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**ICAR-CENTRAL INSTITUTE FOR COTTON RESEARCH
N A G P U R**

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PREFACE



Cotton is the most significant commercial crop grown for its natural fibre, protein rich feed and oil. The area under cotton cultivation remained almost static (12.58 m.ha.) as was in 2017-18 with slight decline (12.35 m.ha.) in 2018-19. For the first time, 5 Bt varieties carrying Bt *Cry1Ac* gene developed by this Institute were provided to the farmers for commercial cultivation in Haryana and Maharashtra. With the ongoing evaluation across different ICAR-AICRP centers and ICAR-CICR, more promising Bt and non-Bt varieties will be made available for cultivation and farmers will have options to retain seeds from the produce, thereby reducing cost on seed and cotton production. Two *G. hirsutum* varieties, CCH 12-2 (Suchitra) and CCH 4474 (Subhiksha) were released and notified for Central and South zone under irrigated condition. In addition, one *G. arboreum* variety namely, CNA 1028 (Ravi) has been identified for Central zone under rainfed conditions. CNA 1032 has been promoted to Agronomy trial for rainfed conditions of central zone. Cotton - Blackgram - Maize was identified as suitable cropping system for conservation tillage under rainfed conditions of Tamil Nadu. Across the soil types and genotypes, the HDPS showed an increased seed cotton yield of long linted *desi* cotton cultivars by 375 kg/ha.

The ICAR-CICR is maintaining 12335 germplasm accessions and wild genetic resources of *Gossypium* and during the year has also enriched its Germplasm Bank by adding 674 exotic accessions that includes 346 of *G. hirsutum*, 211 of *G. barbadense* and 117 of *G. arboreum*. A standardized protocol for somatic embryogenesis in Coker genotypes namely 310 and 312 is being used for transformation using indigenous gene construct *Cry2AbCry1Ac* fusion gene and *Cry2AbCry1Ac*: lectin gene which will pave way to development of indigenous transgenics in future. The resistance development of pink bollworm on BG-II and non Bt cotton fields was continuously monitored across all cotton growing states. This year, the pink bollworm infestation has also been detected on BG II cotton in the Jind district of Haryana and also one or two locations in Faridkot (Punjab) which otherwise was free from pink bollworm infestation. Tobacco Streak Virus (TSV) on *G. hirsutum* is still an emerging threat in Punjab and Haryana and also on *G. barbadense* cotton in Tamil Nadu.

The Institute is being questioned for its contribution in cotton research, particularly, with reference to the management of bollworm infestations in BG cotton. The Institute has provided leadership and spearheaded the implementation of strategies to manage pink bollworm in Maharashtra and other central and southern states. Proactive strategies were put in place for management of this dreaded pest in the states of Maharashtra, Telangana, Andhra Pradesh, Karnataka and Madhya Pradesh. As a result of



adoption of strategies by all the stakeholders, the PBW infestation reduced by 70 per cent, pesticide use reduced significantly and the quality of cotton produced has improved. Our all out efforts to outreach to the farmers were vigorously pursued through the '*Mera Gaon Mera Gaurav*' (MGMG), Tribal Sub Plan (TSP) and IRM Pink Bollworm Management Project sponsored by GEAC under National Food Security Mission - Commercial Crops (NFSM-CC) in major 21 districts of seven cotton growing states. Weekly advisories on various improved production and protection technologies for the benefit of cotton farmers were disseminated through the mobile voice messages, popular articles in agricultural daily newspaper in Marathi / local languages through bulletins, radio talks and farmers meets and ICAR-CICR Mobile App.

I am grateful to Dr Trilochan Mohapatra, Hon'ble Secretary DARE & DG ICAR; Dr. A. K. Singh, DDG (CS) and Dr R. K. Singh, ADG (CC) for their unstinted encouragement, guidance and support throughout. Contribution of Dr A. H. Prakash, PC and Head I/c, Regional Station, Coimbatore; Dr. D. Monga, Head, Regional Station, Sirsa; Heads of Divisions I/c Dr Blaise D'souza and Dr Nandini Gokte Narkhedkar in the execution of research programmes and their significant contribution in finalization of this report is gratefully acknowledged. Dr M. V. Venugopalan, Principal Scientist & I/c PME Cell has immensely contributed in making of this report and needs special gratitude. Thanks are also due to all the Editorial Committee members for their sincere efforts in bringing out this publication. Mrs. Rama Iyer, Sh. Sameer Chalkhure and Dr. Jimmy Vaidya deserve special appreciation for their strenuous efforts, dedication, sincerity and commitment in bringing out this Annual Report to a beautiful shape in a short span of time.

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