



Determination of the best Suitable planting date hybrid cotton varieties

A. Ghajari¹ , H.Biani¹ and S.Soltani¹

Abstract

This project was conducted to determine the best planting cotton date of successful hybrids in factorial using randomized complete block design with three factor and four replications at Kordkoy Cotton Research station in 2009 and 2010 years. Three planting dates were as first factors, three treatment including two Hybrid varieties S8 , S5 and sahel control cultivars as second factor and the third factor including planting patterns 80×20 and 80×50 cm. two planting patterns were selected to create the possibility for maximum yield hybrid varieties in comparison with the control varieties. The results of delaying in planting date showed that the cotton boll number per plant, boll weight, first harvesting yield, earliness and total yield decreased, but plant height and sympodia length increased. Hybrid varieties significantly had higher the first harvesting and total yields than Sahel cultivar. In the first harvesting date, variety of S8 with planting pattern of 80×50 cm had higher yield in comparison with planting pattern of 80×20 cm, but these treatments didn't have significant differences. In the third planting date, the S5 variety with planting pattern of 80×20 cm had significantly higher yield at the rate of 621 kg/ha than planting pattern of 80×50 cm. Final results showed that S8 hybrid variety was better than S5 hybrid variety, but by delaying in planting date, the first harvesting and total yields intensively decreased in mentioned two hybrids, Therefore, it seemed that hybrid varieties were suitable for early planting date.

Keywords: Cotton, Planting Date, Hybrid Varieties

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Investigation possibility of field productivity increasing by using double-cropping system in cotton farm.

S. Soltani¹, O. Alishah and M. Azizi²

Abstract

Cotton is one of the most important crop that is cultivated after winter crop. Improvement of cotton cultivation is related to development of double cropping systems. An experiment was carried out in 2010 in Karkandeh (Kordkuy) as split plot design based on RCBD with two factors and four replications in order to evaluate the effects of winter crop on yield and cotton disease in double cropping and response of cotton cultivars. Main plots were winter crop (wheat, pea, canola, bean and fallow) and subplots were two cotton cultivar (Golestan and Sepid). Some agronomical and fiber quality in this study were evaluated. Analysis of variance indicated that winter crop and cotton cultivars had significant effect on boll numbers, bolls weight, fiber earliness, yield and fiber quality. Mean yield under fallow treatment by 3612/9 kg/ha had significant differences than bean (3005/8), pea (2965/6), wheat (2402/6) and canola (2306.3) kg/ha. Golestan cultivar with boll numbers (15.18), earliness (%71.13) and yield (3054.47) kg/ha had significant differences than Sepid cultivar with boll numbers (12.94), earliness (%58.09) and yield (2663.83) kg/ha. Investigation of incoming results showed that cotton cultivation after bean as compared with cotton cultivation after fallowing had higher profit.

Key words: winter crop, earliness, yield, linter percentage,

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The Law of One Price in oilseeds Markets of Iran comparing world price(Case of: Corn)

Mehdi Nemati, Samane Zare

Abstract

This study examined the law of one price in oilseeds market of Iran using annual data of domestic and world prices for the period of 1992-2008. We used the modern time series econometric analysis methods, including cointegration and error correction model. Main Results of this study confirmed long- run relation between domestic and world prices for corn. The results of estimated error correction model in corn market showed 0.98 percent of disequilibrium would be corrected through every period. Monitoring of world corn markets and adoption of appropriate trade policies in order to reduce the sensitiveness of domestic prices to world price changes was main suggestions based on this paper.

Key words: oilseeds, Law of One Price, Cointegration, Error Correction Model, world price



Winter cropping effect on cotton agronomical traits

Mahmoud Mali¹

Abstract

This experiment arranged as a randomized complete block design with three replications.

This study was carried out for two years in Hashemabad-Gorgan since 2007, in order to evaluation of the winter crop effects [wheat(*Triticum aestivum*, pea(*Pisum sativum*), canola(*Brasica napus*, bean(*Vicia faba*) and fallow]on cotton triats.Winter crop had significant effect on seed cotton yield in the first, second and total harvesting ($\alpha=1\%$). Seed cotto yield after pea had not significant difference in the first harvesting than cotton planting after fallow but were better than other treatments . Seed cotton yield in second harvesting after bean, pea and fallow higher yield by 455.9, 401 and 350 kg/ha than other treatments, respectively. Cotton planting after pea, fallow and bean produced the highest total seed cotton yield at the rates of 3802, 3786, and 3362 kg/ ha ,respectively.

Keywords: cotton, winter crop, legomes, yield, pea, bean, wheat, canola, fallow, yield companent, damping off.

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Evaluation of morphological traits in cotton genotypes (*Gossypium hirsutum*) in responding to drought stress at seedling stage under controlled condition

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Abstract

Identification and use of tolerant cultivars to stress is the one of the methods in seed cotton yield improvement of agricultural systems production under stress. Therefore 22 cotton genotypes were grown under none stress (field capacity) and drought stress condition (-1 MPa) by using of a factorial arrangement of treatments based on randomized completely design with three replications at College of Agriculture, Ferdowsi University of Mashhad in 2011. Until two true leaf stage the soil moisture content was about field capacity and then to the end of experiment, it was conserved about -1 MPa by using of weigh method. Drought stress decreased significantly dry weights of aboveground organs and roots but it was different at susceptible and tolerant genotypes. On the basis of correlation coefficients among traits, leaf dry weight had the highest while stem dry weight and height had the lowest correlations with total dry matter respectively under drought stress. Under stress conditions, the amount of leaf losses was less in tolerant genotypes than susceptible genotypes. As for the obtained results, Varamin, 43347, Khordad, Deltapne25, 43200 and b-433 were the most tolerant genotypes because of the lowest reduction in TDM, number and leaf area, dry weights of leaf, root and aboveground organs, while 43259, Nazili84, Coker 349, Chirpan539 and Asj2*349 were identified in this study as the most susceptible genotypes because of the highest decreasing in the amount of aforesaid traits. Due to the reason of environmental effects on plant morphological and physiological reactions, field study is necessary for evaluation of tolerance levels of cotton genotypes under natural conditions.

Key words: Cotton, Drought tolerance, Morphology, Dry weight, Correlation.

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Determination of rainfall probability distribution function and its damages on cotton product in Gorgan

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Abstract

Cotton is one of dominant agricultural products and contains the most acreage after wheat, grain and rice. Gorgan and Gonbad are major regions of cotton planting in Iran which had highest area of cotton fields and yield in per hectare (1.9 t/ha). Although cotton is one of agricultural products that needs to high amounts of water, but heavy rainfalls can destroy this product. In 2008-2009, heavy rainfalls make more damages to cotton fields among other climatology parameters. In this study, normal distribution, Pearson, Gamble, Gama and other functions have been fitted for maximum monthly rainfall data and damaged area of cotton fields and was used to Kolmogorv Smirnov test determination of the best fitness function. SMADA software was applied for fitness of rainfall parameters and its damages on cotton fields in Golestan province. The results showed that Pearson type III and log Pearson type III models had more accurate results among other distributions for damages and rainfall data, respectively.

Key words: Cotton, probability distribution, Kolmogrov Smirnov method

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Reddening of cotton leaves: A physiological disorder

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Abstract

Cotton is the most important fibrous plants that is used in different industries. The cultivation areas of cotton in Iran have been decreased in recent years due to various reasons. Because of beneficial effects of this product, efforts are doing for increasing of cultivation area. In addition to elimination of the obstacles in the planners' situation, it is necessary to be considered the crop agronomic problems, as well as issues in other cases. One of the issues that crop cultivation was faced with them in Iran is "leaf reddening" that cotton leaves have become red in the middle stages of development. This disorder in addition to Iran in Sudan, India, Pakistan and Turkey has also been reported. These abnormalities led to impaired plant growth and ultimately reduction the yield and quality of cotton yield. Causes of this anomaly have not yet fully recognized, and precision, but based on existing theories, causes of this anomaly are such as reducing night temperature, water lack or flooded fields, intense radiation, lack of nutrients (particularly nitrogen), imbalance of ions in the root area and soil salinity. One of the most important reasons for this anomaly was nitrogen management, uptake and its transfer in plant, especially in modern cultivars. Beginning of red leaves usually started at boll stage and in leaves which were close to the boll. Perhaps this can be interpreted in the flowering and boll formation, reproductive organs acted as a strong sink and obtained nitrogen requirement from a source that was close to the leaves. In other words, it was caused remobilization of nitrogen from leaves to reproductive organs which its deficiency was observed in red leaves. The roots in this stage have not been able to absorb the nitrogen, because all the carbon compounds produced by photosynthesis transported to the plant organs and the possibility of active uptake was less available. It was important to note that some insects and diseases may also cause red symptoms in leaves which in this case the appearance of symptoms was different. This paper can be explained for evaluation of characteristics and symptoms of abnormal red cotton leaves, its importance and spread of disorder, its causes and consequences and also proposed solutions for reducing the incidence of side deals.

Keywords: cotton, red leaf, physiological abnormalities

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The Effects of supportive policies on the sustainability of cotton production in Golestan Province

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Abstract

One of the most important tasks of government are considered to be policy making, monitoring and directing the activities. The main problem of agriculture section was that agricultural policy was in some cases lost its Holistic and became one dimensional , and this approach faced agriculture crisis. This paper attempted to investigate the effects of supporting policies on cotton production in Golestan province. The statistic indicates that cotton cultivation area was about 100 thousand Hec. In 1989 reduced to 8.2 thousand hec in 2010 also decrease to 13 thousand Hec. The result conduct that non holistic planning, inappropriate policy and unbalanced support between various crop caused decreasing in production and cotton cultivation area .following current situation will have environmental impact and also reduce level of production sustainability.

Key word: Supporting Policies, Production sustainability, Cotton



Introducing new invasive weeds in Cotton fields of Golestan province

Alireza Savarinejad¹, Ahmad Deahji², Leila Habibian¹ and Komeil Fatemi²

Abstract

In visual evaluations of Cotton fields in Golestan province, in 2010-2011, it was determined that cotton fields have invaded with some weeds including *Cucumis melo* var. *agrestis*, *Ipomea* sp., *Euphorbia maculata* and *E. heterophylla*. *Cucumis melo* var. *agrestis* is a climbing or trailing herb that reproduces by seed and twines up stems of cotton as a troublesome weed. Morningglory, is an ornamental and herbaceous vine which due to competition of other plants for gaining water, nutrients and light and also breaking of cotton shrubs and makes shadow on them take into account as a damaging weed. Various species of prostrate spurge are annual herbs that reproduce by seed, distribute in the fields, reduce harvesting efficiency and yield. These plants were not previously in the weed flora of Golestan province and recently have been identified at cotton fields of Golestan. Producing a lot of seed, adaptation with ecological conditions of province and not existing efficient herbicides for control of them, are the reasons of their success and survival. These weeds are the invasive plants in the province.

Key words: Invasive plant, Cotton., *Cucumis melo* var. *agrestis*, *Ipomea* spp., *Euphorbia* spp.

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Identification and determination of dominant weeds of Cotton fields in Torkmen

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Abstract

In order to enhancing of cotton quantity and quality and considering of weed integrated management, identification and determination of cotton dominant weeds is necessary. For this reason, an experiment was conducted during 2010-2011 in Torkmen city in Golestan province. Sampling was done by W method using 0/25 m² quadrant and then density, frequency and uniformity of weeds were determined as different genera and species. The 11 weed species belonged to 9 families were reported which among germinated weeds, 42% and 58% were annual and perennial, respectively. The results showed that 85% of reported weeds were dicotyledons weeds and 15% were monocotyledons. The most important weed in monocotyledons and dicotyledons groups were *Cyperusrotundus* and *Alhagicamelorum*.

Key words: Cotton, Flora, Dominant species and Weed

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Study of salinity stress effect on concentration of some antioxidants, prolin and glysin betain in cotton cultivars

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Abstract

In 2009, a laboratory experiment was designed to study the effect of soil salinity levels on concentration of some antioxidants, prolin and glysin betain in cotton (*gossypium hirsutum L.*) cultivars. The experiment was arranged by tow factors as factorial experiment in the form of randomized completed block with three replications. Cultivars and hybrids of cotton including Coker 312×349, Opal, Bolgar 539, 43200, Acala S.J.2×sealand, Sahel and Sepid as first factor were planted in pots with 0.6 and 16.5 dS/m soil salinity as second factor. The effect of soil salinity in 5th and 6th plant leaves of plant were used for measuring of salinity effect on concentration of catalyze, peroxidize, poly phenol oxidize, prolin and glysin betain. Results showed that increasing the salinity stress enhanced activity of catalyze, peroxidize and poly phenol oxidize enzymes in leaves as like as prolin and glysin betain amino acids. Cotton cultivars showed significantly difference in concentration of catalyze, peroxidize, prolin and glysin betain at 1% level and poly phenol oxidize at 5% level. The most concentration of catalyze enzyme was obtained by Sepid cotton cultivar in saline condition as like as peroxidize and poly phenol oxidize enzymes by Opal and Acala S.J.2×sealand cotton cultivars. In spite of prolin concentration, the greatest glysin betain concentrated in Sepid cotton cultivar. On the other wise, concentration of prolin decreased amount of glysin betain in opal cotton cultivar. It seemed that concentration increasing of each these materials decreased concentration of other one.

Key words: Cotton, Salinity, Anti oxidant, Prolin, glysin betain

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Reduced tillage cotton in Fars Province

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Abstract

Mono dimensional view of human on resources in agricultural production during the past years has caused only economic aspects of agricultural activity as producers considered the most important goal. Such an approach may rush unilateral economic needs of farmers in the individual or household level in the short or medium term like to have but too many problems to the human society has imposed. Cotton is one of the most important agricultural products benefits the agricultural community has much to be. Moreover, many plants used in human life and in none of the competitiveness of its products have no artificial, but little damage to cultivated land not to enter the leading cotton. According to the farmers, to soil fertility also may help. In addition, this product has caused the plant to establish a suitable and sustainable agriculture is also very important position. Already, working in the cotton regions of the Fars province of Iran, especially for cotton planting heavy tillage on land was done. In addition to disrupting the soil structure, tillage reduces soil organic matter and biological activity provided which has reduced the soil fertility. Very severe bottlenecks during the last drought phenomenon has occurred in the province. This phenomenon accompanying crummy time to use it non-normative practices and groundwater resources has caused severe declines in the national capital and the God given and the farmers need not rush. Thus, the traditional cultivation of cotton, two major sources of agricultural production (soil and water) has been absolutely no respect and destruction so that be the duty of organizations involved in cotton production in the coming years to maintain these two sources, God has asked. One very effective strategy to preserve and protect water and soil, reduced tillage (Conservation Tillage) is such as no tillage, reduced tillage or minimum tillage is included. Most work in the cotton regions of Fars Province, cotton and wheat are grown in tandem Qhra necessarily be Combining this technique with irrigation systems with approximately 40-25 percent savings in water use and consumption of seeds is taken to be is at least about 40% decrease. Conservation tillage system for cotton in the past few years the efforts of colleagues in research and practical implementation in the province have been welcomed by farmers growing cotton and wheat has been used. It scores well above the cost of planting and land preparation to remove them and will be done in the very valuable time savings.

Key words : Cotton, Conservation Tillage, Fars Province



Winter cropping effect on cotton yield and cotton disease in double cropping

Mahmoud Mali¹

Abstract

Cotton is one of the most important crop that cultivated after winter crop. Improvement cultivated cotton were development double cropping systems. An experiment was carried out in 2010 in karkandeh (kord kuy) using split plot design based on RCBD with two factors and four replications in order to evaluate the effects winter crop in yield and cotton disease double cropping and reaction cotton cultivars. Main plots were winter crops (wheat, pea, canola, bean and fallow) and subplots were two cotton cultivars (golestan and Sepeed). Some agronomical, fiber quality and cotton disease measured in this study. Analysis of variance indicated that, winter crop and cotton cultivars had significant effects on bolls number, boll weight, earliness, yield and fiber quality. The winter crop effects had significant differences in term the disease damping and verticilium. The most plant disease damping off present in pea (%16.37) and decreasing in wheat (% 6.25) was showed. The most plant disease verticilium persent in fallow (%13.45) and decreasing in wheat (% 5.75) was showed .

Key words: Damping off, Earliness, Verticilium, fiber quality , Yield.

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Estimate the technical efficiency of Cotton farmers

Using stochastic frontier analysis approach Case study: Bam

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Abstract

The main objectives of this research are: 1) review and input-output relations in cotton production, 2) measure the technical performance of Cotton growers in the city of Bam, 3) examine the factors affecting the efficiency of Cotton. So by using two-stage cluster sampling convention with 150 Cotton farmers by questionnaire were interviewed. Average technical efficiency was 73% cotton. Therefore, without increasing the area under cultivation and utilization of existing technology can only improve the technical efficiency of Cotton production significantly increased the city. In addition, the effect of socio-economic factors on technical efficiency is also apparent those different variables: age, experience and education are independently linked with an average technical efficiency. On the other hand, the average efficiency of cotton farmers did not do anything other than the job was less.

Keywords: cotton production function, stochastic frontier production function, technical efficiency, generate tension, Bam

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Spinning Industries as the Main Cotton Consumer

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Abstract

According to the definitions, any manufacturing process where fibers are converted into yarn is called spinning. Simple spindle is considered as the primary tool of spinning. This patented device has been attributed to the late Bronze Age. Therefore, that had been the basic mean to produce yarn for 4000 years in the world.

Nowadays, variety of fibers such as cotton, wool, and synthetic fibers like Polyester, Acrylic, and also mineral fibers are used in spinning industries. Amongst them, cotton is the most desirable type of fibers to produce yarn.

There are a variety of production methods in the spinning industries. Ring spinning, open end, worsted, woolen, and different other methods of producing synthetic yarns can be mentioned as the main methods of spinning.

Spinning industries have a great effect in the production and trade of cotton fibers. Therefore, the aim of this paper is survey successful countries in the spinning industry, and Iran's situation in terms of hardware facilities, production, trade and productivity of these industries.

According to the statistics, cotton restrictions, its price fluctuation, and increasing demands for yarn lead synthetic yarns to be developed. It can be seen that major producer cotton countries in the world are located on the top of the best yarn producers. This emphasizes the needs to increase the quality and quantity of domestic cotton.

Keywords: Cotton, Spinning, Consumer

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Determination of amount of N and P on the Tabladila cotton variety

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Abstract:

Consumption efficiency of N and P on Tabladila cotton variety was studied in Esfahan province. The study was carried out with split plot of randomized blocks under two treatments of N and P during 2005 and 2006 continuously. The N treats were the main plots and the P treats were subplots. The main plots include four level of N based on soil analysis (30% less than institute recommendation, 30% and 60% more than institute recommendation) and the subplots treats were four level of phosphor panta oxide (50% less institute recommendation, 50% and 100% more than recommendation). The results have shown that 30% less than institute recommendation for N and the institute recommendation for P were the best treatments for cotton. Organic carbon and available Zn among other variable analysis show were in the best condition when institute recommendation of P was treated. Leaf analysis in first year shows that the best treatment of N is when less than 30% of institute recommendation is treated, and this is also better because it causes less storage of N in leaf and its superiority for feeding the animals.

Keyword: Cotton, Nitrogen, phosphor, Tabladilla variety

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Remainder effect of several species *Amaranthus* on Germination of Cotton

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Abstract:

Allelopathic effects of aqueous extract of shoot and root of five wild species of *Amaranthus* were studied on seed germination of one important crop plants [*Gossypium herbaceum* L. var. *sayocra*] in Golestan province, Iran. Aqueous extract of all species had significant effect on seed germination of Cotton. *Amaranthus viridis* had the highest effect and *Amaranthus blitoides* had the lowest effect on seed germination. Different concentrations of aqueous extract of species indicated the Seed germination of Cotton was completely meaningful. With regards to inhibition effects the aqueous extract of wild species of *Amaranthus* on seed germination of crop plants, it is recommended that their reminder to be removed from farmlands or more seed to be used to neutralize the reduction rate of germination.

Key words: Aqueous extract; *Amaranthus*; Cotton; Seed germination.

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Economic Evaluation of Cotton Marketing in Darab district

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Abstract

Success in the process of cotton production largely depends on effective marketing organization and understanding the nature of marketing this product in order to provide its efficiency was necessary. In this regard, structure, organization, operation, margin and efficiency of marketing this product were considered. Since Darab district is one of the five major regions in cotton production and has the best quality of exported cotton, this city was chosen for study. Information needed in this district obtained randomly through interviews and questionnaires from 53 producers, four wholesale, four filtration units and one cooperative of cotton farmers. The results suggested that in the marketing process, the wholesale market relative to the farm market is more importance. Lack of capital is the most problem cotton marketing operation. Among the marketing channels that filter cotton, the highest marketing efficiency is allocated to the cooperative of cotton farmers. Accordingly, for a more favorable marketing process, forming marketing channels in the form of cooperative is the most appropriate solution.

Keywords: Cotton, Marketing operation, marketing organization, Marketing efficiency, Cooperative.

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Design, make and evaluation a cloth pot maker in order to product cotton transplant

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Abstract:

Tranasplanting refers to the transfer of seedling from one area to another filed. This machine was made for enhancing the transplanting mechanization index of crops and horticulture and improving the efficiency of transplanting.

The pot-macker was able to produce fifty pots in each cycle and the capacity of machine could achive to 2500 pots daily. The procedure of machin was that after filling of cylinders by soil, pistons compacted the soil and transfered to the cloth pots. The pots tested in the field and the results showed that these pots were suitable for cotton transplanting.

Key words: Cotton, pot-macker, transplant

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Comparing of yield, earliness, quantity and quality characteristics of some new cotton varieties in Darab area

Aboalghasem Gheysari¹

Abstract

In order to study 9 new cotton varieties as well as 1 regional cotton variety (Bakhtegan), a field experiment was carried out in Bakhtagerd research station of Fars Agricultural and Natural Resource center in 2009-2010. The treatments included 9 new varieties (L-8-85, N-14, Eram-2, J-74-14, J-74-6, SKN-773, S-6530, Teski-9, B557-T2) and 1 Fars commercial variety were arranged in completely randomized block with four replications. Different traits as yield, yield components, earliness, disease tolerance and qualitative characteristic were investigated. The results showed that J-74-6 and Eram-2 varieties were produced highest and lowest yield, 3772 and 2796 kg/ha, respectively as with compare with the other varieties. These two varieties compared with the control variety (Bakhtegan) have about 30% yield addition and 4% yield reduction respectively. B557-T2 and Bakhtegan varieties were most and least earliness respectively with 82.5% and 60.66%. J-74-6 variety was dedicated most yield and plant height, and so earliness, boll weight, number of bolls per plant, number of sympodial branches characteres are desirable, also yield of B557-T2 variety has not significant difference with the J-74-6 variety and has achieved first rank of the earliness and micronaire, that these two varieties were recommended for future research practices under similar agro-climatic conditions.

Key words: Cotton, New Varieties, Earliness.

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Economical & technical outlook in nation and world cotton production and textile industry

Mohammad ali Ameri¹

Abstract

Cotton fiber is the most important and valuable natural fiber as an agricultural, industrial and commercial product. Because of the special properties of this fiber, such as softness and elegance, strength, moisture absorption, high abrasion resistance and desensitizing, it is one of the most widely used fibers in the textile industries which are devoted considerable acreage to the world. Major producers of cotton in the world are China, India, America, Pakistan, Uzbekistan and Brazil, respectively that have the maximum production of cotton fibers in the world. Considering population growth, it is essential that the developing countries increase the efficiency of their production with improving their qualities to be able to enter into this important economic area. In this paper, the technical and economic situation of cotton fibers in Iran and the world during various periods of time was investigated. The main physical characteristics for producing the different counts of cotton yarns have been analyzed, too. Since Uzbekistan is one of the successful producers and exporters of cotton fibers in the world and the major imported cotton to Iran is from there, so in this research, economics, industry situations and government support policies for the development and success of this product were investigated in three parts; production, refining and trading. Using this information and relying on existing potential, the domestic cotton production conditions would be improved, so in addition finding the ability to fully meet domestic needs, Iran could become one of the exporters of cotton fibers in the world.

Key words: cotton, economic ,textile industry

¹ Directory of mahbad milan textile



Zoning cotton-growing conditions in Esfahan province based on thermal conditions using GIS

Abstract:

Considering more and better food production is considered one of the important issues of today's world, structural study of atmospheric and environmental effects of agriculture are of particular importance. Now day, information technology is considered as safe condition and undeniable for developing of precision farming. However, the cotton as world and strategic plant has significant role in trade and economy of each country. Among the climatic factors, thermal regime had the most influence on the sowing to harvesting stages. This study was examined the conditions of cotton cultivation in the province based on the temperature conditions. For this reason, first data of 16 station were collected for different months and after correction of data, then transferred to GIS page and concerned graphs were plotted. The results indicated that the best months for cotton was April and May which most of province area were suitable for cotton planting in May. It should be noted that in the eastern provinces, territories of Kashan and Ardestan was better to cultivate cotton in March and April. Partly within the central and western provinces in April to took this work. Fereidoonshahr areas, slopes, and Chadegan Singrd due to shorter time to benefit from the appropriate temperature conditions, it was better to not proceed cotton.

Keywords: zoning, temperature, cotton, GIS, Isfahan



Effect of DC magnetic field on cottonseed germination of Sahel cultivar.

Abbas Rezaei Asl, Shahram Nowrouzieh , Farahnaz Daz and Amirhoseyn Shahabi

Abstract

Considering long period of cotton production, ever technique that resulted in reduction of this period could increase cotton acreage. In this paper, the effect of DC magnetic field on growth rate and germination of Sahel cultivar cottonseed was studied. The treatments were based on RCBD at three levels of magnetic field (200, 400 and 600 mT) and three times of seed remaining in magnetic field (5, 10 and 20 m) by three replications. The results showed that magnetic field intensity had significant effect on germination rate and seed growing. Remaining of seed for 5 minute in magnetic field had the heights effect. Also 600 mT with 5 minutes remaining in magnetic field had the highest effect in the rate of germination.

Key words: Cotton, Germination, Magnetic



Effective factors on cotton insurance acceptance among cotton farmers (case study branch in Garmsar Township)

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Abstract:

The main purpose of this study was to analyze the effective factors on cotton insurance acceptance among cotton farmers in Garmsar Township. The methodological approach in this research was applied and survey type. The instrument used to achieve objectives of this study was a questionnaire. The validity of the instrument was specified after several times of reviewing and correction by the university scientist and experts. The reliability of analysis was conducted and Cronbach's Alpha values of the instrument were estimated 85% using statistical SPSS software. Statistical population of the study consisted of whole cotton farmers of Garmsar Township (N=2080). Using Cockran formula through simple random sampling 232 farmers was selected. To increasing confidence of sampling the population considered as 252 farmers. At last 242 questionnaires were completed exactly. The resulted of multi-variable regression in a step by step way indicated that the most important variable in insurance acceptance was farmers information about cotton insurance profits at the rate of 31.2%. In second step, damage variable was considered which in addition of last variable reached to 47.1% of cotton acceptance variance. Third variable was the amount of income from cotton farming (56.8%), and educational level explained %69.3 of changes on the dependent variable of insurance acceptance.

Key words: acceptance, agricultural insurance, cotton insurance

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Investigation of growth promoting activity of cotton via symbiotic rhizobacteria

H .Janlou¹ , A.Heydari², and S. Nasollanejad³

Abstract

In this study the growth promoting activity of five bacterial isolates (three belonging to *Pseudomonas fluorescense* and two belonging to *Bacillus spp.*) on cotton plants was investigated in two field experiments conducted during 2001 and 2002 cropping season in Golestan province. Seed coating procedure was followed for bacterial application and two common cotton varieties (Sahel and Saiokra) were used in this study . The evaluated criteria included plant height at the flowering stage, the number of bolls, The average weight of ten bolls and the yield. Results indicated that in 2001 season all of the above mentioned growth characteristics were significantly promoted by all five bacterial isolates tested in the experiment. The only growth characteristic that was significantly promoted was the plant height at the flowering stage in 2003. However, the other factors were not significantly affected. The differences in the obtained results in different years may be due to the variation in environmental conditions. Based on the overall results of this study it may be possible to use bacteria in the field as plant growth promoting rhizobacteria (PGPR).

Key words: cotton, symbiotic rhizobacteria, growth promoting

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Interaction between nematode (*Meloidogyne incognita*) and *Verticillium dahliae* in cotton plant

Zakeisadat Mohammadi¹, Saeed Nasrollanejad² and Omran Alisha³

Abstract

Vascular wilt fungus, *Verticillium dahliae*, and root knot nematode, *Meloidogyne incognita*, are the most common and destructive pathogen factors in cotton. In order to study interactions between these two factors, their interaction effects on 4 cotton cultivars (Sahel, N200, Mehr and Varamin) were evaluated in a completely randomized block design in 4 iterations and 6 treatments in a greenhouse (Department of Plant Protection, Gorgan University of Agricultural Sciences and Natural Resources). Treatments including control, just fungus, just nematode with concentration of 2300, just nematode with concentration of 7000, both fungus and nematode with concentration of 2300 and both fungus and nematode with concentration of 7000. 12×10^4 Microsclerote for each fungus treatment and 7000 and 2300 nematode eggs and second stage juvenile for the nematode treatments were inoculated to 60 days old cotton seedling (depending on the desired treatment), respectively. *Meloidogyne incognita* nematode was isolated from the host plant and then its species and race were determined and at last it was reproduced by inoculation to tomato transplants. After that the *Verticillium dahliae* fungus was isolated from infected cotton plants and after cultivation and identification steps, it was transferred to the Tajan wheat seed cultivar (three times been autoclaved) for reproducing. The results of this study after 2 months showed that the interactions between *Verticillium dahliae* fungus and *Meloidogyne incognita* nematode in cotton was resonator. As a combination of fungus and nematode simultaneously leads to a significant increase ($P = 1\%$) in the wiltdejection. With increment in nematode concentration, root rot, the number of nodes and egg mass increased and shoot and root length, fresh and dry weight decreased vice versa.

Keywords: cotton cultivars, *Verticillium dahliae*, *Meloidogyne incognita*, interaction.

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Application of university, industry and government subsystem models for enhancing of quality management in cotton trade

Mahdi azim mazrahi¹

Abstract:

The importance of human resources' quality, research and development in improvement of quality management in cotton trade, through endogenous growth models was explained. In this paper, by considering one of the economic growth models, namely improvement model with endogenous technological change, a model for enhancing of quality management in cotton trade was introduced and Positive impact of the three subsystem of university, industry and government on the improvement of quality management in cotton trade will be investigated. Also interrelationships of the labor force, higher education system, human capital, knowledge-based manufacturing and interaction of them on improvement of quality management in Cotton trade will be analyzed. First, the nature of the research and development process was reviewed, then the organization, elements and its impact on the improvement of quality management in cotton trade will be examined and analyzed.

Key words: Research and development, endogenous growth models, Cotton trade, knowledge-based manufacturing, university-industry cooperation.

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Comparative study of the cotton price policy in Iran and the selected countries

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Abstract

Agricultural price policies have always been one of the most important management and planning tools in all countries including Iran. Proper use of the policies can help agricultural growth and development. Otherwise, it may results in lossing and decreasing efficiency of the whole economy at micro or macro levels. Because of the importance of cotton and also agricultural price policies in this study the policies in Iran and some countries were investigated and evaluated comparatively. Again, some shortcomings and the possibility of use of other countries experiences have been investigated. The results showed that the most important problems and shortcomings in cotton policies are non proportionate guaranteed price with production cost, not determining buying price before planting time, low guaranteed price and it's growth comparing with the other crops and inefficient it's system, uncontrolled imports and not paying export subsidy for cotton. Obviously, not paying attention to solving these problems will result in lowering cotton production and competing potential both in domestic and international levels.

Keywords: price policy, cotton, Iran

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Investigating the role and importance of Iran's cotton trade in the world markets

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Abstract

Iran's market share in trade of most agricultural products has never been ideal and according to available potentials. While this issue in view of export and by proper planning can be useful in improving employment and acquiring income aspects. In other hand, demand and consumption markets can be managed efficiently using the proper policies based on the each period requirement. This study because of importance of cotton and its role in world markets has tried to evaluate and investigate past and present situations both at regional and world markets. The results showed that the trend of Iran's cotton export has been both declining and highly fluctuating. By contrast, its import trend has been inclining. Also, Iran's production share both in Asia **and** world has been decreasing, implying lowering production and competing potential of Iran both in Asian and world markets in contrast to the competitors. Totally, these results implied on the improper conditions in Iran's cotton trade and could be a warning to policy makers and planners.

Keywords: price policy, cotton, Golestan province

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The effect of different tillage systems on yield and yield components of Shirpan cotton cultivar

Sayid Khaje Dangalani, Shahram Nowrouzieh

Abstract

The cotton acreage has recently decreased due to economic problem. One of the solutions for the revival of cotton is the use of new technologies like conservation tillage which not only conserve the soil but also save costs and reducing of fuel consumption. So this study was carried out in Cotton Research Institute of Iran in Hashen Ababd station of Gorgan with four different tillage system (no-tillage, Disk, Chisel & Disk and moldboard plow & Disk) on Shirpan cotton cultivar. This study was done in RCBD with three replications in 2009-2011. The results showed that the no-tillage had the most yield than other treatments. Also the number of boll and the boll weights of moldboard plow & Disk (conventional tillage) had the lowest amount as comparison of other treatments. Measuring of soil moisture showed that no-tillage and moldboard plow & Disk (conventional tillage) systems had the highest and lowest soil moisture, respectively.

Key words: conservation tillage, yield, component yield



Transmission of World Cotton Price to Domestic Cotton Price in Iran

Mandana Toossi¹

Abstract

In this paper, Error Correction Model and Engle-Granger Method were used to investigate the relationship between domestic and world cotton prices. The variables of the study were domestic and world cotton monthly prices. The data were collected for period of 2006-2010. According to the results, there was no two-way causality between these two prices. It just showed that world cotton price precedes and causes domestic cotton price. Furthermore, the results showed that any price shock induced by world market causes the domestic cotton price to get out of equilibrium and it adjusts by 30 percent in one month to the long-run equilibrium. So it needs immediate regulatory responses to reduce disequilibrium term. According to the findings, support policies in the field of cotton trade seem most significant.

Keywords: Cotton, Price Transmission, Error Correction Model

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Investigation of cotton lint economic trend in Iran and world

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Abstract

The purpose of this study is to investigate cotton lint production trend in Iran in comparison with world during forty years period ended in 1382. The necessary data of this research were obtained from secondary data the publications of the Food and Agricultural Organization (FAO) and Iran Agriculture Yearbook (various issues) published by Directorate of Information and Statistics, Ministry of Jihad - Agriculture, Government of Iran. In this study, Compound Growth Annual Rate (CGAR) index was computed for investigation on production trend and Coefficient of Variation (CV) index was applied to evaluate fluctuation in production. The results showed that the share of Iran in world cotton lint production has been declined regularly from 1.22 percent in 1964-1973 decade to 0.85 percent in 1994-2003 decade. The results also showed that the CGAR index for production of this product were -0.41 and 1.53 percent in the case of Iran and world for forty years period, respectively. This revealed that the production of cotton lint had decreased 0.41 percent in Iran and increased 1.53 percent in the case of world, yearly. It should be noted that not only Iran faced to diminishing trend in production in mentioned period but also CV index showed fluctuation in cotton lint production by 28.03 percent more than world production fluctuations as this index were 26.69 and 19.21 in the case of Iran and world in the studied period, respectively. This emphasized on the importance of long-run planning in sustainable production of this important product.

Keywords: Cotton lint, production, Compound Growth Annual Rate (CGAR), Coefficient of Variation (CV)

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Influence of mineral fertilizers on income level of the cotton cultivars

Zakaria Khan Heydarov¹

Abstract

The agriculture is considered the main activity of the people in Tajikistan. The 90% of all agrarian products receives from irrigation lands, which is annually 30-32% of irrigation lands compose the cotton planting. Cotton planting takes part in national economic development of Tajikistan. After the Union of Soviet Socialist Republic, because of scarcity of mineral fertilizers and other factors the production of cotton declined in 2-3 levels. Hereinafter the search of yield increasing of cotton became the only aim of agriculture. With this goal the product plan comply with the main plan. In conditions of Hissar valley of the Republic of Tajikistan, inclusive of fat land with N.P.K. norm, for production of 100 kg production coefficient use of N.P.K. from mineral fertilizers and the N.P.K. land were calculated and the account was projected from 1500 to 5500 kg/ha. Completion of plan is composed from 81.3 to 104.9%. Income level is changed from 86.6 to 198.4. In investigation were used these types of cottons: Hissar and Guliston-2.

Keywords: Cotton, Tajikistan, Fertilizer, Income

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Cotton-wheat Production System in Iran

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Abstract

It has been years that cotton production is recessed and farmers do not show any interest in producing it. This is due to inappropriate commercial conditions and cotton's inability to competition with rival products. In cotton-cereal production system two crops are cultivated in a farm during one cultivating period. In this system, early varieties of cotton and cereals were cultivated and the production of both crops was economized and would be stable. A relative package of production practices was another important key factor. These packages were included integrated management of pests and diseases, integrated management of nutrition, weed management, irrigation management and etc. which would ensure the success of this project. This project implemented in farm condition, in six provinces and the production components costs and income were calculated and compared with the checked farms and farmers. Cotton production in cotton-wheat system is influenced by many factors such as genotype, the length of the growth period, sowing time, nutrition management, management of pests and diseases, irrigation management, harvesting time and mechanization in different stages of production. This system had more benefits and income for farmers. The world cultivation area of cotton-wheat system was not exactly known but it was estimated to be around 3-4 m. ha in year. This production system has been used in Iran since 2010 and has greatly developed. For example in Fars province the cultivation area in this system has increased from 100 ha in the first year to 1200 ha in the second year. In South Khorasan the cultivation area (pilot) has increased from 5 ha (in the first year) to 120 ha in the second year and it is planned for 400 ha in this year. Using early varieties of cotton and wheat besides implementing no-tillage method is one of the major characteristics of this system which along with a good time management would lead to a successful production of both crops. Decreasing the costs of production, increasing the yield, improving the stability of cotton and cereal production and decreasing the consumption of chemical pests and fertilizers are the major objectives of this project. The increase of oil organic matter, decreasing 3 periods of cotton irrigation, decreasing fuel consumption and finally decreasing costs of production have been reported by cotton producing provinces using this system.

Key words: cotton, wheat, Production System

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Study the transmissibility of global cotton prices in Iran

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Abstract

Cotton is one of the most important agriculture crops that in addition to providing raw materials for textile and oil industries play an important role in employment of agriculture, industry and commerce. Since analysis of price transferring at agriculture markets is important both economically and politically, so this study evaluated the price transferring (symmetrical or asymmetrical) in foreign and domestic market of cotton for the period of 1962-2009 . In this paper Dicke fuller unit root test was evaluated and he results of this test showed stagnation. Finally the model hook was used. The results showed that cotton was asymmetric price transmission between domestic and foreign markets and cotton prices increasing were transmitted to the domestic market with more intensity.

