

COTTON Innovate



Weekly Newsletter from Central Institute for Cotton Research, Nagpur

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RESEARCH ROUND-UP



Increase in mealy bug, *Phenacoccus solenopsis* incidence in cotton in North Zone

Dr. Rishi Kumar, Senior Scientist, Entomology, CICR, RS, Sirsa

Since its introduction from 2007, the incidence of *Phenacoccus solenopsis* has been declining year after year. However in May, 2013, an increased incidence of *P. solenopsis* was recorded on alternate hosts particularly the weeds like congress grass, *Parthenium hysterophorus* and Jangli Surajmukhi, *Helianthus sp.* etc. On cotton, mealybug incidence was recorded from July onwards. Initially the mealybug population remained under control probably due to the activity of *Aenasius bambawalei* and other cultural practices followed by the farmers. But from the 38th Standard week, there has been a sudden spurt in mealy bug incidence in the already infested fields and mealy bug incidence (%) increased from 10 % (37th Standard week) to 25% during 41st Standard week. The activity of *A. bambawalei* was also recorded. The increase in incidence might be due to the increased field activity as picking has been initiated during this period.



Monitoring DUS Project at CICR, Nagpur

Monitoring of the project on “DUS characterization for Implementation of Protection of Plant Varieties and Farmers’ Rights Act, 2001” funded by PPV & FR Authority of India was held on November 6, 2013, at CICR, Nagpur which is the Co-nodal centre of the project. The team comprised of Chairman, Dr. M. S. Kairon, Former Director, CICR, Nagpur, Dr. K. Rathinavel, Principal Scientist and Nodal Officer, DUS CICR (RS), Coimbatore and Dr. V. Santhy, Senior Scientist and Co-Nodal Officer, DUS, CICR, Nagpur. The monitoring was held in the presence of Dr. K. R. Kranthi, Director, CICR, Nagpur, Dr. Suman Bala Singh, Head i/c, Division of Crop Improvement, Dr. Sandhya Kranthi, Head, Division of Crop Protection and Dr. D. Blaise, Head, Division of Crop Production. Representatives from various private companies also visited to monitor the performance of their entries being tested for registration. Two trials have been laid out with the first trial, one with 40 candidate genotypes being tested for the first year and second trial with 15 genotypes which are being tested for second consecutive year. The team expressed satisfaction with the field lay out & maintenance, as well as observations and data recording.



SCIENTIFIC TALK

Dr. S. Manickam, Principal Scientist (Plant Breeding) made a presentation on “**Modern breeding approaches for abiotic stress tolerance**” on 8th November, 2013. The topics like Marker Assisted Breeding (MAB), Genomics Approach, and Phenomics Approach were covered in the presentation. In His presentation he highlighted by integrating genomics approach like high throughput genotyping, sequencing (including EST-Sequencing), transcriptomics and functional genomics with classical physiological and breeding approaches, abiotic stress tolerant lines / cultivars can be developed. Phenomics refers to acquisition and analysis of high-dimensional phenotypic data on an organism (~genomics). In this approach, automated phenotyping is done through non-destructive and non-invasive sensors and data processing is done through automation to get phenotypic data. Further, robotized delivery of plants to sensors and vice versa, robotized plant culturing and automated analysis of processed data in a data management pipeline is done. Through this approach, accurate phenotyping of large population is possible to identify the tolerant plants to abiotic stresses.



LITERATURE SCAN

Bt protein transfers to pest and their natural enemies

Bt protein transfers through the food chain and to natural enemies of cotton pests. Bt toxin was found in the bodies of predator *Chrysoperla carnea* and parasitoid *Microplitis pallidipes* preyed on *Spodoptera exigua* larvae that fed on transgenic cotton. Bt toxin was detected in *S. exigua* larvae of all the examined instars (second, third, fourth, and fifth) that fed on transgenic cotton varieties and the Bt toxin level was the highest in the body of the second instar. ELISA was used to detect Bt insecticidal protein.

