

10. GENERAL

10.1 List of Publications

Research papers published by the Institute's scientists NAAS rating > 6 in 2014-15

1. Babu Santosh, Bidyarani Ngangom, Chopra Preeti, Monga Dilip, Kumar Rishi, Prasanna Radha, Kranthi Sandhya & Saxena Anil Kumar. (2015). Evaluating microbe-plant interactions and varietal differences for enhancing biocontrol efficacy in root rot disease challenged cotton crop. *Eur. J. Plant Pathol.* 142: 345-362; DOI 10.1007/s10658-015-0619-6. (NAAS rating: 7.71)
2. Bhattacharyya T., Sarkar D., Ray S.K., Chandran P., Pal D.K., Mandal D.K., Prasad J., Sidhu G.S., Nair K.M., Sahoo A.K., Das T.H., Velmourougane K.2014. Georeferenced soil information system: assessment of Database. (Special Section: Georeferenced Soil Information System) *Current Science*, 107 (9), 1400-1419 (NAAS Rating: 6.91)
3. Bhattacharyya T., Sarkar D.,.....Venugopalan M. V, Velmourougane K.....Soil information system: use and potentials in humid and semi-arid tropics. *Current Science*, 107 (8): 1550-1564. (2014). (NAAS Rating: 6.91)
4. Chandran P., Tiwary P. ,..... Venugopalan M. V., Velmourougane K.....Development of soil and terrain digital database for major food-growing regions of India for resource planning. *Current Science*, 107 (8): 1420-1430. (2014). (NAAS Rating: 6.91)
5. Chatterji S.,..... Venugopalan M. V., Velmourougane K.....Land evaluation for major crops in the Indo-Gangetic Plains and black soil regions using fuzzy model. *Current Science*, 107 (8): 1502-1511. (2014). (NAAS Rating: 6.91)
6. Kumar Ashutosh, Srivastava Alok Kumar, Velmourougane K., Bhattacharyya T. 2014. Urease activity and its kinetics in selected bench mark soils of Indo-Gangetic Plains. *PNAS, India, Sec. B Biol. Sci.* DOI 10.1007/s40011-014-0352-5 (NAAS Rating: 6.40)
7. Kumar Rishi, Tian Jun-Ce, Naranjo Steven E. and Shelton Anthony M. (2014). Effects of Bt cotton on Thrips tabaci Lindeman and its predator, *Orius insidiosus* (Say). *Journal of Economic Entomology* 107(3): 927-932 (2014); DOI: <http://dx.doi.org/10.1603/EC13567> (NAAS Rating: 7.61)
8. Mandal C., Mandal D. K.,..... Venugopalan M. V., Velmourougane K..... Revisiting agro-ecological sub-regions of India – a case study of two major food production zones. *Current Science*, 107 (8): 1519-1536. (2014). (NAAS Rating: 6.91)
9. Patil N. G., Tiwary P.,..... Venugopalan, Velmourougane K.....Natural resources of the Indo-Gangetic Plains: a land-use planning perspective. *Current Science*, 107 (8): 1537-1549. (2014).
10. Prasanna Radha, Babu Santosh, Bidyarani Ngangom, Kumar Arun, Triveni Sodimalla, Monga Dilip, Mukherjee Arup Kumar, Kranthi Sandhya, Gokte-Narkhedkar Nandini, Adak Anurup, Yadav Kuldeep, Nain Lata and Saxena Anil Kumar (2014) Prospecting cyanobacteria fortified composts as plant growth promoting and biocontrol agents in cotton. *Experimental Agriculture*, 51(1):42-65. (NAAS Rating: 7.07)
11. Priyadarshani Arun Khambalkar, Sen T. K., Chatterji S. and Venugopalan M. V. Land use changes and their impact on properties of some

soil series of Nagpur district of Maharashtra. *Indian Journal of Agricultural Sciences* 84 (12): 1517-24, December 2014/Article pp 77-84. (NAAS Rating: 6.18)

12. Rao S. S., Sahadevan D. K., Wadodkar M. R, Nagaraju M.S.S., Chattaraj S., Joseph W., Rajankar P., Senguptae T., Venugopalan M. V., Das S. N., Joshi A. K., Sharma J. R. a., Amminedu E. Soil moisture model with multi angle and multi polarisation RISAT-1 data *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Volume II-8, pp. 145-150 (2014). (NAAS Rating: 8.90)
 13. Ray S. K.,..... Venugopalan M. V., Velmourougane K.....Soil and land quality indicators of the Indo-Gangetic Plains of India. *Current Science*, 107 (8): 1470-1486. (2014). (NAAS Rating: 6.91)
 14. Raychaudhuri Mausumi, Kundu D. K.,..... Venugopalan M. V., Velmourougane K..... Soil physical quality of the Indo-Gangetic Plains and black soil region. *Current Science*, 107 (8): 1440-1451. (2014). (NAAS Rating: 6.91)
 15. Sidhu G. S., Bhattacharyya T.,..... Venugopalan M. V., Velmourougane K..... Impact of management levels and land-use changes on soil properties in rice-wheat cropping system of the Indo-Gangetic Plains. *Current Science*, 107 (8): 1487-1501. (2014). (NAAS Rating: 6.91)
 16. Srivastava Alok Kumar, Velmourougane Kulandaivelu, Venugopalan M.V..... Impacts of agro-climates and land use systems on culturable microbial population in soils of the Indo-Gangetic Plains, India. *Current Science*, 107 (8): 1464-1469. (2014). (NAAS Rating: 6.91)
 17. Tiwary P., Patil N. G.,....., Venugopalan M. V., Velmourougane K.....Pedotransfer functions: a tool for estimating hydraulic properties of two major soil types of India. *Current Science*, 107 (8): 1431-1439. (2014). (NAAS Rating: 6.91)
 18. Velmourougane K., Venugopalan M. V.,..... Impacts of bioclimates, cropping systems, land use and management on the cultural microbial population in black soil regions of India. *Current Science*, 107 (8): 1452-1463. (2014). (NAAS Rating: 6.91)
 19. Venugopalan MV, Tiwary P, Ray SK, Chatterji S, Velmourougane K, Bhattacharyya T., InfoCrop-cotton simulation model - its application in land quality assessment for cotton cultivation. *Current Science*, 107 (8): 1512-1518. (2014). (NAAS Rating: 6.91)
- Research papers published by the Institute's scientists NAAS rating < 6 in 2014-15**
20. Reddy A.R., Yelekar Sachitha M. and Agarwal Isabella. (2015). Cotton productivity in the districts of Maharashtra: (TFP) approach. *Journal of Cotton Research and Development*: Vol.29 No.1 pp. 141-146 (NAAS rating 3:41)
 21. Bhattiprolu, S. L. Nakkeeran, S. Rao, M. S. L. Chattannavar S. N. Chakrabarty P. K. and Monga D. (2014) Field Evaluation of Systemic Acquired Resistance (SAR) Inducing Chemicals and *Pseudomonas fluorescens* against Foliar Diseases of Cotton. *Cotton Research Journal* 6:41-45. (NAAS rating: 2.27)
 22. Young Carla Jo Logan, Yu John Z, Verma Surender K, Percy Rechard G and Alan E Pepper (2015). SNP discovery in complex allotetraploid genomes (*Gossypium* spp., Malvaceae) using Genotyping by Sequencing. *Applications in Plant Sciences- A peer reviewed journal* 2015 3(3): doi:10.3732/app.1400077.
 23. Blaise D. and Velmourougane K.. (2014). Dynamics of soil dehydrogenase and alkaline phosphatase activities under organically and conventionally grown cotton on rainfed vertisols of Central India. *Cotton Research Journal*, 6(1), 54-57. (NAAS rating: 2.27)
 24. Prasada Rao G.M.V., Kranthi S., Prasad NVVDS, Gurundipalli ADG, Sujatha S.,

