



Proceedings of the Annual Review Workshop on TMC MM-I (2007-08) held at CICR (RS), Coimbatore

The Annual Review Workshop (2007-08) of Technology Mission on Cotton, Mini Mission -I was held at CICR RS, Coimbatore during 22nd - 23rd July, 2008. The Workshop was Chaired by Dr. P. Rajendran, ADG (PP & CC) and presided by Dr. K.R. Kranthi, Director, CICR, Nagpur.

Dr. K.R. Kranthi, Director, CICR and Member secretary, TMC provided a brief introduction to programme and achievements under the TMC MM-1.

The Chairman in his inaugural address stressed on the need to reorient the research programmes under the changing scenario of cotton cultivation in India. He reiterated that Scientists need to shift from conventional technology generation mode into direct technology utilization/commercialization mode, for which, a thorough analysis need to be performed based on the needs of the cotton textile industry. He urged on the immediate requirement for economic revitalization of cotton crop especially in Vidarbha region. Chairman supported the research programmes formulated in this Mini Mission of eleventh plan which he felt were capable of addressing present day needs on cotton improvement, mechanization, Bt cotton development and management of emerging pests.

The inaugural session was followed by individual PI's presentations on TMC MM-I projects.

TMC MM 1.1: Development and Promotion of medium and long linted diploid cottons (G.arboreum and G.herbaceum): Dr. S. K. Verma, CICR, Sirsa

Suggestions:

- Centers need to send the fibre quality data in time.

(Action: CCPI, CICR, Nagpur and CCPI, UAS, Dharwad)

- The activity on promotion of desi cottons may be taken up by Mini Mission II through FLD.
- The data on six years trials conducted for promising desi genotypes need to be statistically analyzed so that the best lines can be identified for stability & performance and then sent for registration.

(Action: P.I.)

- Registration of new materials identified under TMC MM-I need to be done in time with an accompaniment letter to TMCCel1.
- A policy need to be formulated for early multiplication of seeds of promising genotypes for promotion activity by-passing AICCIP.

(Action: P.I.)

TMC MM 1.2: Development of Extra long staple G.barbadense cotton with improved fibre qualities to meet the requirements of textile industry, Dr. K. N. Gururajan, CICR, RS, Coimbatore

Suggestions:

- Centers not performing according to the formulated programme need to be dropped from the Project.

(Action: TMC Cell on O.U.A.T., Bhawanipatana after intimating the PI)

- The activity on marker aided selection for ELS may be reconsidered in view of the limited resources available under the project for molecular work.

(Action: P.I.)

TMC MM 1.3: Identification of G. hirsutum genotypes suitable for machine picking and development of agronomic package

Suggestions:

- The genotypes identified for machine picking should be raised only in closer spacing of 100 x 10 cm or less and sown on long strips with the width of the picker under design and development. This has to be multilocally tested.
- Study on defoliant and various treatments of the experiments should be chosen after consultation with Physiologists/ Agronomists

(Action: P.I.)



TMC MM 1.4: Development and promotion of Bt transgenic cotton for bollworm resistance.

Suggestions:

- The institute to initiate RCGM trial of several back-cross bred Bt genotypes already developed. (Action: CICR)
- The genotypes performed superior to Bt check in the zonal multilocalational Bt trial project need to be identified, and transferred to MM-II, FLDs etc. for dry and irrigated areas.
- Bio-efficacy testing of the Bt transgenics developed in the project need to be carried out on priority. (Action: P.L)

TMC MM 1.5: Molecular characterization of cotton germplasm using DNA markers

Suggestions:

- The necessity to validate molecular tags identified for economic traits in other countries with the lines grown in our country was emphasized. Also, the utility of identified markers for determining genetic diversity of germplasm need to verify after a thorough analysis of the data generated from the project. A good plan need to be worked out on proper supply of pure seeds of varieties and parents for an authentic DNA fingerprinting. (Action: P.L)

TMC MM 1.6: Exploitation of Apomixis and TGMS System in Hybrid Cotton Seed Production

Suggestions:

- Confirmation of thermo sensitive genetic male sterility needs to be done in growth chambers under controlled conditions. (Action: CCPI, CICR, Nagpur and ANGRAU, Mudhol)

TMC MM 2.1: Development of production technologies for Bt cotton and improvement of water and nutrient use efficiency with precision farming techniques

Suggestions:

- The results may be presented in such a way that one table should give the treatment details across all centers along with clear cut economics of best treatment.
- Water Use Efficiency Index should be clearly defined as to what criteria to be observed before studying in drylands along with clear cut.
- Bt cotton trials should not be taken up at Orissa since GEAC has not approved Bt cotton cultivation in the state. (Action: P.L)

TMC MM 2.2: Identification of Innovative Bt. Cotton based Cropping Systems improvement of water and nutrient use efficiency with precision farming techniques

Suggestions:

- The major finding on successful transplanting of seedlings including north zone has to taken up on a large scale in the Institute/University level for experimental fields.
- The economics of transplanting has to be worked out across locations.
- The activity on double cropping need to be given more emphasis rather than the identification of intercrops per se in Bt cotton. (Action: P.I.)