Citation: Chen C., Wu E., Yang Y. and Su H. (2013) The transfer of Bt insecticidal protein to higher trophic levels via a transgenic cotton, then beet armyworm (Lepidoptera: Noctuidae) and their natural enemies. *The Canadian Entomologist / FirstView Article* pp 1-7 DOI: <http://dx.doi.org/10.4039/tce.2013.41>, Published online: 10 October 2013

Contributed by Dr. V.S. Nagrare

Students from University of Kerala visit CICR Regional Station, Coimbatore

A batch of eleven M. Sc. (Genetics and Plant Breeding) students of the Department of Botany, University of Kerala, Thiruvananthapuram accompanied by Dr. A. Gangaprasad and Dr. Bindu Nair, Assistant Professors visited CICR Regional Station, Coimbatore to study the programmes relevant to their course undertaken in this Regional Station. Dr. Isabella Agarwal, Senior Scientist (Agricultural Economics) coordinated their visit. She gave an introductory lecture to the students briefing them about the cotton at international and national level and how it affects the world and Indian economy related to cotton. She highlighted about the Indian cotton in particular and the genesis of Central Institute for Cotton Research and its activities. Dr. S. Manickam Principal scientist exposed the students to the characteristics of varieties and hybrids released from CICR. Further, they were briefed about various research projects handled in the station and male sterility system, methods of hybrid seed production, introgression hybridization, DUS testing in cotton and Bt cotton technology. Later the students were taken to the cotton experimental fields and the characteristic features of cotton species, crop production techniques, High Density Planting System (HDPS) were explained to them.



Dr. Isabella Agarwal delivered talk on Cotton at international and national level



Dr. S. Manickam delivered talk on Characteristics of cotton varieties and hybrids



Students visiting cotton experimental fields

Other Activities

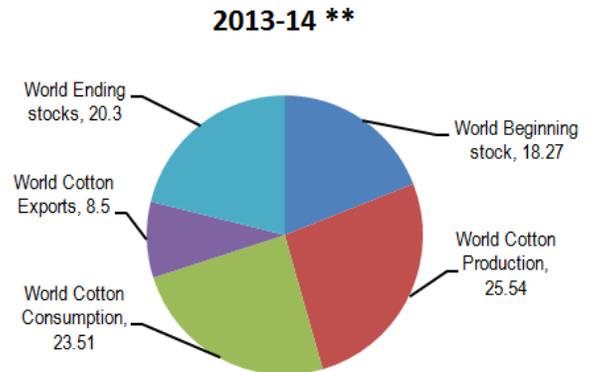
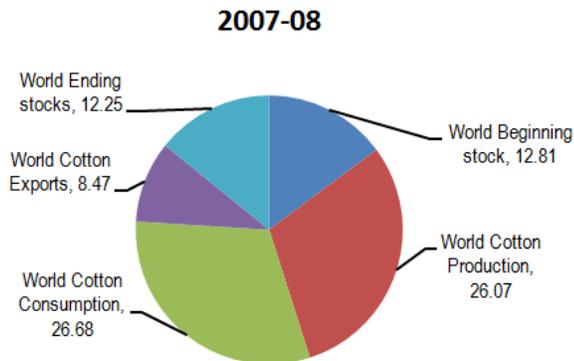
Dr. S. Manickam was nominated as one of the External Expert to finalize the syllabus of new course in Plant Breeding & Genetics (EXP 301) on “Management of Plant Genetic Resources and Special Methods of Breeding” by the Director, Centre for Plant Breeding and Genetics, Tamil Nadu Agricultural University, Coimbatore.



COT.COM

by M. Sabesh, Scientist-Computer Applications

World Cotton Situation



- Recent years the world cotton ending stock position on the raise especially due to continued Chinese raw cotton reserve policy. Current year, the world ending stock, is expected around 20.3 million metric tons compared to 18.27 last year.
- World cotton consumption decreased in recent years, it is expected around 23.51 million metric tons current year compared to 26.68 in 2007-08.
- World cotton export on an average around 8.5 million metric tons for the past 7 years

Metadata: Data source: Cotton Corporation of India.
Quantity in Million Metric tons
** Projected

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Chief Editor : Dr. Nandini Gokte-Narkhedkar
Editors : Dr. J. Annie Sheeba, Dr. Vishlesh Nagrare, Dr. J. Amutha, Dr. M. Saravanan
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Central Institute for Cotton Research
Post Bag No. 2, Shankar Nagar PO, Nagpur 440010
Phone : 07103-275536 Fax : 07103-275529; email: cicrnagpur@gmail.com