- Reddy V. Chenga and Bhosle B.B. (2014). Effect of Imidacloprid 70WS (Gaucho) and Thiamethoxam 70WS (Cruiser) against leafhopper *Amasca biguttulu biguttula* (Ishida) on susceptible and tolerant Bt and Non-Bt cotton hybrids (2014). *Cotton Research Journal* 5(2): 93-95. (NAASrating: 2.27)
25. Singh Jagvir, Velmourougane Kulandaivelu, Kranthi Sandhya and Shanty Venoor. (2014). Evaluation of Organic and Inorganic Cultivation Systems of Cotton on Bollworm, Soil Microbial Population and Yield. *Cotton Research Journal* 5(2): 117-119. (NAAS rating: 2.27)
26. Raghavendra K. P., Phanindra M. L. V. and Ananda Kumar P. (2014). Internal Control Gene for Gene Expression Studies Using Real Time Quantitative RT-PCR during Cotton Boll Development. *Cotton Research Journal* 6 (1) 32-36. (NAASrating: 2.27)
27. Sankaranarayanan K. and Nalayini P. (2014). Performance and behaviour of Bt cotton hybrids under sub-optimal rainfall situation. *Archives of Agronomy and Soil Science*, DOI:10.1080/03650340.2014.986112
28. Sethi Khushboo, Siwach Priyanka and Verma Surender Kumar (2014). Genetic Improvement of *Gossypium arboreum* L. using molecular markers: Status and development needs. *African Journal of Agricultural Sciences*. Vol. 9 (29). Pp. 2238-2249. 17 July, 2014. DOI: 10.5897/AJAR2014.8682. Article Number: B8FB45046128. (NAASrating: 4.00)
29. Sethi Khushboo, Siwach Priyanka, Verma Surender Kumar (2014). Assessing Genetic Diversity among *Gossypium arboreum* L. genotypes using ISSR markers. *International Journal of Pharma and Biosciences*. Volume 6, Issue 1 (2015), Page 201-208.
30. Sabesh M., Prakash. A. H. and Bhaskaran. G. (2014). Shift in Indian Cotton Scenario due to Shift in Cotton Technology. *Cotton Research Journal*, 6(1): 75-82 (2014) (NAAS Rating 2.27)
32. Sabesh M., Ramesh. M., Prakash. A. H. and Bhaskaran. G. (2014) Is there any shift in cropping pattern in Maharashtra due to introduction of Bt Cotton. *Cotton Research Journal*, 6(1): 63-70 (2014) (NAAS Rating 2.27)
33. Manickam, S. and Prakash, A. H. (2014). Interspecific hybridization between *Gossypium hirsutum* and *G. armourianum*: Morphological and Molecular Characterization of Hybrids. *Cotton Res. J.*, 6(1): 7-12. (NAAS Rating: 2.27)
34. Manickam, S. and Venkata Krishnan, S. (2014). Studies on fibre quality of a long staple cotton variety using high volume instrument and advanced fibre information system for fibre quality improvement. *Electronic Journal of Plant Breeding*, 5(2): 213-219. (NAAS Rating: 4.19)
35. Nagrare V. S., Deshmukh A. J., and Bisane A. K. (2014). Relative performance of Bt-cotton hybrids against sucking pests and leaf reddening under rainfed farming. *Entomol Ornithol Herpetol* 3: 134. doi:10.4172/2161-0983.1000134.
36. Nagrare V. S., Kumar Rishi, Dharajothi B. (2014). A record of five mealybug species as minor pests of cotton in India. *Journal of Entomology and Zoology Studies* 2 (4): 110-114.
37. Nalayini, P., Sankaranarayanan K. and Velmourougane K. (2014). Efficient and economical weed management strategies in winter irrigated Bt cotton. *Cotton Research Journal* 5(2):102-104. (NAAS Rating 2.27)
38. Nalayini, P., Anandham. R., Paul Raj S. and Chidambaram P. (2014). Pink Pigmented facultative Methylophilic Bacteria (PPFMB) - A potential bioinoculant for cotton nutrition. *Cotton Research Journal* Vol. 6(1):50-53. (NAAS Rating 2.27)
39. Tuteja O.P. (2014) Studies on suitability of

Cytoplasmic Genetic Male Sterility (CGMS) based Heterosis Breeding and its Causes in Upland Cotton (*Gossypium hirsutum* L.). *Cotton Research Journal* 6 (1): 13-17. (NAASrating: 2.27)

