



CICR

**ANNUAL
REPORT
2007-08**



Central Institute for Cotton Research

Post Bag No. 2, Shankar Nagar, PO,
Nagpur 440010 (MS), India

Tel. No.: (07103) 275536/275549/275617

Fax : (07103) 275529

e-mail : cicrngp@rediffmail.com / cicrngp2003@yahoo.co.in

web site : <http://www.cicr.org.in>



Front Cover :

Process of transgenic cotton development

1. Cotton genomic DNA
2. Bt crystal protein
3. Plasmid DNA
4. Cotton hypocotyl callus
5. Putative transformants
6. Bt transgenic cotton variety: Anjali
7. Transgenic cotton plant

Back Page :

Strip trial of transgenic Bt cotton variety: Anjali

Published by

Dr. K. R. Kranthi

Acting Director

Central Institute for Cotton Research

Post Bag No. 2, Shankar Nagar, PO,

Nagpur - 440010 (MS), India

Editorial Committee

Dr. K. R. Kranthi

Dr. N. Gopalakrishnan

Dr. K. N. Gururajan

Dr. M. V. Venugopalan

Dr. Sandhya Kranthi

Compilation, Collation and Production

Dr. Mahendra Singh Yadav

Assistance

Hindi Version : Dr Ram Ratan Gupta

Computer Composing : Sh. Samir S. Chalkhure

Correct Citation

CICR, Annual Report 2007-2008

Central Institute for Cotton Research,

Nagpur, India

PP. 127

Note: No part of this report shall be reproduced without permission of ICAR/CICR. The reference to some trade names in this report is in no way an endorsement of or discrimination against these products by the Institute.

Printed At :

Surya offset, Ramdashpeth, Nagpur

P R E F A C E

Cotton, the basic raw material for Indian textile industry is more importantly a cash crop sustaining the rural economy in the semiarid and arid regions of the country. In 2007-08, with an annual productivity of 553 kg lint/ha, cotton production rose to 310 lakh bales. The north, central and southern regions contributed 15.81, 61.61 and 18.06 per cent respectively to this production. The increasing trend in production and productivity of cotton which commenced a few years ago consolidated further in 2007-08. This gain was a result of a further spread of transgenic Bt. cotton hybrids and the concomitant adoption of improved crop production and protection technologies. The institute has been a torch bearer in this cotton revolution by providing the necessary technological backup. This report contains an overview of the research and developmental activities undertaken during 2007-08.

Amongst the various research activities carried out during the year, the following highlights of the results listed below have immense potential to contribute towards enhancing cotton production and productivity.

An intra- *hirsutum* hybrid CSHH243 was identified for release in the North Zone. A bio-safety trial with Bikaneri Nerma Bt in ruminants was completed and results indicated that the Bt protein did not enter into the food chain and is hence safe to human beings and animals. The cotton gene bank of the institute was enriched through 1038 germ- plasm accessions from the USA. Eight cotton germplasm lines viz CIR8, CIR12, CIR23, CIR26, CIR32, CIR38, CIR47 and Raj 2006 were registered. Precision farming technologies like synchronous nutrient release and extended soil moisture supply were further refined to improve the productivity and quality of Bt cotton. Application of Ethrel @ 30 ppm at square formation stage altered the plant morphoframe, facilitated synchronies boll formation and improved the yield and harvest index of Bt cotton. Research and development efforts were strengthened for the management of cotton mealy bug (*Phenacoccus solenopsis*). Insecticide resistance management technologies were further disseminated in all the three cotton zones across 1727 villages covering 1,01,113 ha. A rapid GUS (glucuronidase) detection assay to detect GUS in GM samples was developed, validated and commercialized.

The research achievements were a result of the untiring efforts by the entire staff of the institute. The technical and financial support from the Indian Council of Agricultural Research and other funding agencies - DBT, DST etc., provided the necessary momentum to accelerate the R&D output.

I am highly grateful to Dr. Mangala Rai, Secretary, DARE and Director General, Dr. P L Gautam, Deputy Director General (Crop Sciences) and Dr. K. C. Jain, Assistant Director General (CC), ICAR, New Delhi for the guidance provided and also for encouraging new research initiatives.

The Annual Report (2007-08) is being presented herewith with a sense of satisfaction and pride.



(K R Kranthi)
Acting Director