Keywords: Hook pattern ,the global market,domestic market,the price transmission



Surveying Price support policies on the supply of cotton

(Case study in Golestan province)

Seyed Safdar Hosseini¹, Marzieh Aminravan², Sina Ahmadi Kaliji³

Abstract

Since cotton product creates high value added and employment plays an important role in the livelihoods of households and in economic development and can emphasized usage of this product and its products in various industries as an important stimulus in the country's industry. Due to dramatic declines in the country's cotton, especially in Golestan Province, government consistently by applying policies such as guaranteed price or incentive policies has tried to increase this product's cultivated surface. In the present study the effects of cotton price support policy and other factors affecting these productions supply in this province was studied for the period 1990-2008 with using Nerlove partial adjustment model. Variables are include cotton nominal protection rate for surveying price support policies effects, the expected price of cotton, lagged planted acreage and the lost revenue of competing crops. Research results showed significant and negative relationship between variables expected price and the nominal protection rate with the product's supply. Negative value and declining trend obtained for the Nominal Protection Rate variable suggests reducing support and lack of protection in recent years.

Key words: cotton, Golestan province, support price, nominal protection rate, Nerlove model

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Surveying Iran's cotton export advantage and top 15 exporting countries

Seyed Safdar Hosseini¹, Marzieh Aminravan², Sina Ahmadi Kaliji³

Abstract

In this study the export comparative advantage of Iran's cotton and the top 15 countries in exporting this product using the Revealed Comparative Advantage index (RCA) and Revealed symmetric comparative advantage (RSCA) have been studied. Results shows that among the studied countries in 1961-2008, America, Australia, Egypt, Zimbabwe, Pakistan, Tanzania, Mali, Sudan, Greece, Syria, Iran, India, Mexico and Turkey had the comparative advantage and Brazil and China did not have comparative advantage. Some countries like Mexico, Iran, Turkey and Brazil reached from appropriate relative merits in exports of cotton and having advantage to disadvantage and lost their global market but other countries like Mali, Sudan, Syria, Zimbabwe, Egypt and Tanzania have increased their comparative advantage and preserved their global market from changes and the shocks. About Iran's cotton, decrease in production has led to a decrease in exports of this product and generally Iranian since 1377 has lost its advantage in the cotton. To improve the cotton exports process and Retrieving Competitive and export ability using of production incentives and supporting policies can be effective producers.

Key words: cotton, Iran, Revealed comparative advantage, export

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Review of comparative advantage of cotton production in Kerman province (city Orzuiye case study)

Farahnaz shahryaran¹

Sedighe nabieian²

Abstract

Comparative advantage is a term for showing the country's potential and actual production of products with global market. considering the growing population and increasing demand for clothing in developing countries including Iran, reviewing the social profitability of cotton products, the effects of government policies and the impact of bottlenecks on the domestic market have special importance on producers. Since Orzuiye city of Kerman province in Iran is one of the most important centers of cotton production, therefore, this study examined the comparative advantage of cotton production during 2010-2011 by using a policy analysis matrix. Part of data and required information in connection with the cost of production were collected from FAO Web site and various statistical website and other parts from the questionnaire using random sampling of Orzuiye cotton farmers. In this study sensitivity analysis from exchange rates and price was performed and for calculation of comparative advantage of domestic were used domestic resource cost (DRC) and net profit social indicators (NSP).

Keywords: comparative advantage, matrix analysis, policy, social net, cotton.

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Effect of credit on productivity of cotton produced in Kerman province (city Orzuiye case study)

Mohamadreza zare mehrjerdi¹

Farahnaz shahryaran²

Maryam ziaabadi³

Abstract

In recent decades with the development of culture, health and technology, increasing the relative per capita incomes and a growing population and rapid increase, the public needs to consume more clothing has increased. In such a situation of strategic products such as cotton as the main and most essential inputs in the garment of special significance.

Cotton spinning and garment industry has had a major role in the development and export of

this product can be effective in increasing the national income.

Thus, government support in funding the production of cotton in different ways including a grant facility can increase the efficiency of this product. Since the city of Kerman Orzuiye important centers of production and the cotton is in Kerman province and also in economic terms has an important role in the region effect of grant funds from state banks on productivity of cotton produced in Kerman city

Orzuiye using linear regression model and Cobb-

Douglas production function is. This study used data from the questionnaire to a random sampling of 60 cotton work the study area for the crop year 90-89 is collected. Results suggest that granted credit on the productivity of cotton in this region has had a significant positive impact.

Key words: cotton, productivity, finance, Orzuiye.

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Study of Nervous intelligent system performance in cotton planting in the estimated temperature

Saeed radpour¹, Ehsan Tahami² and mansoor smailzadeh³

Abstract

Plants are constantly exposed to a wide range of environmental stresses. The biological and non biological stress show strongly effect on the growth and production. Weather data from 1379 to 1389 of Mashhad Such as wind direction, wind speed, sunshine hours, maximum, and minimum and average rates of evaporation of moisture from 6.5 to 12.5 and 18.5 hours a day minimum and maximum humidity and mean daily temperature was used. The research network (perceptron) with one layer of a multi-layer and 11 hidden neurons and learning the best structure was used as Levenberg Marakwet. In this study, three criteria mean square error (MSE), and normalized standard error (NMSE), and the mean-square (R^2) was used to determine the coefficient. The value of MSE, NMSE and R^2 were 0.0021 and 0.0123 and 0.9999, respectively. Results showed that artificial neural network model of multi-layer perceptron (MLP) with very high accuracy to estimate the environmental conditions.

Keywords: simulation, artificial neural network, air temperature

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Influence of Price Support Policy on Cotton Acreage Development in Golestan Province :Application of ARDL and ECM Procedures

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Abstract:

This research has done in order to investigation of price support policy effects on cotton acreage development in Golestan Province by using time series data and procedures. Based on results, although influence of relative price of cotton (relation to wheat price) on cotton acreage is significant but it is not remarkable. In other words expansion of cotton acreage entails essential growth in cotton relative price. But application of mentioned policy will not be possible to government. Therefore current price support policy of cotton is not effective and sufficient. Therefore non-price support policies are also necessary in order to significant expansion of cotton acreage. Based on other results rice and rapeseed prices didn't have significant effect on cotton acreage changes and also according to amount of adjustment coefficient of error correction model (ECM) cotton acreage returns to equilibrium amount after at least 2 years by application of effective support policies.

Keywords: Acreage response , Error Correction Model , Cotton , Golestan Province

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Survey of Trends and factors affecting the comparative advantage of cotton export of Iran

Mazloome Razzaghi¹ , Hoseyn Mehrabi Bashar abadi² , Somayeh heidarabadi³

Abstract

Cotton and textile industries are as the economic base in many developing and developed countries. Therefore, this study, has been done aimed to survey the competitiveness of cotton exports of Iran and its trend changes over time and also its factors affecting. The time series studied is 1961-2010RSCA indices used to calculate the comparative advantage of cotton export of Iran. The results showed that comparative advantage of cotton exports of Iran, however had fluctuations in different years, had creased in recent years. In order to investigate the factors affecting the comparative advantage of cotton export of Iran, was used time series analysis and Vector Auto-regression pattern. The estimated model showed that the exchange rate, the rate of domestic production, price fluctuations in world's cotton, production of other countries and restrictions, has been effective on export advantage of this product. Finally, the results of policy proposals were presented for increasing production and exports of this product.

Key words: cotton, comparative advantage, Iran, exports, VAR

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Design, construction and evaluation of two-row combine drive system Pamak

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Abstract

Cotton is one of the most important products of strategic importance so that the product of employment and income for the country and has named the white gold in Iran. Specific cotton harvest season, October, November and December months. This month in a crop year, the harvest of crops such as saffron, sugar beets, which are much needed labor. Cotton combine two-row models combine Pamak lacks a driving force of Turkey, which has been purchased. The drive mechanism is such that necessarily combine propulsion and power transmission mechanism for a wheel attached to the combine, tractor, remove the front wheel and the tractor is part of the combine. This means that the tractor can not connect to one of the most popular models of tractors sequence (Draft - semi-mounted and mounted) to combine join. Suitable for installation on the tractor this point we can combine cotton, length and fittings have been chosen, with the necessary modifications, to link and combine tractor hydraulic system and steering wheel was attached, and other factors combine. Technical evaluation of the device attributes such as speed gearbox connected to the output axis PTO, rotation speed of cotton harvester unit, suction fan speed, tractor speed of the ribs, the speed of the wind suction units, suction, cotton harvester base speed, radius around the tractor attached to a combine harvester, combine harvester emptying the tank was measured.

Keywords: Cotton harvester, combine

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Effects of Sub-soiling on Soil physical Properties and Cotton Yield in Moghan

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Abstract:

Agricultural mechanization and the increasing number of traffic are a significant cause of soil compaction and limitations for root growth, water infiltration and water retention in soil. A study was conducted to evaluate the effect of sub soiling on soil physical properties as bulk density and penetration resistance as well as cotton yield. Three soil tillage treatments viz S0: moldboard plow (conventional tillage), S1: 30-35 cm sub soiling followed by moldboard plow, and S2: 50-55 cm sub soiling followed by moldboard plow were randomized in complete block design with four replicates.

The ANOVA results indicated a significant decrease in soil cone index and no statistically significant differences were found with bulk densities, however, sub-soiling treatments led to the lowest values of this index. Highest values of plant height measured 86/27 cm were found with 50-55 cm deep sub-soiling. Lint yields at 30-35 cm and 50-55 cm deep sub soiling were 4180 and 4020 kg/ha, respectively. Lint yield of conventional tillage was 3630 kg/ha. Sub soiling resulted in yield increase within 9.7-13.5% and led to improvement of the soil physical properties.

Key words: Soil compaction, Sub-soiling, Soil cone index and Cotton yield

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Investigation the effects of different amount of N-fertilizer and irrigation water on the yield of cotton in Kashmar

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MOGHADDAM¹, MOJTABA NORIHOSSEINY¹

Abstract

In order to investigation the effects of different amount of N-fertilizer and irrigation water on the yield of cotton(Veramin), a split plot experiment with three levels of irrigation water (45; 60; 75 mm Evaporation from class A pan) and five levels of nitrogen (0; 60; 120; 180; 240 kg N/ha) was conducted in a Randomized Complete Block Design with three replications in Kashmar agriculture and natural resource station in a silty loam textured soil with EC=2.2 dS/m, pH=7.8. Results showed that the effect of nitrogen treatment on cotton yield, boll number, side branch number, and plant height was significant and the greatest cotton yield, boll number, side branch number, and plant height was obtained from N4 treatment and irrigation at 75 mm evaporation from class A pan. When irrigation water decreased N-use efficiency decreased as well. In general, the results of this experiment showed that the best treatment was irrigation with 75 mm evaporation from class A pan and 180 kg N/ha.

Key words: Irrigation, Cotton, Nitrogen

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Electrophoresis evaluation of cotton genotypes based on seed storage proteins pattern

S.Yaghub S. Masoumi¹, Mir Ali.Masoumi²

Abstract

This study was conducted in order to identification of several varieties of Diploid and Allo- tetraploid cotton cultivars in one year. After vertical electrophoresis of seed proteins, a total of 31 positions were detected for the formation of protein bands. Old world diploid species had considerable differences among varieties in terms of the average number of bands and the bands mean, so that the average number of species in the figures strips *G.herbaceum*, and *G.arboreum*, were 25 20 bands, respectively. The difference had among the numbers of Allo-tetraploid species. So that mean number strips in *G.barbadense* was 21 bands and at *G.hirsutum* was 17 bands. Among the old world diploid varieties, Banafsh-Kerman cultivar had the highest bands (27 bar) and the lowest belonged to Iran-1 cultivar (15 bar). Among Allo- tetraploid cotton cultivars T-14 cultivar had the highest number of bands (23 bar) and Tashkent -1 cultivar had the lowest bands (15 bar). Relative motion (Relative Mobity) for the first position against the bar was 0.12 and the last bar position was 0.84, respectively. Accordingly, the three components were separated on a gel. Strips 1 (RM=0.12) to 12 (RM=0.33) weight proteins were identified as the origin of the gel and Bands 13 (RM=0.4) to 21 (RM=0.56) with average weight and strips 22 (RM=0.6) to 31 (RM=0.84) proteins were lightweight. Most of the variation in the number of varieties from the protein bands of proteins were observed with molecular weights of proteins by light and medium-heavy and less variation.

Key words :Electrophoresis , Diploid, Allo- tetraploid

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Drought risk management in cotton With very early varieties

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Abstract

Planting of very early cotton varieties is of planting patterns in the world which is of particular importance in Iran . The varieties identification can solve most problems of famers . Especially the very early varieties due to the short period of growth than medium and late varieties require less water, So they may be used in crisis water condition. The appropriate number of cotton regions was selected or entered as a good parent programs are making hybrids. In this study among foreign cotton varieties in the country, twenty varieties were selected which earliness parameter was important. These cultivars were compared in different parts of Iran with numbers of commercial cultivars. In this research parameters like earliness percentage, the first and second harvesting, boll weight, boll number per plant was measured and recorded. This study was conducted at Agricultural Research Centre of Moghan based on complete block design with four replications and four regions. The results showed that Opal and Beli Izovar cultivars respectively with 3983 and 3975 kg/ha had highest yield and Opal and 4-S-4 cultivars had 92% earliness . Opal cultivar had the highest yield and earliness among early cotton cultivar and was the best cultivar in drought conditions.

Key words : cotton , very early varieties , boll

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Investigation of cotton genotypes interaction to topping and pix treatment in growth different stages

S.Yaghub S. Masoumi¹, Aref Kheirju¹, Mir Ali.Masoumi²

Abstract

In order to examine the response of different varieties of cotton and hormone Detopping Pix, Pars Abad Moghan experiment on four cotton varieties, including varieties of October, Varamin, Oltan and Shyrpan, as the first factor and hormone treatments were sprayed 15 days after flowering and 30 Detopping days after flowering and 30 days after flowering as the second factor and without hormone treatment and Detopping spraying was carried out as control. This factorial experiment in randomized complete block design in four replicates were performed. Studied in this experiment included plant height, boll number per plant, boll weight, twenty, yield, in first harvest, second harvest and total yield were. Analysis of variance showed that only two traits in plant height and boll weight of twenty There are significant differences. Mean comparisons showed that hormone treatment results in Varamin Pix 30 days after flowering, with an average height of 70 cm showed superiority over the control. Compared with the lowest stem height compared to control treatment was equivalent to 30.15%. The study of twenty-boll weight in both cultivars and Varamin Shyrpan Pix 15 days after flowering spray in hormone significantly more than 30 days after flowering hormone Pix were sprayed.and in the Persian month Mehr was no significant difference from control.

Keywords: Cotton, Pix, Detopping, Plant height, Twenty bolls weight

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Review of Researches on Utilization of Cotton Stalk as Raw Material for Wood and Paper Industries

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Abstract

Regards to shortage of wood resources and limitations of forests resources harvesting, essence of finding replacement for supply the increasing demand of society to woody products are feeling more and more. With this aim use of agricultural wastes every times was important for researchers and producers. Cotton stalk as an agricultural waste of an important and strategic and important agricultural product has many important benefits for use as replacement of wood and national researchers during recent years did many studies for using this lignocellulosic resource for production of products like paper, paperboard and particle boards. In this paper was tried in addition to study of previous works, have an investigation to the future out looks and potentials of using cotton stalk fibers as a row material for use in wood and paper industries.

Keywords: Cotton Stalk, Wood and Paper Industries, Agricultural Wastes.



World Cotton Market, Its Structure and Pricing

Mohammad Reza Dehghanpour

Mehdi Emami Meybodi

Babak Dehmoubed

Abstract

According to economic literature, commodity prices are influenced by different factors that in the meantime, the market structure has a special place. This is also because the market structure on the one hand can be effective on the performance of firms and producers, and on the other hand can influence on the pricing mechanism. This issue in cotton market and the strategic importance of this product is most important. Therefore, the global market in terms of cotton exports and its structure has been determined. In this study, in order to determination of export's market structure, criteria of CR and HHI have been used. After determining the structure of cotton in the world export market, Iran's share in this market during 2000 to 2011 was studied and changes in market structure and market share in Iran will be analyzed. According to the results, Iranian power in the world about how pricing of this product and the changes during the course of study that can be explored.

Keywords: Cotton Export, Market Structure, Concentration Ratio (CR) Index, Herfindahl Hirishman (HHI) Index



Study trend of production and trade of cotton in the global market structure

Naser Asiabani, Masoud Hosseinzadeh¹, Arash Dourandish², Omid karamy³

Abstract:

Cotton is one of the world's major agricultural products. It is also the most important and valuable natural fiber textile. Cotton is one of the few products that its production, use, import and export is done in all of the world. Today cotton planting is promoted in 100 countries. In Iran, during different years, the production and trade of cotton has been different. This study tried to analysis the trend of cotton production and trade in the world. Considering various graphs and tables, the study tried to identify top countries in product, export and import of cotton. This article also evaluated the global cotton market structure whit indicators such as Herfindahl-Hirschman, Hannah Kay, first order Shannon entropy and the logarithmic standard deviation. The research findings showed that America, Uzbekistan, Australia and India were the leading exporters of cotton lint and China, Turkey, Pakistan and Indonesia were the largest importers of it, in recent decades. Moreover, calculated indices for the market structure showed that market changed from monopolistic competition to oligopoly During 1997-2007. According to emphasis of Iranian trade policies on developing non-oil exports, the results of this study could be helped to policymakers a wide perspective for making the right business decisions and policies.

Key word: cotton, export and import, global trade structure, index, concentration ratio

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Challenges and strategies for the development of cotton industry

Paniz Jorjani

Abstract

The sensible reduction of demand is major reason for descending explanation which has occurred in the price of cotton recently. The quality of cotton production must increase in the country. The qualitative affairs must be consider along with the level of cotton production till when aggregate production the quality of cotton from the viewpoint of color increase and mixes decrease. autopilot, automatic boom control and planter swaths control are three exact technics of agricultural that we can use them to reduction of production expenses. Topography of corp operation and topography of soil electrical connectivity are important tools for increase production in longtime and we can attain their expenses with increase of revenue and reduction of saving wastes . All of these technologies cause the producers of cotton produce their corps with the maximum of revenue and they can answer to ever-increasing needs for qualitative cotton.

Key word: Cotton, industry, price, descending



COTTON RESPONSE TO WATER STRESS AND WATER USE EFFICIENCY

Hamidreza Zabihi ,Majid frohar, Ali Ahmadpour, Ali hoseinirad, Mahdi Mahdavi¹

Abstract

water stress is important factor affecting cotton quality and quantity. Cotton is plant that needs lots of water to complete its growth and development .Howere, over irrigation as well as water stress can decrease quality and quantity of cotton. A radomized complete block design experiment was conducted to investigate effects of water stress on cotton (var.varamin) yield in kashmar Agricultar Research station. Treatments were four different irrigation schadualing viz . irrigation after 60,70,100 and 120mm accumulative evaporating from class A evaporation pan with three replications. The experiment was carried out on a silt loam soil with PH=7.5 and EC=3 dSm-1. The results revealed that different irrigation scheduling significantly affected yield . Maximum and minimum yield were 3754.6 kgha-1 and 2357 kgha-1 in plot under 70mm and 120mm evaporation treatments, respectively . Moisture stress reduced fiber length and increased microner coefficient while no effect on lint fiber strength. Plant hight also decreased due to moisture stress while it was more in short interval irrigation schedule without any yield increasing. Moisture Stress led to boll fall and reduction in their weight. Since rainfall was negligible, therefore almost all crop water requirements was met by irrigation. keeping in view water USE efficiency (After 100mm evaporation from class A pan),it is recomended to do irrigation with 10 days interval in early as well as late season while 7 days in midle of growing season.This scheduling needs 8890 m³ irrigation water. However to achive maximum yield (70mm evaporation) about 10600 m³ of water should be provided. Cotton net water requirment has estimated about 10000m³ according to Iran Soil&Water Institute (Major crops water requirment -vol.1...).

key words: cotton,water srteess,yield,irrigation

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Analysis and forecasting of world cotton price : application of autoregressive procedure

Noormohammad abyar¹- reza solymani -mehdi hoseyni

Abstract

Time series are observation sets which are arranged as time. These data obtained from observation of one factor during time and are very current. In economic, shares price in bourse, monthly price indices, quantity of annually sales and in agricultural economic, quantity of annually production, products price, soil erosion and export are examples of time series. In this paper world cotton price (A cotlook index) has been forecasted by time series procedures for 2011 up to 2014 years. Although world cotton price in 2010 has been increased to 105 us dollar per 100 pound , but Based on results of an autoregressive model estimation, world cotton price will be decreased after 2011 as this price will be 90, 81.7 ,77.2 and 74.8 us dollar per 100 pound in 2011 ,2012 , 2013 and 2014 respectively.

Keywords: world cotton price , forecasting ,time sries model , autoregressive procedure

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Sub-optimal Capacity in Textile Industry

Mohammad Ali Feizpour¹, Saeede Radmanesh², Saeede Saeedinia³

Abstract

The textile industry should be considered as the main industries according to any economic indicators. The data published by the statistical center of Iran showed that this industry ranked as the second and fourth one in terms of the number of firms and number of employees respectively. Furthermore, it had always ranked as top ten industries in terms of other economic indices. Nevertheless, structural changes, especially in recent years, indicated that a major capacity of this industry has been vacant and in addition, this has increased over time. In such environment, using Comanor and Wilson approach, this paper attempted to estimate existing capacities in the textile industry at 4-digit levels. The results that more than 90 percent of incumbent firms in textile industry were sub-optimal. In addition, the sub-optimal capacity has increased over time. Accordingly, reconsidering the role of textile industry as well as its position in Iranian economy should be at the fore front of economic policy. To do this, using existing capacity to achieve optimal sizes may be as the most and best policy in textile industry.

Keywords: textile industry, Sub-optimal Capacity, the Comanor and Wilson method, cotton product.

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Evaluation of various Linters used in α -cellulose production factories of Iran

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Omran Alishah³, Abbas Chaharmahali

Abstract

Various Linters, based on origin properties, morphologic structure, chemical compositions and their processing conditions in oil-extraction factories, can appeared different behavior in dissolving pulp production such as α -cellulose and subsequently produced different quality products and sometimes unfavorable ones. In this respect, Linters used in Iran α -cellulose production factories with four different origins (Turkmenistan, Uzbekistan, Turkey and Iran), were evaluated based on fiber morphology and chemical compositions. Results showed that desired linters in morphological properties, and chemical compositions such as extractives, ash, lignin, pentosane, cellulose, DP and crystallinity were not similar that it can be have different effects on subsequent process such as cooking and bleaching. As α -cellulose is used as raw material for various cellulose derivatives with marketable and military grades, more study in the field of raw material (Linter) properties can be have high effects in technical, economic and environmental aspects.

Keywords: cotton Linter, α -cellulose, cellulose derivatives

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Industrial fibrous plants potential for papermaking fiber production in Iran

Saeed Mahdavi¹

Abstract

Annually, Iran imports about one million tons of paper and paperboard. The per capita consumption of this strategic material is between 24 to 26 kg. On the other hand, the paper production factories are facing serious challenge due to shortage of wood for papermaking. In order to achieve sustainable development and roadmap drawing to supply raw materials and developing of pulp and paper industries, utilization of nonwoody plants fiber consist of cotton (linter and cotton stalk), kenaf, flax, hemp, reed, bamboo, abaca, esparto and etc. could be considered as wood alternative. In this study, a comparison among the potential of paper grades production such as printing and writing paper, packaging paper and paperboard and special paper manufactured from industrial plants have been carried out. An evaluation has been done according to fundamental properties of raw material for papermaking using initial results of projects in research institute of forests and rangelands. The properties were availability, fiber dimension, density, chemical components and physical properties of paper which evaluated based on technical- economic aspects. Advantages and disadvantages of each plant have discussed in detail.

Key words: cotton, fiber, papermaking

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The importance of cotton in the production of cellulose derivatives

Saeed Mahdavi¹

Abstract

Cotton as one of the important and strategic crop has significant role in various industries such as textiles, cellulose derivatives, military, food, chemical, drilling, packaging, sanitary, and etc. Recently, due to different reasons the cotton area planted is dropping, so cotton production has decreased. Unfortunately, the government spends millions of dollars each year importing cotton, special paper and cellulose derivatives consist of cellulose acetate, cellulose nitrate, methyl cellulose, carboxymethyl cellulose (CMC), and viscous rayon. However, there is possible to production of all these products which are expensive goods from digested cotton linter (Alpha cellulose) so that economic will be booming at the short time. Important characteristics could be mentioned as fiber length, DP, extractive in hot water and acetone, ash, cooking and bleaching process, α , β , γ cellulose, yellowness coefficient, brightness, pH, and mineral elements. It is caused economic- technical problems, if these characteristics content are out of allowable ranges.

Key words: cotton cellulose derivatives , economic

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Evaluation of physiological effective traits on earliness and yield of new cotton varieties

Saeed Mohammadi¹

Abstract

Understanding the physiological characteristics of cultivars is the main steps for determining the strategy of plant breeding in crops. By right understanding the innovation of new cultivars and future planning for cultivation under different environment could be organized. Growth analysis by use of especial furthers is one way to recognize crops characteristics. In order to evaluate the growth pattern of new introduced cultivars of cotton based on earliness and the physiological characteristics an experiment was conducted at Agricultural and Natural Resources Research Center of Tehran Province. The design of experiment was in form of RCBD with 10 treatments and 4 replications. The treatments included eight new imported early varieties and two commercial as check. Cultural practices was done according to local recommendation and data taking were done four times. The results showed that there is a significant physiological difference among cultivars. Variety No 200 had the highest earliness and micronare . Varieties Sindos, Avangard and Mehr due to their boll number, seed cotton weight and fiber turn out had better performance . Sindos with good yield was superior for fiber strength and fiber elongation. Avangard with suitable yield did not have any good fiber quality. No200 with short plant height was good for main stem node and number of reproductive branches. This variety along with Mehr with highest earliness and boll weight they showed superior over others . Also Mehr variety with preserving leaf area index until end of season with good amount of dry bio mass among other varieties shed better performance.

Key words: Cotton, Earliness, yield

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Cotton irrigation water productivity under saline conditions in arid central region of Iran

Mohammad Feizi¹

Abstract:

The quality and quantity limitation of water resources are the main problem in arid and semi-arid regions of Iran and seriously affect agricultural production. In such situations, proper management strategies based on suitable crop pattern have high priority importance to increase the irrigation water productivity. In this study by considering the limited amount of fresh water in the region and necessity of increasing the water productivity, an experiment consisted of three saline irrigation waters of 2.9, 6.3 and 10.2 dS.m⁻¹ during whole growing season, irrigation with water salinity of 2.9 dS.m⁻¹ in the germination and establishment stages followed by irrigation water salinity of 6.3 dS.m⁻¹ or 10.5 dS.m⁻¹ for the rest of growing season and two alternative saline irrigation water application managements of 2.9 dS.m⁻¹ along with 6.3 or 10.5 dS.m⁻¹ were conducted in south east of Isfahan on Varamin cotton cultivar in three replicate in RCBD. The results showed that cotton lint yield decreased as the irrigation water salinity increased. Alternative use of fresh (2.9 dSm⁻¹) and brackish water of 6.3 dSm⁻¹ with about 50 percent save in fresh water had optimum yield. The water productivity with respect to total water consumption in alternative irrigation of fresh and brackish water was 0.22 and 0.19 kg.m³. In cases of abundant saline and brackish water, in treatment irrigated with fresh water during the germination and establishment stages followed by irrigation water salinity of 6.3 dS.m⁻¹ or 10.5 dS.m⁻¹ for the rest of growing season water productivity with respect to fresh water consumption were 1.2 and 0.77 kg.m³ respectively. In general, the saline water could be recommended by using the suitable management strategies and obtain optimum water productivity.

Keywords: Cotton, Salinity, Water productivity, Alternative irrigation

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Investigation of quality and structural traits of some cotton varieties fibers in dry regions of Iran

S. Mohseni Tavakkoli¹, A. Ghasemian², M. H. Areaye Monfared³, B. Sohrabi⁴

Abstract

Cotton is basic material of non-wood plant that has been used for cellulosic materials and Banknote paper and other Bond papers. In this study, different quality traits such as fiber length, tensile, strength, micronairy and uniformity in cotton varieties of dry regions named Varamin, Doctor Omomy, Khordad was investigated. A Factorial experiment was conducted using a randomized complete block design with three replicates with SAS soft ware. Results showed that in cotton varieties, all of quality traits showed significantly difference except as micronairy. In total, Doctor Omomy variety showed a better quality traits in compare with the others. Therefore plant growing it was recommended as a raw material for manufacturing Bond papers. Infrared spectroscopy (FT-IR) results showed no differences between structural and functional group in studied cotton varieties.

Keyword: cotton, micronairy, strength, Bond paper, FT-IR

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Evaluation of four Commercial Cotton Cultivars reaction to vascular wilting disease (*Verticillium dahliae*)

Z.S.Mohammadi¹, T.Davarian², E.Alishah³, A.H.Taheri⁴

Abstract

Cotton is a plant that used as fiber and oil in world trade and research related to that is very important. Vascular wilting disease, is the most important disease in cotton that is caused by fungi (*Verticillium dahliae*) and it takes a lot of damage annually to this crop. In order to identify more tolerant cultivars, four cultivars of cotton Mehr, Sahel, N200 and Varamin were tested in disease severity. This test carried out in the form of completely randomized design with four replications in the greenhouse of Gorgan University of Agricultural and Natural Resources. The pathogen was identified and cultured after isolation from infected cotton in cotton research station of Karkandeh. The incubation was performed based on suspension injection of microsclerote in root of 40 days cotton plant treatments were kept in greenhouse conditions and in 26-30°C. The symptoms record begin one week after incubation and continued until about two months. The results showed symptoms on cotton were in the form of wilting and death of terminal shoot and bud, epinasti, chlorose, wilting on one side of leaves and total leaves and drying of total plant. Based on the results, the Sahel cultivar was the most resistant and the N200 cultivar was the most sensitive. But the sensitivity of two cultivars of Mehr and Varamin were after N200, respectively.

Key words: Vascular wilting, Cotton and cultivar.

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Surveying of Insurance Yield of Cotton Products in Iran

Ali Darijani¹, Sina Ahmadikaliji² *, Marzieh Aminravan³

Abstract

Risk and uncertainty in efficiency, reduce the incentive for investment in agricultural activities. There is also a risk due to agricultural activities cause farmers to choose products that are less volatile products. Insurance product in an effective way to prorated among farmers in risk over time. The purpose of this study was surveying of insurance yield of cotton products in Iran. Required data from the country's cotton farmers were prepared. The results showed that cotton products insurance to reduce the level of risk aversion is the work of cotton farmers. Also farmers who have insurance cotton products, have a high yield in cotton production.

Key words: insurance, cotton, risk, performance

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Study on potential of yield, earliness, quantitative and qualitative characters in cotton mutant lines in Ardebil province

S.Yaghub S. Masoumi¹

Abstract:

This research is accomplished in order to study of diversity of 6 cotton mutant lines, with 4 commercial cultivars i.e. Varamin , khordad , mehr and sahel based on quantitative and qualitative traits during 2008-2009. In this research, genotypes were evaluated in RCBD design with 10 treatments and 4 replications in the Moghan agricultural research center. Traits that measured included yield , earliness , 20-boll weight , number of boll, height and vegetative and generative branches on 5 random plant and fiber quality .Finally data are analyzed with MSTATC , EXCLE , SAS statistic programs. Results of 2 year combined analysis showed that **L-M-1676** genotype had high- yield than other cultivar with 4058 kg/ha seed cotton.

Key words: cotton, mutant lines, Ardebil province

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Study of quantitative and qualitative characteristics in hopeful cotton cultivars and their adaptability in Moghan region

S.Yaghub S. Masoumi¹

Abstract:

This research is accomplished in order to study of diversity in 9 cotton imported genotypes, with one commercial cultivar i.e. Varamin based on quantitative and qualitative traits during 2008-2009. In this research, cultivars were evaluated in RBCD design with 10 treatments and 4 replications in the Moghan agricultural research center. Traits that measured included yield, earliness, 20-boll weight, number of boll, height and vegetative and generative branches on 5 random plant and fiber quality. Finally data are analyzed with MSTATC, EXCLE, SAS statistic programs. Results of 2 year combined analysis showed that **SP-731** with 4269 kg/ha seed cotton genotype had high-yield than other cultivars.

Keywords: cotton, diversity, genotype, earliness, yield

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Stability evaluation of new short-duration cotton cultivars in cotton culturing regions of Ardebil

S.Yaghub S. Masoumi¹

Abstract

This research is accomplished in order to study of diversity in 13 cotton earliness cultivar based on quantitative and qualitative traits during 2007-2009. In this research, genotypes were evaluated in RBCD design with 13 treatments and 4 replications in the Moghan agricultural research center. Traits that measured included yield, earliness, 20bolls weight, number of boll and on 5 random plants. Finally data were analyzed with MSTATC, EXCLE, SAS statistic programs. Results of 3- year combined analysis showed that **43259** genotype was earlier than other cultivar with 83% earliness.

Keywords: cotton, earliness, genotype, yield

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Screening of early maturing genotypes among cotton germplasm of Iran in Ardebil province.

S.Yaghub S. Masoumi¹, Yusef Jahani²

Abstract:

Cotton usually is cultivated after wheat and canola in different regions of Iran, whereas introduction of new earliness cotton varieties for maximizing of growth season efficiency is of importance. In this research, 20 earliness cotton genotypes were studied in randomized complete block design (RCBD) in four replications during 2006-2009 years at Moghan Agricultural Research Center for two years. The results of combined analysis showed that; year(Y), location (L) and interaction effects of Y*L on earliness, boll number, boll weight, yield and plant height were significant at 1% level. The genotypes were shown significant difference for most of characters. On the base of the results, genotype * location (G*L) effect on the different traits was more important than year*genotype (Y*G) effect. The results showed that Tabladila and NO:200 for yield and Opal, Bolgar 539 and Gokorova for earliness were located in A class, respectively.

Keywords: cotton , earliness varieties , Yield.

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Identification of Marker chromosomes on Varamin cotton cultivar

S.Yaghub S. Masoumi¹, Yousef Jahani²

Abstract

In order to investigation of karyotype in allotetraploid cottons , Varamin cultivar is selected and is studied with squashed Agavev III method . This research carried out in 2007 year in genetic laboratory of Tabriz university. Main characteristic in this method was used Citase agent . After karyotype preparing , chromosomes analyzing is accomplished depend on chromosomes morphological traits . This traits were included : Long and short arms length , chromosom length , centromer position , arm ratio in chromosom , arm ratio in cultivar and number and length of satellites . Finally karyogram and idiogram were drawn . Varamin cultivar was allo- tetraploid and $2n = 52$. This chromosomes belonged to **A** and **D** genomes that from 26 chromosome paired , 19 pairs were metacentric and 7 pairs were sub- metacentric . Arm ratio average was $1.53 + 0.068$. Satellites were located on short arms and smaller than short arms in size. In **A** genom the length of satellite on sub metacentric chromosome no.7 was $0.33 + 0.050$ micron . In **D** genom the metacentric chromosomes no.14 and 16 had satellite and length of satellites were $0.43 + 0.041$ micron and $0.33 + 0.060$ micron respectively. This chromosomes can be used marker chromosomes in hybridization programs.

key word : karyotype , Genom , Idiogram , Satellite.

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Effect of high dense planting and different spaces of ridge and furrow on yield and earliness of cotton(*Gossypium hirsutum*)

H.R. Donyavian¹

Abstract

High dense planting is a method for increasing yield and earliness in cotton cultivation. Because of some problems for UNR system such as providing planting machins in Iran, we needed to introduce the other methods for planting cotton in ultra narrow row. For these reasons, a randomized complete block design with 6 treatments was conducted in Hashemabad cotton research station in the north of Iran. Treatments were the forrows made in the plots which broadcasted by 25 kg/ha. Forrows were (40,50,60,70,80 cm) besides a 80*20 as control. Cotton was planted after wheat harvesting. In the first year, results showed that there were not any significant differences between treatments, but in the second year, yield of 40, 60, 70 were the best.

Key words: seed broadcasting, cotton, yield

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Evaluation of Supporting Policies of cotton in Iran

Elahe ajoudani¹, gholamreza yavari²

Abstract:

Study with the aim of supporting cotton production in the provinces of Mazandaran and Golestan as a representative of the country have been conducted during the period 89-1388. The effects of government intervention and taxes paid or subsidies received in cotton production with the use of policy analysis matrix ((PAM support in the form of indices has been studied. Results indicators NPCI, NPCO and EPC showed that the inputs used in production subsidies have been allocated, but the value of canola production during the period 2009-2010 excise is imposed. The results showed that past and current agricultural policies in Iran trying to develop cultivation and production levels from further interference in market mechanisms and the deviation in the price them dozens of agricultural output, however, these policies encourage the efficient and helpful in the practice have been unsuccessful.

Keywords: Supportive measures, policy analysis matrix, cotton

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Evaluate changes in water consumption costs on the competitive position of cotton in Iran

Elahe ajoudani¹, gholamreza yavari²

Abstract:

One of the most important tools for planners and decision makers in formulating economic development programs, knowledge of the relative advantages. This is especially important in foreign trade and the efforts of dynamic comparative advantages into competitive advantage and to the continued success and presence in international competition, is important or inevitable. Data needed to arrange from agricultural and commercial production costs in the Department of Agriculture and Commerce Bank in agricultural statistics were collected 2009-2010. In this study, using indicators such as cost advantage of domestic resource costs, the net social cost and social benefit to the ranking of industrial products in the country's culture, then with water factors in consumer spending levels, 20, 40 and 60 of the sensitivity analysis it has been established. Results showed that dry cotton, the exchange rate in dollars, euros and the balance of comparative advantage. The sensitivity analysis showed that the water input and rank comparative advantage in different products varies.

Key words: water, cotton, comparative advantage.

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Factors affecting the economic and commercial promotion of cotton cultivation in Golestan province, using scale models of economic assessment

Ghasem Ali Rayej KafshGiri¹, Hosein Eslami Mofid Abadi²

Abstract:

Since the last province as one of the areas of agricultural potential in Asia and the Middle East and the global level is raised. Despite fertile soil and other natural factors to establish cotton industries can promote economic and trade and economic growth, create employment and consequently increase the volume of domestic and foreign investment will affect. So desperate Nyazgstrdh and economic investment in infrastructure to promote economic and commercial fields of cotton cultivation in this province is significant given the existing potential is tangible regularly every year and that construction funds and technical assistance to be allocated to achieve desired goals.