40. Tuteja O.P. (2014). Studies on heterosis for yield and fibre quality traits in GMS hybrids of upland cotton (*Gossypium hirsutum* L.). *Journal of Cotton Research and Development* 28: 1-6. (NAASrating: 3.41)
41. Prakash A. H., Kranthi K. R., Nagrare V. S., Kranthi S. and Gotmare V. P. (2014). Cotton leaf reddening- Systematic damage caused by use of Methomyl in Cotton. *Cotton Research Journal*, 6(1): 83-88. (NAAS Rating: 2.27)
42. Saini Priya, Gopal Madhuban, Kumar Rajesh, Verma Sachindra, Srivastava Chitra, Kranthi S. and Kranthi K.R. (2014). Bio-efficacy and Mode of action of Nano Pyridalyl Against *Helicoverpa armigera*. *Cotton Research Journal* 5(2): 112-115. (NAASrating: 2.27)
43. Meena R. A., Monga D. and Neha (2014). Studies to enhance cotton plant stand under North Zone J. *Cotton Res. & Dev.* 28(1) 12-17. (NAASrating: 3.41)
44. Rathinavel K., (2014). Influence of storage temperature and seed treatments on viability of cotton seed (*Gossypium hirsutum* L.). *Cotton Research Journal*. 6(1):1-7. (NAAS Rating: 2.27)
45. Usha Rani S., Wasnik S. M. & Sabesh M. (2014): A Critical Analysis on Issues Faced by Cotton Growers and Labourers in Hybrid Cotton Seed Production. *Cotton Research Journal*, 6(1):71-74. (NAASrating: 2.27)
46. Khader S.E.S.A and Prakash A.H. (2014) - Photosynthesis and related parameters as influenced by leaf surface wetness of cotton plants growth under irrigated and moisture stress condition - *Cotton Research Journal*, 5 (2): 105-110. (NAAS Rating: 2.27)
47. Khader S.E.S.A and Prakash A.H, (2014) - Pruning technique for second fruiting cycle in cotton crop - *Cotton Research Journal*, 6: (1): 46-49. (NAAS Rating: 2.27)
48. Usha Rani S., and Selvaraj G. (2015). Adoption behavior of Bt cotton growers in irrigated and rainfed conditions of Tamil Nadu. *Journal of Cotton Research and Development*. Vol. 29 No.1.pp.132-140. (NAASrating 3.41)
49. Santhy V., Meshram Mithila, Wakade Renuka, VijayaKumari P.R. (2014). Hydrogen peroxide pre-treatment for seed enhancement in Cotton (*G. hirsutum*). *Afric.J. Agric. Research* 9 (25):1982-89. (NAASrating: 4.0)
50. Naik Chinna Babu V., DharaJothi, Dabhade P.L. and Kranthi S. (2014). Pink bollworm *Pectinophora gossypiella* (Saunders) Infestation on Bt and Non Bt hybrids in India in 2011-2012. *Cotton Research Journal* Vol.6, No.1 (January-June). (NAASrating: 2.27)
51. Naik Chinna Babu V., Prasad NVVSD, Rao G. Ramachandra, Raghavaiah G. and Kranthi S. (2013). Survival and Development of American Bollworm, *Helicoverpa armigera* on Bt Cotton Hybrids of Different Bt Events. *Indian Journal of Plant Protection*: 41. (1) 16-24 (NAASrating: 4.3)
52. Velmourougane, K, Singh Jagvir and Nalayini P. (2014). Field assessment of transgenic cotton expressing Cry1 AC gene on selected soil biological attributes and culturable microbial diversity in deep vertisols. *Cotton Research Journal*, 6(1), 18-27. (NAASrating: 2.27)
53. Wasnik S. M. and Kranthi K. R. (2014). 'e-Kapas': An ICT enabled tool for dissemination of cotton production technology. *International J. of Exten. Edu.* Vol.10: 136 - 140, 2014. ISSN: 2319-7188. (NAASrating: 4.15)
54. Nagrare V. S., Bisane K. D., Deshmukh A. J. and Kranthi S. (2012). Studies on life cycle parameters of leafhoppers, *Amrasca biguttula biguttula* (Ishida). *Entomon* 37 (1-4): 93-99.



10.2: List of On-going Projects

S.No.	Project title	Duration
Crop Improvement		
1.	Improvement of tetraploid and diploid cottons for fibre properties through population improvement approaches. V. N. Waghmare (PI), Vinita Gotmare (PA), O. P. Tuteja (PA), S. K. Verma (PA)	2000-15
2.	Studies on Genetic Enhancement of <i>G. hirsutum</i> . T. R. Loknathan (PI)	2002-16
3.	Development of heterotic pool for superior medium staple in tetraploid cotton (<i>G. hirsutum</i>). S. M. Palve (PI)	2006-15
4.	Development of drought tolerant genotypes with good fibre quality in <i>G. hirsutum</i> . Suman Bala Singh (PL), A. H. Prakash (PA)	2008-17
5.	Breeding of upland cotton for improved fibre quality and resistance to biotic stress (Jassid). S. M. Palve (PI)	2005-16
6.	DNA fingerprinting of private hybrids vis-a vis CICR varieties. H. B. Santosh (PI)	2014-16
7.	Development of long staple <i>G. hirsutum</i> variety with improved fibre strength. S. Manickam (PL), V. N. Waghmare (PA), S. L. Ahuja (PA)	2008-17
8.	Development of early maturing, medium staple varieties and hybrids Resistant to CLCuV. O. P. Tuteja (PL), D. Monga (PA), S. K. Verma (PA), Rishi Kumar (PA), S. M. Palve (PA)	2008-17
9.	Development of <i>G. hirsutum</i> genotypes with high yield and high GOT. S. L. Ahuja (PL), R. A. Meena (PA), D. Monga (PA), Rishi Kumar (PA)	2012-18
10.	Development of high yielding, early maturing extra long staple <i>G. barbadense</i> genotypes with high GOT. K. P. M. Dhamayanthi (PL)	2012-17
11.	MAS/MAB for Water-logging in Cotton. Vinita Gotmare (PL), S.E.S.A. Khader (PA), M. Saravanan (PA), J. H. Meshram (PA), J. Annie Sheeba (PA)	2012-20
12.	Breeding for early maturity compact plant type and jassid tolerance in cotton. H. B. Santosh (PI)	2014-19
13.	Identification of male sterile plants in genetic male sterility (GMS) using molecular markers. O. P. Tuteja (PL), S. B. Singh (PA), M. Sarvanan (PA)	2012-17
14.	Collection, conservation, evaluation, documentation and maintenance of germplasm of cultivated species of <i>Gossypium</i> . Punit Mohan (PL), M. Chakrabarty (PA), S. Manickam (PA), R. A. Meena (PA), K. P. M. Damayanthi (PA)	2006-15
15.	Conservation, characterization and utilization of wild species, races of cultivated species and synthetic polyploids of <i>Gossypium</i> . Vinita Gotmare (PL), G. Balasubramani (PA).	2008-15
16.	Exploration, collection and conservation of land races of desi cotton and perennials and from different regions of India. M. Saravanan (PL)	2011-16
17.	DUS characterization and DNA finger printing of public sector cotton varieties. V. Santhy (PL)	2012-17
18.	Studies on Genetic Purity of Public released Cotton Hybrids and its Parents with the help of SDS-PAGE. P. R. Vijayakumari (PL), K. R. Kranthi (PA)	2013-16
19.	Studies to improve the seed and boll setting efficiency in cotton. R. A. Meena (PL), Rishi Kumar (PA), K. Rathinavel (PA)	2012-18



