

# COTTON *Innovate*



Weekly Newsletter from Central Institute for Cotton Research, Nagpur

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## Review Meeting on Insect Pests' Outbreak in Cotton and Soybean Held at New Delhi

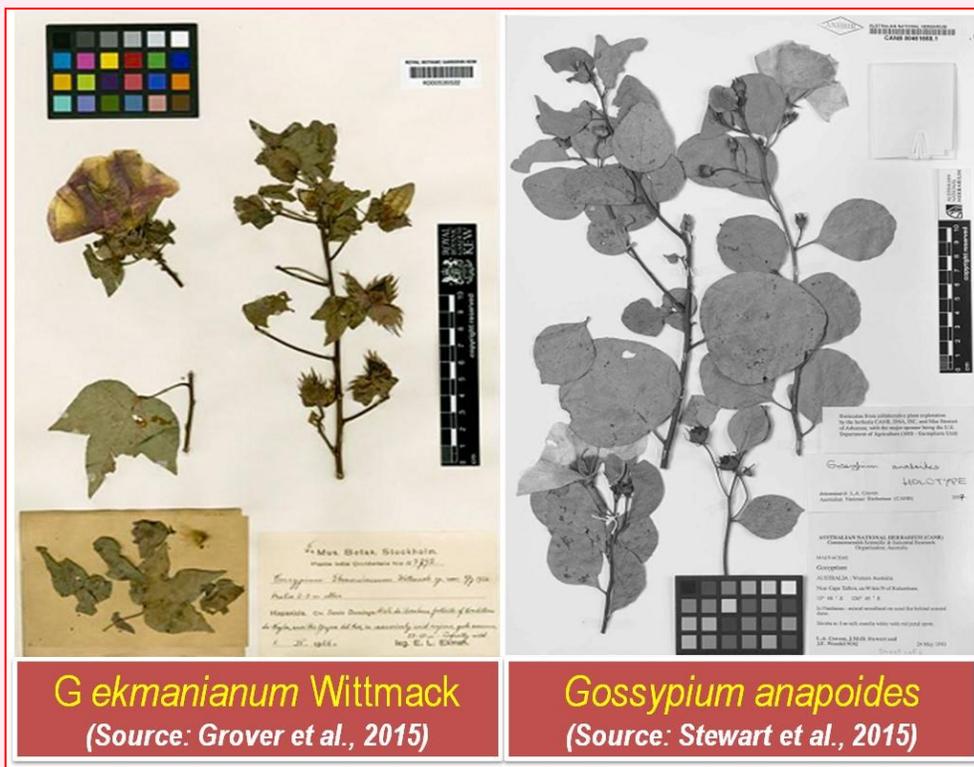
The review meeting on insect pests' outbreak in cotton and soybean was held on 27th October 2015 at NASC Complex, New Delhi under the Chairmanship of Dr S. Ayyappan, Secretary DARE & DG ICAR. Dr KR Kranthi, Dr AH Prakash, Dr D Monga, Dr B Dharajothi, Dr Rishi Kumar, Dr Vishlesh Nagrare, Dr M Amutha and Mr T Prabhulinga from ICAR-CICR participated in the meeting. Dr JS Sandhu, DDG (CS), Dr NK Krishna Kumar DDG (Hort), Dr AK Singh DDG (AE), Dr PK Chakrabarti, ADG (PP & CC), Scientists representatives from Cotton, Soybean and Oilseed institutes (ICAR) and State Agricultural Universities of North India including KVKs of Punjab, Haryana and Rajasthan participated in the meeting. In the meeting deliberations were held regarding the epidemic of whitefly in cotton, Soybean and oil seeds crop as well as Spodoptera and Stem fly. Honorable, DG & Secretary DARE, DDGs, ADGs, and Directors of CICR and DOSR addressed the participants. Honorable, DG & Secretary DARE also desired to make roadmap for next seasons to avoid outbreak of insect pests.