Therefore, the foregoing objective of this study "Factors affecting the economic and commercial promotion of cotton cultivation in Golestan province, using the model to measure the economic and strategic actions (Opportunities and threats, weaknesses, strengths and new investments in cotton industry) Process and is especially efficient strategies". For this purpose, each of which can be an important factor to achieve the above objectives, the province made a substantial contribution to the theory Them as objective and quantitative and qualitative analysis of the data and evaluated Finally, we have been concluded based on the hypothesis.

Keywords: Cotton industry, Promote economic and trade, Measure the economic, Strategic actions

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Study on population dynamics of leaf hopper *Asymmetrasca decedens* (Paoli) in the cotton fields of Golestan province.

Mojeni, T. D.¹

Abstract:

Leaf hoppers are important pests of crops including cotton. This research was carried out during 2006- 2007 to study on population of leaf hopper *Asymmetrasca decedens* in the cotton fields of Golestan province and to study the biology of dominant ones. Observations were done on different cultivated and weed hosts. The specimen were collected and brought to the laboratory.

A. decedens was determined as dominant species. The peak of activity was late in June to late in August in the cotton feilds. The natural enemies of this pest were bugs including; *Nabis capsiformis*(Ger.) , *Orius niger*(Wolf.) and *O. minutus*(L.). The life of this species in the laboratory condition (24 ± 1 °C. and 75 ± 5 % R.H) 25 – 35 days with egg incubation period of 7 – 9 days and nymph duration of 10 – 15 days. The adult lived 8- 11 days. This pest had 5-6 generation per year and over wintered as adult under some weeds. The main important hosts of this pest were cotton, potato, fabae bean, rapeseed, soybean and cucurbit from cultivated crops and black night shade, pigweed, mallow and goose weed from weeds.

Key words: Population dynamics, *Asymmetrasca decedens* , Leaf hopper, biology, cotton and Golestan province

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Determination of chemical composition and metabolizable energy Pak variety cottonseed

Nafisi M, Baniani A, Afshar M, Safarzade A, Saiidy H¹

Abstract:

Since the poultry industry faces with shortage of feedstuffs, it seems necessary to recognize and determine the nutritional value of new feed sources, in order to use in ration. In this study, for determining the nutritional value of cotton seed, it seeds was sowed in the farm of research station of Tehran research center. In harvest season of the crop, (seed and fiber) produced in the mentioned station, for removing fibers from cotton seed was transferred to cotton plant and fiber removing operation was done. For sampling from Pak variety cotton seed, to standard instruction, sampling was carried out at least from 2 percent of available bags. From each selected bags, one sample was taken randomly. The samples obtained, were mixed together and the final sample obtained. This sample was sent to related labs for chemical analysis experiments and metabolizable energy. The test of crude protein, crude fat, crude fiber, ash and minerals was done on samples using AOAC (1990) method. The dry matter, crude protein, crude fat, crude fiber, ash, calcium and phosphorus of cotton seed were obtained 92/8, 17/71, 23/45, 22/45, 3/4, 0/23 and 0/63 percent respectively. Also the composition of cotton seed amino acids of Pak variety was measured. For determining the metabolizable energy of cotton seed *sibbald* method (1989) was used and crude energy, Apparent metabolizable, Apparent metabolizable corrected for nitrogen, True metabolizable, True metabolizable corrected for nitrogen of Pak variety cotton seed were obtained 5504/26, 3260, 3360, 3613 and 3760 kcal/kg respectively. The results showed that energy and chemical substances obtained from Pak variety cotton seed are suitable for poultry feeding although the first limiting factors its consumption is fiber.

Key Word: Glandless Cottonseed, Poultry feed, Metabolism Energy

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Determination of chemical composition and metabolizable energy Pak variety cotton meal and its utilization in poultry nutrition

Nafisi M, Baniani A, Afshar M, Safarzade A, Saiidy H¹

Abstract:

One of the problems of poultry industry is deficiencies of internal protein sources for poultry feed. In this research, for determining the nutritional value of cotton seed meal, at first cotton seed removed from linter. Then cotton seed transferred to oil seeds association in Qom province and was done oil processing. For sampling from Pak variety cotton seed meal, to standard instruction, sampling was carried out at least from 2 percent of available bags. From each selected bags, one sample was taken randomly. The samples obtained, were mixed together and the final sample obtained. This sample was sent to related labs for chemical analysis experiments and metabolizable energy. The test of dry matter, crude protein, crude fat, crude fiber, ash and minerals was done on samples using AOAC (1990) method. The dry matter, crude protein, crude fat, crude fiber, ash, calcium and phosphorus of cotton seed were obtained 92/62, 22/22, 14/72, 18/96, 4/38, 0/26 and 0/58 percent respectively. Metabolizable energy has high usage in calculation of need energy and consummated energy food sources in poultry feed. So for determining the metabolizable energy of cotton seed meal *sibbald* method was used and crude energy, Apparent metabolizable, Apparent metabolizable corrected for nitrogen, True metabolizable, True metabolizable corrected for nitrogen of Pak variety cotton seed meal were obtained 4948/04, 2933, 3076, 3316 and 3607 kcal/kg respectively. The results showed that energy and chemical substances obtained from Pak variety cotton seed meal are more suitable comparison other cotton seed meal use in Iran.

Key Word: Cotton seed meal glandless- Metabolizable Energy-
Chemical Analysis

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Evaluation the resistance rate of different cotton varieties to important pests in Golestan province

Mojeni, T. D.¹

Abstract :

Many pests feed on sahel variety. The important ones are: bollworm, onion thrips, cotton aphids, spider mite, leaf hopper, whitefly and cut worm. This study was carried out during 2007 – 2008 in Golestan province to find tolerant new varieties of cotton to important pests. This experiment was done as randomized complete block design with five treatments and four replications. The treatments were included: tabladila, gukurova, nazily, no-200 and sahel. Sampling was done weekly by selecting of 10 plants randomly from each plot for bollworm and taking three leaves from top, middle and bottom of each plant for sucking pests and counting the number of cotton important pests. Analysis of variance showed that there was no significant difference among treatment ($p < 0.05$) but there was significant difference between the infested on varieties to density population of important pests ($p < 0.01$). The results showed that the highest population to *Thrips tabaci*(L.) per leaf was recorded on varity nazily (5.875 per leaf) , *Aphis gossypii*(Glov.) with(94.77 per leaf) and *Bemisia tabaci*(G.) with (8.314 per leaf) respectively. The lowest population was observed to *Thrips tabaci*(L.) per leaf on varity tabladila (1.75 per laef) , *Aphis gossypii*(Glov.) with (58.15 per leaf) on varity tabladila and *Bemisia tabaci*(G.) with(5.313 per leaf) on varity gukurova also for *Helicovrpa armigera* (Hub.) on varity gukurova (0.285 per plant) with the highest population and on varity sahel (0.035per plant) the lowest population was recorded. There was a significant difference among the treatment on yield.

Key words: Cotton varieties, cotton, Cotton pests and Golestan province

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The effects of different amounts of nitrogen and phosphorus on an early cotton (*Gossypium hirsutum* L.) cultivar

Majid Jafaraghaei¹ Amir Hooshang Jalali²

Abstract

This research was carried out at Agricultural and Natural Resources Research Center, Isfahan, of Iran (Kabootar abad) for two years (2006-2007). The experiment was conducted as a split plot arranged in randomized complete block design with four replications. Treatments were four levels of N fertilizer [110, (160 = Soil and Water Research Institute recommendation), 210 and 260 kg ha⁻¹] as main plots, and four rates of P fertilizer [23, (46= Soil and Water Research Institute recommendation), 70 and 92 kg ha⁻¹) as subplots. Results showed that consuming 110 kg N fertilizer, production would be similar to other levels of N treatments. So this treatment is recommended both economically and environmentally. But, the nitrogen concentration in leaves was significantly reduced in this treatment. Unlike the results of nitrogen fertilizer, reduced of phosphate fertilizer consumption (compared to the recommended amount of Soil and Water Research Institute) caused a significant reduction in yield. This lower performance was associated with a reduced number of capitula per plant and weight of capitula. In this treatment, the phosphorus concentration in leaves remained constant but the amount of phosphorus in the 0-30 cm soil depth was reduced significantly. In this study the interaction of nitrogen and phosphorus on yield was not statistically significant.

Keywords: nitrogen, cultivars, capitula, leaf, phosphorus, cotton.

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Reaction of genotypes of cotton (*Gossypium hirsutum* L.) to salinity stress in Isfahan Province

Majid Jafaraghaei¹, Amir Hooshang Jalali²

Abstract

In order to examine the impact of different levels of salinity on yield and germination of 40 cultivars and local populations of cotton in greenhouse and field experiments this study were conducted at Rodasht Agricultural Research Station of Isfahan. In greenhouse experiments using a randomized complete design with three replications, effect of water with a salinity of 9 dS m⁻¹ on germination rate and percentage on 40 cultivars and local populations of cotton were tested. In this experiment, three cultivars of Deltapayn 16, B557, and Lamberta with Azhyh local populations were selected based on higher percentage of germination for field testing phase. Field research for two years by using a split plot design with four replications was conducted. In this study, the salinity level of 4 and 8 dS m⁻¹ main plots and three superior varieties and local populations in greenhouse experiments, formed the subplots. The results indicated significant interaction of salinity and cultivar, on yield, yield components and percent of emergence. Deltapayn 16 in the two salinity levels 4 and 8 dS m⁻¹ produced 3602 and 3086 kg ha⁻¹, respectively and significantly produced higher yield than other varieties. With increasing salinity from 4 to 8 dS m leaf and stem dry weight was lowest figure. With increasing salinity from 4 to 8 dS m, leaf and stem dry weight of Delta Pine 16 cultivar reduced lesser as compare others. The yield of B557 variety was at the second level after Deltapayn16. Lambrayt variety and local population of Azhyh had lowest levels of performance at two levels of salinity. According to our results among the cultivars compared Deltapayn16 might be recommended for similar agro-climatic conditions.

Keywords: Salinity; Cotton; Germination, Capitula.

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Evaluation of pattern and sowing date on the yield of cotton and cantaloupe in a mixed farming system

Majid jafaraghaei¹, Amir Hooshang Jalali²

Abstract

The use of mixed cropping systems, one of the ways to achieve sustainable agriculture and optimizing use of environmental resources. In order to determine the appropriate pattern and sowing date, in a mixture of cotton- cantaloupe cultivation under plastic in Abuzeidabad, Aran and Bidgol, Isfahan province, factorial experiment in randomized complete block design and four replications was conducted using Varamin cotton cultivar and conventional cantaloupe cultivar in two year. The first factor included three planting dates of 24 February, 29 February and 5 March, and the second factor included four cropping patterns: 1- planting on ridges with a row spacing 100cm, 80cm plant spacing in rows of cantaloupe and cotton 20 cm, respectively, 3 (cotton) and 2 (cantaloupe) ratio 2- planting on ridges with a row spacing 100cm, 60cm plant spacing cantaloupe and cotton 20 cm ,respectively 2:2 ratio cantaloupe and cotton 3- cotton monoculture (75 ×25 cm) 4- cantaloupe monoculture (100×25 cm). The results showed that planting pattern of 2:2 compared with 3:2 cropping pattern produced the greater yield in the entire of sowing date (the both cantaloupe and cotton). Trend of change in Land Equivalent Ratio (LER) was indicated LER for all planting pattern and sowing date higher than 1. The 2:2 cropping pattern in all planting dates compared to the 3:2 model had significant advantages.

Keywords: Competition, Land Equivalent Ratio, Mixcropping, Monoculture.

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Effects of salinity on yield and water use efficiency of three cotton cultivars (*Gossypium hirsutum* L.)

Majid Jafaraghaei¹, Amir Hooshang Jalali²

Abstract

The effect of different levels of salinity on the performance of three cotton varieties experimental was conducted for two years (2008-2009) growing seasons as a split plot in randomized complete block design with four replications at Rodasht Salinity Research Station in Isfahan Province, Iran. To obtain the desired salinity levels water from wells, rivers and drainage water were mixed. A split plot design randomized based on complete block design with four replications was employed. The main plots were different saline of water (4, 7, 10 and 13 dS m⁻¹) and subplots were B557 and Tabladila varieties, whereas the Deltapain 16 was the control treatment. The results showed that with increasing salinity in irrigation water, performance of three cotton cultivars decreased. The highest yield in this study was related to the Delta Pine 16 cultivar, and in the salinity of 4 dS m⁻¹ was obtained (4602 kg ha⁻¹). With increasing salinity levels from 4 to 7, 10 and 13 dS m⁻¹, percent of reduction in irrigation water productivity index in Tabladyla, Delta Pine 16 and B557 cultivars, was (25.5, 63.7 and 175), (22.6, 58 and 189) and (26, 65.5 and 196), respectively. At all levels of salinity, water use efficiency was highest in Tabladila cultivar (0.424, 0.338, 0.259, and 0.154 kg m⁻³ in EC 4,7,10, and 13 dS m⁻¹ respectively). In summary, the results showed that salinity levels 4 and 7 dS m, Delta Pine 16 cultivar is recommended because of higher yields, but in salinity of 10 dS m⁻¹ Tabladyla cultivars had significantly higher yield than the other two varieties. From the viewpoint of resistance to salinity, B557 cultivar cannot compete with the other two varieties.

Keywords: Irrigation; Salinity; Cotton; Yield.

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The use of deficit irrigation system and water supply management for production of two varieties of cotton

Majid Jafaraghaei¹, Amir Hooshang Jalali²

Abstract

In order to study the effect of water stress on yield and yield components of two cotton cultivars, a two-year examination was carried out in Esfahan Agricultural Research Center by using strip split plot randomized based on complete block design in four replications. Main plots consisted of six different levels of irrigation (T1 T6) based on evaporation from the class A evaporation basin, in three growth of cotton and the subplots made up of two varieties of B557 and Tabladyla. Experimental results indicate a significant effect of irrigation on the yield. T6 treatment (irrigation in three stages, from four leaf stage to early flowering, flowering until boll opening and began to the boll opening until the end of growth respectively, based on 150, 70 and 110 mm evaporation from class A basin), in terms of lint yield and efficiency of water use compared with other treatments was the complete dominance (5113 kg lint ha⁻¹ and 0.52 kg m⁻³ water use efficiency). Weight and number of capitula per plant was the main reason for the significant yield advantages in this treatment. Significant differences were not found between the two experimental varieties and interaction of cultivar and irrigation treatment in terms of different characteristics. First harvest yield in B557 cultivar was significantly higher than the Tabladyla cultivar. The result of this study showed that irrigation in cotton vegetative growth stage (four-leaf stage to early flowering) not only was accompanied by increases in yield production but also to save significant amounts of water.

Keywords: Water stress, Boll, Yield, Cultivar

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Determining the optimal date of cotton planting and irrigation termination in Garmsar condition

Ali Naderi Arefi¹, Mohammad Abedini Esfahlani²

Abstract

In order to determine the best planting date and irrigation termination of cotton field (*Gossypium hirsutum* var. Varamin) in Garmsar region an experiment was conducted in 2011 cropping season. The experimental design was split plot on randomized complete block with three replications. Three irrigation termination dates (2011/09/11, 2011/09/21 and 2011/10/02) arranged in main plots as main factor and three planting dates (2011/05/10, 2011/05/25 and 2011/06/9) located in sub plots. During the growth season phenological events such as germination, date of flowering, date of boll formation, boll opening, maturity and after harvest attributes such as plant height, number of boll per plant and weight of boll was recorded. The result showed that effect of planting date on seedcotton yield, plant/ m², boll per plant and plants height was significant but boll weight did not affected significantly by this treat. First planting date with 5248 kg/ha of seedcotton yield was the best planting date. Various dates of irrigation termination did not affected significantly on yield and yield components but plant height affected by this treat significantly. Cotton yield was significantly affected by planting date while irrigation termination had no effect on it. Totally two first planting dates had higher yield than third and first date of irrigation termination was the best due to decreasing the number of irrigation.

Key words: *cotton, planting date, irrigation termination*

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The Forecasting of Cotton Export Quantity Using Artificial Neural Network and ARIMA Model

Seyed Abolghasem Mortazavi, Saeed Hasanlo¹, Hamed Navidi, Reza Hezareh

Abstract

Forecasting the macroeconomic variables is essential for policy makers and economic experts. Since by forecasting these variables they can take the appropriate programs to prevent and stabilize the fluctuations of these variables and they also can achieve the desired objectives. The present study has forecasted the quantity of cotton exports for the years of 2010-2015 using both of ARIMA and artificial neural network methods and also employing the time series data of cotton exports over the period of 1961-2009. After examining the stationary of time series data by augmented Dicky-Fuller test, the stochastic attribute was examined by nonparametric tests such as Wald-Wolfowitz and Wallis-Moore and also by Durbin-Watson test as a parametric test. The results of mentioned tests showed that the first difference of is stationary and also cotton export series were non-stochastic. Forecasted results of two methods using the (RMSE), (MAE), (MAPE) and (TIC) were measured. The results of this evaluation showed that the ARIMA method is more powerful than artificial neural network method in forecasting the quantity of cotton export.

Keywords: Cotton, Forecasting, Artificial Neural Network, Export, ARIMA

¹ Corresponding Author



Effect of plant density, nitrogen and boron spraying on cotton yield

Seyed Reza Najafi Fadafan¹, Farshid Vazin², Mohammad Reza Ramezani Moghadam³, Saeed Jahedi Pour⁴, Seyed Davoud Sajadian⁵

Abstract:

foliar nutrients is one of the most important strategies to increase crop yield and fertilizer use efficiency. In order to study the effects of nitrogen and boron spraying on cotton yield and nitrogen densities this experiment was performed in form of split plot factorial experiment based on randomized complete block design with three replications in crop year 1390 in the research field Khalilabad city in Khorasan. In this experiment, the main treatment of cotton with densities of 4/4, 3/5, 6/6, and 8/8 plants per square meter and secondary treatment and foliar application of nitrogen with Braks and urea, each with two levels of zero and two thousand and three thousand in two weeks and then were two weeks before flowering. ANOVA results of this project represents a significant density effect on cotton yield, respectively. However, a decreasing trend in yield was observed with increasing density per square meter. Effects of nitrogen and boron on yield and were positive and significant at same level. All interactions were not significant in this experiment and the effects on the mean and the highest yield of N and B was about the same time it was sprayed.

Key words: density, foliar application, performance, cotton.

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Design and Fabrication of an Electro-Pneumatic Row Crop seed metering Device

Emam Mohammad Nour Gholi Pour¹, Abbas Rezaei Asl², Ebrahim Esmail Zadeh³, Mohammad Hashem Rahmati⁴

Abstract

Cotton seed precision planting is one of planters' problems due to lint coverage and its special shape. The need for cotton seed precision planting in cotton research centers was led to suggest an Electro-Pneumatic Row Crop seed metering Device. It has small size, lightweight and transportable by low power two-wheel tractors (Tiller Tractors). Power required by seed metering device is achieved by a 12 volt battery. This device can be used in agricultural research centers and small farm lands.

Key words: Cotton, Precision Planting, Electro-Pneumatic

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An Assessment of factors promoting and limiting the development of cotton cultivation in Golestan Province, Iran

Mohammad Chizari¹,

Majid Aghaalikhani²,

Fereshteh Ghasemi³

Abstract:

The study has been conducted to assess the promoting as well as limiting factors regarding cotton cultivation development in Golestan Province. Statistical population included cotton farmers in three regions: Gorgan, Aq Qala, Ali Abad katul during 2010-2011. Random selection was used to select (n=330) cotton farmers out of (N=2734). Cochran's formula was implemented to determine sample size. Questionnaires were used for data collection from scrutinized sample cases where validity of instruments had been confirmed by the faculty members of Agricultural Extension and Education and Agronomy Departments in the College of Agriculture of Tarbiat Modares University. In pilot testing the questionnaire, 30 instruments were distributed among cotton farmers in Mahestan Villages. Reliability coefficient (Cronbach's alpha) was obtained at 0.94 considering the output of Spss Software Version 16. The result of this study indicated that there was a significant relationship between cotton acreage and water supply, supply of seeds, land status and education level of cotton farmers. The results showed that there is a prominent positive correlation at one percent level between the amount of seeds, amount of fertilizers and pesticides used, number of employees, sections of land, acreage of crops, the cultivation of cotton and distance between farm and nearest rural area with cotton acreage. The results of multiple regressions revealed that the amount of pesticides, seeds, fertilizers, sections of land, acreage of land are responsible for 65 percent of cotton acreage changes.

Keywords: Cotton, Cotton farmer, Golestan province, Acreage, Increased production

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The use of cottonseed in ruminant nutrition

KaramShahi, Kh. and Dayani, O.

Abstract

Today, after separating lint of cottonseed, cottonseed oil is extracted from intact cottonseed or cracked cottonseed. There are three types of cottonseed meal, 1) cottonseed meal with lint, 2) cottonseed meal without lint, and 3) cottonseed meal without lint and hulls. The longitudinal and transverse cutting of cottonseed, dark-colored particles, which may vary from yellow to reddish brown,. These particles contain various pigments that one of them is called gossypol. The most important factors limiting the use of cottonseed meal are gossypol and high fiber. Yellow pigment gossypol polyphenols that are found in the glands of cottonseed, but there is some types of cottonseed without gossypol. Gossypol of cottonseed meal is not limited for ruminants. In feeding ruminants, whole cottonseed with a moderate protein, high fat and digestible fiber is effective. Processing whole cottonseed to feed was not necessary, and fuzzy whole cottonseed was acceptable. The cottonseed oil is rich in linoleic acid, and cottonseed can be used as a supplement to increase milk conjugated linoleic acid. Feeding whole cottonseed can be decreased the ruminal protozoa population, that may be useful for host animal and environment. These cases were the benefits of intact or crushed cottonseed in animal feeding.

Key words: cottonseed, ruminant, nutrition



Investigation of Cotton Production structure in North Khorasan province

(Case Study: Esfarayen)

Mohamad Reza Kohansal and Masoud Hosseinzadeh

Abstract

Cotton in North Khorasan province is one of the major industrial products. The aim of this study is to survey the factors affecting the cotton production and also calculation the technical efficiency of cotton producer and determination of factors affecting its efficiency in the Esfarayen city. The required data for this study obtained by using random sampling method and questionnaire completion through 90 farmers of this city in 2011. In order to survey the factors affecting the cotton production was used the Cobb-Douglas production function. Results showed that labor, land and water have the most significant effect on Cotton production, respectively. Calculation results of technical efficiency and factors affecting on technical efficiency also showed that technical efficiency average of cotton producers is 81 percent and the highest and lowest of technical efficiency is 99 and 34 percent, respectively. Also Experience, the main job and number of farmer family labor have a direct and significant effect on technical efficiency.

Key words: Cotton, Production function, Technical efficiency, Esfarayen



Determine the comparative advantage of cotton production in

North Khorasan Province (Case study: Esfarayen)

Mohamad Reza Kohansal and Masoud Hosseinzadeh

Abstract

Due to the constraints of many inputs and production factors in the agricultural sector and also different and specific geographical and climatic features in different regions, Taking steps based on the principle of comparative advantage is very important in every region and provide fields to increase production and exports and also more efficient allocation of resources. North Khorasan province also is including areas which have its own climatic conditions and agricultural structure. Thus, attention to comparative advantage of agricultural products in this province can be considered an important step in increasing production and creating a suitable ground to conscious presence in global markets. Such as important agricultural products of the this province is cotton that due to different uses in different industries finding great economical and commercial importance in the worldwide and famous to white gold. So given that cotton is one of the most important industrial products in the country and North Khorasan province also is considered one of the important areas in cotton production, in this paper, Comparative advantage in cotton production in this province has been studied using the Net Social Profit Ratio, Domestic Resource Cost Ratio and Social Cost Benefit Ratio. The results of calculation of these ratios showed cotton production in the North Khorasan province based on three ratios, has comparative advantage.

Key Words: Cotton, Comparative Advantage, North Khorasan



Transgenic cotton, Genetic Engineering, Profitability, Development

Tohidfar M1¹

Abstract

By the end of the year 2010, 148 million ha of the agricultural lands were devoted for the cultivation of biotechnology or Genetically Modified (GM) crops. More than 17 million ha of these crops were devoted for insect resistant Bt cotton only. India with more than 10 million ha of Bt cotton has the largest area under the cultivation of GM cotton. Pakistan has also officially declared the cultivation of more than 2.4 Million ha of Bt cotton in the year 2010. For the first time in Iran and perhaps in the Middle East transgenic cotton with stacked traits (insect resistance and fungal disease tolerance) has been developed. Comprehensive molecular characterization of the transgenic plants, intensive insect bioassays at both laboratory and greenhouse, inheritance analysis, comprehensive risk assessment including the environmental risk assessment were doing. It is expected that commercialization of biotechnology cotton in Iran will result in the reduced cost of production, reduced need for application of chemical insecticide and hence improved environmental conservation and human health. This may also result in the expansion of area under the cultivation of cotton plantation that has been reduced dramatically, partly due to the heavy manifestation of insect pests in Iran's cotton growing areas. Experience in other developing countries estimated the net economic gain from growing Bt cotton to be USD 600/ha. Relatively higher net economic return is expected from the cultivation of Bt cotton in Iran since the seed will not be distributed among farmers at higher price.

Key words: Development country, Genetic Engineering, Profitability, Transgenic cotton

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Epidemiology of cotton *Verticillium* wilt in Iran.

M.Arabsalmani¹

Abstract

Verticillium wilt incited by *Verticillium dahliae* Kleb .is one of the most important diseases of cotton and there is incidence in all field cotton in the world .In Iran this diseases is more prevalent In Golestan, Ardebil ,Fars and Mazandaran Providences. In order to determination of factors to be effective on epidemiology of *Verticillium* wilt examination were done from 1999 to 2011. In researches , it were evaluated important manageable factors including the effect of disease on the quantitative and qualitative characters on yield ,correlation among effective characters of cotton plant on yield with tolerance to *Verticillium* wilt, host rang and host specify , roll of weed on perpetuation of *V. dahliae* , effect of sequencing of crops on incidence of disease , variability among of isolates based on morphology and pathogenicity , the effect of date planting and density of plants and cultivar in field on incidence of the disease ,to be seedborne disease , roll of nematodes on disease severity , effect of biological agent on diseases were evaluated .Pre planting inoculum density, disease index and disease percentage, yield loss and characters of soil in 143 fields in Golestan providence and 20 fields in Fars providence were measured and correlation between them were calculated. Forecasting of disease and efficiency of propagule was determined .The results showed that *Verticillium* wilt caused the reduction rate of seed germination, boll weight, yield, ginning turn out, weight of 1000 seeds, plant height , number of leaf, number of boll, number of node, oil percentage in wet seed, elongation, fiber fineness, length of fiber, fiber strength, fiber uniformity and decreased percentage of oil in dried seed .Correlation between percent disease(Y) with pre planting inoculum density(x) in Golestan was determined with curve $Y = 4.01x - 5.74$, ($r^2 = 0.68$) and when logarithm of non infected plant was effected the curve changed in to: $Y=0.09x - 0.25$, ($r^2 =0.59$). Correlation between percent disease(Y) with pre planting inoculum density(x) in Fars was determined with curve $Y = 0.70x - 1.77$, ($r^2 = 0.71$).There was not host specify among

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isolates of *V. dahliae* and isolates were gathered from cotton , sesame, okra , pistachio , eggplant , option , tomato , *Capsella bursa-pastoris* , *Atriplex* sp., *Solanum nigrum*, *Hibiscus* sp ., *Medicago lupulina*, *Physalis alkekengi*, *Amaranthus* sp., *Datura stramonium* , *Xanthium* sp.and *Chenopodium album* .Planting of Wheat and Barley after cotton were caused reduction population of the causal agent between 50% - 68% . Based on symptom of disease in cotton and okra isolates were grouped in defoliating and non defoliating strains .Increasing of plants in row and delay to planting were caused decreasing of index disease . Efficiency of propagule decreased by increasing of plants in row and delay planting and also increased when the casual agent was defoliating strain and cultivation before optimum planting date . Forecasting of disease was determined with curve of $Y = 4.07x_1 + 2.65x_2 - 8.8$, ($r^2 = 0.69$) (x_1 = propaguale density , x_2 = percent of silt to sand and Y = percent of disease) and when logarithm of non infected plant was effected the curve changed in to: $Y = 0.00927x_1 + 0.009x_2 - 0.632$, ($r^2 = 0.69$) (x_1 = propagule density , x_2 = percent of silt and Y = percent of disease).

Key words: cotton, Epidemiology , Verticillium wilt



Importance and distribution of the causal agent of cotton diseases in Iran.

M.Arabsalmani¹

Abstract

Numerous biological and abiotic factors can affect the growth and development of cotton. Cotton diseases are one the most important limitation to cotton production and development in most area where the crop is grown. Fifty species of fungi ,three species of bacteria, thirty four causal agents of virus and phytoplasma ,twelve genus of nematodes recorded in the world that attack cotton and causes of injury of plant or losses of yield on cotton crops. The surveys from 1995 to 2011 for recognize and distribution of the causal agent of diseases on cotton were done, showed that : species of fungi , includes *Alternaria alternata* , *Aspergillus niger*, *Fusarium accuminatum*, *F. solani* , *Pythium ultimum* , *Rhizopus arrhizus* *Aspergillus* spp., *Rhizoctonia solani* , *Penicillium* spp .are the causal agent of seed decay and pre emergence damping off, and pathogens ,*F. solani* , *F. buharicum* , *F. equiseti* , *F. proliferatum* , *A.alternata* , *Sclerotium rolfsii* , *Pythium ultimum* , *Rhizoctonia solani* are the causal agent of post emergence damping off. Fungi *V .dahliae* , *V.albo- atrum* , f.sp.vasinfected *F.oxysporum* are the causal agent of wilt on cotton and *F. solani* , *F.semitectum* , *F.proliferatum* , *Fusarium accuminatum* , *S.rolfsii* ,are the causal agent of root rot. Species *A. alternata* , *A.macrospora* , *Ascochyta gossypina* , *Rhizopus* spp . , *Penicillium* spp . , *R. solani* , *Bipolaris spicifera* , *Nigrospora* sp. , *F. roseum* , *Macrophomina phaseolina* are the causal agent of leaf spot and boll rot .Bacterial blight(incited by *Xanthomonas smithii* subsp.*smithii*) locally and restricted in 2001 to 2004 was incidence in Golestan and Ghorasan – e-shomalii .Nemathodes *Aphelenchus avenae* , *Boleodorus thylactus* , *Merlinius brevidens* , *Helicotylenchus pseudorobustus* , *Pratylenchus thornei* , *P . neglectus* , *Pratylenchoides ritteri* , *Pratylenchus ranjani* , *Tylenchorhynchus latus* , *Psilenchus hilarulus* , *Filenchus quartus* , *Merlinius quodrifer* , *Helicotylenchus digonicus* , *Neopsilenchus magnidens* were isolated and recognized from soil in cotton fields. *P. neglectus* and *P. thornei* ,seed decay , damping off of seedling and boll contamination in all area and boll rot and Verticillium wilt in Golestan, Ardebil ,Fars and Mazandaran Provinces are more distribution and important to another diseases.

Key words: cotton, diseases, biological

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Development of transgenic cottons, an approach for solving the challenges of cotton in Iran

Kamal Ghasemi Bezdi¹

Abstract

Every year, major pests such as leafhopper, aphid, whitefly and bollworm associated with diseases such as *Verticillium* are considerable losses of the cottons of Iran. For example, the bollworm outbreaks in 2011 in Golestan province destroyed a large part of cotton products of the province and it was followed repeatedly spraying pesticides. The weeds also cause a large part of problems in cotton, especially in the cultural practice period; so that the annual decline in global agricultural production due to biological stresses have developed in total by 36 percent. The pests, diseases and weeds problems, along with numerous other issues have been caused that Iran greatly loses its position in cotton production, so its acreage in the whole country reaches less than one hundred thousand acres.

By releasing and cultivation of transgenic cotton varieties resistant to pests, diseases and herbicides can be promoting acreage the product. It proved to the several reasons, including: reduction of pests, diseases and weeds control costs because of reduction of pesticides and their spraying costs, yield increasing due to decreasing of pests, diseases and weeds, conservation of production resources and the environment by creating a sustainable agriculture, existence many small farmers in the country and suitability of transgenic cottons for most farmers, textile relish more willing to buy fibers because lack of quality loss due to pests and diseases, better competition of cotton with rival crops due to lower production costs and economic losses, better confidence of farmers to grow more cotton because of less dependence to buy chemical pesticides and very high costs of spraying, and tendency of most farmers tend to cultivate a more secure food products that require less chemical, so its result can help to overcome health problems and solution to prevent incurable diseases like cancer in society which unfortunately is common in Golestan province with a very high percentage.

Thus, using application of transgenic cottons in Iran, in addition to lower production costs and thereby increasing yield, also increasing farmers' willingness to growing this crop, self-sufficiency and even cotton exports will be possible in a short time and it will be a mechanism to deal with international sanctions and economic independence and political stability will be maintained. Therefore, development of transgenic cottons in Iran can be viewed as the best and most appropriate solution to resolve the current cotton problems of the country.

Key words: Cotton, Transgenic, Pests, Diseases, Weeds, Golestan province.

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Background and future proposal of cultivation and production system of cotton in Iran

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Abstract

Cotton cultivation and production in Iran from 1350 to 1390 was declined. As a result, Iran has changed from cotton exporter to cotton importer. The average growth of cotton production per hectare in the world over last 40 years was 2% annually, but in Iran, this growth was 1.66%. The average of decrease area under cotton cultivation in Iran annually, was 24% and production of seedcotton was 9%. Profitable of alternative crops, the timely cost of the purchase price of the product, selling in advance products such as rice, corn, alfalfa and vegetables, increasing price and performance of their products (rice, alfalfa, cucumber and corn), especially in the provinces Golestan, Mazandaran, Ardebil and Fars, reducing the coefficient of mechanization of cotton than alternative crops, government support and facilitation services to competing crops, caused reducing the competitive advantage over other crops and cotton farmers prefer to produce alternative crops and non-consensual to cultivate cotton. Comparison guaranteed prices of cotton and other crops, it became clear that the guaranteed price of cotton from 1370 to 1390 had an average 18 percent growth annually, but declined in relation to prices of competing crops. For example, the guaranteed price ratio of cotton to wheat, from 5/71 in 1373 to 2/43 in 1389 and 2/39 in 1391 was decreased. The price of one Kg of seedcotton was 900 Toman in 1389, 1050, in 1391. Whereas compared to 1373 will be 2112/7 Toman in 1389 and 2512 Toman in 1391. Production costs for cotton production per hectare is between 1800000 to 2000000 Toman, which is 25 percent of cost is for harvesting. Due to the amount of cost and performance with the current price of cotton in the 2406 to 3007kg seedcotton per hectare may be compensated only by fees and the investor will not be benefit. If the cotton production systems would not be change in future, cotton cultivation will be occur. Thus the changing in the culture system, releasing of suitable varieties with proposed system, mechanized cultivation and harvesting, increasing production per hectare, reducing the growth period and reducing production costs and reducing time cost from the sale of cotton, not an inevitable choice for the cotton production but it is necessary for continuation to cotton production. The choice of Cotton – cereal system especially wheat and barley in the country with limitations of water scarcity, blowing of wind, market traction is the country's needs. Inputs in the system efficiency, reduce production costs, save water, reduce the period of economic growth and the production of wheat, barley and cotton is possible and stability, production, ground eliminate the need for self-sufficiency and export of any three strategic crops guarantee.

Key words: cotton, cultivation, production system



Forecasting of cotton prices and importance of its factors affecting

Dr Ali Falahati Sahar Abbaspour, Minoos Nazif¹

Abstract

Domestic cotton prices are influenced by increasing world prices which increasing in cotton prices is affected by global tensions and low product in international markets. In some areas, global economy growing is promoting and Purchasing power of Crude fiber textile products and consumption have increased. Production of cotton is considered one of the main indicators of economic growth because of its direct relationship with the industrial and economic activity. The linkage between industry and cotton has caused that rates and the consumption of this product to evaluate more accurately. Also by identifying the underlying factors affecting the price of cotton should be established for the development of this product. In this study the technique of artificial neural network (ANN) is used to predict the price of cotton and also review the importance of each factors affected the price of cotton. Artificial neural network, was considered as a powerful tool for data analysis and modeling of nonlinear relationships. The results indicated that neural network prediction error was very less. Applied methods for neural network were the MLP neural network or multilayer perceptron. The results showed that the neural network model was better than other models and was able to forecast cotton price precisely

Keywords: cotton prices, the neural network, cultivation, agricultural

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Evaluation of cotton farmers efficiency in country with specific – measurement and standard method

(Data Envelopment Analysis)

M. Norouzian¹, M. Sabouhi², A. parhizkari¹, S. Talebi¹

Abstract

Cotton has a great economic and commercial importance due to different applications nowadays. Also this product is one of the most important oil plant in the world and its cultivation in Iran is increasing sustainable. This product is considered as one of the important agricultural commodities. Considering that this product vocalizes the raw material of textile industry, has become under special attention by government, in recent years. Therefore evaluation of its efficiency is an important and influential factor in productivity and performance without any need to additional cost. in this study, all kinds of technical, allocated , economic applications and comparison with two standard methods and special measurement at two constant level and variable with respect to comparison for determination of efficiency of productive province's, was conducted. Statistic information from 88-89 analyst agriculture has been extracted. Average of variations economic efficiency with respect to two standard and special measurement methods ,are equal to 84% and 8%, respectively. After solving input-oriented covering analysis model, the results for comparison of two slack of variable and special measurement methods at standard and constant toward the scale were reviewed. With respect to the results, the provinces where have been noticed with standard method, also are efficient by special measurement method. But for non-efficient proviruses, the estimated value at special measure method is less than the standard values. In other words, the special measurement method in this case has estimated more accurate results.

Keywords: efficiency, standard, special measure, cotton

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Cotton transplanting in saline lands strategy for increasing cotton production

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Abstract

Cotton due to various uses , culture suitable climatic condition in Iran and its values in the global market and industry is important. Production continuity and efficiency of this economy important product is needed to identify issues and farming problems. Employing new methods arable and proportion with plant adaptations, fundamental step in this direction is considered. Transplanting cotton with using of pot paper, most recently is as one of the methods of farming in cotton producing. The results showed that delaying in transplanting had unfavorable effect on performance, unripe, grain weight, boll number and vegetative branches. Zigzag planting also compared to rectangular planting had higher yield, the performance of established plant, boll number and vegetative shoots which would be more suitable for saline lands. Among yield components, number of established plants, was strongly influenced by the method of transplanting and decreased by increasing of age seedlings.