S.No.	Project title	Duration
Biotechnology		
20.	Deployment of biotechnological tools for enhancing cotton seed by-product utilization: Reduction of gossypol content using CYP6AE14 gene. K. P. Raghavendra (PI), Sandhya Kranthi (PA), G. Balasubramani (PA), K. Velmourougane (PA), M. Chakrabarty (PA)	2014-17
Crop Production		
21.	Allelopathy as an alternative weed management strategy in cotton. Blaise Desouza (PI), P. Nalayini (PA), A. Manikandan (PA), M. Chakrabarty (PA)	2012-17
22.	Identification of 'crop-cycle' for Extra Long Staple (ELS) cotton in non-conventional regions. R. B. Singandhupe (PI), Blaise Desouza (PA)	2012-15
23.	Evaluation of potassium silicate formulations on cotton production (yield and quality) and protection (pest and disease). K. Velmourougane (PI), J. H. Meshram (PA), A. Manikandan (PA), V. Chinna Babu Naik (PA), Sampath Kumar (PA)	2012-16
24.	Phenotyping of cotton for drought tolerance traits. J. H. Meshram (PI), R. B. Singandhupe (PA), M. Chakrabarty (PA), J. Annie Sheeba (PA)	2013-16
25.	Correlation of leaf colour transmittance with relation to soil/plant nutrient status. J. Annie Sheeba (PI)	2014-17
26.	Evaluation of structured water for cotton production (Ad hoc). P. Nalayini (PI)	2014-15
27.	Role of leaf phytochemicals in cotton leaf reddening and plant responses to management through growth chemicals, nutrients and insecticides. M. Chakrabarty (PI), J. Annie Sheeba (PA), A. Manikandan (PA)	2012-15
28.	MCDA based decision support system for selecting cotton cultivars for different agro climatic conditions. M. Sabesh (PI)	2011-16
29.	Synthesis and characterization of nano-formulated micronutrients foliar spray for yield maximization in different cotton genotypes. D. Kanjana (PI)	2012-17
30.	Cotton Mechanization-Tracing the needs and gaps for sustainable cotton farming in India (Adhoc). Isabella Agarwal (PI), G. Majumdar (PA)	2014-15
31.	Effect of homeopathic medicines on the phytopathological diseases and insects of cotton (Adhoc). S. N. Rokde (PI)	2014-15
Crop protection		
32.	Gene discovery for useful traits. K. R. Kranthi (PI), Sandhya Kranthi (PA), K. P. Raghavendra (PA), K. Velmourougane (PA), J. Annie Sheeba (PA), A. Sampathkumar (PA)	2014-19
33.	Role of epicuticular wax in reaction of cotton genotypes to whitefly/ CLCuD. Rishi Kumar (PI), D. Monga (PA), Sandhya Kranthi (PA), J. Annie Sheeba (PA)	2014-17
34.	Isolation and characterization of endophytes in cotton and endo-symbionts in bollworms. M. Amutha (PI)	2012-17
35.	Production, stabilisation, formulation and validation of microbial agents and their natural products against insects and nematode pests of cotton. J. Gulsar Banu (PL), M. Amutha (PA)	2012-17
36.	Use of innovative methods for management of cotton leaf curl virus disease. D. Monga (PL), Rishi Kumar (PA)	2011-15

