

COTTON Innovate



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Annual Review Workshop of TMC MM I

A meeting of PI/CCPIs of TMC MM I projects (TMC MM 1.3, TMC MM 1.4, TMC MM 1.5 & TMC MM 1.6) located in southern zone was held at Directorate of Oilseeds Research (DOR), Rajendra Nagar, Hyderabad on 8th May, 2014 to review the progress of work and to discuss the technical programme for the year 2014-15. The meeting started with welcome of the participants by Dr.D.Blaise, HOD, Crop Production, CICR, Nagpur. In his introductory remarks Dr.K.R.Kranthi, Member Secretary TMC MM I & Director, CICR explained about purpose of the meeting. Dr. K.S. Varaprasad, Project Director, DOR was present during inaugural function and expressed his desire to be part of TMC 1.6: e-kapas project and appreciated the HDPS system of cotton production. The meeting ended with the vote of thanks by Dr.J.H.Meshram, In-charge TMC Cell, CICR, Nagpur.



Literature Scan

Can Green Biotechnology mitigate Global warming?

Agricultural biotechnology, cleverly working with nature to meet human needs, can potentially play a significant part in the effort to reduce human impact on the environment. Global warming caused due to more Carbon dioxide and methane emission has become a major problem. A large proportion of these two compounds come from power plants and transportation. To counteract green house emissions, engineers are building cleaner cars and modernizing power plants. However, green biotechnology offers another solution. Many scientists strongly believe that genetically engineered plants can play role in diverse ways in slowing down global warming. Corn that is engineered to grow thicker, woodier stalks uses more carbon so it can make all the woody lignin and cellulose that makes them thicker and stiffer. Those two elements are slow to decompose in soil, so the more biomass that is produced, the more carbon that is put into the soil. Scientists are also exploring new ways of farming rice so that it can curb global warming as well and produce higher yields. Other possibilities include no-till agriculture, which involves the use of herbicide resistant genetically modified crops to control weeds instead of tilling the ground. The herbicide resistant transgenic cotton trials have already been conducted in India and awaiting for final nod from biosafety authorities (http://igmoris.nic.in/field_trials.asp). Weed tilling causes tractor fuel to be emitted into the atmosphere. Therefore, no-till crops offer a double benefit. Bacteria and fungi use carbon in nearly every molecule, so if they can be made to take on a little more carbon, it could help add up to more carbon sequestration. Fungus is also being studied to create usable fuels out of agricultural waste.

CICR has made a spectacular progress on high density planting system (HDPS) in cotton, which maintains high plant population for higher yield (Kranthi *et al.*, 2012). Biotech team of CICR has made significant progress to transform elite cotton cultivar Suraj with Bt gene/s as Suraj is suitable for high density planting system. Further, transformation with multigene construct combining biotic, abiotic and herbicide resistant genes is in progress. Hope that in near future green biotechnology, will play greater role in mitigating environmental problems that plague our civilization.

Reference:

Transgenic crops under development and field trials in 2013 http://igmoris.nic.in/field_trials.asp.

Kranthi *et al* 2012. *High Density Cotton Planting For Improving Rainfed Cotton Productivity In Vidarbha*, *CICR News Letter*, Vol 28, No.2, April–June, 20

Contributed by Dr. G. Balasubramani, Principal Scientist, Biotechnology Section, CICR, Nagpur.

MEETINGS ATTENDED

Dr. K.R. Kranthi, Director, CICR delivered presidential address in the Annual Students function at TNAU Coimbatore on 06th May, 2014.

Dr. K.R. Kranthi, Director conducted TMC MM I and TMC MM II meetings at Directorate of Oilseeds Research, Hyderabad and ANGRAU, Hyderabad on 08th and 09th May, 2014 respectively.

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