Keywords: Cotton, Performance, Transplanting, Saline Lands.

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Economic and Commercial Importance of Cotton in Iran

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Abstract

Cotton is one of the most important agricultural products throughout the world and the most important and valuable natural fiber. It is one of the few agricultural products, which is cultivated, processed, consumed, exported, and imported all over the world. It is cultivated in more than one hundred countries, among which nearly two thirds are the developing countries. It is estimated that cotton plays a crucial role in the agricultural economy of 77 countries. Considering its various applications, cotton is of great economic and commercial importance in today's world. It is known as a strategic product owing to the variation in product processing, and consumption rates, and applications. Considering the economic importance of cotton, it is called the white gold. Accordingly, in Iran cotton is one of the most important agricultural products. Since cotton is the raw material of the textile industry and this industry is associated with high rates of employment in agriculture and services sectors, it is of great importance in the current economic status of the country. Production of cotton has a long history in Iran. Although cotton does not receive the attention despite of deserves, it has a special place among cotton growers. Golestan, Mazandaran, and Khorasan provinces are the most important centers of cotton cultivation and production in Iran. According to the statistics available, during 1960s and 1970s, Iran was a cotton exporter; such that the cotton export reached 77 thousand of tons in 1971. In that time, cotton was the second main export income of the country after oil export and 2-3% of the annual national income came from cotton production. This indicates the agricultural and commercial importance of cotton in Iran.

Keywords: Iran; Cotton trade; White gold; Export.

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Application of geometric programming not bind model in input optimization and estimation of economic benefit in cotton fields of Golestan province.

Abozar parhizkari¹, Mahmoud sabouhi², Mohammad norouzian¹ and Mahdi heydari¹

Abstract

Efficient use of inputs in cotton production is effective strategies and two strains that in addition to stability and preservation of existing resources is caused increasing productivity of this product per unit area and to achieve the highest possible profits for the farmers. Golestan province, with the 2.5 percent higher than global average is one of the major cotton producing areas in Iran. This province, with ability of both dry and irrigated cotton production has allocated 8 percent share of production and the 9.1 percent share of the cotton harvest in Iran and after the provinces of Khorasan, South Khorasan and Fars has fourth place in production of this product. Therefore, determination of the optimal values inputs used in production process of this product in order to achievement a stable system, with the goal of maximum profit for cotton farmers in this province has particular importance and is the main objective of this research. To achieve this goal in this , geometric planning model not bind, the Cobb-Douglas production function and statistical data of 2010-2010 years were applied. The results after solving the proposed model showed by with determination the optimal amount of inputs consumed during the growth period of cotton, in addition to reducing costs related to the purchase of inputs, can be helped, to the economy of cotton farmers of the region.

Keywords: Optimization of inputs, Geometric programming not bind model, The Cobb-Douglas function, Maximum profit, Cotton.

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Study of Effect of Iron and Zinc elements on intensity of cotton Verticillium Wilt disease

S.M. Nourihosseini, M. Ramezanimoghadam and D. Bayat-tork¹

Abstract:

In order to study the effect application of Iron and Zinc sulphates on yield and yield components and intensity of cotton Verticillium Wilt disease of varamin cultivar cotton, an experiment was conducted at cotton research station of kashmar during 2007-2008. In a factorial experiment with three replication, four levels of soil application of zinc sulphate (0, 40, 80 and 120 kg/ha), and two levels of foliar application of Iron sulphate (0 and %0.6) were applied to the field plots. Results showed that interaction of soil application of 40 kg/ha zinc sulphate with Foliar application of Iron sulphate (%0.6), significantly decreased intensity of cotton Verticillium Wilt disease percent (%3.2), as well as this treatment increased yield of cotton (4250 kg/ha) by %22.6 in compared to control.

Keywords: cotton, Iron, Zinc, Verticillium Wilt disease

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Study of effects of Rates and Application Methods of Zinc sulphates on yield and yield components of cotton

S.M. Nourihosseini, H. Zabihi and M. Ramezanimoghadam¹

Abstract:

In order to study of effects of rates and application methods of Zinc sulphates on yield and yield components of varamin cultivar cotton, an experiment was conducted at cotton research station of kashmar during 2007-2008. In a factorial experiment with three replications, four levels of soil application of zinc sulphate (0, 40, 80 and 120 kg/ha), and two levels of foliar application of zinc sulphate (0 and %0.5) were applied to the field plots. Soil application of Zinc sulphates were applied in pre-planting stage and foliar application of zinc sulphate were applied in thinning and flowering stages. Results showed that soil application of 40 kg/ha zinc sulphate with Foliar application of zinc sulphate (%0.5) significantly increased yield of cotton (3950 kg/ha) and weight of cotton boll(5/6g) by %23 and %18 respectively, in compared to control.

Keywords: cotton, Zinc sulphates, yield components

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Effect of different planting systems on morphological characteristics and yield of four cotton varieties in Yazd Province

Seyed Ali Tabatabai¹, Seyed Mohsen Naghibalghora², Hesamodin Samet²

Abstract

Effect of different planting patterns on yield and agronomic characteristics of four cotton cultivars, an experiment was conducted in spring 1385 at the University Meybod. The factorial experiment in randomized complete block design with three replications was conducted. Different planting patterns including square, rectangle and rhombus distance lines were planted in square or rectangular pattern was used in the 40×40 cm and 40×80 cm diamond pattern, figures Varamin, Mehr, and B512 Sindoz test were considered. Results in different planting patterns showed that in term of leaf number and height, Mehr than other varieties had higher yield, but the figure Sindoz charts. And then to the figures Varamin, B512 and Mehr were B512 than the other figures the number of bolls formed but not all the fibers to produce many of the bolls open and has remained there. Results in different planting patterns showed that the square pattern had the maximum yield and that the more uniform distribution of plants resulted in lesser competition for light and lesser shedding which followed by increasing the yield.

Keywords: pattern, cotton varieties, yield

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Yield and Components of yield of local varieties and improved conditions in Yazd Province

Seyed Ali Tabatabai¹, Seyed Mohsen Naghibalghora²
Mohamad mehdi Hamidnezhad²

Abstract

The present study was carried out in order to investigate the performance and quality characteristics of improved varieties and native cotton in a randomized complete block design and four replications. This research was done in the experimental research station of Agriculture and Natural Resources Research Center of Yazd Province in 1388. Experimental treatments included three improved cultivars Mehr, Varamin, Sindoz and indigenous varieties. Different traits including plant height, different harvest yield, the total fiber, seed and lint percentage were measured and then a sample from each experimental unit was transferred to the laboratory and different traits were evaluated. Analysis of variance and the comparison of means showed the agronomic characteristics differences were significant. The hybrid samples were ready for harvest earlier than the indigenous samples but the yield was the same. Lint percentage in indigenous sample was lower than the hybrid samples. The overall performance of Sindoz sample with an yield of 4079 Kg/hect and fiber percent of 37.48% was the best among all samples.

Keywords: Cotton, Farm characteristics, Quality Characteristics, Performance

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Effect of planting pattern on the percent non-open boll of cotton varieties and the yield of harvest

Seyed Ali Tabatabai¹, Seyed Mohsen Naghibalghora², Hesamodin Samet²

Abstract

Planting density and pattern are more significant role on the number of boll and boll lint yield and those are not open. Therefore, the test pattern on the percent not open boll and yield of cotton varieties in crop year 1385 at the University Meybod with factorial experimental design randomized complete block design with three replications was conducted. Different planting patterns including square, rectangle and rhombus distance lines were planted in square or rectangular pattern was used in the 40×40 cm and 40×80 cm diamond pattern, figures Varamin, Mehr, and B512 Syndoz test were considered. In this experiment the total number of boll, boll number was not opened, the first Chinese performance, yield and total yield were second cutting results in different planting patterns showed. So that the there was no significant effect on the pattern of not open boll but the pattern on the total yield was significant at 1% probability level. In between the planting patterns, square pattern with production of the highest yield was 4875 kg/ha. So that the cutting the highest yield per harvested square pattern. Sindoz figure among cultivars yield (3907 kg ha) achieved.

Keywords: pattern, cotton boll percentage yield of each cutting.

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Effect of cultivars on yield and fiber quality of cotton in Yazd Province

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Abstract

The present study was carried out in order to investigate the performance and quality characteristics of improved varieties and native cotton in a randomized complete block design in four replications. This research was done in the experimental research station of Agriculture and Natural Resources Research Center of Yazd Province in 1388. Experimental treatments included three improved cultivars Mehr, Varamin, Synduz and indigenous varieties. Traits including yield, total fiber, strength and elongation of single washcloth, fineness, maturity ratio, percent maturity, fiber linear density, Knapp, direct dye (1% and 2%), reactive dye (1% and 2%) had. Analysis of variance and the comparison of means showed the agronomic characteristics were significant. The overall performance of Sindoz sample with an yield of 4079 Kg/hect and fiber percent of 37.48% was the best among all samples. Linear density of fiber traits were significant at 1% of native varieties with 2.3 micrograms per square inch line had the highest density of fibers is that the score indicated. The results of analysis of variance showed that the NEP between cultivars of this trait, there is a significant difference. The results of analysis of variance showed that the NEP between cultivars of this trait, there is a significant difference. According to need can be better adapted varieties that are native to a productive but short fibers are used for the production of thick yarn and If the fibers are long and delicate and should be improved cultivars used in this regard.

Keywords: Cotton, quality of cotton, Quality Characteristics, Performance

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Comparison and evaluation of qualitative and quantitative characteristics of four varieties of imported cotton

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M. H. Hekmat and S.Y. S. Masoumi

Abstract

Agronomical and morphological traits and plant breeding programs have significant reform in recent years. These programs in cotton on several traits, including selection for early product selection to achieve more, high quality fibers, resistance to stress factors and access to high heterosis has focused on. Varieties that have been introduced from the outside in terms of traits evaluated and could be used in breeding programs for superior transmission characteristics to existing commercial varieties and providing suitable varieties for mechanized operations. Therefore, variation in four imported cultivars and two commercial varieties were evaluated for quality and quantity of fiber properties evaluated and treatments were studied in a randomized complete block design with 6 treatments and 4 replications in five regions, in 2008-9. Traits including yield, earliness, weight boll, boll number, plant height, length and number of monopodial and sympodial branches, on 5 plants selected from each plot were measured. The fiber samples to compare the qualitative traits were sent to laboratory. Analysis and results from each region and compare the results showed that the most not significant superiority of imported varieties to commercial cultivars and or this superiority are not significant statistically. Sepid cultivar (commercial varieties as control) produced 2947 seed cotton kg/ha and 73-S-492 with 2643 kg/ha were in second place. Of course their difference was not significant statistically. It is recommended that 73-S-492 Cluster Type and it can be sowed with more planting density and hence are suitable for machine harvesting.

Key words: Cotton, Imported Varieties, Quantitative and Qualitative Characteristics

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The study of Iran & world Cotton situation

A. Salehirad¹, Prof. M. Haghghat Kish, Dr. N. Mardani Mehrabad, M.M. Fathi

Abstract

Having an important industrial role especially in the textile and apparel industries, cotton as an agricultural product is one the most valuable natural fibers. Production of this plant in 79 countries whole around the world leads to millions of jobs in the fiber and oil industries. The importance of this fiber in textile industries is fully clear and man-made fibers couldn't reduce it. Some reasons of cotton importance in textile and apparel industries are: No skin allergy, softness, elegance, comfort and human body compatibility, high-strength, easy print and dye ability, high moisture absorption, cool in summer and warm in winter, resistance to sun-light, heat and hot washing, and no static electricity. In this paper, statistical description of cotton production and trade in Iran and in the world was provided also some suitable cotton for textile and apparel were compared in terms of quality. Considering the importance of cotton production in terms of economic and employment, the production situation (cultivation, production performance, cost and etc) of cotton in the world were studied, and compared with Iran's. The major producer and consumer countries were identified and their performance were evaluated. Iran's cotton problems and the importance of investment in cotton production (employments, prevent wasting national income, etc) were considered. In addition to reviewing the cotton associations and institutions, some suggestions were offered to prevent problems such as high production costs, lack of mechanized cultivation, the reform of agricultural inputs, shrinking agricultural lands, failure to ensure the products being purchased and etc. As long as reviewing the production processes of successful countries in this filed, the appropriate procedures for Iran that was combination of technology and labor were proposed.

Key words: Fiber, Cotton, Textile Industry, yarn

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Review of cottonseed oil extraction with supercritical carbon dioxide fluid modern extraction technology

Mansour Rezaei¹, Naeim Shahini²

Abstract

Temperature and pressure of each substance that is above its critical temperature and pressure, is called supercritical fluid. A supercritical fluid has properties between the characteristics of a gas and liquid. The physical characteristics of supercritical fluid have led to be considered for extraction. Supercritical fluid density compared with gas density is approximately a thousand times more, for this reason supercritical fluid's dissolving and extraction power is very high. The best solvent for extraction using supercritical fluid is carbon dioxide because it is neutral, cheap, available and safe compound. Cotton is cultivated mainly for fiber production, but it also produces seed which is an important source of edible oil for human. The production of oil from cottonseeds, in addition to the species and climatic effect, change with the pretreatment of the seeds, method of extraction and post-extraction processing. Steady attempt are being made global to improve novel processes for the produced better quality oils for food industry. In conventional methods of oil extraction with organic solvents, oils extraction efficiency from oilseed is low. In addition to removal of solvent and solvent recovery from the oil lots of energy should be spend that has much cost for the factory. As well as there is problem of remaining organic solvent (That is harmful to health) in the oil. Problem of entering the organic solvent to the environment and create adverse effects should also be added to these cases. Therefore supercritical fluid extraction is a suitable alternative to conventional methods of extraction with organic solvents (such as hexane, etc.).

Keywords: supercritical fluid- cottonseed oil- carbon dioxide-extraction

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General Review of antinutritional and toxicological characteristics of cottonseed gossypol

Mansour Rezaei¹, Naeim Shahini²

Abstract

Gossypol (C₃₀H₃₀O₈), is a polyphenolic yellow compound that occurs naturally in the seed, stem and roots of cotton plant. Gossypol is a natural defense compound produced by plants against pests and diseases. Together with every 40 kg fiber cotton produced on the farm, about 63 kg of seed are also produced. So at the same level in the field, seed production is more than the production of fibers. Cottonseed is a by-product of the cotton-fiber industry which is rich of high quality edible oils and protein and therefore in the food industry (also in many industries such as animal feed) has taken into consideration. The use of cottonseed meal as a human food and animal feed is limited by the presence of gossypol, a toxic polyphenolic pigment produced in the seeds of the cotton plant. Gossypol free form is toxic to monogastric animals, whereas ruminants are somewhat more resistant. Signs of acute gossypol toxicity are similar in all animals where it acts by reducing the oxygen-carrying capacity of the blood and results in shortness of breath and edema of the lungs. Moreover due to its several biological properties including anti-cancer, antimicrobial, anti-HIV, anti-oxidation and male contraceptive has numerous applications in medicine and pharmacy. It should also be noted that the toxicity of a compound depends on its dosage. So for the safe use of this precious resource more research needs to be done about the toxic properties of this pigment.

Keywords: byproduct- Gossypol-cottonseed-toxicity- human health

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**Review of Improve nutritional value and oxidative stability of
cottonseed oil with increase of oleic and stearic fatty acids using
genetic modification method**

Mansour Rezaei¹, Naeim Shahini²

Abstract

the advantage of unsaturated fatty acids, such as the oleic acid is lowering LDL-cholesterol, and thereby the risks of cardiovascular disease are reduced. So this type of oil can be a good alternative to hydrogenated oils that are harmful. In addition by increasing of stearic acid, solid or semi-solid fats can be produced without requires hydrogenation. Therefore, genetically modification of cottonseed oil fatty acid profile is essential to avoid hydrogenation and subsequently to better nutritional properties of cottonseed oil. In this paper, increasing the stearic and oleic fatty acids in the profile of cottonseed oil, using gene suppression in the cotton plant has been reviewed.

Keywords: Cottonseed oil- Gene Silencing- oleic and stearic fatty acids
- hydrogenation

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Investigation of affecting factors on production and area under cotton cultivation in Iran

Afshri mohsen, Zareei Mohsen & Ebrahimi M.

Abstract:

Cotton is one of the industrial plants which are used in various industries. Price of cotton in the world affected by many factors, including the cultivar of cotton and quality of the product. Climate change, trade policies, foreign exchange and pricing associated with area under cotton cultivation changes in different years. Unfortunately, in Iran due to lack of support subsidized government from production and exports of cotton in comparison with other crops, cost of cotton production is high and due to uneconomical cotton production area under cultivation and production in Iran has decreased. this paper investigate the most important factors affecting the level of production and area under cotton cultivation in the country, including climate change, trade policies, currency, pricing and etc . This paper accomplish with descriptive-analytical method and assistance of survey study and comparison new data with past documents. Results obtained by means that in order to get out of cotton from the crisis, offered can be supported by government subsidy, low interest payment facilities to finance the planting and harvesting, buying cotton with reasonable price and timely payment, guarantee purchase cotton and provide necessary machine facilities for performing complete mechanization of operations planting and harvesting can be mentioned.

Key word: cotton, production, price, iran



Estimation of Cotton production function and factors affecting of its production

Case study: city of Isfahan

Omid Karamy

Abstract

Non-oil exports is more important today. Therefore, the optimal production, economic and efficient use of inputs tailored approach can lead to increased share of agricultural exports in total exports. In this research by evaluation and study consumption of inputs and production of 36 cotton farmers in Isfahan city and the estimated production function which was quadratic (the best fit among functions) factors affecting the production of cotton and also the production of each share was studied in Isfahan city. The results showed that the labor variable had a negative impact on production, indicating that these variables are used to non-optimal. Considering the high price per unit of labor is suggested that local farmers to turn mechanized cultivation. Also, less seed was used than optimal economic use, therefore, it was recommended to increase consumption.

Key words: cotton, Isfahan, production function, quadratic production function



Investigate the potentials of cotton plant: Production of alkaline peroxide mechanical pulp of cotton stalks

Mehrnoosh Tavakoli¹, A. Saraiyan², H. Resalati³ and A.Ghasemian⁴

Abstract:

Since domestic wood raw material for paper industry in decline and the other hand, the maximum use of primary sources available nonwoody cellulosic, can be a factor toward achieving the goals of sustainable development. The cotton stalk is one of the fiber sources that the dimensions and building of fiber are similarities to hardwood. and as a lignocellulosic matter is generated considerable waste in Golestan province. This present study examined method of the alkaline peroxide mechanical pulping of cotton stalks which deals with the review of the pulp prepared by mechanical methods APMP of cotton stalk . Therefore APMP pulp were prepared from cotton stalks without skin. A two-stage pulping was Performed with liqure-to- cotton stalk ratio 6:1(ml/g), Consistency 15-20, 70 0C Temperature in the first stage and 75 0C Temperature in the second stage. Pulp were considered as control with superior characteristics. APMP pulp was prepared with the same conditions but using a fixed ratio of sodium silicate and DTPA and variable ratio of caustic soda and hydrogen peroxide. Then was studied efficiency, Brightness and mechanical properties APMP pulp from samples.

Key words: cotton stalks, Residual, *APMP*, sustainable development

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Improving the performance of with alkaline peroxide mechanical pulp cotton stalks by mixing with recycled paper

Mehrnoosh Tavakoli¹, A. Saraiyan², H. Resalati³ and A.Ghasemian⁴

Abstract:

Cotton stalks is an Agricultural residues. The stem has a significant percentage of brain cells associated with the external dark skin can be provide problems in pulping and paper making process. This study was examined the characteristics of alkaline peroxide mechanical pulp APMP from cotton stalk. Therefore APMP pulp from cotton stalks were prepared without skin. A two-stage pulping was Performed with liquore-to- cotton stalk ratio 6:1(ml/g), Consistency 15-20, 70 0C Temperature in the first stage and 75 0C Temperature in the second stage. Pulp were considered as control with superior characteristics. APMP pulp was prepared with the same conditions but using a fixed ratio of sodium silicate and DTPA and variable ratio of caustic soda and hydrogen peroxide. But the brown skin and fibers having a middle section (core) is relatively short, APMP pulp brightness and strength properties of the rate is not too high. In this study is checked the effect of adding Mixed office waste paper (MOW), which had much better brightness and fibers from the APMP from cotton stalk.

Key words: cotton stalks, APMP, brightness, Waste paper

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Chemi mechanical pulping of cotton stalks

Mehrnoosh Tavakoli¹, A. Saraiyan², H. Resalati³ and A.Ghasemian⁴

Abstract

Cotton stalks were pulped in a blender, using cold soda and alkaline peroxide chemimechanical (APMP) processes. Overall yields for both processes were low, but comparable to values found for semichemical pulping in the literature. Strength values were lower than for chemical pulping but comparable to literature values for semichemical pulping. Pulps produced from the APMP process were 50 % brighter and slightly weaker than for the cold soda process, and they required significantly less secondary refining to reach a given freeness level. An increase in the concentration of alkali and peroxide caused a decrease in both soaked and refined yields. Increased chemical concentration slightly reduced the secondary refining time required to reach a given freeness level, but it had no effect on strength at a given freeness. An increase in the alkali/peroxide ratio during soaking caused a decrease in screened rejects and an increase in screened yield. Higher ratios resulted in slightly higher freeness values at a given secondary refining time, and they also produced slightly higher tensile and moderately lower tear strength. Brightness was decreased as the ratio increased.

Keyword: Cotton stalk, *APMP*, cold soda, Brightness

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Examine the possibility of making pulp and paper method of cotton stalk soda and soda anthraquinone

Khadijeh Armand¹ AR Saraeyan², Hossein resalati³ , Elias afra⁴

Abstract

Using non-wood raw materials for pulp and paper industry has a long history. The production of this type of pulp has increased more rapidly :such as wheat straw, cotton stalks, to produce pulp and paper In this study, cotton stalks were cooked using soda and soda – anthraquinone (AQ) process. soda cooks were conducted by changing cooking conditions including active alkali charge and pulping time. Soda-AQ cooks were obtained by adding 0.15 , AQ to optimum soda pulping. Adding AQ to soda pulps led to the increase in regarding to pulp yield and kappa numbers.

Key word: cotton stalks , soda, anthraquinone, active alkali , yield and kappa

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The study of cotton crop coefficient changes during the growing season in the Moghan region

Rasul ahmadi adli¹

Abstract:

This experiment was performed in the field in which a drainage lysimeter was established in its center. The parameters of soil water balance equation were directly measured through drainage lysimeter, and the potential water consumption of cotton was determined in 10 days interval. Also, for investigation of cotton crop coefficient during growth season, another land that lysimetric study was conducted for determination of reference evapotranspiration simultaneously, appropriated for lawn cultivating. The lawn was managed according to those recommended by F.A.O, during growing season.

The results indicated that the cotton crop coefficient was changed from 0.38 to 1.28. Its minimum value occurred in the third decade of Ordibehesht, and first decade of Khordad and maximum occurred in second decade of Mordad. Also, the product of crop and pan coefficients ($KC \times KP$) was changed from 0.22 to 1.0, that occurred in the first decade of Khordad and third decade of Mehr, respectively. The cotton crop coefficient values in the elementary and middle stages, were 0.38 and 1.18 respectively. Crop coefficient has increased in the development stage and varied between 0.38 and 1.18. The cotton crop coefficient value in the final stage has decreased and varied between 1.18 and 0.88.

Key words: Evapotranspiration, Lysimeter, Cotton, Crop Coefficient, Pan Coefficient

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Determine the most appropriate crop curves for estimating the cotton crop coefficient during the growing season in the Moghan region

Rasul ahmadi adli¹

Abstract:

To determine the most appropriate crop curves for estimating of cotton crop coefficient during the growing season, two arable lands, that one drainage lysimeter was established in their centers at last years, were devoted to cotton and lawn. The parameters of soil water balance equation were directly measured through drainage lysimeter. Crop curves are estimated crop coefficients based on time. The result showed that crop coefficient of cotton had logical relation with Growth- Degree-Days (GDD), Days After Sowing (DAS), and Growth Stages (GS) indices. DAS method turned to be for predicting of cotton evapotranspiration. Also, it was not observed logical relation between $KC \times KP$ and GDD, DAS, and GS indices.

Key words: Evapotranspiration, Cotton Crop Coefficient, Crop curves, Growth- Degree- Days, Days After Sowing, Growth Stages

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Comparative Biology of two-spotted spider mite, *Tetranychus urticae* (Acari: Tetranychidae) on different cotton cultivars

S. Ghavidel¹, A. Golizadeh²

Abstract

Two-spotted mite, *Tetranychus urticae* Koch (Acari: Tetranychidae) is the most important and polyphagous pest on field crops. Different host plant cultivars could be an effective and determinant factor on biological parameters of insects and mites. Biology of this mite was studied under laboratory conditions, $24\pm 1^{\circ}\text{C}$, $65\pm 5\%$ relative humidity and 16:8 (L:D) hour on three cotton cultivars including Avangard, B.557 and Sayakra in growth chamber. The results showed that the immature development time and adult longevity of *T. urticae* have significant difference between tested cultivars. All three development stages (egg, larvae and nymphs) of mite were significantly different among cotton cultivars. The longest and shortest total development time were observed on Avangard (12.30 ± 0.37 days) and B.557 (9.30 ± 0.26 days), respectively. Female adult longevity on Avangard cultivar was the shortest (12.40 ± 0.53 days) and the longest female longevity was recorded on B.557 (17.60 ± 0.84 days). Oviposition period showed significant difference among cultivars and the shortest and longest period were achieved on Avangard (8.50 ± 0.55 days) and B.557 (12.00 ± 0.63 days), respectively. On the whole, the life cycle of *T. urticae* showed significant difference between cotton cultivars and it lasted 26.90 ± 0.80 days on B.557 and 23.70 ± 0.72 days on Sayakra cultivar. Knowledge on biological characteristics of two-spotted mite on different host plant cultivars could be considered in developing control programs of this pest.

Key words: cotton cultivars, two-spotted mite, biology

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Investigation the impact of government support policies using Policy Analysis Matrix: A case study of cotton in Gorgan

Reza Hezareh¹, Hamid Amirnejad², Hamed Navidi¹, Saeed Hasanlo¹, Sharhazad Mirkarimi³

Abstract:

The investigation of the trend of government intervention impacts in agricultural production process in order to decision making about the continuance the policy making or determining the efficient programs has a specific importance. In this regards, The main objective of this study was determination the effects of government protection policies on cotton production incentive in Gorgan county during 2008-2011. To achieve this objective, a policy analysis matrix (PAM) was used and nominal protection coefficients, effective protection coefficients, ratio of production subsidy and comparative advantage, were estimated. The results indicated that only at the period of 2010-2011 the input and output markets have been protected by government, despite, the cotton production at the mentioned periods had comparative advantage. Also, the net impact of government policies on shadow income of farmers at the period of 2009-2010 was positive that this issue has been caused the 20 percent growth of cotton production in Gorgan county at the mentioned years. Finally, in spite of the government protection policies in this sector, the production of cotton hasn't an expected growth in this county.

Keywords: cotton, support policies, policy analysis matrix, comparative advantage

JEL Classification: Q18

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Evaluation of Nano Silver impacts on seed germination and seedling vigor of three cotton cultivars

Mahmoud Mali¹

Abstract

This study was carried out in Gorgan and kordkoy as randomized completely design and complete block design with 3 replications in 2010 respectively. Labratitry studies and field studies was done In Gorgan and kordkoy respectively. The results showed that Nanosilver and cotton cultivars were not significant effect in seed germination. Cotton seed germination percentage in control and 80ppm Nanosilver were 57% and 64% respectively. Interaction effect of Nanosilver and cultivars on seed germination was non-significant. But the most of cultivars had more germination in high concentration of Nanosilver solutions. Seed surface condition had significant effect on germination percentage. Delinted seed had highest germination(88.6%). Interaction effect of seed surface condition and Nanosilver was significant on germination. The most germination(95%) observed in delinted seed and high concentration of Nanosilver(80ppm). Studies showed that Nanosilver cultivars had not significant effect on plant emergence. Emergence percentage in 20 and 80ppm Nanosilver was 71% and 71.2% respectively. Cotton cultivars had not significant difference to gether in emergence percentage and it was vary from 65.2% in Sepid(cv.) to 70.1 in Sahel(cv.). Nanosilver and cultivars interaction effect on emergence percentage was non-significant. But the most emergence percentage obtained from 20ppm Nanosilver. Seed surface condition had not significant effect on emergence percentage. Delented seed had high emergence(69.3%) for water absorbtion facility. Seed surface condition and Nanosilver interaction did not significant effect on emergence percentage. Probably its related to water absorbtion germination facility. The most emergence(74.8%) obtained from delinted seed and 80ppm Nanosilver.

Keywords: cotton, Nanosilver, delinted seed, cotton cultivars, germination, emergence

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Evaluation of corn as a trap crop for damage decrease of *H.armigera* in cotton

Parisa Heravi¹

Abstract

Cotton boll worm is a polyphagous pest that because of the several usage of poisons for cotton pest control and death of natural enemies in cotton ecosystems , integration of controlling methods is advised .The benefits of using summer trap crops is under studying in the world. The use of trap crops in borders and inter-rows of main crop , have benefits such as reducing use and costs of pesticides, conserving natural enemies , increasing crop quality and improving soil and environment conservation . Corn crop (*Zea mays*) which is the current culturing crop in this region and one of the hosts of the cotton boll worm and their enemies , in this research planted in borders and inter-rows of cotton plots in RCBD with 3 replications . Combined analysis of results showed that minimum number of larvae was in cotton with corn in borders with 12.1 larvae and maximum value of yeild was in cotton plots with corn in borders with 3280 kg/ha . Corn as a fence around the cotton attracted less *Helicoverpa armigea* in cotton . This research is a base of IPM controlling and by this method farmers may save spraying and conserving natural enemies.

Key words : Trap crop – Corn – Cotton Boll Worm

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Occurrence Level of *Fusarium* Fungal Seed Borne Species in Country Cotton Cultivar Seeds

Karami S.¹, Amin Khaki S.², Hashemi Fesharaki S.³, Norani A.⁴

Abstract:

To determine the occurrence level of existing seed borne *Fusarium* spp. in and on certified cotton seeds to develop national seed standard, 570 seed samples from Varamin and Sahel cultivars seeds from Khorasan razavi and Southern, Fars and Golestan provinces using ISTA methods were collected and tested base on protocol. For this purpose, deep freeze blotter test was done in SPCRI-Karaj seed health laboratory. 100 seeds were plated on petri dishes (10 in each, based on seed size), that each contained three moistened filter papers. After a day passed, petri dishes were transferred to freezer with temperature adjusted -21° C for 24 hours. Then all dishes shifted to incubator for 7-10 days incubation at 20 degree centigrade with 12 hour light and darkness interval. Then after seeds were examined under stereomicroscope for observing habit characteristics of each fungus and if necessary slide preparation of fruiting structures of fungi and observation under compound microscope carried out. Results revealed that all seed samples showed *Fusarium* spp. colonies with an average of 53.7% percentages. Lowest occurrence of 18.3% recorded for delinted seeds.

Key words: health, result, seed, test.

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Economic assessment of cotton planting in Tehran province.

Ali Sajedipoor¹ and khabat ghaderi²

Abstract

The decision making to change the plant crop pattern, in addition to evaluation the technical planting, needs to economic assessment of crops in the province” during the year. Financial and economic indices provide opportunity to comparison and analysis of investment. In this study, economic assessment of cotton cultivation in “Ray” and "Varamin" was examined and by using indices like net present value investment and Internal rate of return (*IRR*) , economic assessment of cotton cultivation was conducted. Also sensitivity analysis of cotton cultivation plan also has been done. The results showed that 35.8% of production cost was related to the harvesting, but with regard to water requirement, the highest production costs were related to water price and irrigation. Internal rate of return (*IRR*) with the assumption of seed cotton sale was 23% . The sensitivity Analysis showed that increasing of 20% in income, the rate domestic output reached to 29% by reduction of 20% , the rate of income decreased to 16%. Sensitivity analysis also showed that the price index Internal rate of return had less sensitivity than production costs changes but had more sensitivity than income change.

Key words: economic assessment - sensitivity analysis – Internal rate of return (*IRR*) – net present value investment(*NPV*)

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Changes in biological characteristics of spiny bollworm

(*Earia insulana*) as affected by feeding on different cotton varieties.

Amin, Gh. A.¹, Hekmat, M.H.¹, Sajad R.² and Gheisari, A.¹

Abstract

Spiny bollworm is one of the important pests in cotton grown region of southern area of the country. Determination and identification of host plant suitability and their effect on biological characteristic of the pest is the most important factors on IPM programs succession. Therefore an investigation conducted in RCBD design with 16 treatments at four replications in Darab region during 2011-2012. In this investigation we examined 16 varieties of cotton as treatments included 1-Varamin, 2-Okra, 3-Deltapine, 4-Pak, 5-Golestan, 6-Barbadence, 7-Sahel, 8-Super okra, 9-Siokra, 10-No200, 11-NNC, 12-NNB, 13-SKSC, 14-SP731, 15-SP732, 16-Bakhtagan as regional variety. The different stages of the pest were reared on the cotton varieties by inclusive method, and the fecundity, larval and pupal elongation time, larval and pupal weights and so the adults living period were determined. The results mediated very significant differences on biological characteristic of the pest which reared on different varieties of cotton, so that highest rate of fecundity was on Barbadene with 98 eggs and the lowest rate of fecundity was on Pak variety with 24 eggs. The percentages of the larva which reached to final instar were highest in Barbadence with 98 percent and the lowest were in siokra with 73 percent the highest weights of pupa occur in Barbadence with the average of 0.82g and lowest was on Deltapin and Siokra 0.56 and 0.54, respectively. The lowest larval elongation period was on NNC variety with an average of 12.4 days, and the highest was on Varamin variety with 21 days.

Key words: Spiny bollworm, biological characteristics, cotton

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Investigation effect of DC magnetic field intensity on cottonseed germination of Golestan cultivar.

Abbas Rezaei Asl, Shahram Nowrouzieh , Farahnaz Daz and mohamad hoseyn Shahabi

Abstract

Considering long period of cotton production, each technique which decrease this period can increase cotton plant area. In this research, the effect of DC magnetic field on growth rate and germination were studied in Golestan cultivar cottonseed. The experiment was carried out in RCBD with three levels of magnetic field (200, 400 and 600 mT) and three times of seed rest in magnetic field (5, 10 and 20 m) in three replications. The results showed that 10 minutes rest in magnetic field had the heights effect in 200 and 400 mT. Also 400 mT with 10 minutes rest in magnetic field has the highest effect in rate of germination.

Key words: Cotton, Germination, Magnetic



Examination of capability solution of unsolvable mineral phosphates by silicate dissolving bacteria (SDB) on phosphor uptake of cotton.

Alidoost Narjes¹, & Olamaee. Mohsen²

Abstract

Silicate dissolving bacteria are a group of bacteria which are capable to dissolve potassium feld spates, phosphate rock particles and the mineral materials of the soil. These bacteria can be found in a large amount in rhizospher of root. They can produce complex compounds with high resolving power producer by secretion of carbonic acids and polisacarid materials on minerals. A great number of reports have revealed that these bacteria are able to alter unsolvable phosphate compounds to a form that can be used for the plant. In this survey were selected 20 silicate dissolving bacteria isolated from rhizospher of cotton and the effect level of the bacteria on the solvability of mineral phosphate, in a liquid and solid medium was measured. The insemination of micro organism, that able dissolve of mineral phosphate, causes the increase of phosphor uptake by plants, and as a consequence, the increase of the plant growth. Besides, insemination of these bacteria helps economizing the usage of chemical fertilizers and decreasing pollution of such fertilizers in the environment. The results of this survey revealed that solubility indicator in solid medium was form 1.82 to 3.07 on the average and the most amount of solubility of phosphor in liquid medium was related to ks 4-5 (40.04 mg/kg) and the least amount, also, was related to H4-4 (15.63 mg/kg).

Key words: Silicated dissolving bacteria, bacillus , rhizospher of cotton, solvable phosphorus

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Effects of Potassium sulphate and chloride on yield and growth of cotton in saline conditions.

S.M. Nourihosseini, M. Ramezanimoghadam and H. Zabih¹

Abstract:

In saline conditions nutrient absorption decreased because of decreasing of roots growth and antagonism between nutrient. Effects of potassium sources on the cotton were different. In order to study of the effects of potassium sources and rates on the Varamin cultivar cotton an experiment was conducted in a fields of kashmar with saline condition ($E_{c} = 12.4 \text{ dS/m}$) during 2007-2008. In a factorial experiment with three replications and 9 levels of soil application of potassium sulphate (SOP) and potassium chloride (MOP) contains of: 1- Control 2-100 kg/ha MOP application 3-100 kg/ha SOP application 4-200 kg/ha MOP application 5-200 kg/ha SOP application 6-300 kg/ha MOP application 7-200 kg/ha SOP application 8-400 kg/ha MOP application 9-400 kg/ha SOP application. The results showed that soil application of 300 kg/ha potassium sulphate (SOP) significantly increased yield of cotton by %35, in comparison with control.

Key words: cotton, potassium sulphate (SOP), potassium clorid, yield.