S.No.	Project title	Duration
37.	An accelerated process for preparation of bio enriched compost from cotton plant residues. V. Mageshwaran (PI), D. Monga (PA), P. Nalayini (PA), K. Velmourougane (PA), A. Manikandan (PA)	2011-15
38.	Technology Mission on Cotton MM I	2012-17
	TMC MM 1.1: Development of multi-gene constructs and Bt cotton varieties for sustainable pest management. K. R. Kranthi (PI), S. B. Singh (PA), K. P. Raghavendra (PA), S. B. Nandeshwar (PA), G. Balasubramani (PA), M. Chakrabarty (PA), K. Velmourougane (PA), Sandhya Kranthi (PA)	
	TMC MM 1.2: Marker Assisted Breeding for Cotton Leaf Curl Disease (ClCuD), Bacterial Leaf Blight (BLB) and Nematodes Resistance in Cotton. V. N. Waghmare (PI), A. Sampath Kumar (PA), N. Narkhedkar (PA), S. Manickam (PA), J. Gulsar Banu (PA), D. monga (PA), S. K. Verma (PA)	
	TMC MM 1.3: Consolidation of repository of high strength cotton genotypes and evaluation for quality traits and yield in specific agro-eco zones. S. Manickam (PI), T. R. Loknathan (PA), S. M. Palve (PA), P. Nalayini (PA), Vinita Gotmare (PA) (2013-15)	
	TMC MM 1.4: Evaluation of genotypes and agrotechniques for high density planting system and surgical cotton varieties. M. V. Venugopalan (PI), Blaise DeSouza (PA), V. Chinna Babu Naik (PA), Punit Mohan (PA), T. R. Lokanathan (PA), A. R. Raju (PA), A. Sampath Kumar (PA), K. Shankarnarayanan (PA), S. L. Ahuja (PA), R. A. Meena (PA)	
	TMC MM 1.5: Simulation models/electronic gadgets to predict insect infestation, bollworm resistance to Bt cotton, area, production and price of cotton. Sandhya Kranthi (PI), K. R. Kranthi (PA), V. S. Nagrare (PA), V. Chinna Babu Naik (PA), A. R. Reddy (PA), Anuradha Narala (PA), A. H. Prakash (PA), K. Shankarnarayanan (PA), Isabella Agarwal (PA), B. Dharajothi (PA), Rishi Kumar (PA), M. Chakrabarty (PA), J. Annie Sheeba (PA), M. Amutha (PA)	
	TMC MM 1.6: E-Kapas Network and Technology Documentation. S. M. Wasnik (PI), A. H. Prakash (PA), S. Usha Rani (PA), O. P. Tuteja (PA), M. Chakrabarty (PA), Anuradha Narala (PA)	
	TMC MM I 1.7: Development of cotton picking machinery for small scale cotton production systems. G. Majumdar (PI)	
	Externally funded projects	
39.	DBT: Development of saturated genetic linkage map for <i>Gossypium hirsutum</i> L. using SSR and SNP markers. V. N. Waghmare (PI), Punit Mohan (PA)	2012-16
40.	Consortia Research Platform on biodiversity. Punit Mohan (PI), Vinita Gotmare (PA), J. H. Meshram (PA), S. Manickam (PA)	2014-17
41.	UGC: Association mapping of fiber traits in <i>Gossypium arboreum</i> L. accessions using SSR, ISSR and AFLP markers. S. K. Verma (PI)	2012-16
42.	NSP: National Seed Project (Crops). K. Rathinavel (PI)	1999-17
43.	DUS: Implementation of PVP legislation 2001 and DUS testing of cotton under ICAR-SAUs system. K. Rathinavel (PI)	2003-17
44.	MSP: ICAR project on Seed Production in Agricultural Crops and Fisheries. P.	2007-17

S.No.	Project title	Duration
	R.Vijayakumari (Nd Offi), V. Santhy (PA), K. Rathinavel (PA), R. A. Meena (PA)	
45.	NASF: Molecular characterization and validation of fiber strength genes with fiber specific promoter for improvement in cotton. G. Balasubramani (PI), K. P. Raghvendra (PA), J. Amudha (PA), S. B. Nandeshwar (PA)	2012-17
46.	NPTC: Transgenics in crops. Insect and disease resistant transgenic cotton. G. Balasubramani (PI), J. Amudha (PA), S. B. Nandeshwar (PA), K. P. Raghvendra (PA), Suman Bala Singh (PA)	2012-17
47.	NICRA: Climate change- adaptation and mitigation strategies in cotton. S.E.S.A Khader (PI), A. H. Prakash (CoPI), Blaise Desouza (CoPI), M.V. Venugopalan (CoPI)	2013-17
48.	DST: Design & Development of a cotton picking head. G. Majumdar (PI)	2012-16
49.	DST: Development of vision based expert system for vacuum picking of cotton. G. Majumdar (PI)	2013-15
50.	Maha. Govt: Impact evaluation of Bt cotton in Maharashtra. Anuradha Narala (PI), R. B. Singandhupe (PA), S. N. Rokde (PA)	2012-15
51.	Mahyco: Monitoring changes in baseline susceptibility to Cry toxins in the cotton bollworm, <i>H. armigera</i> , <i>pink bollworm</i> and <i>Spodoptera litura</i> . Sandhya Kranthi (PI), K. R. Kranthi (CoPI), V. Chinna Babu Naik (CoPI)	2012-15
52.	GEAC: Event based approval mechanism. Sandhya Kranthi (PI), K. R. Kranthi (CCPI)	2010-15
53.	Consortia research platform (IIHR-Lead centre) - Management of sucking pests in horticultural crops. S. Karnthi (PI)	2014-17
54.	TMC MM II: Dissemination of IRM strategies in India. K. R. Kranthi (PI), Sandhya Kranthi (PA), D. Monga (PA), B. Dharajothi (PA), Rishi Kumar (PA)	2007-15
55.	DST: Entomopathogenic-endophytes mediated plant defense as a novel approach for the management of bollworms in cotton. M. Amutha (PI)	2013-17
56.	Maha. Govt: Crop pest surveillance and advisory project (CROPSAP) in Maharashtra. V. S. Nagrare (PI)	2010-15
57.	NFSM-OPMAS: On line pest monitoring and advisory services (OPMAS) under NFSM -commercial crops. R. K. Tanwar (PI), D. Monga (PA), Rishi Kumar (PA)	2012-17
58.	DST: Engineering root-knot nematode resistance in cotton by RNAi mediated silencing of parasitism genes of <i>Meloidogyne incognita</i> . N. G. Narkhedkar (PI), S. B. Nandeshwar (CoPI)	2013-16

10.3 : Consultancy, Patents, Commercialization of Technology

Revenue Generation

The Bt referral lab has generated a revenue of Rs. 52,430/- through sale of Bt Express, Bt Quant, GUS detection Kits during 2014-15.

Patent submitted and published in IPINDIA website

A complete patent application was submitted by Er. G. Majumdar *et al* (2014) at Patent Office, Mumbai for the invention of "Small Cotton

Harvester with Precleaner Attachment" (Filing Application no. 2076/mum/2014, dt. 26/06/2014). The invention was published on 22/8/2014 and request has been made for Examination.

MoU signed by ICAR-CICR

1. Material Transfer agreement (MTA) was signed between ICAR-CICR, Nagpur and National Botanical Research Institute (CSIR-NBRI), Lucknow on 11th June 2014 for validation of the transgenic cotton against whiteflies.

2. MoU signed between ICAR-CICR, Nagpur and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Krishi Nagar (PDKV), Akola dated 04th July 2014 for production of TFL seeds of PKV 081 for demonstration during 2015-16 seasons.
3. MoU signed between ICAR-CICR, Nagpur and M/s. Bayer BioScience Pvt., Ltd., Hyderabad, Andhra Pradesh dated 22nd Aug 2014 for trials of transgenic crop (Rice).

