



## **INCANA Newsletter 3**

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### ***In this issue:***

- ***Invitation for the First International Conference on Science, Industry and Trade of Cotton in Iran***
- ***Introducing the new INCANA secretary in Iran***
- ***Introducing the new Director for Cotton Research Institute in Iran***
- ***The China national reserve is absorbing a large portion of the 2011/12 global cotton crop***
- ***A new method with low cost and low risk for DNA extraction in cotton***
- ***Yield and quality of cotton under different saline water***
- ***Ultra Narrow Row is helpful for cotton after wheat harvesting***
- ***India Slashes Cotton Production***
- ***Relations between climatic factors and cotton yield***
- ***Cloth-pot maker machine***
- ***Effect of cotton gossypol on human prostate cancer cells***
- ***Seed Coating solution***

**Invitation:**

**The First International Conference on Science, Industry and Trade of Cotton**

By: **Dr. Roshani Ghorban Ali**,  
Director, Cotton Research Institute of Iran (CRII) and Chairman of conference  
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I am pleased to announce that "The First International Conference on Science, Industry and Trade of Cotton" will be held October 2-4, 2012 in Gorgan, Iran. It is my proud privilege to invite you to join us and strengthen our efforts by sharing your expertise through a response paper or keynote to the conference topics which have detailed at the conference website.

We are looking forward to welcoming all INCANA member countries representative to participate and present key note lecture in the conference. Please inform us if you have any paper, idea and recommendation about this conference.

For more information please visit our conference website at:

<http://www.icsitc.ir>

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## **Introducing the new INCANA Secretary in Iran**

In September 27, 2011 a meeting being held in ICARDA office located in headquarters office of Agricultural Research Education and Extension Organization (AREEO) in Iran, Dr. Ghorban Ghorbani Nasrabad, Researcher and Head of the Agricultural Engineering Division in Cotton Research Institute of Iran (CRII) selected as INCANA new secretary on behalf of Dr. Ghorban Ali Roshani, Director of Cotton Research Institute of Iran (CRII).



He would like to thanks a lot to Mrs. Aisel Gharedaghli former secretary for her efforts and hope that the new secretary will be more efficient to enhance the INCANA's missions by getting the help and supports of the INCANA member countries. In 2011, he got his Ph.D in Agricultural engineering from Indian Agricultural Research Institute (IARI).

The INCANA office has shifted from AREEO in Tehran to the Headquarters of the Cotton Research Institutes in Gorgon, Iran.

For more information please visit our website at:

Website: <http://www.cottonnetwork.ir>

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## **Introducing the new Director for cotton Research Institute in Iran**



In 14<sup>th</sup> July 2011 and by the agreement of the Iran's Minister of agriculture, Dr. Jahangir Porhemmat, Deputy Minister of Agriculture and Head of Agricultural Research, Education and Extension Organization (AREEO) Dr. Ghorban Ali Roshani has been selected as the Director of Cotton Research Institute in Iran. In 2004, he got his PhD in Soil Science and Agricultural Chemistry from Indian Agricultural Research Institute (IARI). He is the Head of Cotton and Lint Crops Coordination Centre in Iran as a Non-Governmental Organization (NGO) to make coordination between Ministry of Jihad-e-Agriculture which is responsible for cotton production, Ministry of Industry, Mine and Trade which is responsible for trade and commercial and private sectors also.

From 2005 onward he is a member of Directorate Board in Soil Science Society of Iran.

## **The China national reserve is absorbing a large portion of the 2011/12 global cotton crop**

By: [ICAC Press Release, January 3, 2012](#)

Global cotton production is forecast 8% higher in 2011/12, compared with 2010/11, at 26.8 million tons, whereas consumption could decline by 2% to 23.9 million tons. As a result of the projected surplus of 2.9 million tons, global cotton stocks could rebound to 11.9 million tons by the end of 2011/12. This recovery follows two seasons of relatively tight global stocks. Almost 40% of the gain in global stocks this season could take place in China, due to the rebuilding of the national reserve. Between October 8 and December 30, 2011, a total of 2.1 million tons of domestic cotton were purchased for the China national reserve. Daily purchases are continuing. There is no limit to the amount of domestic cotton to be purchased by the national reserve this season. In addition, it is reported that about one million tons of non-Chinese cotton has been bought for the reserve; this cotton will be shipped to China over the next few months. Overall, the national reserve, which was almost exhausted by the end of 2010/11, could grow by at least 3 million tons or 11% of 2011/12 global production. It is possible that some of the reserve cotton will be sold later in the season. Outside of China, cotton stocks are expected to grow by 26% to 8.7 million tons in 2011/12, the largest in four years.

The lack of demand for cotton and ample supplies are placing downward pressure on prices. The Cotlook A Index dropped from 114 cents/lb in early August 2011 to 93 cents/lb in late December 2011. The average Cotlook A Index for the first 5 months of 2011/12 is 109 cents/lb or a third lower than the 2010/11 full-season average.