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E- commerce , an useful method in advertising and marketing of cotton

Shahbaz shamsoddini

Abstract

E- commerce is fulfill of trade affairs in on-line and by Internet. It began in 1970s and uses in a wide applications. E- commerce includes not only Internet exchanging but also other aspects of trade activities such as inventorying , production management , distribution , transportation and services after sale. In 2007 , the share of E-commerce have had 3/4 percent in total retail and in 2010 , this share was 5/1 percent. According to OECD statistics , E-commerce value was \$5180 billion in 2004 and was \$22200 billion in 2006.The share of E-commerce in world trade is estimated about 36 percent. E-commerce is indefinite in Iran but according to informal statistics , it is about 1000 billion Rials. In 2005, more than 81 percent of world production of cotton has produced in China , U.S , India , Pakistan , Uzbekistan , Brazil and Turkey.About 23 , 22 and 17 percent of world production of cotton allocated respectively to China , U.S and India. Iran with 1/5 percent of world production of cotton is in 20th place, while China , India , Pakistan , Turkey and U.S are the greatest consumers of cotton. In 2005 about 75 percent of world production of cotton has consumed in these countries. According to existing statistics , about 37 percent of world production of cotton is exported(\$20 billion) and it is 0/12 percent of world trade of goods. In 2005 , about 78 percent of cotton exports has fulfilled in U.S , Uzbekistan , India , Australia , Brazil , Burkina Faso , Greece and Mali.In this year , about 71/5 percent of world imports of cotton has allocated to China , Turkey , Bangladesh , Pakistan , Indonesia , Tailand , Russia , Mexico , Taiwan and south Korea. In Iran, cotton is 8th irrigation crop with 121000 hectare. Before Islamic Revolution , cotton was an important item in our exports. This crop is produced in 17 provinces of Iran and these provinces have more than 90 percent of cotton production. The most important producer provinces of cotton in Iran are : north Khorasan , Razavi Khorasan , south Khorasan , Golestan and Fars. Despite , the often of importer countries of cotton are in Asia and we available to market of these countries and cotton is produced in more than half of our country , in an E-commerce area we can make an effort for advertising , marketing and development of market share of cotton for our country

Key words : E-commerce , Marketing , cotton



Investigation of Iran status in world production and trade of cotton

Shahbaz Shamsoddini

Abstract

Cotton is a strategic crop in Iran and uses in industry , food industrials and animal husbandry. This crop provides raw material of weaving industrials and oil-pressing and make opportunity for employment in agriculture , industry and trade. In order to consumption of cotton in various sections , it is named “white gold”. Now , about 35 million hectare has allocated to cultivation of cotton in the world. The most important of cotton cultivation areas are: U.S , Brazil , Argentina and Mexico in America continent ; Burkina Faso, Mali , Benin and Cameroon in Africa continent ; India, China, Pakistan, Uzbekistan and Australia in Asia and Oceania continent ; Greece , Turkey and Spain in Europe continent. In 2005 , more than 81 percent of world production of cotton has produced in China , U.S , India, Pakistan, Uzbekistan, Brazil and Turkey. About 23, 22 and 17 percent of world production of cotton allocated respectively to China , U.S and India. Iran with 1/5 percent of world production of cotton is in 20th place. While China, India, Pakistan, Turkey and U.S are the greatest consumers of cotton. In 2005 about 75 percent of world production of cotton has consumed in these countries. According to existing statistics , about 37 percent of world production of cotton is exported (\$20 billion) and it is 0/12 percent of world trade of goods. In 2005, about 78 percent of cotton exports has fulfilled in U.S , Uzbekistan, India, Australia, Brazil , Burkina Faso, Greece and Mali. In this year, about 71/5 percent of world imports of cotton has allocated to China, Turkey, Bangladesh, Pakistan, Indonesia, Tailand, Russia, Mexico, Taiwan and south Korea.

In Iran, cotton is 8th irrigation crop with 121000 hectare. Before Islamic Revolution, cotton was an important item in our exports. This crop is produced in 17 provinces of Iran and these provinces have more than 90 percent of cotton production. The most important producer provinces of cotton in Iran are: north Khorasan, Razavi Khorasan, south Khorasan, Golestan and Fars. Now, 90 cotton-gin company, 230 oil-pressing, company 80 weaving company, 33000 cloth manufacturing and etc active in Iran and also about 2 million employees in cotton industry. Therefore , cotton crop is important in economy of our country.

Key words : Iran , production , world trade , cotton



Study the Effect fluctuation of exchange rate on Cotton export price

M. Bakhshayesh, E. Mehrparvar, H, N. Asiabani

Abstract

Today, growing non-oil exports and increasing its share in global trade is too necessary for freedom from economic dependence of Iran and this fluctuated in more cases affected by exchange rate. In Iran's non-oil exports, Cotton is one of products that despite the high production in past years, it has failed to increase its export share in the world. So in this study, the effects of short and long-run fluctuation of exchange rate were considered on Cotton export price during 1966-2011 by Autoregressive Distributed Lag model (ARDL). The results showed that effect of real exchange rate and export, on Cotton export price was positive and significant in long-run. So, we can help to increase exporter income and encourage him by fixing exchange rate.

Keywords: Exchange rate, Export Price, Cotton, ARDL Method.



Vision of Cotton Domestic and Export Price of Iran in Horizon of 1400

M. Bakhshayesh, E. M. Mehrparvar, A. Chizari

Abstract

One of important variable in any economy is price. Forecasting of domestic and export price can help government to evaluate and analyze their producing and foreign Trade policies. In this study, by using time series data during 1345-1390 and ARIMA model, cotton domestic and export price for Iran were forecasted. Results indicated that cotton domestic and export price will have decreasing trend until 1392, but will have increasing trend after 1393.

Keywords: domestic and Export Price, Cotton, Forecasting, ARIMA Model, Iran.



Horizontal price transmission of the Iranian cotton market in the world market

E. Mehrparvar, M. Bakhshayesh, O. Karami

Abstract

One of the most important issues that affect the welfare of producers, marketing agents and consumers of a product, is price impressionability of a market from other markets, when there is the distance between them. With regard to the import and export of cotton in Iran and change its position in past years, analysis of horizontal price transmission of this product from world market to domestic market has implication for policy makers. Causality test for period of 1966 to 2010 showed a one-way causality from world market toward domestic market. Findings of price transmission by error correction pattern also revealed a symmetric price transmission in long run while it was found asymmetric in short run in such a manner that price increasing transmission from world market was larger than price reduction. Transmission of cotton world price to domestic market may resulted in deterioration of upstream industries.

Keywords: Price Transmission, Cotton, Error Correction, Iran.



Efficiency and Return to Scale of Irrigated Cotton Producers in Iran Provincial Comparison

Elie Azadegan¹, Mahmoud Sabuhi²

Abstract:

In Iran, there are plenty of talent in relation to agricultural products. Cotton is one of these products. This product is used in parts industry, food industry and animal husbandry and addition to providing raw material for textile and oil industries, plays an important role in employment agriculture, industry and commerce sectors. Thus, increasing production of this strategic product is important. Review the efficiency of agricultural products is affect and important factor in increasing production and their performance without additional cost. In this study, technical and scale efficiency in 10 provinces under irrigated cotton was measured and compared by data for crop year 2009-2010 and using data envelopment analysis (DEA). The result showed that the average technical efficiency in constant returns than scale was 0.924 and the average technical efficiency in variable returns than scale was 0.952. The average scale was 0.968. In addition, the Fars province had the lowest technical efficiency in constant returns than scale and variable returns than scale.

Keywords: Irrigated Cotton, Technical Efficiency, Data Envelopment Analysis Method.

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Determination of water requirement for cotton by Lysimeter method in Kashmar

Mohamad Hossein Rahimian¹, Ali Kakhki², Ali. Hosseini Rad³

Abstract

Cotton as a most important industrial crops, grows in different climatic conditions. To determine the cotton water requirements (ET), having the water shortage and drought duration and the distribution of precipitation during growing season is necessary. This investigation was conducted in Kashmar Research Station, Using a drain Lysimeter system (2 * 2 * 1.5m) with a guard of 40 * 40m. Cotton was planted around the Lysimeter to eliminate the climatic effects such as heat transfer. Before planting, soil samples were collected and chemical and physical properties and soil moisture characteristics such as FC, PWP were determined. Fertilizers were applied according to Soil and Water Research Institute recommendations. Irrigations were done when readily available soil and water was depleted. The amount of applied water calculated according to the below equation so that 10% drain water were collected. Inflow and drain water were measured. Evapotranspiration was calculated based on soil water balance and equation as below :

$$ET_c = I + P \pm \Delta w - D$$

Where : ET_c = Evapotranspiration (mm) , P = precipitation (mm) , I = irrigation depth(mm), D =Drainage water depth(mm) and Δw = soil moisture variations between two irrigations that was assumed (0) zero. Results showed that mean cotton evapotranspiration for four years of experiment was equal to 1183 mm, while this was predicted 1000.4 mm according to Penman Monthies equation.

Key Word: Lysimeter, Water requirement, Evapotranspiration, Penman Monthies

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Investigating productivity growth of irrigated cotton production in Golestan province

Eshraghi farshid¹, Momeni morteza²

Abstract

Increase in productivity is one of the most important factors could improve economic growth. Especially, this has been as a challenge in the Iran's agricultural sector. Because of importance of cotton in Golestan province, in this study it's tried to investigate it's productivity growth during the last years. So, some index numbers including Laspeyres, Paasche, Fisher and Tornqvist were used. The results showed that there has been instability and no specific trend in the productivity. Also, both total and partial productivity growth of cotton have been very low and even had negative growth in some years.

Keywords: productivity growth, index number, cotton, Golestan province

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The effect of microwave assisted extraction on free and total gossypol content and extraction efficiency of cottonseed oil

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Shahram Nowrouzieh², Omran Alishah²

Abstract:

Microwave assisted extraction (MAE) is a new technique with high ability for the extraction of phenolic compounds. The main goal of this study was the influence of MAE on the gossypol content of two varieties of cottonseed (Pak and Sahel). Cooking process before extraction was done by a 30 minute wet heating method (at autoclave, 121°C) following by a 60 minute dry heating method (oven, 100°C). Then, the micella was centrifuged and solvent was removed by rotary evaporator at 50°C. Total amount of seeds oil evaluated by Soxhelt method and it was 35% for pak variety and 39% for Sahel variety. The oil extracted after 2 minute of MAE was 25% for Pak variety and 27% for Sahel variety. The amount of gossypol in Pak was much lower ($P<0.05$) than Sahel and MAE had a significant effect ($P<0.05$) on free and total gossypol since, both free and total gossypol content increased significantly after MAE. By applying a thermal pre-treatment step (cooking) before extraction, the amount of gossypol can be decreased significantly ($P<0.05$) in cottonseed oil.

Key words: Microwave assisted extraction, Cottonseed oil, Gossypol, Extraction efficiency.

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The gossypol content of some Iranian whole cotton seed

M. Rasti¹, A.R.Ranjbari¹, R. Bahadoran² and J.Keramat³

Abstract:

Gossypol is a highly active and polyphenolic compound found primarily in the pigment glands of the cotton plant, and it exists in both the Free (FG) and bound (BG) forms. The gossypol content of whole cotton seed is related to many factors such as; the type of fertilizer, the texture of soil, periods of irrigation and so on. The sum of free and bound gossypol is called total gossypol (TG). Although the gossypol is toxic for livestock but it is a natural defense against insect in cotton plant. In this survey the free and total gossypol of most important trade whole cotton seed and some native whole cotton seed was determined. The seed index for native whole cotton seed was considered 50%. The (FG) and (TG) content were determined by AOCS method. The Objective of this study was determining the FG and TG among of Iranian whole cotton seed (Native and trade cultivar). The result of this study showed that the lowest content of FG (0.29%) and TG (0.3 %) was in Varamin cultivar, although there is no significant difference with this cultivar with other trade cultivar (Sahel and Bakhtegan) ($p < 0.01$). The highest FG and TG was determined in Semnan native cultivar that was 0.502 and 0.504 %, respectively.

Key Words: Whole Cotton Seed, Native, trade, total gossypol, free Gossypol.

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Identification and Analysis of Influential Factors on Employment in the cotton industry

Ali Rabiee¹, Javad Golbinimofrad, Abolfazl Seifi

Abstract

Agricultural sector is the most important sectors in the country which has a large share in total employment. There is Abundance of talent in relation to agricultural products in Iran. Cotton is one of these products. This paper aimed to Identification and Analysis of Influential Factors on the economic prosperity of the cotton industry and consequently on Employment in that industry. The methodology used was descriptive survey. The statistical population consists of all the farmers and cotton growers in the Golestan Province. The sampling method used was Cluster sampling and random, in which 420 people were chosen as the sample. After collecting the questionnaires and doing statistical analysis such as Kolmogorov-Smirnov, Spearman Correlation Coefficient, Simple and Multi-Variable Linear Regression, It was concluded that the variables including Natural hazards, production and transportation costs, prices, import, export, brokers and intermediaries, experience and expertise, future job security, training, promotion, research and development and agricultural cooperatives had an effect on the economic prosperity of the cotton industry. Also, it is verified that the economic prosperity of the cotton industry is effective on employment in this industry.

Key words: Economic Prosperity, Employment, Cotton Industry, Natural Hazards, Agricultural Mechanization

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Land suitability evaluation for the development of cotton in adjacent lands of dams

(Case study: Jolfa Golfaraj plain)

Asghar Farajnia

Abstract

This research used the FAO land suitability models to evaluate the possibility of cotton cultivation in Golfaraj plain of East Azerbaijan province. Climatic data was prepared from metrology station and soil survey was used to prepare the different soil parameters. The results showed that rain fed of cotton in Jolfa is impossible based on Jolfa synoptic meteorological station data. Results identified following categories class for irrigated cotton on class S2. Final suitability evaluations have separately done for each land units based on parametric approach. Results of this approach showed that from 32000 hectares only 1624 hectares in S2 15969 hectares in S3 and 13925 hectares in N2.

Key words: cotton, Land suitability, FAO models



**Study of the Effects of growth promoting bacteria (*Azospirillum spp*)
and triple super phosphate fertilizer on absorption of phosphor for
cotton in greenhouse conditions**

mahnaz.mohammadian¹

Abstract :

This research is done for evaluation the use of *Azospirillum* bacteria, with and without phosphate fertilizer on cotton. In this study after selection and isolation ,5 isolates of *Azospirillum* from cotton root for insoluble mineral phosphate solubilizing ability and inoculation of the bacteria into cotton seed ,Greenhouse experiments was performed in the research institution of cotton in Gorgan.The planters was tested in three replicas on a complete random, block experimental design in factorial form and in two levels of triple super phosphate fertilizer, P0(no fertilizer), P1(75 kg/hectare) and six levels of bacteria content, B1(witness,without inoculation) B2, B3, B4, B5 and B6 were measured.After the 50 days of growth period ,the contents of phosphor were measured in cotton aerial parts for all treatments.The findings suggest that the effects of fertilizer and bacteria are significant at %1 level and the interaction of bacteria and fertilizer on the traits of interest was significant at %5 level .In addition , at both fertilizing levels .All *Azospirillum* isolates have significant difference in comparison with witness treatment and the lowest level of phosphor absorption was about witness treatment .Also the highest level of phosphor absorption in the first level is B3 and in the second is B2. The data were further analyzed using SAS and Excel.

Keywords: *Azospirillum*, insoluble mineral phosphate, Cotton

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The Study Of Fluctuations Of real exchange rate

On Export Of Textile Industry Of Iran

Kazemi Behzad, Khiz Zohre & M.H. Tarazkar

Abstract:

Fluctuations of exchange rate have always imposed irreversible losses to exporters. The cotton industry was not exempted, and in recent decades, the textile exports have been large fluctuations. Based on this, in this study the impact of fluctuations of real exchange rate on export of cotton and silk subdivision in (1995- 2011) was investigated. Also the amount of impossibility of exporting these parts from Fluctuations of real exchange rate in the short-run and long-run was estimated. Therefore, first the index of Fluctuations of exchange rate was calculated by using Generalized Auto Regressive Conditional Heteroscedasticity (GARCH) model. Then the effect of Fluctuations of exchange rate on export values of selected industry was studied by using co-integration Johansen & Juselius Method and Vector Error Correction Model (VECM). The results of estimation showed the negative impact of Fluctuations of exchange rate on export of cotton and silk industries in short and long runs. However, the real exchange rate will lead to increased export of textile products. Coefficients of variables were smaller in the short run indicating the influence of variables in the long run is more.

Keywords: Exchange rate, Export, Textile, GARCH, VECM.



Neural network-assisted irrigation management in cotton

M. Khanmohammadi¹ and S. Radpoor

Abstract

Using sprinkler systems is one way of reducing water consumption. If properly designed, these systems can be implemented to reduce water losses and increase water distribution uniformity. This study was conducted to estimate the wind speed, wind direction to reduce losses in cotton wind drift. These were studied in ten-year weather data since 1379-1389 of Mashhad city, including minimum and maximum temperature, relative humidity, minimum and maximum relative humidity, wind speed, wind direction, sunny hours, temperature in 5 hours 6.5, 12.5 and 18.5. This was in the network (perceptron) layer with 3 hidden layer and 9 neurons and learning rules (momentum) as the optimal structure with the minimum error. Three criteria were used to estimate the wind speed (MSE) mean square error 0.0017, (NMSE) standard error of the mean square of the normalized 0.145 and the coefficient of determination (R²) 0.9999. The findings suggest it was Multi-layer perceptron artificial neural network model to estimate the learning rule (momentum) the complex environmental conditions with good accuracy. Option of using the artificial neural networks can be the best time to do the sprinkler irrigation systems in cotton.

Keywords: Wind drift, perceptron, wind speed, artificial neural network

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The impact of exchange rate uncertainty on Iran's cotton export

M. Vakilpoor, H. Navidi, E. Darbandi & S.Hasanlo

Abstract:

To earn income and to get rid of single-product export of crude oil, pay attention to the agricultural export including cotton, has a specific importance in Iran. Among the affecting factors of foreign trade, exchange rate and its volatility have key roles. Hence, the objective of this study was investigation the impact of exchange rate uncertainty on Iran's cotton export over the period of 1961-2009. The results of the estimating the cotton export function showed that in general the exchange rate fluctuation had a negative and significant effect on cotton export. In this regard, stabilizing the foreign exchange market or covering the exchange rate risk for cotton exporters, is essential.

Keywords: cotton, export, uncertainty, exchange rate

JEL classification: F10, F31, Q17



Investigating economic sustainability of irrigated cotton production in Golestan province

Eshraghi farshid¹, Keramatzadeh Ali²,
Shirani Farhad³, Mohsenzade. A⁴

Abstract

Economic sustainability of production is one of the most important factors could improve economic growth. Especially, this has been as a challenge in the Iran's agricultural sector. Because of importance of cotton in Golestan province, in this study it's tried to investigate the sustainability during the last years and comparing with the other provinces. So, some descriptive statistic indexes including range, standard deviation and coefficient of variation for cost, revenue and profit per hectare were used. The results showed that despite of better economic sustainability in Golestan comparing with the other provinces, but the current conditions were not ideal.

Keywords: economic sustainability, sustainable development, cotton, Golestan province

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Study on yield and quantitative traits of new cotton cultivars using correlation cluster analysis

F. Basiri anzab¹, A. Faramarzi², S. Y. Seyed masomi³

Abstract

In order to evaluate the performance and some properties of new cultivars of cotton in the region, Taha, a test on 10 cultivars of cotton in the form of a randomized complete block with four replications 2011 cropping year in the field of Research Center of Agriculture and Natural Resources of Ardabil (Moghan). Quantitative traits in this experiment as a percentage of earliness, boll number, boll weight, 20, plant height and yield performance of both China analyzed were analyzed. Pearson correlation coefficients for the studied traits showed that the three traits, early performance of China and the number of bolls significant correlation at 1% level of total performance and other traits showed significant correlation with performance.

Key words: new varieties of cotton, cluster analysis, performance, correlation.

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Investigation on utilization of Golestan province Stem and pod cotton in wood plastic composites production

M.Yahyavi¹, T.Salari²

Abstract

Waste materials from agricultural crops for many years ago Has been raised as a cheap raw material in wood and paper industry. In recent decades Due to limitation of raw materials and much Reduction of forest resources , Use of agricultural waste to be inevitable. Therefore, Be an adequate replacement for wood and paper and cellulose industries will find.. wood-plastic composites (WPC) as new products in recent years due to high flexibility in the construction and use of waste lignocellulosic and recycling plastic, Considered by many inside and outside industry the country's is located. Golestan Province with cotton Cultivation Area)9.06(% and rate production)7.5(% to Fourth place in the country has allocated. Therefore, considering the high volume of cotton produced in Golestan province, wastes from these products can be good support for the production of wood-plastic composites in the province.

Keywords: Agricultural waste, Cotton Stem, pod cotton, wood plastic composites, Golestan province

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Quality evaluation of land suitability for cotton in Ardestan region

(Esfahan province)

N.Yaghmaeian Mahabadi¹, J.Givi²

Abstract:

Extension of cultivation areas becomes gradually impossible due to ever-increasing urban area development in Iran. Therefore, it is very important to use the existing cultivated lands more efficiently.

Qualitative evaluation of land suitability has been carried out for cotton **in Ardestan region** due to the importance of cotton in agriculture, animal husbandry and industry. For **qualitative** evaluation of land suitability soil and climatic data were used, then climatic and soil suitability classes were determined according to the degree of the matching with plant requirements, by parametric (square root) method. The results indicated that the major constraints in the study area were pH and soil texture. More than half of the study area was not suitable (N1,N2) for cotton production. Emphasis should be placed on soil management techniques that conserve organic matter to reduce the effects of soil texture and increase cotton production.

Keywords: Qualitative evaluation, land suitability, Cotton, Land characteristics, Ardestan

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Interspecific response of genus *Gossypium* to seed delinting processes

M.R.Ramazani Moghaddam¹, E. Seddighi² and H.Najjar³

Abstract

This Experiment was conducted in 2011 at seed laboratory to study of effect seed type as linter amount and genotypic response at species level to Acid delinting processes. Factor of seed type in two levels, delinted seed and normal seed and species as second factor in four levels - cultivated species of genus *Gossypium* - as a factorial experiment based on RCBD was compared. 100 seed weight, germination amount, germination speed, radicle length, pedicle length, fresh and dry weight of radicle and pedicle and Was measured and analysed. Results of this study showed that the seeds from *G.hirsutum* species was better than other tetraploid species (*G.barbadense*) in most traits for acid delinting. Significant effects for interaction of species×seed type confirm that.

Keywords: Cotton, seed type, genus *Gossypium*

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Investigation of ploidy levels effect on characteristics and seed delinting processes of cotton using sulphoric acid

M.R.Ramazani Moghaddam¹ and H.Najjar²

Abstract

This Experiment was conducted in 2011 to study of effect seed type as ploidy level to delinting processes by sulphoric acid. Linter and delinted seed from two ploidy levels of four cultivated of genus *Gossypium* evaluated in a factorial experiment based on CRD with 4 replication. 100 seed weight, germination amount, germination speed, radicle length, pedicle length, fresh and dry weight of radicle and pedicle and Was measured. Results of this research showed that all of traits of two allotetraploid species *G.hirsutum* and *G.barbadense* were better than diploid level (*G.herbaceum* and *G.arboreum*). Between two allotetraploid species (), however the seeds from *G.barbadense* heavy and larger than other species but *G.hirsutum* traits were better. Finally seeds from allotetraploid species in delinting processes by sulphoric acid were tolerant and their embryos did not damaged, because they are large and their seed cortex are thick.

Keywords: Cotton, ploidy levels , sulphoric acid

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Study of variety and region effects on cotton seed delinting processes by sulphoric acid

H.Najjar¹ and M.R.Ramazani Moghaddam²

Abstract

This Experiment was conducted in 2011 at seed laboratory of Kashmar station to study of effects of varieties and regions to Acid delinting processes. Seeds from four Allotetraploid varieties – Khoradad, Golestan, Sahel and Sepid propagated in two locations – Golestan province as humid zone and Khorasan-e-Razavi Province as dry zone delinted by sulphoric acid and experiment layouted in a 2×4×2 experiment based on CRD in 4 replications. 100 seed weight, germination amount, germination speed, radicle length, pedicle length, fresh and dry weight of radicle and pedicle and Was measured and analysed. Results of this study showed that the seeds from dry region was better than humid region for both linter and delinted seed. Among the varieties Khordad and Golestan Varieties were btter than two other varieties in case of delinted seed, and for linter seed Sahel variety was better than others and after that Khoradad variety established.

Keywords: cotton , variety and region

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Estimating the Economic Value of Water in cotton Production

(Case study: Golestan and Semnan provinces)

A. askari^{1*}, M.sabuhi²

Abstract

Water limitations always have been one of the main obstacles to social and economic development of the country Iran, without attention to it, will more appear the problem of water in the future. Therefore, in order to optimal management of water resources, at the first, the water input should be evaluated based on the actual price and the valuation. Actually, estimating the economic value of water, is included two important results include; "water consumption decrease" and "investment increase ". The aim of this study was estimating the economic value of water in cotton production in the Golestan and Semnan provinces using a generalized quadratic functional form and statistical information during 2010. The results showed that the real value of water in cotton cultivation in Golestan Province (with production of 8 percent, fourth rank in Iran) is 2685 Rial per cubic meter and in Semnan Province (with production of 6 percent, fifth rank in Iran) is 3357 Rial per cubic meter. The real value of water in Semnan province was estimated more than water value in Golestan province, because Semnan province was located in dry area. In other words, there were more serious water restrictions in Semnan province. AlphaThe real value of water in these two provinces, set from it office value by the government was much more, Therefore it is necessary that government to achieve real value and create efficiency in cotton production, water prices could be determined based on to the real value.

Key words: Water, Economic Value, functional form, cotton

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Forecasting the quantity of Iranian cotton exports: Comparison of Artificial Neural Network (ANN) and ARIMA Models

A. askari^{1*}, M.sabuhi² and A. parhizkari¹

Abstract

The importance of independence from oil revenues due to fluctuations in oil prices and global demand that has caused many scholars and researchers of economy who can be directed to analyze the current state towards exports. For more efficient planning for cotton product export, proper forecasting is necessary. To achieve this goal, two methods were used and compared. First, an artificial neural networks (Multi-Layer Perceptron) and second, autoregressive integrated moving average (ARIMA). For this purpose, the data were received from customhouse from 1971-2010. The data from 1971- 2006 were used for comparison of methods and the last 4 years data, were used for examination of forecasting power. In order to comparison accuracy of the methods forecasting, mean absolute deviation, root mean square error and determination coefficient were used. The results indicated that artificial neural networks (Multi-Layer Perceptron) radial basis was more efficient than autoregressive integrated moving average (ARIMA) model which was able to the quantity of cotton product export during 2011-2014 and evaluation criteria Error was lower.

Key words: cotton Export, ARIMA Model, MLP Model, Iran

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Bioconversion of cotton waste fibers to ethanol

Safartalab.K, Dadashian.F Vahabzadeh

Abstract:

The aim of this work was the bioconversion of cotton waste fibers to ethanol via enzymatic hydrolysis and fermentation. First, the effect of alkali pretreatment on the enzymatic hydrolysis and also the cellulosic structure of cotton fibers investigated. Then, reducing sugars from enzymatic hydrolysis of cotton fibers during different times of hydrolysis have been measured and changes of hydrolysis rate during different times of hydrolysis have been studied. The results showed that the bioconversion of cotton waste fibers to ethanol is possible. But, cotton fibers need to be a pretreatment before enzymatic hydrolysis to increase hydrolysis and so fermentation yield. The final ethanol yield calculated as 54% of theoretical yield.

Keyword: recycling, cotton, enzyme, ethanol.



Survey the Relationship Marketing and production Indices of Cotton industry in Golestan province

Rassul Amisama, Ahmad Deiyaji, Ali Shahnavaizi, Jafar Sfahani¹

Abstract

Cotton is one of the high potentials production in Iran in view of agricultural activities. A effective internal and external marketing system has a vital role in economic growth, sustainability of producer firms, and contributing to macro-economic indices such as national products, national employment and foreign exchange earnings which could prevent the economy from external damages. This research was as cross-sectional type, on-field and applied one, in order to indices investigation of marketing, exporting and production of cotton in Golestan province of Iran. Stratified and weighted mutli-staged clustered and random sampling method was applied. Size of sample was identified by applying Cochran formula, where numbers of 126 farmers firms were selected. To achieve the objectives of this research, the information collection instruments were, personal interviews, observations and four types of questionnaires- for the characteristics of producers, production, marketing agents, marketing skills of producers, assessment the marketing knowledge of producers, were completed by personal face to face interviewing. Using one-way analyses of variance, calculating Pierson and Spearman regression coefficient, and Crooks- Wallis test the research hypotheses and questions were tested and analyzed by utilizing SPSS 17 software. The results showed, positive significant relation among producers income levels and their marketing skill levels. Inverse significant relation among their marketing margin levels and their marketing skills, while the relation between their income levels and marketing margin were not significant at 95% confidence level. It is recommended to determination of cotton cultivation optimum pattern in Golestan, interference and monitoring of agricultural Jihad Ministry in order to adjustment of market sustainability and government guarantee buying.

Key words: Cotton, Marketing , Marketing Margins, Marketing Skills, Production.

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Study on quantitative and qualitative traits of cluster and semi-cluster cotton genotypes suitable for mechanical harvesting

Omran Alishah¹ and Mahmoud Mali¹

Abstract

Twenty three new cluster and semi-cluster type cotton genotypes and two commercial cultivars (Sahel, oultan) were investigated in randomized completed block design with four replications at Hashem Abad and Karkandeh cotton research station in 2007-2008. Analysis of variance showed significant variation among genotypes for most characters. The Yield of cluster type genotypes was lower than Golestan and Armaghan new cotton cultivars, but near to Sahel variety. Cluster type was early genotype with more square droughty and shorter plant height. On the base of combined analysis, 43259, 43347, Taskhi-9, J-74-14, Hyoz13-ASR, N19, 85-ASR and Namavgir varieties recognized as superior genotypes with higher yield and suitable for machinery harvesting.

Key word: cotton, machinery harvesting, cluster genotypes, yield

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Study on useful heterosis in superior cotton hybrids and comparison of their F₂ generation

Omran Alishah¹ and Mahmmad Nemati²

Abstract

In order to study the quantitative and qualitative traits and genetic analysis, six superior varieties of cotton were crossed in a half-diallel design in 2006. Parents were: No.200, Siokra-324, Tabladila, Mehr, Sindos and Belilzovar. Fifteen F₁ hybrids with 6 parents (21 genotypes) evaluated in a randomized complet block design (RCBD) with three replication at HashemAbad and Gonbad research station in 2007. Also, 15 F₁, 15 F₂ and their parents were studied at RCBD scheme at Hashemabad station in 2008. Analysis of variances and mean comparison showed significant differences between genotypes for most traits. Means comparison test showed Sindose × Mehr was superior for yield. Genetic analysis were done according to griffing (1956) and Hayman 's (1954) methods. General combining ability (gca) and specific combining ability (sca) were significant for most of traits (except for lint elongation and sympodial length, lint homogeneity and micronair index). Among parents Belilzovar and Sindos had the highest GCA for earlinnes, No.200 for yield and Tabladila for lint percentage. Earliness and lint percentage had the highest (%8.5) and lowest(%4.1) hetrosis respectively. %2.5 lint length and eloungation had negative hetrosis. Maximum useful heterosis and heterobeltiosis for yield was stimated 7.2 and 17.3 %, respectively. N200 × Tabladila , N200 × Siokra and Tabladila× Mehr were assessed as superior hybrids for locations same as HashemAbad regions, and also N200 × Tabladila and Tabladila× Mehr for Gonbad regions. All hybrids had closer type than Siokra and Tabladila, which are useful for new cropping systems.

Keyword: Cotton, hybrid, heterosis and yield.

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New Cotton Cultivar (CRI-867-200) Introduction in Iran Omran Alishah

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Abstract

The new cotton variety CRI-867-200 cotton variety, which originated from foreign germplasm by mass-pedigree breeding method. This cotton variety was candidate as a high yielding and earliness genotype in 2005. Breeding programs were undertaking 2006 until 2011 at four country cotton research stations. Some agronomic and qualitative characters improved during selection program. Adaptability and yield stability experiments at more than 10 locations indicated the general and specific adaptability for CRI-867-200 variety as compared to other. Moreover, this variety has showed more significant yield and earliness than commercial varieties at most locations as well as compact canopy, more boll and standard qualitative characteristics. The results showed that the CRI-867-200 is an earliness genotype with high yield potential, desired adaptability and abiotic stress tolerance. This cultivar will be suitable for common agronomic and double cropping systems at Moghan (Ardebil), Central regions of Iran (Qom, Saveh, Isfahan, Kashan), Darab (Fars) and some area in Golestan and Khorasan provinces.

Keywords: Cotton, Cultivar, North regions, Earliness



Genetic improvement of quantitative and qualitative traits of superior cotton cultivars with back crossing method

Omran Alishah¹

Abstract

In order to genetical improvement of some quantitative and qualitative traits in superior cotton cultivars by backcrossing method, five recurrent parents (like Siokra-324, Sahel, Oultan, 818-312 and B557 were crossed with some donor parents (No:200, Mehr, Asj2* Sealand, Tabladila and Nazily) at Hashemabad Cotton Research station in 2004. F1 hybrids were backcrossed with recurrent parents by three years. Single plant selection from population carried out as pedigree method. Four cycles of selections in back cross populations have resulted in value added genotypes with good agronomic traits. Siokra, 818-312, Sahel and Asj2×Sealand parents showed more crossability and hybrid seed production. Finally, the five superior new genetic combination find out on the base of high yield, earliness and lint characteristics. All new genetic materials are introduced for complementary breeding research programmes in future.

Keyword: Cotton, backcross, yield, earliness

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Reasons, reducing the area under cotton cultivation in Iran and necessary solutions for reducing the problems

Kamal Ghasemi Bezdi¹

Abstract

Cotton is a strategic crop because its importance it is called white gold, also in Iran, Golestan province has been introduced as a white gold land. However, the cotton cultivation position in Iran and especially in the Golestan province over the past decade has greatly reduced, as during last years, the cotton acreage in the whole country came down to less than a hundred thousand acres, and about ten thousand acres in the Golestan province. Several issues as factors reducing the cotton acreage of the most notable are the high costs of production in various stages of planting, cultural practice and harvesting, low levels of farm income, long term of cultivation period for cotton, the existence of competing crops such as wheat and oilseeds, inadequate support of the Iranian government for this crop, losses of pests, diseases and weeds and high costs of pesticides spraying, heavy subsidies of countries like America for cotton, low cotton prices in world markets, procedure changes of large landowners in cotton-rich provinces of Golestan, Khorasan, Isfahan, Fars and Ardebil, fragmentation and integration of large lands suitable for mechanized cotton cultivation, and uncertainty status of land ownership.

Key words: Cotton, Competing crops, Production, Cost, Biotechnology.

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Comparing comparative advantage in export of Iranian cotton among countries around Caspian sea

Omid karamy

Abstract

Considering comparative advantage of Iran in exporting of a product, we can understand that there is comparative advantage in producing and also exist good procedures in exporting that good. This good procedures are included a good transportation system, a good customers procedures, particular existing exports prizes, a good marketing system and a good politic relationship among trade partners. In this research, cotton export statistics of Iran and countries around Caspian sea have used and revealed comparative advantage index (RCA) was calculated. Climates of provinces that produces cotton in Iran was similar to countries around Caspian sea. So, differences between comparative advantage indices was due to marketing system, transportation system, politics relationships and other trade policies. The results showed that in some years we could not choose good trade policies respect to product policies. Finally, sustainability in trade policies, giving exports prizes and subsidy for marketing are recommended.

JEL classification:

Key words: cotton, export, revealed comparative advantage index



Plan of cultivation place change from middle of it's hill into change by change in row- plantings of cotton single – row in increase of quantitative and qualitative cotton products in Garmsar.

RamazaniTarameshlo¹
mehrnooshRafeie²

Abstract

Cotton is one of the most important plant in extensive vegen of our country which has numerous usages and many of industries depends on it's production and cultivation.

Nevertheless , by reason of abundant employment – generating economy of many families in these regions also owe that many of our county soils which climatically opted to cultivation are suffered for special salinity . and this issue with sat concentration in surface (center) of hill prevented desivable green and development and because operation is dependant of concentration and part of operation , concentration has so many role in the pleasunt operation . regarding cotton cultivation is performing echanized and semi- mechanized and it's traditional cultivation is move expensive and in top level like Garmsar region and the same negion of manual and tradition planting have no economic explanation , cultivation operation and party havest are doing by maching . but in common row – planting , cultivation is done in center of hill. In regions with salt sols by reason of above mentioned cultivcation failures for this sake in this plan by change of farming place via row- planters sing or two row into double or two row(faring location replacement from hill center to edges this subject has solved.

Of bushed and number of bolsosless , with accumulation that this type of cultivation gives accumucation of decreasing the boll number will be compensated.

Key words; cotton- row planter – concentration- mechanized

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Evaluation the effect of various date of cotton transplanting and seed planting on quantitative and quality characters of varamin cultivar

Mohammadi.M, Ramezanimoghadam.m,Barzegar A.B,Mehrabadi.H

Abstract

High potential and high quality fibers of Varamin, has led to the widespread use of this figure in different climatic conditions of khorasan province and some other provinces of the country. Now the date of common culture of this figure is such a way that the maximum possible utilization of environmental resources such as light and heat is not possible and because of virtually every small plant and cotton low growth features in the early growth, optimum use of temperature and light is not possible. Because of this, the use of transplanting cotton provides optimum productivity growth than the maximum possible growth factors and high production. While reducing water use, there will be ability to cereal crops after irrigation with minimal adverse impact on cotton yield. Scheme used in this study is the split plots Test that will be repeated in randomized complete block design in four steps. The different dates of planting (in which the transplanting and planting seeds in the field will be transferred from time to time) will be as the main plots and two planting transplanting of 30 days and direct planting of seeds as the sub plots. Different planting dates will include persian date Farvardin 30 Persian month Ordibehesht 20 (on conventional cotton planting date) in the Persian month Ordibehesht 15, khordad 15. At the end of the experiment the effects of transplanting of different times on the percentage and direct seeding cultivation of green product, Components of pests, diseases, precocity function and quality of fibers will be statistically analyzed.

Keywords: Cotton , Transplantation , Transplanting transmission time , Fiber quality properties



The effect of humic acid on reducing the negative effects of salinity on germination and seedling growth of cotton (Varamin variety)

F.Shariati nia,A.R.Karimi,N.Soltani nejad

Abstract

Varamin v araiaty is the only cotton seed varieties in Kerman province. In order to evaluate the reaction of seeds of this variety to organic acids under conditions of salinity, an experiment was conducted at Research Center of seed and plant certification and registration section of kerman in 2012 with 16 treatments and 5 replications as factorials completely randomize design. Treatments was consisted of three levels Humic acid concentrations (30,60 and 90 mg/l) and three levels of electrical conductivity (9,12 and 15) dS/m with distilled water (control). Humic acid treatments affected parameters of germination significantly ($0.01 \geq P$) so that compared to the control increased root length 29%, shoot length 19%, seedling vigor 21%, coefficient of germination rate 16% , shoot and root dry weight 27% and 12.5%, respectively . The best concentration for improving these traits was 60 mg/l Humic acid concentration. The effect of salinity on the measured traits was highly significant ($0.01 \geq P$), so that decreased root and shoot length 51 and 57%, germination rate of 19%, seedling vigor 27%, coefficient of germination rate 28% and root dry weight 33%, shoot dry weight 23% And electrical conductivity 15 dS/m had the maximum negative effect. The interaction between salt and Humic acid was significant ($0.05 \geq P$). Humic acid reduced the negative effects of salt on root length (22%), seedling vigor (17%), fresh weight (58%), dry shoot (25%) and mean duration of germination (14%) than without humic acid .

Key word: humic acid, cotton, germination, salinity.



Evaluation effects of salicylic acid and ascorbic acid on germination and seedling growth of cotton (varamin variety).