10.4 : Significant Decisions of RAC, IRC, IMC

Research Advisory Committee Review Meeting

Research Advisory Committee (RAC) review meeting was held at ICAR-Central Institute for Cotton Research (CICR), Nagpur on November 21-22nd, 2014 to review the progress of work and to discuss the technical programme for the year 2014-15. The meeting was chaired by Dr. B. V. Patil, Former Vice Chancellor, UAS, Raichur, Karnataka. The meeting started with welcome address by Dr. K. R. Kranthi, Director, CICR. Dr. Patil, Chairman, RAC in his introductory remarks provided an overview of cotton scenario this year and reiterated that High Density Planting System (HDPS) and mechanical picking of cotton should continue as the two important flagship programmes. Dr. S. K.



The salient recommendations of the RAC include

1. Publication of research results has to be expedited

RAC urged all the scientists to focus their research

Mukherjee, Member RAC, stressed on development of drought tolerant cotton varieties. Dr. T. Pradeep, Member, RAC, emphasized on need for prioritization of research efforts benefitting the farmers and other stake holders. Dr. A. K. Dhawan, Member, RAC, discussed about Cotton Leaf Curl Virus (CLCuV) in north India and its management approaches. Dr. A. J. Shaikh, Member, RAC, talked about the challenges for scientific community with respect to availability of cotton in 2050. Dr. N. Gopalakrishnan, ADG (CC) and member, RAC, called for tailoring crop improvement programmes for sustainable cotton production. He also appreciated the E- kapas effort which was included in 100 days achievement of Government of India.

Dr. K. R. Kranthi, Director, CICR, presented 'CICR Vision 2050' before RAC members. The Action Taken Report (ATR) was presented by Dr. M. V. Venugopalan, Member Secretary, RAC. The research achievements of 2013-14 and technical programmes for 2014-15 of various divisions and regional stations were presented by Heads of Divisions and Regional Stations. The RAC members also visited the experimental fields and reviewed the trials laid out. The meeting concluded with vote of thanks proposed by Dr. Sandhya Kranthi, Head, Crop Protection Division, CICR, Nagpur.



efforts on basic aspects and called for sincere efforts for the early publication of the findings in the reputed national and international journals.

2. Efforts towards development of cotton G.



***hirsutum* and *G. arboreum* genotypes amenable for high density planting system and machine picking**

High density planting system is emerging as an alternate production technology. To sustain the momentum of HDPS system there is need (a) to accelerate efforts for the development of compact genotypes of *G. hirsutum* and *G. arboreum* amenable to closer planting and machine picking. (b) to develop / evaluate planters to obtain satisfactory plant stand in cotton fields.

3. Initiate a long term programme to improve the soil health through appropriate cotton based cropping systems

The decline in soil health and low partial factor productivity of fertilizers in cotton production is affecting the sustainability of cotton production systems. There is a need to initiate a long term research programme with components of both basic and strategic objectives aimed at improving soil health through appropriate cotton based cropping systems.

4. Resistance breeding against whitefly has to be initiated like using Tomato leaf curl virus Ty-2 and Ty-3 virus resistance gene

Cultivated cotton in north India is inherently susceptible to cotton leaf curl virus (CLCuV). In Tomato commercially important alleles like *Ty-1* and *Ty-3*, which were introgressed from the wild tomato relative *Solanum chilense*. These genes were originally mapped to different regions on chromosome 6, but recent findings suggest that they may rather be alleles of the same gene. *Ty-1* and *Ty-3* are alleles that code for an RNA-dependent RNA polymerase of a class for which no function had been described before. Thus, *Ty-1/Ty-3* unveils a completely new class of resistance genes. An attempt may be made to utilize the available information about these genes for screening of cotton genotype / germplasm lines for their cross species validation against CLCuV.

5. MicroRNA approach may be explored for the management of cotton leaf curl virus (CLCuV) using the conserved regions

Gemini viruses are plant pathogens that profoundly affect diverse plant crops in tropical

and subtropical countries. These are emerging class of viruses with new strains still evolving, thereby making them more virulent with wide host range specificity. Cotton leaf curl virus (CuCLV) is a member of begomoviruses infecting cotton crop causing severe yield losses. Genetic engineering approach through RNAi may be further explored by analysing the sequence information through bio-informatic tools. Conserved region of the target genes in the viral genome may be identified and targeted for management of the Cotton leaf curl virus through RNAi approach.

6. Regular monitoring of PBW incidence on Bt cotton in different ecosystems

There is a concern regarding the incidence of pink bollworm in Bt hybrids in farmers fields and the chances of resistance development cannot be ruled out. Hence, the existing programme on monitoring of pink bollworm population from different agro-eco regions for resistance to Cry1Ac and Cry2Ab needs to be intensified.

Institute Management Committee Meeting

The 52nd Institute Management Committee (IMC) meeting was held on 12th March 2015 under the Chairmanship of Dr. K.R Kranthi, Director, ICAR, Nagpur.

At the outset, Shri. Sachin Agnihotri, Sr. Administrative Officer and Member Secretary welcomed the Director, ICAR and Chairman, IMC, Dr. R.G. Dani, Vice Chancellor, Dr. PDKV, Akola other members of IMC and special invitees.

Dr. K.R Kranthi, Director ICAR & Chairman, IMC in his introductory remark mentioned that non-official members of IMC are yet to be nominated by Council. The major agenda was to seek recommendations of the committee for purchase of equipments, furniture & fixtures and execution of works approved in XII Plan for the year 14-15 and 15-16 to be taken on priority and for processing of the same under B.E. of 2015-16. The chairman stressed that the construction of boundary wall has to be taken at Hqrs. Nagpur on priority basis. Further, Dr. M. V. Venugopalan, I/c PME Cell summarized the research highlights of the institute.

Dr. R.G. Dani, Vice Chancellor, Dr. PDKV, Akola

expressed satisfaction over the research work conducted at CICR and was particularly impressed with the initiatives on high density planting system and screening for CLCuV disease. He emphasized that both CICR, Nagpur and Dr. PDKV, Akola are situated in Vidarbha region of Maharashtra and have a huge responsibility of redressing the problems related to agriculture, with reference to cotton and soybean. He also stressed upon the social distress among the farmers of Vidarbha which is highly vulnerable to climate variability and extremes. Further, he suggested that CICR should implement the recommendations outlined in the QRT report of CICR and AICRP on Cotton submitted under the Chairmanship of Dr. C.D. Mayee, Former Chairman, ASRB, New Delhi. Shri. G.C. Prasad, SFAO, NBSS&LUP, Nagpur expressed satisfaction over the expenditure pattern and the resources generated by the institute. Dr Jagdish Prasad, Principal Scientist, NBSS & LUP, Nagpur stressed the need of purchasing scientific research equipments on priority basis. Dr. A.D Huchhe, Principal Scientist, CCRI, Nagpur recommended planting citrus trees in the Institute farm.