## WORLD COTTON SUPPLY AND DISTRIBUTION

	2010/11	2011/12	2012/13	2010/11	2011/12	2012/13
	Million Tons			Changes from November Million Tons		
Production	24.872	26.788	24.91	-0.007	-0.091	-0.232
Consumption	24.459	23.866	24.69	-0.037	-0.521	0.202
Exports	7.625	7.624	8.48	0.001	-0.101	-0.327
Ending Stocks	9.010	11.931	12.15	0.004	0.434	0.077
Cotlook A Index*	0.78	1.64	1.09**			

\* Season-average Cotlook A Index (U.S. \$ per pound).

\* Average for the first five months of the season (August to December 2011).

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### **A new method with low cost and low risk for DNA extraction in cotton**

By: **Dr. Ramazani Moghaddam Mohammad Reza**, Head of Cotton Research Station  
of kashmar, Iran.

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*Gossypium* species (approximately 49 species) represent a vast resource of genetic diversity for improvement of cultivated cotton. In cotton breeding and genetic studies hundreds of accessions need to be evaluated at the DNA level using molecular markers, so as a prerequisite, a fast, simple and low risk method is considered for DNA extraction in cotton. Modifications have been introduced for plant species such as cotton that have high levels of polysaccharides and polyphenols. The compounds form a sticky brown gelatinous matrix during DNA preparation that interferes with DNA digestion

and PCR process. For this purpose, cotyledonary leaves from 6 plants of 28 accessions of four cultivated species of *Gossypium herbaceum*, *G. arboreum*, *G. hirsutum* and *G. barbadense* were collected and grinded with a pestle in liquid nitrogen, and were transferred in a 1.5 ml micro centrifuge tube. After addition 0.5 ml extraction buffer, the tubes were capped and vortexes. After incubation in 65°C, an equal volume of chloroform : isoamyl alcohol (CIA, 24: 1, v/v) was added and the tubes were centrifuged. The supernatant was transferred to a fresh 1.5 ml tube, mixed with 0.5 ml of isopropanol, and kept at -20°C for 60 min for precipitation of DNA. The tubes were centrifuged for 10 min and the liquid phase discarded. After washing the DNA pellet respectively in 70% and 96% ethanol, it was vacuum dried and resuspended in 300 µl low salt Tris-EDTA buffer. The extracted DNA was then subjected to an additional cleaning stage as follows: the preliminary DNA solution was resuspended with 0.5 ml cleaning solution and shaken for 60 min at room temperature. The solution was then centrifuged for 5 min. After the liquid phase was discarded, the DNA pellet was washed with 80% ethanol + 15 mM ammonium acetate and then 96% ethanol, respectively. The cleaned DNA pellet was vacuum dried and resuspended in low salt Tris-EDTA buffer. DNA quality and quantity were determined by both spectrophotometric technique and running in 0.8% agarose gel electrophoresis. The results of both methods confirmed quantity and quality of the extracted DNA. Advantages of the studied method are the requirement to small amount of tissue, frugality of chemical agents, fast method, high yield and quality of extracted DNA and no necessary to phenol. Therefore, the presented method will be introduced as an economical, rapid and low risk method for DNA extraction of cotton.

## **Yield and quality of cotton under different saline water**

By: [Ghorbani Nasrabad Ghorban](#), Head of Agricultural Engineering Division,

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The effect of saline water on cotton yield and fiber quality was studied on loamy soils at Indian Agricultural Research Institute (IARI), New Delhi during 2009-2010 years. Irrigation water having four levels of salinity ( $EC_1=2 \text{ dS.m}^{-1}$ (ground water),  $EC_2= 5 \text{ dS.m}^{-1}$ ,  $EC_3= 8 \text{ dS.m}^{-1}$  and  $EC_4=11 \text{ dS.m}^{-1}$ ) taken as main plot treatments was used as drip with laterals placed at three depths (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 water were made by mixing NaCl and  $\text{CaCl}_2$  in water 1:1 (ratio). Cotton yields were not influenced by saline water up to  $8 \text{ dS.m}^{-1}$  but decreased by 32.6, 40.3 and 39.2% at  $11 \text{ dS m}^{-1}$  compared to  $EC_1$ ,  $EC_2$  and  $EC_3$  treatments. Lateral depths had no effect on yield. Fiber quality parameters in cotton except micronaire were also not affected by salinity levels and lateral depths. Salinity treatment of  $11 \text{ dS.m}^{-1}$  and lateral buried at 30 cm resulted in lower micronaire than other treatments.



## **Ultra Narrow Row is helpful for cotton after wheat harvesting**

By: **Donyavian Hamidreza**, Cotton Research Institute of Iran.

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Ultra Narrow Row (UNR) in cotton (*G. hirsutum*) reduce the production cost, increase earliness, and decrease use of pesticides. Planting cotton after wheat harvesting (double crop) is widely used in the northern part of Iran (Gorgan). Thus, determination of the effect of UNR after wheat in cotton is very important. Therefore, two cultivars of Sahel and B557 and also different rows spacing (20,30,40,50,60,70,80,90,100 cm)



were compared during 2009 - 2010 years in the Hashemabad Research Station of Gorgan. Results showed that the best yield was obtained from 20,30,40 cm rows in Sahel and 20 cm rows in B557 cultivars. As B557 cultivar made the best yield compare with Sahel , it is suggested B557 in 20 cm row for planting cotton

after wheat in the northern part of Iran.