F.Shariatinia,A.R.karimi,F.Amiri,N.Soltani

Abstract

The most important fibrous plant in Kerman province is cotton which its seed multiplication is of great importance. In order to study the effect of salicylic acid and ascorbic acid on germination and seedling growth index of cotton an experiment was conducted in seed and plant certification and registration laboratory of Kerman Agricultural research center. This experiment consists of 35 treatments with 4 replications in a randomized complete factorial design. Treatments were seven concentrations of salicylic acid (0,0.05,0.1,0.5,1,1.5,2) mMol/L and five concentration of ascorbic acid (0,0.1,0.7,1.4,2.1) mMol/L .Results of variance analysis showed salicylic acid has a very significant effect on root length, shoot length, shoot and root dry weight, seedling vigor ($p \leq 0.01$). Ascorbic treatment had significant effect on some traits of weight, shoot and root and fresh weight shoot ($P \leq 0.05$).The best concentration of salicylic acid for improved measured traits was 0.05. Different concentrations of ascorbic acid had only affected fresh and dried root and stem weights, which the most effective concentration was 2m/l. Interaction effects of salicylic acid and ascorbic acid was highly significant on shoot length, root length, fresh weight shoot and root, seedling vigor ($P \leq 0.05$).

Key word: cotton, salicylic acid, ascorbic acid, germination



Survey of farmers trend to cotton insurance

Mazloome Razzaghi¹, Mohamad reza Zarei Mehrjuie², Mehdi Khodadadi³
,Fateme Fathi⁴

Abstract

Considering climate variability, existence of natural risks and the multitude of small operators, the necessity of the agricultural insurance system will be necessary. The objectives of development and expansion of agricultural insurance production is included production acreage enhancing, risk reduction from natural hazards, ensuring a minimum income of farmers and etcetera. The process of agricultural insurance is a Rational thinking of rural society and takes a certain behavior to be placed in the basket of farm households. In this study, satisfaction of cotton insurance have been studied on organizational factors and effective structural agricultural insurance in the city of Gorgan. In this research, parametric methods of neural networks and the probit model were used. The results showed that education, age of farmers, income level, technical knowledge - sufficient crops, the consent of the insurance, the amount of compensation, prestige, and the bank's apparent, awareness of insurance and the insurance affecting, were the most important factors that had traced on using of agricultural insurance. Finally, with regard to the findings, recommendations were provided for the establishment of its acceptance by farmers.

Keywords: insurance, Gorgan, cotton, satisfaction

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Analysis of comparative advantage of cotton production in Golestan province, using indicators of policy analysis matrix (PAM) : a case study city of Gorgan

Maryam Hasanvand¹ , Ramtin Joola², Javad Tahmasebi³

Abstract

Considering cotton is used for textile industries, defense, money, pharmaceutical, cellulosic, health, etc it is important products and strategies for governments . Present study was conducted in 2011 in order to analyzing the cotton production comparative advantages of Gorgan in Golestan province by using data collected through designed and completed questionnaires by experts of Agriculture Agricultural Bank and the Central Bank in 2010-2011 years through policy analysis indicators. The results indicated that irrigated cotton production had not comparative advantage but rain fed cotton had comparative advantage. Measures of effective supportive coefficient indicated government support in income and inputs of irrigated cotton production while production in rain fed was Lack of government support in income and inputs. In addition, although the social price of Irrigated cotton had more income than rain fed cotton but because of higher cost of irrigated cotton, social profitability was less than rain fed cotton. However, results showed a Irrigated cotton cultivation in Gorgan had not comparative advantage while rain fed cotton cultivation had. Increasing the use of improved seed cotton is caused development of cotton production. Strategies like pay subsidizing for inputs such as fertilizers and pesticides and improved seed for cotton cultivation, banking facilities in order to development of cotton cultivation, traditional improvement methods and use of new technologies, could be recommended as enhancing of cotton yield and production cotton raised in Gorgan.

Keywords: Comparative advantage, Domestic Resource Cost, Cotton Products, Golestan

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survey the factors affected of cotton trade for the period of 1987-2009: case study Iran

HosseinMehrabiboshrAbadi¹, MojtabaNikzad², Ali DehghanHarati³

Abstract

One of the most important issues of domestic cotton production in Iran is application of this product in the textile industry. Iran high advantage in production of this crop, but in recent years, has low share in the world production and this issue led to have large imports of this product. For this reason, survey of trade statue and factors affecting of this product are very important. This study, evaluated the effect of factors such as global prices, domestic producer prices, real exchange rate and the share of global production in the period 1987-2009 in Iran . For this purpose,time series econometric model was used. The results indicate in the short period among variables, domestic price had a positive effect on trade volume and others had a negative effect while in the long-term indices of global price and price domestic production had a positive effect on trade volume. Iran's share of production and exchange rates had a negative effect on trade volume. Negative effects of real exchange rate and share of production, Indicated that the import share of Iran trade was more than the share of exports of this crop. It is recommended to provide background for most production of this crop.One of the most important condition for production increasing was government support policies from Iranian cotton growers which is led to self-sufficiency and reduction of product costs for raw materials of the textile industry. So, employment and exports in the agricultural sector and textile industry will be increased.

Key Word: Cotton, Trade Volume, World prices , agricultural raw materials

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Surveying of factors Affecting on cotton exports development by using Endogenous Growth Models

Elie Azadegan, Farshid Alipour¹, Mahmoud Sabuhi², Parisa Mohagheghi³

Abstract:

Iran's economic dependence on oil and petroleum products is one of the fundamental problems that always in the non-oil export development to get rid of it, have been considered different policies and strategies which development of exports is one of these cases. The cotton is one of the important agricultural products and the main items of Iran non-oil exports in the last two decades, Despite the emphasis to self-sufficiency policy of agricultural products and non-oil exports, has lost its former status. Cotton due to the different applications in today's world, has economic and commercial importance. This strategic product, due to its economic importance, have called white gold. In this study the factors affecting cotton exports of Iran during the 1962-2009 periods was reviewed and analyzed using Auto regressive distributed lag model (ARDL) and error correction model (ECM). The results of estimated dynamic model approved long-run equilibrium relationship among exchange rate, export price and production level with the exports of cotton. Among variables, export price variable had negative significant relationship with the endogenous variable which has been the most reversed impact on exports of this product. So price policies for cotton export development can be used.

Keywords: cotton, error correction model, Auto regressive distributed lag model, iran.

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Investigating The Impact of Subsidy Eliminations of Energy Carriers on Cotton Production Price and Finished Price(a case Golestan Province)

Simin dokht ghasemian¹

Abstract

The use of important cotton plan in food consumptions, medicine and industrial is unique. Due to earning exchange and property of substantial income, employment and enjoy a comparative advantage cotton is considered as a strategic and important plants in the national economy. Since the trade and pricing policies in the past two decades of this product than other products on the area of production, acreage and exports has been more influential. The objective of this study was determination the price of agricultural inputs, costs and prices of finished cotton products, the effect of elimination policy of energy carriers. Required cross-sectional data from the Bank's cost of production of agricultural products and completed questionnaires were collected by connoisseurs and experts. Then, using teqnique of adjusted industrial accounting, the cost of agricultural inputs, production costs and prices of finished cotton products were calculated in the form of three scenarios "before the plan" (165 rials for gas oil and 20 rials for electric power), "during the plan" (1500 and 3500 rial gas oil and 140 rial power), and "complete elimination" (7900 rials for gas oil and 550 rials for power) . The results showed that the increasing price of gasoline under the specified scenarios, the cost of cotton production during the implementation of policies (1 and 2) and after policy implementation increased by 2, 4 and 7 percent, respectively. By increasing in electricity prices, the cost of cotton production during policy implementation was 42% and after implementation of policies increased by almost 3 times. According to research findings, it is recommended the removal of subsidies, especially in water price should be done gradually.

Keywords: energy carriers, Cotton, Techniques of Adjusted Industrial Accounting, Golestan

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Assesment fiber quality of cotton cultivars in pure and mixed cultivation

Mazangi.M, Dadashi.M.R,Mali.M¹

Abstract:

experiment was done in Research station in Karkandeh, Golestan state, during 2009-2010 crop year performed in complete randomized block design with four replications. Cultivars included, Golestan, Sahel, Sepidar and Armaghan. Effect of intercropping didn't show significant difference on fiber percent in quantitative yield. Treatments experimental didn't show significant difference on fiber length and armaghan cultivar with 83/9 percentage average, fiber uniformity was produced. monoculture and intercropping of cotton cultivar were affected microneria trait in 1% statistical level. In this study, the monoculture of Sahel cultivar with 3.8 microneria average, was produced thinner fibers.

Keywords: cotton, fiber quality, pure and mixed cultivation

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Solutions out of the country's cotton production

M. Ghavami¹, Hassan Habibi²

Abstract

Cotton, which once called white gold, is one of the most important agricultural products of the world and Iran that could be a chain of employment from farm to market and even export Cotton production in a period of time after the oil have the highest GDP and its importance in providing raw materials and clothing imports of oilseeds is due to the 85 major oilseeds. It is regrettable, but what is happening today in cotton, despite potential, not only are not considered in producing, but even in the field of production for domestic consumption as well as we regress. Towards solutions that can handle the current situation of cotton in Iran to settle in a timber consisting of four supply inputs - Monitor - Sales (Market), in the form of a working group to set the country's cotton production, cotton-rich provinces in Agriculture, Department under the Ministry of Agriculture and Cotton in all this planning, all based on the use of private sector, be used as leverage to force the public sector as a powerful watchdog, the sales department, this project will be designed based on government support of the purchase and import management to create stability in production. This working group should be weekly, monthly meetings with provincial ministries, along with other committees of provinces and present solutions to problems, had the necessary planning for production management.

Key words: cotton, supply of inputs, monitoring, marketing, workgroup

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Estimation and Adjustment Comparison of Research Budget Indices for Agricultural Products (Case Study of Cotton and Sugar beet in Iran)

Darijani.A¹ Mehregan nasab.F&Mirkarimi,S²

Abstract

Cotton and sugar beet have a special position in households' food basket. Since earlier years, the government spent on human resources and capital, in supporting of these products, specialized research centers have these two product commissioning and annual costs of these products to spend too many basic and applied researches. Considering these two products as inherent, form and value are different, the annual budget indices such as budget per US dollar product, budget for every stakeholder, and budget per hectare has been used. The first, total research budget allocated to each product over time and separately analyzed. Based on the results, while in the study, the total value of research budget were increasingly during the time, but a review of various indices, not only does not show an increasing trend, but in some cases and considering time value of money, the downturn has also been. The surveys show the average growth of cotton research budget is more than sugar beet. Although, it requires a review of pathology and the price is with perspective and outlook. Finally, according to research findings, recommendations to decision makers, researchers and policymakers in the research field to improve the situation, increase productivity and budget performance was presented.

Keywords: Research, Cotton, Sugar beet, Budget Research, Agriculture, Iran

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Assessment and Analysis the Trend of Cotton Acreage in Golestan Province, Iran

Fardis Mehregan nasab¹

Ali Darijani²

Abstract

Cotton is one of the strategic agricultural products and raw material in processing industries, especially textile, nutrition (drawing oil) and livestock. Meanwhile, it plays an important role in earning exchange and employment in agriculture, industry and commerce sectors. During before the revolution, this product, after oil, has been allocated the most of foreign revenue and can be assigned to non-oil goods, likewise considered as important goods with export advantage. This study was conducted using time series data and information in recent decades from the Cotton Research Institute of Iran, Iranian Ministry of Jihad-e-Agriculture, with the aim of cotton acreage exploratory in Golestan province (region of white gold) in 2011. The results revealed that, unfortunately, despite the government's investment in cotton research and implementation of agricultural support policies as axis economic development, especially the political and undulation oil revenues, mostly focused on wheat (as competing of cotton) has been grown in planting pattern. Moreover, cotton acreage fluctuations, the trend to reduction that may remain absent from the strategic product compared with competing products, high production costs, loss of competitive advantage, relative low price guarantee, and planting in salty lands. Finally, according to findings, some recommendations were presented to planners and policymakers in the industry to improve this situation.

Keywords: Cotton, Acreage, Supply, Agriculture, Golestan

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Effective Factors in the Export of cotton

Ghasem layani¹, saeed mehrjou², mohammad bakhshoodeh³

Abstract

Political and economical support of developing countries like Iran is strongly rely on income obtained by exporting raw materials. Earning income and producing exchange by exporting of some agricultural products can result country independent to oil incomes. In the past, cotton has been one of the produced and export grade items and in some years has been main producing exchange good of country. Among agricultural products, cotton in addition to providing raw materials of textile and oil pressing industries has an important role in agricultural, industrial and commercial domains. According to capability of creating added value and variety of yield, few agriculture products can be equal with cotton. With this aim by using regression analysis called ARDL the role of effective factors on exporting cotton during 1980-2009 in long and short term has studied. The results showed that in long and short term, rate of price than internal price had a positive and meaningful effect on offering of export cotton and also internal production of cotton. Also, internal cotton production had positive and significant effects on short term exports.

Keyword: Export supply , cotton , ARDL , Iran.

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Investigation the statue of cotton production and causes of Iran share reduction in cotton world production Using the estimated supply of cotton production

Maryam Hasanvand¹, ali keramatzadeh², vahid hasanvand³

Abstract

The cotton is one of the important industrial plants and a large part provides from oil and fiber required. This study was conducted in order to investigation cotton production situation and causes of share of Iran share declining in global cotton production by using data collected from cotton farmers, the experts of Agriculture jahad, Ministry of Jihad Agricultural in the period of 2001-2011 using of method systematic of ordinary least squares estimator (OLS) under the Eviews software, to estimate of the supply equation cotton production in the from a single equation regression models. The results of the estimating the supply function with of their lack of serial correlation among disturbance terms in equation at the 5% statistical level showed that the variable price of cotton, artificial fibers prices, annual income, annual consumption of cotton in last year had a positive effect on the amount of cotton produced in Iran. Variable width from the origin, the imported cotton from last year and cotton production costs (the price of production inputs) had a negative effect on cotton production. Overall, the reduction of tariffs on the cotton and entry of this product more than consumption were of the major reasons for the declining of cotton production which was the most important reason for reduction the motivation for cotton producers.

Increasing in cotton production costs in Iran relative to foreign countries of cotton producer was resulted in reducing of Iran share in the global cotton production. Pay Subsidies for inputs such as fertilizers and pesticides, improved seed for cotton cultivation, Increasing cotton import tariffs in order to imports reduction, improvement of traditional methods and use of new technologies could be considered as strategies for improving of cotton yield and increasing of cotton production in Iran.

Keywords: cotton production, supply function, agriculture, Iran, world production of cotton

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Study the effect of exchange and trade policies on Iranian cotton exports

Behzad Kazemi¹, Mohammad Hassan Tarazkar², Sajjad Mahmoudi³, Mansour Zibae⁴

Abstract

Cotton is one of the most important agricultural products and one of the main items of non-oil exports in Iran, that decades recently and lost its previous position in agricultural export. Deviation of real exchange rate and production fluctuations has been one of the factors affecting cotton export. Therefore, in this study different indices such as Deviation of real exchange rate (RERMIS), the coefficient trade diversion index (TB), Economic opening index (OPEN) and Herfindal index (HERF) were investigated to study the impact of trade and exchange policies on Iran's cotton industry exports during 1965-2011. The relationship among variables was studied by using Johansson cointegration test and Granger causality tests. The survey results showed that in the short-run, exchange and trade policies had no significant effect on this cotton export. But in the long-run, when the exchange rate was closer to equilibrium exchange rate and reduction on cotton industry control, specifically the open index was cause increasing in cotton export significantly. So, adoption of appropriate policies and stability of these policies, could be resulted in increasing in the competitiveness and capability to planning of exporters and reduction the risk of export.

Key words: Exchange and Trade Policies, Export, Cotton, Iran

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Determining the economic value of water in cotton production of Golestan Province

Ali Keramatzadeh, Naser Ghorbani¹

Abstract

Since the agricultural sector as a main and fundamental part is the main fulcrum for the providing of Iran economic needs and water as well as the most important factor limiting the development of this sector is considered, thus economic importance of water in this sector is crucial. One of the most important objective is improvement of water economic structure through water pricing and water demand management has been explained in 4th development program of Iran. Therefore, in this study, determination of the economic value of water in cotton production has been studied using econometric methods.

In this study, after estimating the production function of cotton in Aq Qala city of Golestan province, which is a function of various inputs such as water consumption, labor, capital, and chemical inputs, the economic value water or value marginal product (VMP) has been estimated. The results showed that the economic value of water in cotton production was equivalent to 473 Rials per cubic meter of water, which indicated that the use of water had profitability in cotton production.

Keywords: Economic Value of Water, Production Function, Cotton, Golestan Province.

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The Textile Industry is the Museum of Industrial Development of Iran

Mahmoud Rahimi¹

Abstract

Among Iranian Industries, Textile industry is preceded for a long time. From The Achaemenian Dynasty which Iranian artisans were skilful on rugs and cloth-weaving till The Safavid Dynasty which silk was the main export commodities, textile has been one of the manifestation of Iranian salient civilization. Composition of Art and life has seen on textile industry in all parts of Iran. Influence of European countries on the Qajar Dynasty and using modern machinery are the beginning of Industrial Development of Iran. From that time till now, Iranian Government has have a main role in policymaking on Textile industry. The result shows that The Textile Industry not only has been a training centre for industrial development of Iran, but also is a mirror for evaluation of industrial policy of country. In fact observing the industry of Iran, without study of development of textile industry is impossible. The method of this paper is mainly historical and library research. The study period is from entrance of modern textile industry to Iran till Islamic Revolution in 1979.

Key words: Textile Industry, Iran, Industrial Development

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Calculation the Trend of Comparative Advantage in Export of Iran Cotton Products

(ALI REZA ALIPOUR¹, MOHAMMAD HASAN VAKILPOUR², MOJTABA NIKZAD³)

Abstract

Cotton is the most widely used natural fiber and the most important dual industrial plant in the world which after Soybean has appropriated the second dignity among the world's oil seeds. In the other hand, world trading is being entitled of superior velocity, position and different countries are always trying to coordinating themselves to it and attempting to scale their portion up. Cotton products have long been one of Iran's export items. Considering the export trend of this yield and it's formatives in previous years is provided for planning in order to improvement of cotton export turnover in the time horizon ahead. This study was conducted for calculation the trend of comparative advantage in exporting of cotton products in Iran including cotton carded and cotton linter as major export content of this yield and surveying the export performance consistency of that in the period of 1992-2009. The results suggested that average growth rate of revealed comparative advantage index (r_{RCA}) in export of these products during this period was about 2 percent. Also, index for stability of changes in export performance (R^2) reached to 0.94 which showed low tendency in exporting of comparative advantage creation of this yield. So, it is recommended to create groundwork of outbreak in export of this yield's products for the country by more governmental support in production and export of this yield. Also, it is suggested to increase Iran share in the world trade by identifying the goal export markets of this yield's products.

Keywords: Exporting comparative advantage, stability of changes in export performance, cotton export,

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Survey linkage between extents of Guaranteed Purchasing Policy and total factor productivity in cotton production on Golestan province

Adele Esmaili Dastjerdipoor¹, Hosien Mehrabi Boshrabadi²

Abstract

Recently cotton has experienced trade and pricing policy more than other cultivate production. This causes inconstancy in production, area harvested, yield and the end its productivity. Whereas it plays an important roles on providing row material for loom industrial and employment. It is also important as an exported production. Golestan province is one of greatest areas of cotton production in Iran. Guaranteed Purchasing Policy is one of supported policy that used by government. This paper linked relation between the policy and total factor productivity of cotton production during 1999-2008 in Golestan province. For this aim nominal and effective protection rates were assessed as criteria for evaluating the degree of government intervention. Total factor productivity was estimated based on Kendric index.

Keywords: total factor productivity, cotton, Guaranteed Purchasing Policy, Golestan province.

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Export of Cotton; Opportunities and Challenges

Simindokht Ghasemian¹ , Farshid Eshraghi²

Abstract

The product of cotton most valuable and most important plant which not only in textile industry but also in terms of food. was important and due to exchange technology and property income and have significant comparative advantage in the national economy is considered as a strategic crop. Cotton in the past strengths of our country, such as history, cultivation, exchange technology and the quality is remarkable. But despite these benefits, this product in recent years with many challenges including low production world cotton prices did not match the price of product, not the government guarantee with the purchase of production costs, cotton growers and cotton factories resources and liquidity constraints, lack of suitable commercial and shopping and has faced a drastic reduction of import tariffs. The aim of this study was to examine the problems and bottlenecks cotton exports. Study of statistical was analysis – described The results showed that cotton production and performance in recent decades has had its downside because of the lack of government support for farmers and ignore cotton in government policy, reduced production and lower prices, increased production costs, especially in labor and lack of fitness product price than competing products and the inability to compete with prices in the world.

Keyword: Cotton, Marketing, Exports, Iran.

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Determining price fluctuation sources of agricultural crops

Case study of cotton and silk

A.hasanpour¹,B.kazemi²,M.zibaei³

Abstract

Agricultural products including cotton and silk have experienced severe price fluctuations in recent decades. As the available evidence shows, agricultural prices have experienced more fluctuations compared to other products. This may cause some serious problems especially for small farmers as they have limited access to risk lowering strategies. Therefore, price fluctuations may impose irreparable losses on the cotton and silk producers and induce them to leave the activity or to accept high interest rate loans. This study aims at investigating the price fluctuation sources for domestic producers of the mentioned crops. To get the objective yearly time series data were applied. To determine the fluctuation sources Lifert model was used in which domestic and world prices, exchange rate and import tariff are considered. The results revealed that world price, tariff rate and exchange rate have the highest contribution to price fluctuation, Respectively as they are determinant in the selected crops trade.

Key word: price fluctuation, agriculture, Lifert , cotton, silk

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Comparative advantage of cotton in Golestan Province

Elahe ajoudani¹

E.ajodani¹,

Abstract

Golestan province of Iran is considered one of the poles in the field of agricultural crops in the country's contribution is intentional. Given the importance of agricultural products, especially industrial products in Golestan Province This comparative advantage in cotton crops in Golestan province 2008-2009 were determined and sensitivity analysis of the exchange rate and price of machinery was made. Part of the data and information required in connection with the cost of production of agriculture organization statistics released by the province and other parts of the various data centers are collected in 2008-2009 Type text or a website address or translate a document. To calculate the comparative advantage of domestic resource cost index, index, index of net social benefits and social costs were used. The results showed that cotton has a comparative advantage is in Golestan province. Generally, improve performance, reduce production costs and improved cultivation methods and solutions for the benefit of cotton cultivation in the province.

Key words: comparative advantage, cotton, Golestan Province

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Non-destructive Estimation of Cotton Leaf Area Using Artificial Neural Networks

Sayed Javad Sajadi¹, Abbas Biyabani² and Abdorahman Dogonchi³

Abstract

Accurate measurement of leaf area is very important in agricultural researches. Conventional methods for leaf area measuring are usually destructive, time consuming and expensive. Non-destructive conventional leaf area measuring method is discovering regression relationships between leaf dimensions and area. In this research a new and different method for nondestructive cotton leaf area estimation has introduced using artificial neural networks. The use of artificial neural networks is faster, cheaper and more accurate. In addition, in this method there is no need to find regression relationships between leaf dimensions and area. In this paper Multi-layer Perceptron artificial neural network with backpropagation Levenberg-Marquardt learning algorithm was employed. This neural network was created with Matlab R2011a software and after training with different structures, 2-4-1 structure was selected. Neural network inputs are leaf length and width and it's output is leaf area. Neural network estimation accuracy was calculated via Squared correlation coefficient (R^2) between estimated leaf area with neural network(independent variable) and actual leaf area(dependent variable). Estimation accuracy was more than 97% with regression through origin and more than 99% with regression through mean using this neural network.

Keywords: leaf area, cotton, artificial neural networks

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Evaluation of improvement in qualitative and quantitative characteristics of commercial cotton cultivar of Sahel during three years selection

Kamal Ghasemi Bezdi¹

Abstract

In order to maintain or enhance desirable traits in cotton breeding should consider several characteristics. Consequently, after releasing the commercial cultivar, more studies on it through the selection method are bound in different years, in order to maintain the desired characteristics, which often can lead to improved quality and quantity of the cultivar.

The present study that was included single-plants and lines selection and preparation of new combination of commercial cotton cultivar of Sahel, as one of the important commercial cotton cultivars of Iran, using selection method based on yield, earliness and morphological characteristics of the Sahel cultivar, and also *Verticilium* tolerance, selection of single-plants and lines was carried out during 2007 to 2009 in Cotton Research Stations of Hashemabad in Gorgan and Karkandeh in Kordkuy, Iran.

Every year in laboratory studies on selected single-plants based on the lint percentage and qualitative characteristics of fibers, undesirable plants were removed and the selected single-plants were formed selection lines each year and therefore the nucleus seeds of Sahel cultivar in the next year. At the end of the third year, among the best single selected plants based on quantitative characteristics, improvement in the qualitative characteristics were also observed. Thus, during three years selection on commercial cotton cultivar of Sahel, while maintaining of produced seed characteristics, significant progress was observed in cultivar improvement that further investigation could lead to the introduction of a new cultivar.

Key words: Selection, Cotton, Sahel, Single-plant, Line, Improvement.

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A criticism on FAO method in the net irrigation calculation in humid region

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Abstract

In term of cotton irrigation schedule in humid region of the country , a basic reconsideration is necessary. Because performing the instruction of the authentic word sources like FAO without noticing the geographical conditions, cause big harms to the farmer. For example Agricultural Ministry of Iran announced the net cotton irrigation in Gorgan , 7800 m³ /ha ,While the consuming water of research plots with a proper function in the same region is about 4000 -5000 m³ /ha. Considering the clear difference between FAO method, amount of irrigation water consumed by farmers and the soil moisture condition, it seems that a reconsideration in scientific management of cotton irrigation according to the local researchers is necessary. Because the farmers of the province harvest the cotton on their farms in a condition that is not unsatisfied with the known scientific basis. The main mean of this contradiction is possibly making the instructions based on the studies done in dry region of the word and in conditioneray the localizing the so-called science in Iran.

In this paper we try to compare net irrigation computed with FAO Method(CropWat Model that reported by Jihad-Agriculture about 7700 m³/ha) and review of some research in Cotton Research Institute of Iran by Sohrabi(2003,2004,2006,2009,2010) and Ghorbani(2003,2004,2006) that reported the net Irrigation of cotton about 4000-5000 m³/ha.

Keywords: *Cotton, CropWat, Irrigation, water requirment*

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cotton seed coating in sulfur its effect on antioxidant enzyme

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Abstract

The one of ways increase production amount and production constancy on surface unit is seed coating and effect its in early planting. in order to determine Sulphur seed coating and effect on early planting of cotton , an experiment was conducted randomized design with three replication in 2010-2011 at karkande cotton research station (Gorgan). the planting date consist (1-early planting, 2-on time planting and 3-delay planting) and kinds of seed coating consists (1- downy seed, 2-delinte seed 3-downy seed with malik solution coat 4-delinte seed with malik solution coat 5-sulphur downy seed with malik solution 6- delinte seed with sulphur coat with malik solution. the result of this study showed that, in early planting and on time planting, the highest proxidase amount obtain (respectively 0/2, 0/16 OD.min g fw) in delinte malik treatment. Maximum poly phenol oxidase amount (1/16,1/13 OD.min g fw) obtain respectively in delay planting of cotton downy seed and on time planting, sulphur seed coating with malik solution treatments. Maximum Ascorbat proxidase amount (0/63, 0/62 OD.min g fw) respectively obtain in on time planting, downy and sulphur delinte seed with malik. , sulphur seed coating treatment and malik solution can have positive role in increase catalase enzyme density.

Key words: cotton , planting date , seed coating, antioicidant anzim

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Investigation the value for cultivation and use(VCU) in new cotton cultivars

Mahmoodjanlou.H¹

Abstract

One of the experiments must be done before interroducing varieties is value for cultivation and use (vcu) that is test in field and labratovary. This experiment is investigating superiority of commercial and economical properties in hopfull varieties.43259,43347,N-200,Tabladila,Chechurova,B-557and sepide-2 varieties were studied for one year (2009) at Hashemabad cotton research station with randomized compelet block design(RCBD). Experiment was performed in four replications with 80×20 densities and each treatment in four lines with 11 meters length. Results showed that all cultivar in seed cotton, earliness, and boll number properties are higher than control treatment and its significant at 1% level. N-200 variety is the most earliness among them. Condidia varieties such as 43259,chuchorova and 43347 had lesser height than another varieties. Varieties of 43259 and 43347 were intruduced names of golestan and armeghan.

Keywords: cotton, value for cultivation and use(vcu), new varieties.earliness

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Progress of quantitative and qualitative properties in Sepid cotton variety by selection

Mahmoodjanlou.H¹

Abstract:

Cotton is the one of the self pollination plants with natural pollination that caused of non purity genetics. Single plant selection on commercial varieties is nessesery to conservation and improvement quality and quantitative properties. Sepid variety is new cultivar in cotton research institute of Iran that selection for improvement of its purity is very necessary. At first it was less boll weight ,high number branch and lint rougher than Sahel variety. Progeny selection carried out in the 2001-2006 years and some traits in population indicated significant variation for boll weight, fiber fitness and morphological of plant. In this project selection carried out with new combination lines and progeny-balk method in 2008-2011.The results indicated that process of selection was effective on production of combination nucleus cotton seed as well as production of lines with new properties of fiber fitness, fiber strength and elongation.

Key words: Cotton, Sepid, Selection, Progeny , Nucleus

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Optimize the amount of cotton imported into the country in terms of risk and

Uncertainty (An application of interval transport programming model)

Abozar parhizkari¹, Mahmoud sabouhi², Armin askari³

Abstract:

Cotton is the most important and the most valuable Natural fiber and one of the major agricultural products, industrial and commercial world. This product is a valuable source of fiber and food source for humans and livestock. As regards Production in agricultural Section, conversion in industrial sector, distribution in trade sector, provides value added and high employment and has an important role in economic development. Although in recent years the rate production this strategic Product increased in the country, but still a significant amount of this product each year for Internal needs is imported to the country. Major importing cotton Iran is done of countries such as, UAE, Korea, Uzbekistan, Singapore and Turkey, that costs enormous for the country create. Reduce these costs in addition supply other domestic needs, to growth and development of national economy helping. The main objective of this study is optimizing the amount imports of cotton in different year's seasons. To achieve this objective of statistical data year 90 - 1389 and transport programming model was used in terms of risk and uncertainty. Solve the model Mentioned in Excel software environment took. The results suggest that with optimizing the import of cotton, transport and import costs are reduced to minimum possible value and surplus need domestic this product is provided without disrupting the supply value and demand.

Keyword: Optimization, Risk and uncertainty, Transport programming model, Imports of cotton.

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Cottonseed: oil, protein and gossypol

Dr. Mohammad Ali Najafi¹

Abstract:

In Iran, cottonseed has been known for fibers more than other its compounds. While, cottonseed for quantity and quality properties of oil and protein, and a combination of gossypol is a unique crop. After delinting process, cottonseed is transported to oil extraction factory. Cottonseed oil contains significant amounts of unsaturated fatty acids about three times of saturated fatty acids. This oil has high smoke point and the high level of antioxidants and vitamin E that contribute to its long life in the cooker or on the shelf. For these reasons, cottonseed oil as frying oil without Trans in comparison with hydrogenated oils has been considered. Also, the cottonseed oil does not have allergenic compounds and it's able to preserve the natural flavor of foods, especially seafood, snacks and salads. By considering the need of protecting the environment, most studies performed on the use of cottonseed oil in diesel engines that have been successful. With the rising cost of animal proteins, researchers have focused on plant protein. Cottonseed meal with having 45% of protein is byproduct of oil extraction factory. The protein contents in cottonseed meal are 3-6 and 10-20 times of most oilseed and forage, respectively. Only a small amount of cottonseed protein is sufficient for balancing of diet protein. So cottonseed meal can directly or indirectly improve the protein sources. Today, The WHO and FAO organization have allowed using cottonseed protein as food supplements in bakery products, meat products formulation, Emulsifier and color improver. Cottonseed storage protein influences the stability of foam systems. Gossypol is a polyphenolic yellow compound found in pigment glands distributed throughout the cotton plant. Gossypol can be removed from oil and meal of cottonseed with little change in the solvent formulation. Isolation of gossypol can enhance the nutritional value of meal, and derivatives protein. Effect of Gossypol derivatives as effective drugs in treating of men affected by prostate cancer, and inhibition of HIV has been remarked. As a result we can say with the wide applications of cottonseed in the various industries, and cut dependence on foreign employment, this crop requires more attention.

Keywords: cottonseed, oil, meal, protein, gossypol.

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Causes of reduction in area under cotton cultivation and strategies to deal with it

ramezanali dehghan and Ghasemiomid

Abstract:

Cotton is the main agricultural products in addition to providing raw materials for textile and oil industries, drawing on the employment sectors of agriculture, industry and commerce plays an important role. Unfortunately, a critical process for cotton cultivation and thereby dramatically reduction in the area under cultivation in recent years for this product is rich in cotton areas. Survey statistics show that cotton acreage in the last four years is 19% lower than the previous four years. The average level of cultivation in 1380 to 1383, 164 thousand and 201 hectares is the rate in the years 1384 to 1387, and 733 to 132 thousand hectares have been reduced. The most important factors in reducing the cultivation of cotton, not cotton production can be cost effective compared with other crops, long cotton crop growing period, the lack of mechanized cotton, picked cotton and lose the high cost of mechanized harvesting, low guaranteed purchase price compared to competing products and the lack of careful planning to import cotton. Prevent destruction of the cotton industry in the Iranian culture and factors such as improved productivity, lower manufacturing costs and technological change in cotton fields, improve efficiency and quality Hand Knotted Carpet, introducing high-yielding varieties, renovating and improving the quality of its products, actualized up relative and dynamic talent and excellence in the textile industry, competition in global markets and the principle of sovereignty (the mechanisms of supply and demand) in the field of manufacturing, trading and pricing of cotton be considered.

Keywords: Cotton production reduce, problems, strategies



Factors affecting success in cotton (*Gossypium* sp.) tissue culture

Kamal Ghasemi Bezdi¹

Abstract

In recent years, tissue culture techniques have become as powerful tools for breeding and reproduction of many species. Achievement to low-priced and short-term methods for obtaining of tolerant lines to biotic and abiotic stresses in plant breeding programs is one of the main applications of tissue culture. In other cases of tissue culture can be cited the use of haploid cells to produce doubled haploid plants, production of secondary metabolites, micropropagation and rapid multiplication of plants, protoplast fusion and production of somatic hybrids, embryo rescue, protection and transfer of genetic resources, *in vitro* fertilization, etc.

However, despite the enormous commercial success in production of transgenic cottons, gene transformation and regeneration of cotton still is a problem than other plant species. In addition, the efficiency of somatic embryogenesis and somaclonal variation is one of the problems in plant regeneration of cotton. So, cotton is known as a recalcitrant plant in regeneration systems *in vitro*, cotton regeneration is difficult, and the percentage of success achieved so far in the regeneration of commercial cotton cultivars of Iran was not high.

During recent years several studies have been conducted in cotton tissue culture, which the most important factors affecting performance of tissue culture in this plant can be cited the type of tissue culture technique, plant species, type of cultivar, explant type, genotype within the species, source of explant, age and health of mother plant supplying explant, explant size, degree of contamination, differentiation frequency of explant cells, nutrient medium (mode, acidity (pH), types and materials in medium), amounts, types and different combinations of hormones or plant growth regulators, environmental factors including temperature, light (light intensity, light quality, photoperiod and dark conditions), humidity and ventilation, the effect of temperature treatments (heat and cold), necessary pre-treatments prior to disinfection and accuracy of tissue culture user during the work.

Key words: Micropropagation, Regeneration, Explant, Nutrient medium, Genotype.

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Effect of quality and volume of solvents ENVOK on control of weeds and cottons yield in drought stress condition

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Abstract

The joint effect of weed competition and drought stress could severely harm crop yield; therefore, it is important to management weeds and save stored moisture for the crops. to evaluate the effect of different volume and different quality of herbicide carrier on trifloxy solfuron sodium (ENVOK) efficiency in control of weeds in cotton field and the yield of cotton in drought stress condition were studied in a filed experiment using split plot-factorial arrangement in a randomized complete blocks design with three replications in Faculty of Agriculture Experimentl Station at University of Birjand in 2011. Treatment of experiment included three levels of drought stress (FC; field capacity, 75% FC=low stress, 50%FC=medium stress and 25% FC=severe stress), as the main factor and combination of (three levels of quality of carrier (Q₁=good quality+ citogate , Q₂=bad quality +citogate, Q₃=bad quality without citogate) and three levels of volume of carrier includes (200,400,600 liter.hectare⁻¹) as subsidiary factor. The results showed that efficiency herbicide in different qualities of carrier was influenced by drought stress ($p < 0.01$). When drought stress increased, efficiency herbicide in different qualities of carrier, reduced. there was no significant difference between treatments Q₁ and Q₂ in control percentag of weeds, but efficiency of treatment Q₃, was less than Q₁ and Q₂. when the volume of carrier reduced, efficiency of weeds control in Q₁ and Q₂, reduced too. Unlike them, in Q₃, As volume of carrier reduced, efficiency of herbicide increased. As drought stress increased, reaction of yield cotton to presence of weeds was reduced. trifloxy solfuron sodium did not have any nagation effect on cotton.

Key words: yield of cotton, citogate, post emergence herbicide, herbicide carrier.

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Soil water and salt distribution under subsurface drip irrigation in cotton

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Abstract

To study the effect of salinity of irrigation water on cotton yield, distribution of soil moisture and soluble salts, a field experiment was conducted on loamy soils at Indian Agricultural Research Institute (IARI), New Delhi during 2009 and 2010 kharif. Irrigation water having four levels of salinity ($EC_1= 2 \text{ dS m}^{-1}$, $EC_2= 5 \text{ dS m}^{-1}$, $EC_3= 8 \text{ dS m}^{-1}$ and $EC_4=11 \text{ dS m}^{-1}$) taken as main plot treatments was used as drip with laterals placed at three depth (at surface, 15 cm and 30 cm below the soil surface) as sub plot treatments in a split plot design with 3 replications. Salinity levels for irrigation were made by mixing NaCl and CaCl_2 in water 1:1 (ratio). Irrigation was applied on alternate days. Mean boll weight and boll number per plant in first year were significantly different than recorded in second year, while yield and earliness percentage were similar in both the years. Cotton yields were not influenced by irrigation water salinity up to 8 dS m^{-1} but decreased by 32.6, 40.3 and 39.2% at 11 dS m^{-1} compared to EC_1 , EC_2 and EC_3 treatments. Lateral depths had no effect on yield. Moisture distribution data showed a horizontal decrease in soil water content at a distance of 20 and 40 cm away from drip line in all lateral depths. Evaporation loss was minimum and uniformity of soil moisture distribution was the maximum when laterals were buried at 30 cm. There was an increase in salt accumulation at a distance of 20cm and 40cm from the dripper. Soil salinity near drippers was the minimum for all depth of laterals placement. During boll opening stage, most of soluble salts were leached out from soil profile due to rains received in monsoon. Distribution of soil moisture and electrical conductivity was simulated by Hydrus 2D model. The model evaluated by R^2 , AE, RMSE and E showed a good correspondence on soil water distribution between observed data from field experiment and simulated by model. The model could not simulate electrical conductivity during crop developing growth and before monsoon. The results of simulation after monsoon revealed that model is able to predict leaching of salts from root zone.

