

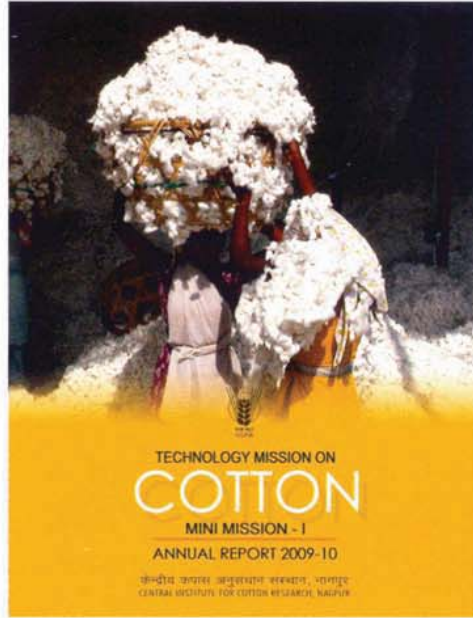


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COTTON

MINI MISSION - I

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CENTRAL INSTITUTE FOR COTTON RESEARCH, NAGPUR



Published by:

Dr. K. R. Kranthi
Member secretary, TMC MM I
Director
Central Institute for Cotton Research
Post Bag No. 2, Shankarnagar PO, Nagpur 440 010

Edited by:

Dr. A. R. Reddy
Dr. M. V. Venugopalan
Dr. S. M. Palve
Dr. Sandhya kranthi
Dr. Gautam Majumdar

Compiled by:

Dr. A. R. Reddy
Ms. Varsha G. Dhosewan

Hindi translation:

Dr. M. S. Yadav

P R E F A C E

Cotton production this year has been good (240 to 315 lakh bales) for the sixth consecutive year. The record production 300 lakh bales in India, most notably a record 67 lakh bales (170 kg lint/ bale) in Maharashtra under 95% rain-fed conditions, was heartening, despite aberrant and erratic weather conditions. The enhancement in yields has been primarily due to several technological changes that have taken place since 2002, significantly related to the introduction of Bt-cotton, new cotton hybrids, novel pesticides, and the pest management and other crop production technologies developed and disseminated by CICR. It is widely believed that many of the improved varieties developed by the public sector are being used by the private seed industry to develop high yielding commercial hybrids, which have contributed to the enhanced production. The role of farmers, scientists, private sector in introducing Bt-cotton, coupled with the role of Governmental agencies such as the Ministry of Agriculture, Ministry of Science and Technology and ICAR, has been significant in taking cotton production to new heights. The Technology Mission on Cotton Mini Mission MM-1 (TMC-MM-1) played a stellar role in developing and validating several technologies apart from supporting research for the introduction and popularization of Bt-cotton in India. The TMC-MM-1 team of scientists developed package of practices and appropriate strategies to optimize input use and maximize benefits from Bt-cotton. Cotton area increased to more than 100 lakh hectares in India for the first time in history. The recent increase in Minimum Support Price and the prevailing good market price for cotton have contributed to the rise in area and production. The yield increase has been due to efficient and effective technological interventions by the TMC-MM-1 team of scientists. Problems of mealybugs and leaf reddening were being reported from time to time in central India, and the TMC team contributed immensely towards yield enhancement through its research findings that helped in developing remedial measures for the management of mealybugs, leaf reddening, and wilt problems which have recently become a menace, especially reducing yields of Bt-cotton. Recently Monsanto declared that the pink bollworm developed resistance to Bt-cotton Bollgard technology which expresses Cry1Ac toxin from Bt. This has raised several concerns on sustainability. An exhaustive survey was immediately initiated under the TMC-MM-1 programmes to monitor resistance development of several insect pests to insecticides and Bt toxins. New Bt detection kits for new genes such as Cry1C that were released for cultivation in the new Bt cotton events, were developed under the TMC 3.4 project. After the introduction Bt-cotton, the area under Desi (*G. arboreum* and *G. herbaceum*) and Egyptian cotton *G. barbadense* species, has declined significantly. The TMC projects 1.1 and 1.2 have contributed commendably to identify regional constraints and develop appropriate elite fibre varieties suitable for profitable cultivation in specific regions, especially a few varieties also for organic cotton with less need for pesticides and fertilizers. The BNLA106 event of Cry1Ac has been introgressed into some of the best elite varieties. Under the TMC 3.1 and 3.3 projects, several new biological pesticides were developed for mealybug management. A new technology called 'Anacard' was developed for inoculative release of parasites for control of mealybugs. Many implements and devices were developed and patent applications were filed under the TMC projects. The 'solar powered knap sack sprayer' and 'bullock drawn planter' have been commercialized. Research initiatives on the development of cotton picker have been commendable. Molecular diagnostic kits to detect diseases were developed and are being commercialized under the TMC 3.3 project. The socio-economists have carried out detailed studies on the agrarian crisis in Vidharbha and other cotton growing regions of the country and have suggested programmes research approaches that can offer solutions to the crisis. The TMC team has recently initiated steps to refine the INFOCROP cotton crop simulation model for yield gap analysis and regional production forecast. We are confident that the new technologies developed by the TMC MM-1 projects will be validated in the TMC and AICCIP programmes and disseminated through the FLD and TMC-MM-II projects for the continued benefit of the cotton farmer.



(K. R. Kranthi)
Member Secretary, TMC MM-I &
Director, CICR, Nagpur

Recently developed technologies under TMC MM I



CISA 310



CISA 614



GN.Cot. -25



Stale seed bed technique



Organic mulch cum fertilizer applicator



Bullock Drawn Cotton Planter



Power weeder



Solar powered knapsack sprayer



Self propelled weeder



Check row planter



Inter Row Cultivator



Mealy-Quit

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