## **India Slashes Cotton Production**

By: **Cotton International, 24/7**, Bloomberg, Business Standard and published reports, Edited by FCI Staff, January 26, 2012

India, the world's second largest cotton grower, will grow a smaller crop than expected as diseases have hurt yields in Maharashtra and Andhra Pradesh, according to a Bloomberg report this week quoting the country's textiles commissioner. The report said the harvest could reach 34.5 million bales of 170 kg (375 lbs.) each in the year that began Oct. 1. That is down from last year's 35.6 million bales.

Production may be only marginally better than last year, D.K. Nair, secretary-general of the Confederation of Indian Textiles Industry, told Bloomberg, adding that local prices will rise as ending stocks may come down because of higher exports."

Another report, from India's Business Standard newspaper, said high export demand from China is supporting prices. Export demand "has picked up from major textile hubs like China, Bangladesh, Taiwan and Indonesia," it said. China's December cotton imports rose 71% year-on-year to 790,000 tonnes and the country will soon issue another import quota of 1.1 million tonnes, it said. Demand from cotton yarn manufacturers also increased in the last couple of weeks, according to the newspaper. So far, 4.6 million bales had been exported and by March-end 5.5-6 million bales are expected to be exported.

## **Relations between climatic factors and cotton yield**

By: **Donyavian Hamidreza**, Cotton Research Institute of Iran.

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Determination of relations between climatic factors and crop yield for recognizing and developing mathematical models is an important knowledge in agricultural science. To estimate and interpret of regression models between climatic factors such as: temperature, rainfall, sunlight and yield of cotton, this investigation was conducted in the north of Iran. In this way, in 12 years, linear, quadratic and cubic regressions between mentioned climatic factors and yield were estimated and interpreted the significant regressions. The results revealed 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 °C. 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 10 mm increase in rainfall increased cotton yield up to 277 kg/ha.

## **Cloth-pot maker machine**

By: **Nowrozieh shahram**, Head Division of Agronomy management, Cotton Research Institute of Iran  
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Cloth-pot maker machine was designed and made in Cotton Research Institute of Iran(CRII) enable to produce planting pot through soil blocker technology. In this technology, planted pots could be directly transferred to the field without taking out the seedling from the pots during the transplanting time. So it is possible to transplant any kind of crops by this technology. This machine can produce 2500 pot daily. After filling of cylinders by soil, pistons compact the soil and transfer to the cloth pots. The objective of designing this machine is enhancing of mechanization efficiency in transplanting crops and improvement of transplanting.



### ***Advantages of cloth pot maker machine are:***

- Early plant maturation and better marketing
- double cropping per year will be possible
- Preventing of soil crusting in germination time and bad growing
- Uniform plantation with suitable density in uneven lands
- Adapting for all soil texture
- Solving of the germination problem in saline soil, dry and cold conditions
- Adapting with conservation agriculture system
- Suitable for pressurize irrigation systems
- Reduce the rate of seeds per unit area in comparison with direct seeding



- Easy pests and diseases control in early season
- Easy weeds management
- Reduce costs of pests and diseases control
- Environment protection

### **Effect of cotton gossypol on human prostate cancer cells**

By: **Mali Mahmoud**, Cotton Research Institute of Iran,  
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Gossypol (GP) is a potent antifertility agent contained in cotton seed and other parts of cotton plants. It has shown that GP inhibits in-Vitro growth of Dunning rodent prostate cancer cells (MAT-LyLu), PC<sub>3</sub>, MCF-7 and primary cultured human prostate cells, as well as the Vivo tumor growth of the MAT-LyLu cell line after implantation into Copenhagen rats.

### **Seed Coating solution**

By: **Mali Mahmoud**, Cotton Research Institute of Iran,  
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This solution is completely organic and can be used in agriculture section and food science. In cotton cultivation, recently delinted seeds have increased instead of fuzzy seeds. Nearly 45-50% of required seeds for cotton cultivation are delinted seeds. Coating of fuzzy seed is recommended as

suitable substitution instead of delinted seed. Unlike the delinted seeds, in this method Sulphuric Acid is not applied. So it has not destructive effects on environment. Sulphuric Acid by releasing SO<sub>2</sub> gas is caused environment pollution. Nearly 15-20 kg Sulphuric acid is used for providing of 1 kg delinted seed. On the other hand, Sulphuric Acid decrease seed vigour by 20% and damage to machine in delinte factories. Micronutrient, plant growth regulators, insecticides and fungicides can be added to seed coating solution which is resulted to saving of costs. This solution can be used as anti-transpiration and enable to increase drought tolerance of crops and also control of aerobic pathogens.

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