Keywords: Subsurface drip irrigation, cotton yield and quality, Hydrus 2D, soil water distribution, salt distribution

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Cotton: A strategic product in competence advantage of textile and clothing in Iran

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Abstract:

Cotton has been as one of the fundamental products in process of mercantile, s agricultural industry and also as one of the most major important natural raw material in textile and clothing industry . however , in spite of increasing it ,s value and price in world trade , in the last few years due to decrease of product rate inside country (Iran) , it had at tracted the consideration and interest of researchers and expertise to itself . No need to say the above mentioned people could analyze and examine the situation cotton market in Iran approximately.

In this research for developing the exploratory according to it ,s competence advantage cotton products in textile industry of Iran , based on competence porter model including standards such as , product condition , investment , trade benefit and supporting industries and etc... there has been a massire effort to define cotton as a strategic product in agricultural industries according to it ,s functional role in product process. It can also be used as a very important and basic competence product in textile and clothing industry as an executive necessity in order to obtain the Iranian investors and supporting of interior production for planners and govern related people and care taker of this business. In conclusion., the government is able to take steps in order to support the interior producers and development and growth of the level of this products , both quantitative and qualitative , regardinol to fulfillment of the article 44 of constitutional law expanding the cotton clustering producers network.

Keywords : Cotton , Agricultural , Textile industry, competence advantage , Porter model

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The effect of micronutrients foliar application and irrigation frequency on yield and yield components of cotton

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Abstract:

A field experiment was conducted over 2 years to examine the effect of irrigation interval and foliar application of compounded micronutrients fertilizer on yield and yield components of cotton (*Gossypium hirsutum* L.). A split-plot experimental design with three replications was used with irrigation intervals of 10, 15 and 20 days as main-plots. Foliar application of micronutrients in set up the flowers, bolls, both of them, and none of them as check treatment, were assigned to sub-plots. Despite of 1st year results, increasing of irrigation interval significantly decreased seed cotton yield in 2nd year and compound analysis of experiment. Jointly foliar application of micronutrients in set up the flowers and bolls significantly increased the number of bolls per plant in comparison with check treatment. Likewise, foliar application of micronutrients increased the seed cotton yield, but the differences were non-significant. Interaction effects of treatments on yield and majority of yield components of cotton were significant during 2-year experiments. The least and the most seed cotton yield were produced by irrigation interval of 20 days on check plots of foliar application of micronutrients, and irrigation intervals of 10 and 20 days on plots of jointly foliar application of micronutrients in set up flowers and bolls, respectively.

Key words: Plant hight, Earliness, Rainfed conditions

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THE CULTIVATION OF COTTON AND ITS IMPORTANCE IN ECONOMY

AHMAD EMADODIN

Abstract

Cotton is one of the most important crops in the whole world and in the same time one of the most worthy natural fibre for textile industry. Cotton plant is cultivated today in many developing countries and at least in 77 countries in the world cotton has the fundamental role in economy. The export of cotton is one of the most important resources for foreign exchange in developing countries. In the early 1970's, among the exports of raw materials, cotton has the fifth place after coffee, sugar and copper and was accounted for 2.6 % of exports of these countries. If we consider the importance and value of textile exports, cotton with a share of 8 percent of foreign exchange in developing countries has the second place in exports of these lands. Although cotton is primary cultivated for the use of its fibre in textile industry, but we must consider that in addition man earns seed from cotton plant. In other words, we can get oil and protein from these seeds, what has a high nutritional value for human and animal. In this article I examine the role and importance of cotton in economy from various fields:

- 1 – The importance of cotton in supply of goods.
- 2 – the role of cotton in industry and economy.
- 3 – the role of cotton in employment.

Key words: Industry, Economy, Employment



Nutrient management in cotton under water stress environments

Ghulam Hussain Mirbahar¹, Fiaz Ahmad² and Shabab-ud-Din

Abstract:

Although cotton is recognized as drought tolerant but it is widely grown as an irrigated crop in Pakistan. The amount of irrigation water available in the country is declining and the cost of pumping ground water is increasing every year. Water use efficiency, therefore, needs to be optimized to sustain crop productivity. Three independent field experiments were, therefore, conducted at Central Cotton Research Institute, Multan, Pakistan during the years 2006-2009, to investigate the impact of phosphorus, potassium and zinc nutrition on cotton production under artificially imposed water stress conditions. Cotton crop was sown in Randomized Complete Block Design in four replications with split-plot arrangement. Two water stress treatments were imposed i.e. non-water stress at -1.6 ± 0.2 MPa leaf water potential (ψ_w) and water stress at -2.2 ± 0.2 MPa ψ_w . Water stress treatments were kept in the main plots while fertilizer levels in the sub-plots. The crop was sown in the second week of May each year. Water stress at -2.2 ± 0.2 MPa ψ_w was imposed at 30 days after sowing and maintained at this level during the rest of the cropping season. Leaf water potential was monitored using "Pressure Chamber Technique" and the crop was irrigated when it attained the desired ψ_w . Irrigation water applied to each treatment was measured through "Cut Throat Flume". The crop received all standard production practices as usual. Data on vegetative and reproductive growth parameters, gas exchange characteristics, water use efficiency and seed cotton yield were recorded in all three experiments. The results revealed that the application of phosphorus (0, 50, 100 kg P₂O₅ ha⁻¹), potassium (0, 50, 100, 150 kg K₂O ha⁻¹) and zinc (0, 10, 20 kg Zn ha⁻¹) had positive impact on yield determining parameters (height, fruit production per unit area, gas exchange characteristics, seed cotton yield and seed index). Seed cotton yield increased by 24.8% with 100 kg P₂O₅ ha⁻¹, 31% with 150 kg K₂O ha⁻¹ and 11% with 20 kg Zn ha⁻¹, over unfertilized plots. With the imposition of water stress seed cotton yield decreased, irrespective of fertilizer levels, by 24% in phosphorus, 21% in potassium and 28% in zinc experiments. The adverse impact of water stress declined as the levels of phosphorus, potassium and zinc were increased under water stress conditions. Furthermore, seed index increased with the application of these fertilizers both under non-stress and water stress conditions. A positive interaction among water stress and fertilizer levels demonstrated that cotton crop production under water limited conditions may be increased by adequate management of nutrients.

Keywords: Nutrient management, Cotton, Water stress

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CONDITION OF COTTON GROWING IN THE KYRGYZ REPUBLIC

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Abstract:

Development of cotton growing in Kyrgyzstan has reached the big successes during Soviet times. So, the cotton areas in 1977 made 74 thousand hectares. 214 thousand tons of clap-raw has been collected.

Its productivity on republic reached 3 tons/hectares, and some stations received 4-5 tons from each hectare. After disintegration of Soviet Union the areas under crops and productivity of cotton have sharply decreased. The cotton variety Kyrgyzskii 3, created in 1985, occupied in 1988-1991 1 million hectares of area under crop in cotton planting republics of the former USSR or one third part of all area under crop. In 2002 the new variety Kyrgyzskii 5 is differing by early maturing, high productivity and 37 percent of fiber exit is created and released. The variety is resistant to cotton diseases and it is a basic variety in the Republic. Since 2012 the new variety Kyrgyzskii 6 is released in territory of Kyrgyzstan. At observance of developed by our scientists agro technology the varieties of domestic selection have potential possibility of productivity on 4-4,5 t/hectares. Cotton cultivation in crop rotation fields with application of organic and mineral fertilizers serves as the base of stable soil fertility restoration. The crop rotation cultures are cereal and leguminous plants, corn and long-term grasses, in particular a Lucerne. Due to structureless light grey soils located in the South of Kyrgyzstan, fall ploughing is better to do on depth of 28-30cm. The seeding norm of cotton is within 100 kg/hectares, covering depth is 3-4 cm, planting density is 110 thousand/hectare. Irrigation of cotton is made under the scheme 2-2-1: before flowering of plants are irrigated 2 times, from flowering to maturing - 2 times irrigation and at maturing - 1 time irrigation. Mineral fertilizers application norm in term of operating elements is made N150P180K100 kg/ha. One of the main activities in cotton growing is cultivation of soil between the rows. Timely and quality its conducting promotes the moisture conservation and creation of optimal conditions for plant growing. Intercultivation of cotton are made 4-7 times in depends of climate conditions. The fiber quality depends from pinching out, which is made during of 11-13 branches. In case of late cotton ball maturing defoliation is made by using of magnum chlorate at norm of 8-10 kg/ha. In many case the harvesting is made by hand. In big co-operative stations it made by techniques. After Soviet Union disintegration an agricultural seed production system including the cotton is also destroyed. Now the measures on restoration of Seed Production System should be made in following: After releasing of new variety the Elite Station, which produces elite and first reproduction seeds will be organized. Then there is a Seed Production Station, which produces seeds of first (P1) and second (P2) reproductions which are transferred to farmers and co-operative farms.

Keywords: cotton, Kyrgyzstan, Production

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Influence Cotton Leaf Curl Virus on yield and quantity of cotton fibre

¹Kadirova Z.N., ¹Juraeva U.M., ¹Vakhabov A.H.

Abstract:

The aim of our investigation was study of influence of Cotton Leaf Curl Virus (CLCV) on the cotton yield, growth and development of cotton plants, also on technical firmness hydrolysis and sprouting of cotton seeds. Cotton seeds from 87 varieties and lines were sowed into beds. There were 60 plants in each variant. Infecting of the plants was conducted via artificial way. There have been revealed immune, resistant and sensitive cotton varieties from the world collection of Uzbekistan's Institutes. CLCV negatively influences on growth and development of plants, so infected plants were shorter from 2 to 24 cm than the healthy ones. The influence of CLCV on quantity seeds and their sprouting have shown, decrease of sprouting from 24 till 52% has been observed. He negative influence of virus affecting on cotton production, including increase of hydrolysis of cotton fiber length of the infected plants in average from 0,4 to 5.4 mm and diminishing of seed weight in average from 1,64 to 3.6 g comparing to control. The negatively influence of the virus affecting on cotton production, including increase of hydrolysis of cotton fiber, has been detected. The influence of the virus infection displays as both shortening of fiber length of the infected plants in average from 0,4 to 5.4 mm and diminishing of seed weight in average from 1,65 to 36.0 g comparing to control.

Keywords: Cotton, Leaf Curl Virus, Tajikistan, Cotton yield

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Cotton Ginning Technologies - Selection Criteria for Optimum

Results

M. K. Sharma¹

Abstract:

Ginning is the mechanical process for separating cotton into its constituents namely lint (Cotton Fibre) and Cotton Seed. The Seed Cotton that comes from the field has to be subjected to various treatments in the ginning factories depending upon its inherent characteristics such as trash contents, moisture contents, length of the fibre, variety of seed i.e. fuzzy or black, method of seed cotton transportation, storage practices, handling practices inside the ginning factories and finally subjected to ginning process for separation of fibre and seed before packing into bales etc. Ideally the quality of the constituents i.e. cotton fibre and cotton seed before ginning and after ginning must be more or less same however it is seen that substantial damage is caused to quality parameters during processes in the ginning factories. The selection of cotton for spinning is made on the basis of fibre quality and any damage in the same during the process of ginning reduces the value of the fibre and results in lowering down of value in total textile value chain. The development of high speed spinning and weaving machinery has necessitated requirement of better cotton fibre parameters and any damage in quality caused while ginning cannot be rectified later and the defect is carried forward to yarn and fabrics during spinning and weaving process. The economics of ginning operation is greatly affected by the damage in the quality of the constituents i.e. cotton fibre and cotton seed and lower realization due to same affects down the line to the farmer / grower as the pressure of the lower realization by ginners results in lower price for seed cotton being paid to him. The economics of ginning operation depends upon the proper selection of ginning technology suitable for various characteristics of the seed cotton to optimize the quality parameters and operational costs, thus the selection of suitable ginning technology is of paramount importance.

Keywords: Cotton, Fibre parameters, Ginning technologies

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Effect of Different Management Practices on the Production of Bt Cotton vertisols of central India

M.S.KAIRON¹, Venugopalan M.V.²

Abstract:

India has grown to become the strongest global partner in the production, processing and trade of raw cotton and its finished products. The Transgenic Bt cotton, containing the cry gene provide resistance against bollworms represents a land mark in Research and Development. The large scale adoption of Bt cotton by Indian farmers in a span of 5-6 years shows the strength of this technology. Introduction of Bt gene has changed the morphological, phenological and Physiological characters of these hybrids and hence to get the full benefit of Bt cotton and to sustain their yield potential, sound management practices needs to be standardized. Two set of experiments were laid out at KVSS Research Foundation farm at Sakarla, Nagpur (Maharashtra) in Central India during the year 2008-2009 and 2009-2010.

The first set of experiments- To study the effect of Plant Population in relation with fertilizer doses on Bt cotton hybrids

The second set of experiments- To study the best time of application of fertilizer in relation with different plant populations on different genotypes of Bt cotton.

The result from the First set of experiment indicated that the higher population produced significantly higher seed cotton production to the extent of 20-30% in all the hybrids. The maximum yield was recorded where higher plant population was coupled with higher dose of fertilizer in all genotypes. In the second set of experiment the result revealed that the best time of application of higher doses of fertilizer 160kg-80kg-80kg (N:P205:K2O/ha) where the split application of fertilizer was given in the following schedule - 50% at the time of sowing and 40% in two splits at squaring and flowering stage and 10% was given through foliar application in during boll development. This schedule registered higher seed production by 30% over the traditional method of fertilizer application. Among the three hybrids, -Bt Rasi-2 and Rasi-2 Not Bt and check Ankur 650 Non-Bt, the Bt Rasi-2 gave the higher yield over non-Bt hybrids. The response of split application (50% at the time of sowing) was observed in Bt hybrid to the extent of 40% higher over the traditional method application of fertilizer.

Keyword: Bt cotton, India, Plant population, fertilizer application time

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Financial crisis and the competitive advantage of agricultural products

Amin Razinataj¹
Mohammad Razinataj²

Abstract

At the time horizon of the 21st century, different sectors of a country's economy are facing with issues of globalization, rapid technological advances and the global financial crisis. Within this time horizon, these sectors for their survival and progress should be different from their prior acts. In particular, they should be looking for new resources to create competitive advantage. In the present paper, our attempt is that with the use of financial crisis definitions, the signs of the financial crisis, the theory associated with the financial crisis, major international financial crises that have occurred since 2012 assess the impacts of different factors affecting agricultural sector and non-oil exports, which constitute the main focus of this type of agriculture export commodities and the impacts of financial crisis on agricultural sector by the use of definitions of competitive advantage, sustainable competitive advantage, and applying the model of Diamond (Porter's diamond)

Key words: Financial Crisis, Agricultural products, Porter's diamond, Sustainable Competitive Advantage

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ROAD MAP OF ELECTRONIC SUPPLY CHAIN MANAGEMENT OF COTTON CULTIVATION

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³ Ph.D Assistant Prof. Of Shiraz university, ⁴ Ph.D Assistant Prof. Of IROST

Abstract:

Cotton is an important cultivation crop with great value-added, such as it supply crude material of different industries e.g. textile, oil, soap, feed-stuff, pharmacy, etc. In the last years, the cotton has most challenges in the marketing, production and support service of farmers in Iran. The purpose of this research is to present a conceptual model for establishment of electronic supply chain management in cotton cultivation. The model is used to create a solution for integration of stakeholders and coordination in the flow of materials and information to reach competitiveness and value added in cotton products on national and international markets. Getting these goals causes distance reduction between agricultural producers market consumption, and also shifts market focal point from urban areas to rural areas, and ultimately makes economic development in rural areas. In conducting this research, current situation of products, facilities and IT capacities in the country were investigated as As-Is study. Then by reviewing similar works in other countries, To-Be plan is suggested. By comparing As-is and To-be and using gap analysis, the Strengths and weaknesses, opportunities and threats were obtained. Then appropriate strategies are developed by the SWOT analysis matrix. To assess the situation and select the best strategies the SPACE method is used and by interview with the experts, the aggressive area is offered. The area contained the strategies such as improvement in quality of the product, market development and market penetration. As the next step a conceptual model for cotton e-SCM (i.e. C-ESCM) is extracted from dominant strategies. The model is verified and validated by developing a questionnaire for all stakeholders in cotton topic and then a phase to phase roadmap is developed as an offer on implementation of the model. Finally, some recommendations for future studies are brought.

Key words: Cotton, Supply chain management, Road map



Potentials insect pest threats to transgenic Bt cottons and IPM needs for its sustainability

Udikeri.S.S¹. Sandhya. Kranthi² and B.V.Patil³

Abstract:

The need for silver line technology to deal with bollworm menace for profitable cultivation of cotton worldwide has been satisfied through development and commercialization of Bt transgenic cotton expressing Cry 1 Ac endotoxin. The beginning of bollworm resistant transgenic cotton cultivation though started in 1996 in US and Australia, it could not take much time for the technology to reach all major countries including India. There has been nearly cent per cent control over bollworm and reduction in usage of insecticide to the tune of 65 -80 %.The possible resistance in bollworms to Cry 1 Ac has been managed through refugia options initially and cultivation of cotton expressing Cry 1 Ac + 2 Ab toxins simultaneously. However the Bt cottons did not remain longer time as pesticide free crops anywhere in the world as the insect pest scenario is in the process of geoparadisation. Unforeseen insect pests have emerged as potential threats to cotton cultivation in India and other countries. Different species of mirid bugs have been considered as major constraints in production of Bt cottons profitably in Australia, China and US today. The incidence, spread and chemical control exercised over mealy bugs *Phenacoccus solenopsis* Tinsley (Pseudococcidae:Hemiptera) recently stands as land mark example such phenomenon. For long term and sustainable use of Bt technology the transgenic cottons should be managed well for emerging /new pests. The present paper deals with potential threats to Bt cottons in rainfed cultivation as well as its IPM necessities under changing pest scenario.

Key words: Bt cotton, Mirid bug, IPM

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Impact of nutrient omission on productivity and soil nutrient status of Bt cotton in cotton- wheat cropping system

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Abstract:

A field experiment on nutrient omission plot technique (NOPT) on Bt cotton-wheat cropping system was conducted at research farm of the Division of Agronomy Indian Agricultural Research Institute, New Delhi during rainy season of 2010 and 2011. The experiment had 20 treatments, laid out in Randomized Block Design with three replications in fixed plots. Treatments comprised omission of N, P, K, S and Zn, 50% omission of N, P, and K, absolute control (no nutrient applied) and optimum plane of nutrition (150-26.4 -50- 15-3 kg/ha N-P-K-S-Zn). Each of the 10 treatments were duplicated and randomized so that there were 20 plots within each replication for cotton. Same nutrient omission treatments were tested on wheat in 50% of plots and uniform N was applied for the remaining 50% of the plots. Yield was estimated in terms of seed cotton, lint, seed and oil yield. Soil of each plot was analyzed for the available nutrient status after each crop. The uptake of nutrients in omission plots gave an estimate of the indigenous soil nutrient supply and nutrient use efficiencies. N proved to be most limiting factor nutrient and there was a reduction in the seed cotton yield to the tune of 28%, 6.5% and 14.5% due to N, P and K omissions during the year 2010. The corresponding figures for the year 2011 are 26.5 %, 15.5% and 12.4 % respectively. N continued to be the most limiting nutrient followed by P and K during the year 2011. P omission led to the higher yield reduction during the second year of experimentation which proves that P supplies fast depleted in the cotton- wheat cropping than the K supply. Lint yield followed similar trends. The yield reduction due to S and Zn omission ranged from 2.0-5% which was statistically non significant during both the years. Although N omission had a non significant effect on the total soil N; however the available N decreased in the N omission plots by about 33%. Similarly available P level dropped by 46% in the P omission plots. There was negative soil P and K balance when worked on cropping system basis. The non exchangeable soil K declined faster than the exchangeable K and the water soluble K appeared to stable over the seasons. Omission of N reduced net income by about 32 -33% followed by omission of K and P. During the second year P proved to be more limiting than K and led to the reduction of net income by 13 and 16%, respectively. However, omission of secondary nutrient S and micronutrient Zn had no drastic negative effect on cotton yields. Hence, N followed by P and K were the major nutrients contributing to higher yield of Bt cotton.

Key words: Cotton- wheat cropping system, Nutrient omission, Bt cotton, Soil nutrient

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Effect super absorbent polymer on yield and yield components of cotton

Seyed Mohamad Reza Ahmadi¹, Borhan Sohrabi², Hashem Aminpanah³

Abstract

This study was carried out to evaluate of various levels of water and super absorbent polymer (SAP) application on Cotton yield and yield component of Golestan Variety at Hashemabad Cotton Research Station, Gorgan/ Iran. In this experiment Three levels of Irrigation water [Rainfed: (I0) , 50% (I50) and 100% (I100)] and five levels of super absorbent polymer application [0 (S0), 10 (S10), 20 (S20), 30 (S30), 40 (S40) gr/m³soil] three replications were compared. The experiment was conducted in split-split plots design with complete randomized model that Water levels arranged at main plot and SAP at subplot. The relationship between yield and Irrigation treatment were significant at P=0.05. In general the maximum cotton yield were 2134 Kg/ha and 2074 Kg/ha for rainfed and S30 , respectively. Irrigation treatment just had significant difference on Micronary properties of fiber. Interaction between water level and SAP had no significant difference on yield and yield component of cotton.

Keywords: Cotton, super absorbent polymer, Irrigation, Yield

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Preparation of edible protein concentrates from cottonseed (Varamin variety) by Ethanol- Ultra filtration method

Najafi M. A¹., Haddad Khodaparast M.H².

Abstract

Cottonseed is considered among most important crops. It contains about 26% oil that is used for oil production in oil extraction industries. After oil extraction, cottonseed meal with 45% protein (min) is only used as a protein supplement in food dietary for livestock. It's due to presence a toxic constituent of cottonseed, named gossypol. In this study, delinted cottonseed (Varamin variety) was defatted by Soxhlet extractor that used ethanol as solvent. So prepared cottonseed meal was solved in water, and then concentrated by ultra filtration process. We studied effect of aqueous extraction process type (Acidic, Classic and Alkaline), and molecular weight cut-off of filter on cottonseed meal properties. Fiber, protein, oils, and free as well as total gossypol contents (HPLC method), and Nitrogen solubility value, of all samples were determined. The obtained results showed, all protein concentrates meet the world standards as edible protein that was described by protein advisory group, with the exception of concentrated protein sample obtained by alkaline extraction procedure and without ultrafiltration process.

Key word: Cottonseed, Ethanol, Meal, Protein, Ultra filtration

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Comparison of drought tolerant varieties of cotton in view of whitefly, *Bemisia tabaci* infection in Kashmar region

Sirjani Mohammad¹ & Mehri Montazerikhadem²

Abstract:

Drought tolerant varieties of cotton, are different from morphological characteristics with each other and this difference causes that the pests damage on them is different. Therefore, this study was conducted during 2011 in the Cotton research station of Kashmar and 5 drought tolerant varieties of cotton were compared in a randomized complete block design with 3 replication in view of cotton whitefly, *Bemisia tabaci* damage. Sampling of pest carried out on 10 plants of every plot randomly, adults and nymphs of cotton whiteflies were counted and recorded behind the three terminal leaves of each plant. Finally, data analyzed with SAS software and the means were compared with Duncan's multiple range test. Results showed that there are significantly different between treatments and the among cultivars, Varamine with 23.4 nymph and 11.2 adult and Nazili84 with 11.5 nymph and 8.6 adult per leaf had the highest and the lowest attractiveness for whitefly respectively.

Key Words: cotton varieties, whitefly, *Bemisia tabaci*

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Survey the differences infection of 7 varieties of cotton to shedder bug, *Creontiades pallidus* in Kashmar region

Sirjani Mohammad¹ & Ramezanimoghdam Mohammad Reza¹

Abstract:

Cotton cultivars are different from morphological characteristics with each other; therefore the attraction of pests can be differed on them. For comparison of cotton shedding bug, *Creontiades pallidus*, this study was conducted during 2011 in the Cotton Research Station of Kashmar and 7 cotton varieties includes Varamine, Khordad, Siland, super okra, Irma, Tabladila and 43200 were compared in a randomized complete block design with 3 replications. Sampling of pest carried out on 10 plants of every plot randomly and shedding bugs were counted and recorded inside the buds, flowers and bolls of each plant weekly. Finally, data analyzed with SAS software and the means were compared with Duncan's multiple range test. Results showed that there are significantly differences among treatments and the among cultivars, so 43,200 and Irma with 5.03 and 1.93 insect per plant had the highest and the lowest attractiveness for pest respectively.

Key Words: cotton varieties, shedder bug, *Kashmar*

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Comparison of 7 varieties of cotton to leafhopper, *Empoasca decipiens* in Kashmar region

Sirjani Mohammad¹

Abstract:

Cotton varieties are different from each other from morphological characteristics and this difference causes that the attraction of pests can be differed on them. Therefore, for comparison of cotton leafhopper , *Empoasca decipiens* this study was conducted during 2011 in the Cotton Research Station of Kashmar and 7 cotton varieties includes: Super okra, Khordad, Varamine, Siland, Irma, 43200 and Tabladila were compared in a randomized complete block design with 3 replication. Sampling of pest carried out on 10 plants of every plot randomly and cotton leafhopper were counted and recorded behind the 3 leaves (upper, middle and bottom) of each plant weekly. Finally, data analyzed with SAS software and the means were compared with Duncan's multiple range test. Results showed that there are significantly different between treatments and among cultivars, 43,200 and Irma with 5.56 and 2.86 insect per leaf had the highest and the lowest attractiveness for pest respectively.

Key Words: cotton varieties, leafhopper, Kashmar

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The impact of Okra- leaf cotton on populations reduction of *Bemisia tabaci*

Sarbaz, S¹., G. h. Moravvej¹., M. Sirjani² and M. R. Ramazani- Moghadam²

Abstract:

We compared smooth-leaf okra- and normal-leaf upland cotton (*Gossypium hirsutum* L.) strains and cultivars for susceptibility of colonization by *Bemisia tabaci* (Gennadius) in the field experiment for the period of 2009 cropping season at cotton research station east countries of kashmar, Iran. Okra-leaf strains and cultivars, as a group, had lower numbers of adults, eggs, and nymphs compared with normal-leaf strains and cultivars indicating the potential of okra-leaf genetic traits for reducing colonization by *B. tabaci*. Results also suggest that okra-leaf shape may provide less favorable micro-environmental conditions for the habitat of *B. tabaci* because of more open canopy as evidenced by higher leaf perimeter to leaf area ratio. The okra-leaf cultivar appears to had genetic traits that should be examined further as a source of *B. tabaci* resistance.

Key Words: *Bemisia tabaci*, Okra-leaf, Normal-leaf, Cotton, Resistance

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Preference (attractivity and oviposition) of *Bemisia tabaci* on seven cotton cultivars under greenhouse condition

Sarbaz, S¹., G. h. Moravvej¹., M. Sirjani² and M. R. Ramazani- Moghadam²

Abstract:

The whitefly *Bemisia tabaci* is an important pest of cotton whitefly transmitting plant pathogenic viruses which causes damage and reduce lint quality. In order to evaluation the attractivity and oviposition preference of *B. tabaci* on seven cotton cultivars (Okra, Red Okra, khordad, Sahel, Mehr, Varamin and Termus 14) of two species of cotton (*Gossypium hirsutum* L.) and (*Gossypium barbadence* L.) in a choice test greenhouse condition with temperature conditions $24\pm 2^{\circ}\text{C}$, $65\pm 5\%$ relative humidity and photoperiod 16:8 (dark: light) was studied. Results showed that the number of whitefly at different hours counting (48 and 72 h) on Termus 14 cultivar was significantly more than other cultivars ($p < 0.01$). In this choice test the highest mean of egg deposited on the leaves 72 h after the infestation was observed on Termus 14 and it was significantly more than other cultivars ($p < 0.01$). According to these results, *B. tabaci* showed the highest attractivity and oviposition preference on Termus 14 that represented the susceptibility of this cultivar to activity of *B. tabaci* than the other cultivars. The results obtained in the present study can be used in integrated management programs of this whitefly in cotton field.

Key words: Cotton- Susceptibility- preference- *Bemisia tabaci*

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Susceptibility of cotton varieties different to *Bemisia tabaci* in Kashmar, Iran

Sarbaz, S¹., G. h. Moravvej¹., M. Sirjani² and M. R. Ramazani- Moghadam²

Abstract:

Bemisia tabaci (Homoptera: Aleyrodidae) is one of the most important pests of cotton in Khorasan causing crop damage and yield reduction as a result of direct feeding on plant and transmission of viruses. Using resistant varieties is an economic and environmental friendly procedure for controlling this pest. The infestation of seven cotton varieties (Okra, Red leaf Okra, Mehr, Varamin, Khordad, Sahel and Termus 14) was evaluated against *Bemisia tabaci* in the period of 2009 cropping season at Cotton Research Station East Countries of Kashmar, Iran. The result indicated that there was a significant difference between treatments ($P < 0.01$). The result revealed that cultivar Termus 14 presented the most number of adults (2.74 per leaf), nymph (8.94 per 3.88cm² -leaf dick) and egg (8.81 per 3.88cm² -leaf dick) while Okra and Red leaf Okra varieties presented the lowest number of adults (0.22 and 0.26 per leaf, respectively), nymph (1.6 and 1.7 per 3.88cm² -leaf dick)and egg (1.34 and 1.67 per 3.88cm² -leaf dick, respectively).The result showed Okra and Red leaf okra may benefit the integrated management of whitefly in cotton fields and suggested for more investigations.

Keywords: Cotton; varieties; *Bemisia tabaci*

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Tolerance evaluation of boll rot disease in cotton

Mohammad Reza Zangi¹

Abstract:

Cotton boll rot disease occurs in all the lands of world. The amount of damages is were different depending on the climate. Naturally damage is very high in wet areas.

In this study, 20 different genotypes of cotton were evaluated to identify and determine the amount of boll rot present. Design was randomized complete block with 4 replications. Results showed S-65 ASR with 11.63 was the most sensitive genotypes to boll rot disease. The others genotypes had the least boll rot (B classe). The C148-TSHL ASR with 2.24 percent, TSHL ASR with 2.18, SIO with 0.77 percent, NAMANGAN-77 with 1.16 percent, F-108-1 with 0.83 percent, N-13 with 1.5 percent, AK ASR with 1.12 percent, HYSOZ with 0.25 percent, F-108 with 0.68 percent, B-201-TSHL ASR with 0.76 percent, TAKHI-4 with 1.66 percent, J-74-6 with 3.24 percent, KIRGIZY-3 with 0.76 percent, H-220 ASR with 1.82 percent, F-108-6 with 1.46 percent, TSKHI-7 with 1.01 percent, SOGD-3 ASR with 0.59 percent, N-13 with 2.78 and Sahel with 0.81 had the least boll rot percent. These genotypes were tolerant to boll rot disease.

Key words: Cotton genotypes, boll rot, tolerance or resistanse

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The study tolerance of verticillium wilt diseases in cotton

Mohammad Reza Zangi¹

Abstract:

Verticillium wilt disease is one of the most limiting factors for cultivation of high yielding varieties and susceptible to this disease. This disease is common in all areas of cotton farms.

The 19 new and introduced and 2 check phenotypes were evaluated in this study. Verticillium wilt disease classified and results showed H-220 ASR genotypes with 1.09 had the greatest disease severity. If the J-74-6 genotypes with 0.52 was the least disease severity. Based on verticillium wilt disease index, TSKHI-7 with 84.5 was the most sensitive varieties. J-74-6 with 19.2 disease indices were the most tolerant genotypes to verticillium wilt disease.

Key words: Cotton genotypes, Verticillium wilt, tolerance and resistance

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Evaluation of the Neem Azal T/S formulation efficiency in cotton boll worm control under field condition

Parisa Heravi¹

Abstract:

In order to evaluate the efficiency of Neem Azal T/S formulation (from Neem Seed Kernels of *Azadirachta indica*) on cotton boll worm, an experiment in RCBD was conducted in Ali abad ,Gorgan, Iran. The treatments were Neem azal T/S in 3 doses (0.015 ,0.002 , 0.025 Concentration), Indoxacarb and Endosulfan in recommended dose and control without spraying. Each treatment was repeated three times . By weekly sampling of cotton reproductive organs and based on pest 's ET , time of treatment application was recognized. One day before and 3 , 5 , 7 , 10 , 15 days after spraying the number of infected reproductive organs of 10 randomly selected plants of each block were counted. The results showed that 0.025 concentration of Neem Azal T/S with 94.83 % effectiveness was the best treatment. Endosulfan and Neem azal (0.015 concentration) were in the same group with 76.66 and 69.95 percent efficiency respectively. The maximum crop yield was obtained in Indoxacarb and Neem azal (0.025 concentration) as 2471.33 and 2454.66 (kg per hectare) , respectively. In cotton boll worm control less effects of pesticides is observed because of the resistant insects , so new insecticides is advised .

Keywords : Neem azal T/S , Cotton Boll Worm , Field trail , Indoxacarb

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Optimality check inputs used in cotton production in Golestan Province(Case study: city of Gorgan)

Nikzad.M, Mehregan nasab.F, Darijani.A, Ghasemian.S

Abstract:

Cotton products in Iran as one of strategic agricultural products is that the various applications in today's world, the economic importance and has a special brand. Statistics and information needed as farm-level cross-sectional survey of 40 samples were collected from the city of Gorgan and library studies. After fitting and selecting the most suitable form of production function, and calculate the elasticity of production inputs, the optimal use of agricultural inputs in cotton production was investigated. The results of fitting the production function, indicates the production function Cobb - Douglas function form is as the best. The calculated values based on the partial tension, the inputs of nitrogen fertilizer, phosphate fertilizer, pesticide, seed, and Sayrkvdha, only nitrogen and phosphate fertilizer inputs in the region are economic. However, the inputs of water, pesticides and seeds in the third and non-production, are used.

Key words: cotton, production function, efficient, sustainable agriculture, Cobb, Douglas, Gorgan



The application of neural network approach in forecasting stock market prices for cotton

F. Mehrgan nasab, A. Darijani & M. E. Nikzad

Abstract:

Today, prices, markets and investments is considered an important factor in the mechanism and predicting the knowledge that, for consumers, producers and traders is necessary. Product prices, the allocation of resources affects economic system is considered the primary regulators came. Based on numerous studies in the field of agriculture and industry, the neural network approach as scientific techniques and flexible, able to predict more accurately known. With the method, the variable with the lowest error cotton prices may have been anticipated. It can predict prices, price volatility ahead for the industrialists, investors and farmers, and transparent as possible to reduce price risk.

Keywords: price, cotton, forecasting, neural network, the stock market



Cotton economy with the emphasis on the demand side

R.Gholami¹, A. Radpour²

Abstract:

Cotton due to its high economic value is the most important crop in Iran. In this study, the structure of supply and demand method has been carefully evaluated. Then using of Nerolove model, the market model for cotton crop was introduced.

Nerolove model was used for supplying of seed cotton and seed cotton demanding was applied as indirect supplying or demand for production inputs.

Assuming the demand for cotton fiber and cotton seed, seed cotton are marketed directly, and thus create demand for seed cotton. Seed cotton crop for the establishment of a multi-product obtained in the pattern can be seen.

After design our model, we are fitted the model of cotton market. Price elasticity of supply, seed cotton demand and cross elasticity fiber of cotton ratio to price of polyester for the medium term is calculated.

The results indicate the supply and demand of seed cotton than seed cotton prices has very little stretch. And hence the price policy, will not impact on the market, unless relative prices change.

Keywords: Cotton economic, economic, cotton

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A Survey of Changes in Total Factor Productivity of Cotton Production in All Provinces

Ali Darijani¹, Mohammad Ismael Nikzad², Morteza Momeni³

Abstract:

Nowadays, in all developed or under developing countries are emphasized on the importance of productivity as one of necessities of economic development and gain a competitive advantage in international field. The survey of countries' performance that had had significant economic growth in latest decades reflects the fact that most of these countries share the purpose of economic growth through increasing productivity have been achieved. The productivity growth is as the difference among the growth of output and used inputs over time. Using the non-parametric Tornquist-Theil index, total factor productivity growth for cotton production in Iran has been derived during 2001-2007. The data were collected from cost of production bank and other sources from Ministry of Jihad-e-Agriculture. The results showed an average annual growth of total factor productivity in Iranian cotton production for all periods was positive, but small and diverges in different provinces.

Keywords: Productivity, Index, Tornquist, Cotton, Iran

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The effects of Nitrogen and Row Spacing on Growth and Yield of Cotton Varieties

Ramzan Ali Alitabar¹, Omran Alishah², Seyed Abbas-Ali Andarkhor¹, Sirous Shojaei¹

Abstract

Response of different cultivars of cotton namely Sahel, N200 and Shirpan to different levels of row spacing 40 x 20 cm and 80 x 20 cm and 0, 75, 150 and 225 kg ha⁻¹ nitrogen fertilizer was studied at Gharakhil Agricultural research Station, North of Iran in 2010. Different row spacing influenced height and number of boll and different nitrogen levels significantly influenced yield and yield components of cotton. Application of 150 kg.ha⁻¹ nitrogen fertilizer produced maximum yield, number of boll and earliness index as compared to another nitrogen rates. In level of 225 kg.ha⁻¹ nitrogen fertilizer we observed maximum height, number of node, weight of boll and number of sympodial branch as compared to the another nitrogen rates. The varieties N200 and Sahel provided maximum yield as compared to Shirpan.

Keywords: Cotton, Growth, Nitrogen, Plant spacing, Yield, earliness index, Sympodial branch

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Review and assessment of the Greek Cotton production: Perspectives and obstacles

Khah, E. M¹. and Kostoula, S¹.