Institute Research Committee (IRC) meeting

Institute Research Committee meeting was held at CICR, Nagpur from March 17 to 19, 2015 under the chairmanship of Dr. K. R. Kranthi, Director, CICR, Nagpur. Dr. K. R. Kranthi, Director, CICR, initiated the meeting with the introductory remarks. Dr. M. V. Venugopalan, Head, PME, presented the RAC recommendations. Dr. Vinita Gotmare, Nodal Officer, RFD, presented the Research Framework Document of 2013-14. Dr. V.S. Nagrare, Secretary, IRC, presented the Action Taken Report of IRC 2013-14. Dr. Sandhya Kranthi, Head, Division of Crop Protection, Dr. D. Blaise, Head, Division of Crop Production, Dr. Suman Bala Singh, Head I/c, Division of Crop Improvement, Dr. D. Monga, Head, Regional Station, Sirsa, Dr. A. H. Prakash, Head, Regional Station, Coimbatore were present. All the Scientists of CICR, Nagpur, CICR, RS, Sirsa and CICR, RS, Coimbatore presented their research findings and the results were discussed. Technical programme for 2015-16 was finalized for each

project. Concluding remarks were given by Dr. K. R. Kranthi, Chairman, IRC. Shri. S.P. Muchali, Technical Officer (T5) was felicitated by Chairman, IRC for his services during the IRC meetings conducted over the years as he would be superannuating this year. Dr. J.H. Meshram, Joint Secretary, IRC, proposed the vote of thanks.

Project Monitoring and Evaluation Committee (PMC)

PMC visit to CICR, Sirsa

The Project Monitoring and Evaluation Committee (PMC) from CICR, Nagpur under the chairmanship of Dr. K.R. Kranthi, Director, CICR, Nagpur along with Dr A. H. Prakash, PC & Head, CICR Coimbatore, Dr. Suman Bala Singh, Head Crop Improvement, CICR, Nagpur, Dr. K. Rathinavel, Principal Scientist, CICR, RS, Coimbatore and Dr. M. V. Venugopalan, Principal Scientist & Head PME Unit CICR, Nagpur visited CICR, Regional Station, Sirsa on Sept. 11, 2014 and evaluated the performance of the ongoing projects. The team members visited the demonstrations of various hybrids and varieties released/sponsored/developed by the Station along with large plot of HDPS sown with F-2383 (*G. hirsutum*) and CICR-1 and CICR-3(*G. arboreum*). The visit was followed by discussion and observations about the research programs by Chairman and members.

PMC visit to CICR, Coimbatore

The Chairman and members of Project Monitoring and Evaluation Committee visited CICR Regional Station, Coimbatore during January 19-21, 2015. Under the chairmanship of Dr. K.R. Kranthi, Director, CICR, Nagpur, the committee evaluated the progress of research projects handled by the Scientists in Divisions of Crop Protection, Crop production and Crop Improvement. The committee also visited the experimental field trials and demonstrations in the main as well as new farm. At the end, the Chairman addressed the scientists with his concluding remarks. The program concluded with the vote of thanks proposed by Dr. (Mrs.) S. Usha Rani, Senior Scientist (Agrl. Extension).

10.5 : Other Important Workshop/ Symposia/Meetings

Annual Review Workshops of TMC MMI

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 address by Dr. D. Blaise, Head, Crop Production Division, 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. He also appreciated the HDPS system of cotton production. The meeting ended with the vote of thanks by Dr. J.H. Meshram, I/c TMC Cell, CICR, Nagpur.

A meeting of PI/CCPIs of three TMC MM I projects (TMC MM 1.4, TMC MM 1.6 & TMC MM 1.7) for central zone was held at Central Institute for Cotton Research, Nagpur on 19th 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. M.V. Venugopalan Head, PME Cell, CICR, Nagpur. In his introductory remarks Dr. K.R. Kranthi, Member Secretary TMC MM I & Director, CICR explained about the purpose of the meeting. The action plan for the implementation of IRM-HDPS and HDPS demonstrations at various locations during 2014-15 were discussed and finalized based on the availability of seeds at various centres. The meeting ended with the vote of thanks by Dr. J.H. Meshram, In-charge TMC Cell, CICR, Nagpur

Screening and Evaluation for Cotton Leaf Curl Virus

A Meeting was held on "Screening and Evaluation for Cotton Leaf Curl Virus" under the aegis of the AICCIP on Aug. 5, 2014 at CICR, Nagpur. About 26 participants from public and private sector

attended the meeting. Kohinoor seeds, Ankur Seeds, MAHYCO, Ganga Kaveri, Krishidhan seeds, JK seeds, Bayer Crop Sciences, Bioseed, Rasi seeds, Nuziveedu seeds were represented by their officials. Dr. Siwatch (HAU) Dr. Pankaj Rathod (PAU), Dr. A.H. Prakash (PC), Dr. Sandhya Kranthi (CICR), Dr. Chinna Babu (CICR), Dr. Pradeep Kumar (RAU) and Dr. R.K. Arora (PAU) were also present. The meeting was chaired by Dr. C.D. Mayee. While Dr. K.R. Kranthi, Director, CICR, welcomed the gathering, Dr. Mayee gave the introductory remarks, followed by Dr. Rishi Kumar's presentation on the status of leaf curl virus screening procedures. Detailed discussion on the screening methodology followed. A monitoring team under the chairmanship of Dr. K.R. Kranthi was constituted for the year.