TMC MM2.3: Mechanization in cotton production

Suggestions:

- Data need to be generated on comparison of bullock drawn cultivation versus mechanized cotton inter cultivation. The trials for machine picking activity need to be laid out in long strips as mentioned for the earlier project MM 1.3.



- The spacing at which hybrids are amenable to machine picking has to be worked out by studying still lesser plant to plant distances than 10cm.
- A PERT analysis component analysis of the pickers already developed and available has to be performed.
- Linkage with the work in MM1.3 has to be kept.

(Action: P.I.)

- Subproject 1 on mechanization of sowing, weeding intercultural operation and spraying has to be dropped from the Mini Mission programme and only the subproject 2 on mechanization of cotton picking may be focused.
- The Center, CIAE, Bhopal need to be dropped from the project

(Action: TMC Cell after intimating to the PI)

TMC MM 2.4: Physiological manipulation of Bt plant morphoframe for enhanced productivity under varied agro-climatic conditions

Suggestions:

- Care need to be taken in application of defoliant at correct stage and correct concentrations for its full benefit.

(Action: P.I.)

TMC MM 3.1: Emerging key pests; their characterization, taxonomy, genetic diversity and control

Suggestions:

- The role of N on population dynamics of mealy bug incidence in Bt cotton need to be understood
(Action: P.I. after consultation with Agronomist/Soil Scientist)
- Similar to the insects, molecular analysis of fungal pathogens may be done.
- The mode of action of fungus on mealy bugs needs to be elucidated

(Action: Co P.I.)

TMC MM 3.2: Development and validation of IPM firm strategies for Bt and conventional cotton under different ecosystems

Suggestions:

- A procedure need to be designed for determining the ETL for mealy bug which is the immediate requirement
(Action: P.I. after consultation with Entomologists)

TMC MM 3.3: Development, validation, utilization and/or commercialization of bio-pesticides and bio inoculants

Suggestions:

- The efficacy of already identified bio-inoculants needs to be studied rather than placing efforts on developing new bio-pesticides.

(Action: P.I.)

TMC MM 3.4: Development of farmer friendly diagnostic kits for transgene seed purity

Suggestions:

- Kits for new genes should be commercialized.

(Action: P.I.)

TMC MM 4.1 Quality Evaluation of Cotton Fibres

Suggestions:

- Interaction between CIRCOT and the cotton scientists especially breeders is very important to have a follow up of the promising strains identified in various projects so that it is not lost.

(Action: P.I.)



TMC MM 4.2: Commercial Technology Development for value addition

Suggestions:

- The activity on refinement of cotton stalk compacting machine need not be continued further under Mini Mission-I.

(Action: TMC Cell after intimating to the PI)

- Commercialization of technique for preparation of absorbent cotton from non-spinnable cotton has to be prioritized. Also, the possibility of environmental friendly microbial conversion rather than chemical conversion needs to be explored.

(Action: P.I.)

TMC MM 5.1 Total Factor Productivity of Cotton in India

Suggestions:

- The reasons for decrease in TFP over the years in certain states need to be worked out at individual factor level.

(Action: P.I.)

TMC MM 5.2: Studies on social dynamics of cotton production in distress areas

Suggestions:

- The necessity to understand what sociological interventions are needed to improve cotton farming situation in the country was suggested.
- The attitude of farmers towards use of pesticides has to be studied.

(Action: P.I.)

TMC MM 5.3 Indian Cotton Portal

Suggestions:

- The data sets obtained from various projects need to be assembled and incorporated into the web site.

(Action: P.I.)

The Chairman in his closing remarks emphasized on following aspects:

- CICR should take up a special drive for monitoring of all the projects operating under Mini Mission I of TMC
- The vulnerability of Mini Mission projects to shift from the main focus need to be prevented as it is time bound.
- The interaction between co-operating centers of various projects needs to be strengthened for an effective outcome.
- Timely reviewing of the mini mission projects is important
- There is a necessity to shift from the conventional redundant, routine ways of research to a fast-track mode where achievements are time bound.
- The need for interaction between CIRCOT and breeders was again emphasized.
- The allotted budget in each project may be saved by changing RA post to SRF whenever the vacancy is created.

The meeting ended with Vote of Thanks to the Chair by Dr. N. Gopal Krishnan, Project Coordinator & Head, CICR Regional Station, Coimbatore (Cotton) as well as Dr. K.R. Kranthi, Director, CICR and Member secretary, TMC.