## New wild species of *Gossypium* – An update

Understanding the relationship between domesticated crop species and their wild relatives is paramount to germplasm maintenance and the utilization of wild relatives in breeding programs. The genus *Gossypium* which belongs to the family Malvaceae and tribe Gossypieae, includes about 50 species, out of which only four species are cultivated for their spinnable fibre. The remaining 46 species are distributed throughout the tropics and subtropics of the world in wild forms. A tetraploid AD genome species, *Gossypium ekmanianum* Wittmack was resurrected as an independent species based on morphological analysis of specimens obtained from the Dominican Republic (Krapovickas and Seijo, 2008) and the species status was recently confirmed based on the species-specific, indel polymorphisms observed in chloroplast and nuclear DNA (Grover et al., 2015). *G. ekmanianum* is phylogenetically close to *G. hirsutum* which can be identified using the character combinations viz., 2.5 cm bracteoles with 3–9 teeth; 3-loculed capsules each of 2 cm; lamina lobes that are less than half the length of the lamina; hairy stems with 1–2 branches and stellate hairs; and 1–2 cm submuticous capsule with a 2 mm apex.

*Gossypium anapoides*, a new diploid species of *Gossypium* belonging to K genome group and endemic to the north Kimberley region of Western Australia was reported recently (Stewart et al., 2015). This species is erect, with multiple, unbranched stems arising from the crown of a woody lignotuber. This trait, along with the presence of an elaiosome (a fleshy structure that is attached to the /fruit, rich in lipids and proteins) on each seed and the results of molecular analyses, places it with the species of *Gossypium* section *Grandicalyx*. *G. anapoides* is phylogenetically sister to the geographically disjunct species *G. cunninghamii*. The species is named for the unique, raised venation on the adaxial leaf surface that imparts the appearance of an abaxial surface. The conservation status of *G. anapoides* is assessed as 'data deficient' according to IUCN Red List criteria (IUCN, 2001). Etymology of this new specie's name indicates that it is derived from the Greek, combining forms ana- (back or bottom), apo- (front or top), and -eidos (resemblance) and refers to the leaves being of quite similar in appearance on each surface. They are isobilateral, being distinguishable only by a small nectary on the main vein of the abaxial side of the leaf while, the leaves of all other species of section *Grandicalyx* are distinctly dorsiventral.

Wild species have been undeniably beneficial to modern agriculture, providing plant breeders with a broad pool of potentially useful genetic resources. Wild species of *Gossypium* are the source of valuable genes for majority of useful traits including lint yield, fibre



***Gekmanianum* Wittmack**  
(Source: Grover et al., 2015)

***Gossypium anapoides***  
(Source: Stewart et al., 2015)

quality, male sterility, plant architecture, resistance to biotic and abiotic stresses etc. which can be introgressed into the cultivated species for further improvement. The newly identified and confirmed species of *Gossypium* viz., *G. ekmanianum* and *G. anapoides* have further broadened the *Gossypium* gene pool and stands for utilization in future cotton improvement programmes.

**Suggested readings:**

- Gotmare, V., Singh, P. and Tule B. N. Wild and cultivated species of cotton. Technical Bulletin from CICR available at [http://www.cicr.org.in/pdf/wild\\_species%20.pdf](http://www.cicr.org.in/pdf/wild_species%20.pdf).
- Grover, C. E., Zhu, X., Grupp, K. K., Jareczek, J. J., Gallagher, J. P., Szadkowski, E., Seijo, J. G. and Wendel J. F. (2015) Molecular confirmation of species status for the allopolyploid cotton species, *Gossypium ekmanianum* Wittmack. *Genetic Resources and Crop Evolution* 62(1): 103-114.
- Stewart, J.M., Craven, L. A., Brubaker, C. and Wendel J. F. (2015) *Gossypium anapoides* (Malvaceae), a new species from Western Australia. *Novon: A Journal for Botanical Nomenclature* 23(4): 447-451.

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**Meetings attended**

- Dr. K.R. Kranthi, Director, ICAR-CICR attended the review meeting on status of white fly infestation on cotton crop in Haryana & Punjab on 27th October, 2015 at ICAR, New Delhi and also attended a meeting of IRM HDPS on 27th October, 2015 at ICAR, New Delhi.
- Dr. K.R. Kranthi, Director ICAR-CICR attended and delivered a lead lecture for National Seed Congress at Hyderabad on 28th October, 2015.
- Dr. K. R. Kranthi, Director ICAR-CICR attended the ASRB selection committee meeting on 29th October, 2015 at ASRB, New Delhi

**Other Activities**

Dr. S. M. Wasnik, Principal Scientist (Agric Extension) has been nominated to act as a Member of Expert Committee for the Selection of Two Technical Assistants (contractual basis) for Monitoring of National Food Security Mission (NFSM) activities for Directorate of Cotton Development, Government of India, Ministry of Agriculture and Farmers Welfare, Nagpur. The selection committee meeting was held on October 29, 2015 under the Chairmanship of the Director, DCD



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