Abstract:

In Greek agriculture, cotton (*Gossypium hirsutum* L) has been a crop of major importance for domestic producers and a politically sensitive issue in recent years because, within the European Union (EU), cotton is primarily grown in only two member states (Greece and Spain). Within the EU, Greece has thus become the largest cotton producer, with an area of about 380.380 ha (2004) representing 12% of total cultivated area and 18% of arable land with a total production of approximately 1.254.780 million tones. Cotton accounts for more than 8% of total agricultural output in Greece. It comprises of the 80% of the total EU cotton production (followed by Spain). Cotton is an important crop creating the income of more than 80.000 agricultural households as well as contributing significantly to the National economy. In terms of cotton yields per hectare, Greece ranks fifth worldwide and in terms of cotton production it is among the first ten countries worldwide. In the light of the considerations introduced above, assessments of the current status and especially the perspectives of Greek relationship with EU, cotton farming should primarily focus on the gap between the cotton farm's actual production and best-practice production i.e., their technical efficiency level. In addition, the latest Common Agricultural Policy (CAP) measures, starting in 2009/10, have considerably influenced the scale of production in Greek cotton farms by encouraging farmers to invest in modern equipment and expanded production. However, at the same time, the EU agriculture appears to be at the crossroads. It can no longer continue to depend on the current support schemes as the financial costs of C.A.P. have boomed; the world market by turning increasingly more competitive; and potential new member-states with huge farm sectors to join the union, with consequent difficulties. Likewise, since 2008, due to the financial crisis in Greece, the cotton market is negatively affected resulting to 'creating risks and uncertainty',

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for Greek ginnerers who faced difficulties in selling their output. Without bank financial support, many ginnerers and cooperatives could not hold back their stocks until price improvement. In response, efforts take place to find new outlets for Greek cotton. Moreover, at the same time Greek textile sector is facing difficulties. With production falling to 18% and orders declining to 20%, exports have also fallen by 4–5%, so the textile sector looks for state support to revitalise. During the last three seasons (2007 -2010), it has been a significant drop in cotton acreage in Greece, due to the decrease in the subsidy system and competition from alternative commodities such as wheat and corn. However, it is anticipating that, In Market Year 2011/12 Greek cotton production has increased significantly, due to increased cotton price and more effective pest control. In fact, this has been supported by EU for the years 2012/13, so that EU cotton production is projected to increase by 41.2% (from 249,000 to 354,000 tonnes). In this new situation, such analyses become interesting due to the shortage of relevant studies. Therefore, the objective of this study is to review and analyse the evolution of cotton farming in Greece, which has gone through various stages and difficulties. Moreover, to assess these issues in relation to future development of Greek cotton farming and industry.

Key words: Greece, Cotton production, Perspectives and obstacles



Innovative systems for increased Agrochemical Use Efficiency in cotton

D. Chachalis¹ and I. Khah²

Abstract:

In this presentation, an overview will be given regarding innovative systems for increased Agrochemical Use Efficiency (AUE; water, pesticides, fertilizers) in Greece. Results will be presented from two large (total budget 3.2m euros) EU LIFE+ projects, namely the EcoPest (www.ecopest.gr), and the HydroSense (www.hydrosense.org) derived from large pilot demonstration sites. In the EcoPest project, significant reductions (30%) of amounts and the Frequency Treatment Index of pesticides were made. Additionally, the impact of agrochemicals on the environment was minimized, through innovative actions related to training of all users, inspection and repair of spraying equipment, reduction of spray drift, and management of point pesticide pollution. In the HydroSense project, innovative precision technologies for increased AUE were implemented in cotton in a water-limited agroecosystem. Management zones based on soil organic matter (using proximal and satellite images) were made and variable rate of water and fertilizers were applied. Weed management using a combination of band applications, weed density estimations, weed maps and spraying maps using proximal, remote, and image analysis models were made. Emphasis will be given to present all the unique and innovative tools derived from these projects not only for increased AUE at field level but also for sound estimations at an upscale level of the watershed area.

Key words: Cotton, Agrochemical, Innovative systems

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**An Analysis of Farm-Wholesale Price Transmission in Cotton
Market
(A Case Study of Golestan Province)**

Masoumeh Asgari, Mohamad Khaledi, Gholamreza Yavari

Abstract

Price transmission mechanism is of a great importance in affecting the welfare of producers, marketing agents and consumers. In this study Error correlation models were used to analyze price relationships and patterns of price transmission among farm and wholesale markets for cotton in Golestan province as one of the main producers of cotton in Iran. The empirical analysis was conducted using annual data from 1353 to 1389. The results suggested that price transmission was bilateral and asymmetric in farm-wholesale levels. Estimated elasticities of the model indicated that price changes at wholesale level transmitted increases more rapidly and completely than decreases in farm level while these changes at farm level were reverse and transmitted decreases faster and more completely than increases in wholesale level. As a result of asymmetry in price transmission in cotton market producers paid less and consumers pay more than actual price and processing industries benefit from price changes.

Key words: Price transmission, Error correlation model, Golestan province, Cotton.



Wide hybridization as a scientific tool to understand the genetic background of cotton

Mavromatis A.G¹, Vlachostergios² and D.G Roupakias³

Abstract:

Orka, (*Abelmoschus esculentum* L. Moench (2n= 62-65) is an annual species, close relative of the cotton plant. It belongs to Malvaceae family and the plant habit and growth pattern are very similar to those of cotton. In sub-tropical and Mediterranean regions the flowering season for cotton and orka, coincides. This event, induce the question if there are possibilities to exchange pollen between the two species and which would be the product of such interaction. The result of this study could be lead to the capability of transfer desirable genes from one species to another or to design a strategy to avoid a desirable gene flow especially in cases of co- culture of GMO cottons and orka at the same geographical areas. Brown (1947) reported the production of a hybrid plant between *Gossypium hirsutum* and *Abelmoschus esculentum* L. and she supposed that this plant (Z-118) must be the product of some form of chromosome reduplication in the ovule at early embryo stage. Today, 50 years later one could theorize that fertilization and chromosome elimination was happened although she was not able to realize and explain it. Zhou Shi-Oui et al., (1991) however, reported parthenogenetic seed set in a rate of 1.3-2.4% when cotton flowers were pollinated with pollen from another Malvaceae species, *Hibiscus cannabinus*. According to this observation, one could be assume that a larger number of unfertilized ovules were stimulated by the alien pollen but they were unable to reach maturity (Mavromatis A. & Roupakias D., 1996, Vlachostergios et al., 1998). In such a case, a support by in vitro culture of stimulated cotton ovules could be an alternative approach to generate hybrid or haploid cotton plants. This work was undertaken, firstly to study the in situ response of cotton flowers when were pollinated with pollen from *Abelmoschus esculentum* and secondly to develop a protocol for production of hybrid or haploid cotton plants via in vitro ovule culture.

Key words : Cotton, Interspecific cotton hybrids , *Abelmoschus esculentum* , Malvaceae species

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Study on the effect of planting date and germination of fuzzy and delinted seeds of cotton cultivars on seedling establishment and yield

A.A. MIRI¹, M.AZIZI¹, F. GHADERIFAR¹, J.REZAEI¹ AND A. GAJARI¹

Abstract:

Planting date is the most important factor that affects the germination characters, seedling establishment, field emergence and yield. Field study was conducted in 2006. The experiment was split-split plot design on randomized complete block basis with 3 replications. The main plots were included type of cotton seed (fuzzy & acid delinted seed), sub-plots included planting dates (20th April, 5th & 21st May, 5th & 21st June and sub-sub plots included cotton cultivars (Siokra324, 43347, 43259, early-mutagenesis, sahel and Varamin).

The results showed that Siokra324, 43259, 43347 and early – mutagenesis had the most germination percentage and rate in 4th and 5th dates than others. Also, sowing of fuzzy and delinted cotton seeds produced more field establishment at early and late dates, respectively. Seed cotton yield was 3432.1kg/ha and 3194.4kg/ha for treatment delinted and non- delinted cotton seed, respectively. Siokra324 at early planting date was early maturity cultivars. 43259, 43347 and mutagenesis-earliness had increase of yield. The yield of cotton cultivars had been decreased about 40% at the last planting date in comparison with the first planting date.

Keyword: cotton, genotypes, fuzzy and delinted seed, germination

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Assessing the Performance of Cotton Supply Chain in Golestan Province

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Abstract:

In transforming from traditional to modern agriculture, the management of supply chain of agricultural products has gained a growing importance. An agricultural supply chain is composed of all the activities that occur from the production to the final consumer. Supply chain management is the integrated planning, implementation, coordination and control of all activities necessary to produce and deliver, as efficiently as possible, products that satisfy market requirements. International experiences have often demonstrated that chain analyses can be important tools in efforts towards the enhancement of performance of agricultural systems. This paper, applied a SWOT analysis to assess the strengths and weaknesses of the supply chain and the opportunities and threats of the supply chain environment. Finally, we discussed the various components of supply chain and present some recommendation to improve supply chain performance in areas like mechanization, processing, production, distribution, governance and cooperative.

Key words: supply chain management, cotton, SWOT-analysis, Iran

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NEW METHOD FOR CHARACTERIZATION OF YARN GEOMERICAL PROPERTIES

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Abstract:

It is well known the importance of yarn diameter characterization for fabric properties (cover factor, thickness, pore size,...etc). Recently yarn hairiness became great issue in characterizing yarn properties because of its bad influence on further processing. Beside fiber properties, yarn forming process has different principles, ring, open-end, air jet spinning, siro,...etc. Each of these principles influence yarn hairiness due to the mechanism of yarn forming and machine settings. To define yarn hairiness, one should at first define the yarn diameter, because yarn hairiness is known as the fiber ends and loops protruding from the yarn body (diameter). Actually the yarn diameter can be defined as the intuitive cylinder where most fibers are concentrated. Therefore yarn diameter and yarn hairiness are connected together. Beside laboratory methods based on image analysis, Uster evenness tester equipped with OM sensor measures the total hair length in cm per one cm yarn length (H value). The other known instrument is Zweigle-Uster characterizes yarn hairiness as the total numbers of hairs per meter protruded from yarn diameter, of have different lengths (S value...). The H value gives the average value of hairs within one cm if of yarn, this value giving no proper indication of the distribution of the length of hairs. Also Lawson Hemphil measures the yarn hairiness and the yarn diameter by means of CCD camera. These instruments have different measuring sensors and different evaluation algorithms, resulting in different values for the same yarn, and it is hard to interpret them or compare these values. The main aim of this contribution is to analyze the yarn hairiness distribution of different cotton yarn based on the possibility of fitting bimodal function; i.e. dividing the hairiness to two types of hairiness short and long hairs. The individual values of yarn hairiness and yarn diameter were extracted from the different instruments and fed to a computer program D-yarn and H-YARN written in Matlab code for complex characterization of yarn hairiness. The results show that in general, the fiber hair distribution has a bi-modal shape and comprises a mixture of two Gaussian distribution indicating the mean, standard deviation and percentage of fibers of each component. Also the data was used for complex evaluation of yarn diameter and yarn hairiness based on time series theory. Deeps analysis was provided to characterize the behavior of yarn diameter and yarn hairiness in both time and frequency domain, such as autocorrelation function, spectrograph, periodogram, fractal dimension, Hurst coefficient, and many other functions.

Key words: Cotton, Textile industry, Yarn geometrical properties

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COMPARISON OF COMPLEX INDICES FOR COTTON FIBER QUALITY CHARACTERIZATION

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Abstract:

The cotton classification is now system of standardized procedures for measuring of raw cotton properties (physical attributes) that affect quality of processing (spinning mainly) and quality of products (yarns). There exists a plenty of standard and HVI techniques for characterization of cotton fibers. Despite of some differences in measurements principles it is possible to specify basic cotton fiber properties having potential influence to the cotton quality or spinning ability. The main problem with utilization of these properties for quality characterization is multivariate character of information, various units and lack of transformation to the utility scale. One of first attempts to create aggregated criterion of cotton fiber quality was fiber quality index (FQI). Some other criteria are based on the regression models connecting fiber properties with parameters characterized spinning ability or quality of yarn (characterized by yarn strength). Examples are spinning consistency index (SCI) or premium discount index (PDI). The main problem with all above mentioned characteristics of cotton fiber quality are due to strong dependence on the units of individual cotton properties and methods for their evaluation, utilization of dimensional parameters based on the limited amount of experimental data and no defined ranges (limits). According to the general definition, the quality is characterized by several properties expressing the ability of a product to fulfil functions it was designed for. The degree of quality (complex criterion) is often expressed as utility value U . Evidently, general quality of textiles is characterized by many of various utility properties R_i ($i = 1, \dots, m$). These are such properties that make it possible for the product to fulfil its function. Utility value $U \in \langle 0, 1 \rangle$ aggregates then in some certain way partial quality properties. The importance of these properties is generally dependent on the spinning technology. The purpose of the paper is to describe the complex evaluation of cotton fibre quality (cotton quality index U) based on utility value concept. The other empirical complex characteristics of cotton fiber quality are also computed. The program QCOTTON written in MATLAB is briefly mentioned. The comparison of selected complex criteria is demonstrated on the two set of real data. First set are results of the US crop study of 1997 and 1998 and second set are typical cotton varieties used in the Czech Republic for rotor yarn creation.

Key words: cotton fiber quality, complex indices, utility value concept, HVI data, Bootstrap simulation

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Evaluation of tolerance to the aphid *Aphis gossypii* in cotton varieties tolerant to salinity

Rohollah Faez¹

Abstract:

The classification of plants resistant to the negative effects of salinity, cotton plants are relatively is resistant to salt. Salinity threshold or the maximum amount allowed for this plant is about 7/7 dS m. Therefore, in order to increase efficiency and enhance unit area under cultivation of cotton varieties tolerant to salinity, 6 treatments of the most tolerant cultivars to salinity study in the Cotton Research Institute (including cultivars 43 200, Siland, Sepid, Syndo, Jukorova and Sahel), were studied in this experiment in a randomized complete block design (RCBD) with four replications in year 2004 in a salt land located on the northern of Gorgan was performed. The cotton aphid pest data studies and notes, then remove the 5/0 m from the beginning and end of the midline was performed on 4 lines. Attribute table analysis showed that the number of aphids on the leaves between cultivars compared, significant differences exist in the 1 percent level. Mean populations of this pest by using Duncan's multiple range showed that the figures are statistically different groups. 43 200 so that the mean number 6/7 the number of aphids on the leaves had the highest infection and were classified in a group, and is among the most sensitive cultivars to this pest. The average number Sepid 2/8 in the leaves of this pest in the group d classification and minimum contamination of germplasm used in comparison, has had. Aphid populations than the average figure for all types of Geneva, 45 percent less than the density of this pest and is considered the most tolerant cultivars.

Key Words: Cotton, Saline, Tolerance, *Aphis gossypii*

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Evaluation of tolerance to whitefly *Bemisia tabaci* in cotton varieties tolerant to salinity

Rohollah Faez¹

Abstract:

The relative performance of plants in certain conditions of salinity affected by different factors, including climate, soil fertility, agronomic operations, pests and diseases and the like is placed. Despite the extraordinary resistance of cotton against salinity, the adverse effects of salinity in different varieties are not the same and the difference in yield is observed. More resistant to pests, for example, cotton type Okra show. For comparison, in six varieties tolerant to salinity tolerance of cotton pests, including cultivars 43200, Siland, Sepid, Sindoz, Jukorova, and Sahel salty areas, research in 2004 in a randomized complete block design (RCBD) with four replications was carried out in Gorgan. After planting and pest emergence in research plots, density of cotton whitefly eggs and nymphs and adults were measured using Narnjo and Flint. The whitefly population data results showed statistically significant differences existed between treatments at 1% level compared to the method of Duncan at 5% level of significant difference between treatments in different groups are. Study showed that compared with the average population figure Sahel 1.1 in each leaf were highest in a group with a mean figure Sepid 0.4 whitefly population allocated to the lowest leaves and the c are classified. Thus the results obtained in Gorgan, the salinity tolerant cultivars studied, the most tolerant cultivars to this pest, the figure is Sepid.

Key Words: Cotton, Saline, Tolerance, *Bemisia tabaci*

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Review by additional resistance to boll worm *Helicoverpa armigera* Hub. (Lep.: Noctuidae) in the top lines of new varieties of cotton

Rohollah Faez¹

Abstract:

The pest management strategies are used to significantly reduce pesticide application. One of these strategies, is the use of resistant cultivars. Therefore in this study an evaluation was performed on 20 new genotypes of cotton which was imported to measure the boll worm, *Helicoverpa armigera* Hub, pest tolerance of major pests of cotton. A research carried out by 19 new cotton genotypes and Sahel cultivar in RCBD with 3 replication Hashem Abad Research Station, Gorgan in 2006-2007. After planting and emerging of *H. armigera*, 5 plants were sampled in plots randomly. The results showed the C148-TSHLASR germplasm with 1.028 larva's/plant was most susceptible and F-108-1 with 1.001 larva's/plant was most tolerant.

Key Words: Cotton , Top Lines , Resistance , *Helicoverpa armigera*

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Changes of Iran's Trading partners on Cotton Competitiveness in Mazandaran and Golestan Provinces

Afshin Amjadi¹, Hamed Rafiee²

Abstract:

Competitiveness of agricultural products and competitive products always are very important in economics. Exchange rate and trading partners' changes in world markets affects on this competitiveness. In this study, Competitiveness of cotton according to Exchange rate changes in Mazandaran and Golestan provinces was investigated. Competitiveness by using two exchange rates of actual, Euro and equilibrium rate and by calculating Domestic Resources Cost (DRC), Net Social Profit (NSP) and Social Cost Benefit (SCB) in crop year of 2008-2009 was estimated. The results showed that the cotton in the Mazandaran and Golestan provinces with the current situation has not comparative advantage of production. But with increasing exchange rate changes in trading partners, competitive index of cotton in Mazandaran and Golestan provinces will be improved. In order to improve the competitive advantage in real exchange rates of Dollar and Euro and in equilibrium exchange rate Is needed, especially the cost of limiting resources in these two provinces with the arrival of new technology rather than traditional technology, be adjusted and moreover, improving productivity and efficiency of production, the competitive advantage in two province must be improved.

Keywords: Competiveness, Trading Partners, Cotton, Mazanadaran and Golestan Provinces.

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Comparison of germination power and performance of cotton varieties in terms of salinity

Ghasem khedri¹, mohammad reza dadashi², mohammad javad jafari³
hamideh sadat amirlatifi³

Abstract:

Cotton is one of the strategic plants. Golestan Province in Iran is the biggest producer of cotton. Lands are saline and brackish in this matter will require further research. Cotton plant is resistant to salinity. In this study for comparison salinity tolerance of two cultivars (Armaghan and Sahel) with NaCl salinity treatments in 6 levels (0, -3, -6, -9, -12 and -15) ds/L and with 3 replications. This experiment was performed in 12 day factors germination, dry weight, fresh weight was measured. The results showed that brings in the high salinity treatments (-9, -12 and -15) had better performance. Although treatments with low salinity (0, -3) showed a better performance in Sahel cultivate. The results can be deduced. Bring that figure is more resistant to salinity. And to cultivate Armaghan with high salinity is recommended.

Keywords: Cotton, Armaghan cultivate, Sahel cultivate, salinity, germination

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Comparison of phenol level in 8 cultivars of seed cotton (*Gossypium*) of Golestan province using ethanol extracts

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Abstract:

Cotton seed oil is extracted from the seeds of cotton plants. To separate the oil from cotton seeds from fiber, to obtain Antioxidants found in foods are divided into various categories. Phenols and polyphenols are the most important secondary compounds with antioxidant effects, it is the largest category, which includes Phenolic acids are the same. To obtain the greatest amount of phenol in this study between different varieties of cotton were conducted in Golestan province. Figures sahel90, Varamin, dej59 (Bndrtrkmm), Bakhtegan, sepid, armaghan, dej59 (dome) and Golestan cultivars produced 70% ethanol and ethanol extracts were prepared, and standardized using gallic acid and Folin methods with spectrometry results were obtained. The highest was belong to dej59 (Gonbad) and Bakhtegan, and Varamin was the lowest. The results are advised to figure dej59 (Gonbad) and cotton seed oil extraction Bakhtegan to be used.

Keywords: *Cotton, Golestran province, phenol*

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Determination of critical temperature for germination of delinted and fuzzy cottonseeds in laboratory

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Abstract:

There wasn't any investigation about determining the effect of critical points of temperatures on germination of fuzzy and delinted cotton seeds in Iran. For this reason an experiment was conducted in laboratory as factorial on the basis of randomized complete design with 4 replications. The laboratory tests were carried out with rolling towel method that their treatments including of 7 temperatures (15, 20, 25, 30, 35, 40 and 45°C), 2 cotton seed types (fuzzy and delinted) and 6 cultivars (Sahel, Siokra 324, Varamin, early maturing mutagenesis, 43259 and 43347). The single linear regression was used for quantifying of germination rate/temperature ratio and cardinal temperatures (minimum, optimum and maximum) were obtained for seed germination. Results showed that, base temperatures ranges for germination of delinted and fuzzy cottonseed were 8-11 and 9-12°C, respectively. Optimum and maximum temperature for seed germination of delinted seed were 35.12-35.97 and 35.12-35.65°C, and for fuzzy seed were 44.82 - 52.25 and 44.8-52.25 °C, respectively. Also, cultivars Siokra324, early maturing mutagenesis and 43259 had the highest germination percentage, germination rate and uniformity.

Key words: Cotton – temperature- germination, cardinal temperatures.

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Distance effect bobbin nip yarn Take-up till winding point in rotor yarn

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Abstract:

Production speed of rotor spinning system is greater than that of ring. In spite of this advantage, winding error of the yarn take-up package causes yarn breakage and reduces spinning limit of the rotor system.

In this research effect of winding error on spinning limit was investigation. Distance of the take-up roller till winding point(D T W) was increased in three levels to reduce the winding and error and spin and finest possible yarn count. Eleven yarn samples were produced and their tenacity, extension work of rupture and hairiness were tested. Test results showed that, an increase in DTW decrease winding error and increase spinning limit. The finest spin able yarn count in three levels of DTW was 10.8, 9.6 and 9.4 Tex. It was also concluded that tenacity, extension and work of rupture of the yarns decrease as the yarn count decrease in the yarn counts studied.

Key words :Nipbobin,Take-up yarn,Winding error

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Physiological Responses of Cotton (*Gossypium hirsutum* L.) to Salt Stress

Mohammad Pessaraki¹

Abstract:

Cotton plants (*Gossypium hirsutum* L.) cv. Pima, grown in a growth chamber hydroponically in normal (control) and NaCl-treated Hoagland solutions were studied at two stages of growth (vegetative and reproductive). A randomized complete block (RCB) design with 4 replications and 4 salinity treatments, including control (0), -0.4, -0.8, and -1.2MPa NaCl salinity stress, were used in this experiment. Plant growth in terms of dry-matter production was measured. Nitrogen absorption (total-N and ¹⁵N) and water uptake were determined. Plant parts (shoots and roots) were analyzed separately for total-N and ¹⁵N uptake after the plants were provided ¹⁵NH₄NO₃ in nutrient solutions for 6, 12, and 24 hr. Dry-matter production of the plants was significantly reduced by decreasing the osmotic potential (increasing salinity) of the nutrient solution. The low and medium levels of salinity did not have a significant effect on the ¹⁵N absorption rate, but the high salt levels caused a substantial reduction in the ¹⁵N uptake rate. The ¹⁵N concentration of the roots was higher than that of the shoots, particularly under stress conditions. The ¹⁵N concentration in plants increased with increased salinity levels. The concentration of ¹⁵N in plants in terms of the ratio of plant total ¹⁵N content to dry matter produced (mg ¹⁵N/kg dry matter) was significantly higher for moderately stressed than for the control plants. Total water absorbed by plants decreased linearly with increased salinity levels. This reduction was even more appreciable than the reduction in ¹⁵N absorption rate. The effect of salinity was more pronounced at the vegetative than at the reproductive stage of growth.

Keywords: Cotton, *Gossypium hirsutum*, Salt stress, Shoot and root growth, Dry matter production, Nitrogen absorption, Water uptake

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Assess the effects of climate change on world cotton production and trade in the coming decades

Mohammad Barzali¹

Abstract:

Review of climate change on the fluctuations in world cotton production suggests that changes in environmental factors and changes in rainfall patterns and droughts will be expected to produce this product. Temperature rising and carbon dioxide concentrations increased pests and diseases in cotton production. Forecasts of world cotton production and trade in the coming decades shows that the irregular monsoon rains reduced production in India, atmosphere temperature rising increased use of groundwater in the United States and consequently increased production costs, reduced production due to increased temperature in Pakistan and in Uzbekistan and Turkey in order to reduce the quality of production inputs such as soil and temperature rising, production will decrease. Effects of climate change on cotton production in I. R. Iran are mainly due to increased production costs and reduced water availability will decrease. Climate change also causes fluctuations in the economic production of cotton products and changes in cropping pattern from cotton growers and impact of policies on the basis of their use of resources will follow. Given that developing countries at 2/5 billion dollars the annual export of cotton in the world is devoted, climate change effects on them can put a negative impact on trade. In this study, fluctuations of production in major cotton exporter in the world (developed and developing countries) on climate change in coming decades and its impact on trade in global markets, this product has been discussed.

Keywords: Climate change, Cotton, Production, International trade.

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Study of Relations between climatic factors and yield of Cotton

(*Gossypium hirsutum*) in Gorgan region

Donyavian H. R.¹

Abstract:

Determination of relations between climatic factors and crop yield for recognizing and developing mathematic models is an important knowledge in agricultural science. To estimate and interpretation of regression models between climatic factors : temperature, rainfall, sunlight and yield of cotton, this investigation was done in Hashemabad cotton research station in Gorgan province. In this way, in 12 years, linear, quadratic and cubic regressions between mentioned climatic factors and yield were estimated and interpreted the significant regressions. This study showed that there were significant linear and quadratic regressions between monthly mean minimum daily temperature and yield in August . The favorable minimum daily temperature for the best yield was 23.4 siliceous. There were significant quadratic and linear regression Between monthly mean rainfall in August and monthly sunlight hours in June and yield, respectively. In August, each 10mm increased in rainfall increased cotton yield in 277 kg/ha.

Key words : climatic factors, yield, cotton

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Cotton Production & Consumption of Bangladesh

Md. Imran Ali¹

Abstract:

Bangladesh produces some cotton, though it can not be termed as cotton-producing country. Assuming normal monsoon conditions, MY 2012/13 domestic cotton production is forecasted at 120,000 Bangladeshi bales from 40,000 hectares. MY 2011/12 cotton production is estimated at 95,000 Bangladeshi bales, harvested from 36,000 hectares. Of this quantity, 87,000 bales were medium staple American variety & 8,000 bales of short staple up-land. Bangladesh has a Cotton Development Board & all activities of cotton production are being conducted by this Board, i.e., research, extension service, including technology transfer, training & demonstration, seed production & distribution, marketing and other institutional supports. Problems associated with cotton production in Bangladesh include lack of proper and advanced research activities, low yield, long duration crop, high input costs, competition with other crops, insect pests, and diseases of cotton, etc. Future direction of cotton is based on multiple cropping patterns, insect/pest issues, variety development, low cost management, education and training. The CDB strategy includes an expansion of the use of new high yielding varieties, the introduction of summer cotton & gradually converting 20,000 hectares from tobacco to cotton cultivation. Despite this increase, under normal conditions, domestic production is unlikely to exceed 3%. Domestic raw cotton demand causes the trade situation being expected to improve & a new mill spring will come into operation almost every month. Raw cotton consumption in MY 2011/12 is estimated at 3.5 million bales (760,000 tons), down by about 5.5% from MY 2010/11. This is due to a sharp decline in imports as well as less demand from spinning sub-sector. Cotton consumption in MY 2012/13 is forecasted to reach 3.6 million bales. Most of the raw cotton requirements are met from the imported cotton. Local production can meet only 3% of the requirements. Remaining 97% are imported from different countries, including Uzbekistan, India, USA, Australia,

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Pakistan, Sudan, Uganda, Turkmenistan, Kazakhstan, Egypt, Zimbabwe, Nigeria, South Africa, Cameroon, etc. Uzbekistan and India are the major suppliers of raw cotton to Bangladesh due to competitive prices and short delivery periods. Raw cotton imports in MY 2011/12 are estimated at 3.9 million bales (700,000 tons), a 12% decrease from the previous year. Many Bangladeshi buyers are currently facing contract payment problems. The Indian ban on cotton exports has also had an adverse impact on supply. As market conditions stabilize, industry observers expect that trading volumes will resume. In MY 2012/13, raw cotton imports are forecasted to reach 3.5 million bales. The procedure for importing cotton in Bangladesh is fairly simple. Only the US cotton needs to go through a fumigation process, because of the high use of genetically modified cotton & chemicals in the USA. Bangladesh importers follow ICA rules & contracts, with two exceptions. When importing from Govt. companies in India, East India Cotton Association rules are followed. Imports from Egypt follow the Alexandria Cotton Rules. Payment is done through credit documents. Contract parameters mainly cover staple length, micronaire range & the strength of cotton. However, other considerations such as neps, trash content, sugar content & maturity, though not part of the contract, may cause serious difficulties. This is one reason why the importers prefer cotton from established sources, as they know exactly what is coming. Spinners receive advance fiber information measured using the HVI system that can measure all necessary quality parameters with the same instrument, & it is generally recommended in lieu of individual testing instruments. Buyers in Bangladesh prefer to establish long-term relationships with a few agents who represent reputable trading companies in various cotton exporting countries.

Key words: Cotton production , Cotton consumption, Bangladesh



Nutrient concentration, uptake and quality of Bt cotton as affected by nutrient omissions in cotton-wheat cropping system

Dinesh kumar¹ and Ashag Hussain¹

Abstract:

A field experiment on nutrient omission plot technique (NOPT) in Bt cotton-wheat cropping system was conducted at the research farm of Indian Agricultural Research Institute, New Delhi during 2010-11 and 2011-12, New Delhi. The main objective of the study was to assess the contribution of the nutrients towards the nutrient uptake and quality of Bt cotton in cotton-wheat cropping system. The soil of the experimental field was sandy loam in texture, low in available nitrogen (196.4 kg ha⁻¹), medium in available P (12.5 kg ha⁻¹) and K (286.6 kg ha⁻¹). The experiment had 20 treatments, laid out in Randomized Block Design with three replications in fixed plots. Treatments comprised omission of N, P, K, S and Zn, 50% omission of N, P, and K, absolute control (no nutrient applied) and optimum plane of nutrition (150-26.4 -50- 15-3 kg/ha N-P-K-S-Zn, respectively). Each of the 10 treatments were duplicated and randomized so that there were 20 plots within each replication for cotton. Same nutrient omission treatments were tested on wheat in 50% of plots and uniform N was applied to the remaining 50% of the plots. Results showed that the nutrient N, P and K concentrations in the seed, fibre and stover were significantly reduced in the respective omission plots. Omission of N had also an adverse effect on the P and K concentrations in the cotton seed and stover. N uptake in stover, seed, fibre and total N uptake were significantly affected by N omission treatments. P uptake in, stover, seed and fibre was significantly reduced due to P omission; it was more so in the N omission plots followed by the control plots where no fertilizer was applied. P omission also reduced the K uptake. N omission had more severe impact on K uptake than the K omission. Zn omission significantly reduced the total Zn uptake; however the effect of N omission was more severe on Zn uptake. The nutrient omission treatments failed to produce any significant difference in the quality parameters of cotton.

Key words: Cotton, Nutrient concentration, Cotton-wheat cropping system, Bt cotton

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Conservation agriculture practices for higher productivity and resource-use efficiency in cotton-wheat cropping system in northern India

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Abstract:

Conservation agriculture (CA) is a concept for resource-saving agricultural crop production, which aims at enhancing natural and biological processes above and below ground to achieve acceptable profits, high and sustained production levels, and conservation of the environment. Keeping all these in view, an experiment was undertaken at the Indian Agricultural Research Institute, New Delhi during rainy and winter seasons of 2010 and 2011 to find out the effect of bed planting with residues on cotton-wheat system under zero-till conditions. Treatments comprising seven tillage and residue management practices, viz., conventional-till flat bed, zero-till narrow bed (70 cm; 1row), zero-till narrow bed with residues, zero-till broad bed (140cm; 2 rows), zero-till broad bed with residues, zero-till flat bed, and zero-till flat bed with residues were laid out in a split plot design with three replications. It was observed that zero-till flat bed with or without residues and zero-till broad-bed with and without residues resulted in comparable cotton leaf area, which was significantly higher than that in conventionally tilled flat sown crop. These CA treatments, again, were comparable with each other on cotton yield, and gave significantly higher cotton yield than that in conventionally-tilled flat-sown crop. Cotton yield under zero-till flat bed without and with residues was increased by 71.3 and 73.7%, respectively over conventional-till flat sown crop. Wheat yields in zero-till broad and flat bed with residues were comparable, but higher than those obtained from narrow-beds or from these beds without residues. Cotton-wheat gave the highest system productivity on zero-till broad bed with residues. Cotton-wheat system when compared was found superior to the traditional rice-wheat system on system productivity, net returns, and B:C. CA based management practices like zero-till permanent flat or broad bed with residues would be a better proposition for growing cotton as well as wheat for higher productivity and profitability.

Key words: Conservation agriculture, Cotton-wheat cropping system, Zero-till, India

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The most important cotton field weeds in Golestan province

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Abstract:

Weeds are the inhibiting factor of planting and increasing of production costs that are current in Iran. The most popular if weeds in cotton fields are Amaranthus sp, Chenopodium sp., Abutilon sp., Portulaca sp., Tribulus sp, Solanum nigrum, Heliotropim sp., Xanthium sp., Cyperus sp., Physalis sp., Phalaris sp., Cynodon dactylon, Sorghum sp., Acroptilon repens, Polygonum sp.. The damage of weeds caesed decreasing of yeild and have less efficeincy on vegetative growth. Weeds in cotton fields are the host of pest and diseases and caused pest and diseases population.

Keywords: weed, cotton , Abutilon sp

¹ Cotton reasarch inistitute of Iran



Plant Regeneration of Cotton (*Gossypium hirsutum* L.) in *In vitro* culture

L. Fahmideh¹, G. A. Ranjbar¹, O. Alishah², N. Babaeian¹
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Abstract

This study was conducted to determine the callus induction and plant regeneration in cotton and this study was carried out in Cotton Research Institute of Iran (Gorgan) using a factorial experiment based on completely randomized design with three replications in 2011-2012. Hypocotyl and cotyledon explants from 7-14 days old sterilized seedlings of 6 genotypes cotton (*Gossypium hirsutum* L.) were used. Explants for callus induction cultured on MS medium (MS medium with Gamborg vitamins B5) supplemented with a combination of auxin and cytokinin hormones for 10 weeks. Cultures incubated at $28\pm 2^{\circ}\text{C}$ under a light intensity of approximately 2000 lx with 16/8 light/darkness photoperiod for callus induction. Analysis of variance revealed that genotype 4-S-4 produced faster and more callus than the others. The percentage of callus induction and embryogenic callus were also higher in hypocotyl than cotyledon explants. For induction of embryogenesis and maturation of embryos, embryogenic calli were transferred on a free hormone MS medium supplemented with NH_4NO_3 and KNO_3 . Although, KNO_3 is less efficient for somatic embryo induction it is the best for embryo maturation. For germination of somatic embryos all produced calli were cultured on a MS medium supplemented with GA3 and then plantlets regenerated through somatic embryogenesis.

Key words: Cotton, In vitro culture, Callus induction, Somatic Embryogenesis, Plantlet regeneration

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Responses of *in vitro* Culture in Cotton (*Gossypium hirsutum* L.)

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Abstract:

In order to evaluation the response of cotton genotypes to *in vitro* culture conditions, a factorial experiment based on completely randomized design with three replications was carried out in Cotton Research Institute of Iran (Gorgan) in 2011. Three factors were genotype (ujCoker 312, 4-S-4 and C1211), explant type (hypocotyl and cotyledon) and growth regulator (0.1 mg/l-1 Kinetin + 1.9 mg/l-1 MgCl₂ and 0.5 mg/l-1 Kinetin + 1.6 mg/l-1 MgCl₂). Seeds were germinated on hormone free 1/2MS culture medium at 28 ± 2°C and 16/8 h light/dark conditions. Percentages of callus initiation, callus induction and embryogenic callus were measured. Analysis of variance revealed that 4-S-4 genotype had earlier and higher rate of callus production than the other genotypes. The percentage of callus induction and embryonic callus in hypocotyl were higher than that of in cotyledon explants. In all genotypes, the medium supplemented with 0.1 mg/l-1 2,4-D, 0.5 mg/l-1 kinetin, 1.6 mg/l-1 MgCl₂ was more efficient for callus induction than the other one. For embryo induction and its maturation, embryonic calli were transferred on free hormone MS medium supplemented with NH₄NO₃ and KNO₃. Then embryos were transferred on germination medium and plantlets were regenerated.

Key words: Cotton, *In vitro* culture, Hypocotyl, Cotyledon, Embryonic callus.

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Designing of automated farm cotton transplanter

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Abstract

The research and mechanization of cotton transplanting (i.e. seed sowing, transplanting, machine designing) can be listed as: seed sowing in nursery and specific vessel, raising the nursery till transplanting, economizing the water supply, pesticides and fertilizer inside the nursery/ glasshouse, immunity of seeds against the biotic and abiotic stresses, speeding up the transplanting via transplanter machine over a short time and large area of farm. Using the machine affects the cotton production to more economically in view of seed and water supply, also make a possibility of second cropping of cotton after wheat and barley and finally harvesting the cotton yield before end season freezing. The dimensions of this innovation are 100 x 175 x 280 (length x width x height). The approximately weight of machine without carrying the transplants and water is 480 kg. The machine operates by towing by a single tractor. This innovation, during operation, performs seven main acts simultaneously as, making the lines, raking, line cleaving, transplanting, watering, soil adding and cleaning the furrows. The power needed for towing is at least 75 hp for two-line and 100-120 hp for four-line models. This machine transplants about 12000 plants per hour.

Key words: Cotton, transplanter, mechanization

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Evaluation of cotton genotypes resistance to damping- off disease

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Abstract:

The rate of cotton seed germination in cold and wet soils and also infection to damping –off disease in the field are important factors for breeding of commercial varieties. Resistance of 41 germplasms belong to *Gossypium hirsutum*, *G. barbadense* and *G. arboreum* were screened by standard mold growth test invitro and on the bases of CR experimental design. The germplasms were cultured on 2% water – agar and incubated at 13.30C, for 8 days. The superior germplasm and little mold growth were selected and planted in 8 m rows and 80 × 20 cm patterns in RCB design with 26 treatments and 3 replications. The parameters of soil emergence, damping – off (percentage) were recorded 30 days after planting. In order to evaluation the resistance relatively stability in next genre, number of 100 bolls from each germplasms were harvested and for evaluation of seed quality, seedling growth and pollution rate were studied in laboratory by rolling wet paper towel and Agar – plate methods. Variance analysis of data showed that significant difference had among tested germplasms ($\alpha = 5\%$). The germplasm Chirpan-539 indicated higher seed germination %, seedling growth, lees seedling abnormally and seed decay percentage. This germplasm was more resistant to mold colonization, field deterioration and emergence in cold and wet soils.

Key word: damping, seed germination, cotton germplasms, *Gossypium hirsutum*, *G. barbadense* and *G. arboreum*

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