Review meeting on TMC MMI-IRM HDPS

Review meeting on TMC MMI-IRM HDPS was conducted at CICR, Nagpur, on 25th August 2014. Dr. K. R. Kranthi, Director, CICR, Dr. D. Blaise, Head, Crop Production, Dr. M.V. Venugopalan, Head, PME, Dr. R.B. Singhandhupe, Shri Atul Sharma from Wardha, Dr. Solanki and Dr. C.K. Patil from Gujarat, Dr. R. K. Patnaik from Orissa, Dr. P. Mewade, Dr. Satish Parsai from Khandwa, Mr. B. Tule and KVK staff attended the meeting. The purpose of the meeting was to review the implementation of IRM – HDPS demonstrations, to take stock of the number of trials/farmers etc in each district and to review the crop condition *viz.*, per cent germination, crop stand and implementation of HDPS package.

Cotton Technology Assistance Programme (TAP) for Africa Review Meet

A review meeting on Cotton TAP was held on 27th August, 2014 at CICR, Nagpur. Dr. K.R. Kranthi, Director, CICR, Dr. D. Blaise, Head, Crop Production Division, Er. Gautam Majumdar, Dr. A.K. Krishna Kumar, Executive Director, IL&FS and Dr. Milan Sharma, Head, Africa Initiatives and Industry Research, IL & FS Cluster Development Initiative Limited attended the meeting. Discussions regarding II phase of the ongoing Technical Assistance program and extension of the programme to five new African countries based on their request were held during the meeting.

Regional Committee Meeting at Raipur

Hon'ble Union Minister for Agriculture, Government of India, Shri Radha Mohan Singh inaugurated the 23rd meeting of ICAR Regional Committee No.VII at Indira Gandhi Krishi Vishwavidyalaya (IGKV), Raipur on October 17, 2014. The meeting aimed to address the various emerging issues and problems of farming communities of Chhattisgarh, Madhya Pradesh, Maharashtra and Goa. The Inaugural session was chaired by Hon'ble Chief Minister, Government of Chhattisgarh, Dr. Raman Singh. Dr. S. K. Patil, Vice Chancellor, IGKV, Raipur welcomed the dignitaries. Shri Brij Mohan Agrawal, Hon'ble Minister for Agriculture, Veterinary, Fisheries and Water Resources, Government of Chhattisgarh, Sushri. Kusum Mehdele, Hon'ble Minister for Animal Husbandry, Horticulture and Food Processing, Government of Madhya Pradesh, Shri. Ramesh Bais, Hon'ble Member of Parliament, Raipur Lok Sabha, Shri. Devji Bhai Patel, Hon'ble MLA, Dharsiwa, Vidhan Sabha Chhattisgarh, Dr. S. Ayyappan, Secretary, DARE & DG, ICAR, DDGs, Dr. K. R. Kranthi, Director, Central Institute for Cotton Research, Nagpur and Member Secretary of the ICAR Regional Committee, Vice Chancellors of State Agricultural and Veterinary Universities located in the region VII, ADGs, Directors of different ICAR institutions, Agricultural Commissioners and Senior Government Officers from the State Departments, members representing ICAR Society & NGOs, Project Co-ordinators of AICRPs, Heads of Regional Stations, special guests and invitees were present at the occasion. Dr. M.V. Venugopalan, Head, PME Unit, Dr. K. P. Raghavendra, Scientist, Biotechnology, Dr. H.B. Santosh, Scientist, Plant Breeding, Dr. Mahendra Singh Yadav, Chief Technical Officer and Mrs. Vandana Satish, Programme Assistant

from CICR attended the meeting. Dr. R. B. Singhandhupe, i/c Head, KVK, Dr. Punit Mohan, Principal Scientist and Shri. S. S. Patil showcased the technologies developed by CICR in the exhibition. Speaking on the occasion, Dr. S. Ayyappan, Chairman of the Regional Committee expressed gratitude to Union Minister of Agriculture, Shri. Radha Mohan Singh for his presence in the ICAR Regional Committee meeting. He also briefed the dignitaries and audience about the major issues to be discussed in the meeting and lauded the contributions of the region towards national agricultural development and prosperity. Dr. Raman Singh, Hon'ble Chief Minister of Chhattisgarh during his presidential address lauded the contributions of farmers, ICAR, SAU's, and KVK's in agricultural development in the region. Hon'ble Union Minister of Agriculture emphasized the role of Regional Committee in agricultural development of region. He appreciated the efforts of National Agricultural Research System in sustaining food grains production through district-wise contingent plans in wake of deficit monsoon. He called for utilization of *desi* cattle breeds in animal breeding programmes to develop climate resilient cattle breeds while exhorting the researchers to be vigilant and realistic towards climate change. He urged all the researchers and administrators to explore the potentiality of inland fisheries and *desi* cattle breeds to achieve higher fish and milk productivity, respectively. Many innovative farmers from the region were felicitated and a number of useful publications in the form of bulletins, CDs, books from ICAR institutes and SAUs were released during the occasion. Dr. K.R. Kranthi, Director, Central Institute for Cotton Research, Nagpur and Member Secretary of the ICAR Regional Committee - VII proposed the vote of thanks.



NAAS Silver Jubilee Symposium

One day NAAS Silver Jubilee Symposium on "25 years of Research on Insect Resistance to toxins – the way forward" was organized at Central Institute for Cotton Research, Nagpur on 27th December, 2014. The symposium was inaugurated by the Chief Guest Dr. S. N. Puri, Former Vice-Chancellor, Central Agricultural University, Imphal, Manipur. Dr. Sandhya Kranthi, Head, Crop Protection Division, welcomed the delegates and participants. Dr. K. R. Kranthi, Director, CICR, gave introductory remarks emphasizing on the specific purpose of technical gathering on Insect Resistance to toxins, especially of young speakers working in this area. Dr. S. N. Puri appreciated the initiative taken by NAAS to discuss upon the burning issues in such scientific forum especially Cotton- Bt Cotton-Pesticides-Resistance-Sustainable Management.

Deliberations were held in two technical sessions. First session was on 'Insecticide Resistance- over 25 years in India' chaired by Dr. S. N. Puri and Co-chaired by Dr. T.V.K. Singh. Speakers and topic of talks were Dr. Rishi Kumar on "Insecticide resistance reports", Dr. G.M.V Prasad Rao on "Management issues in India", Dr. V. Sridhar on "Mitigating resistance with new molecules" and Dr. Sandhya Kranthi on "Mechanisms of insecticide resistance in insects". Second technical session was on 'Resistance to Bt crops across the globe and India'. Speakers and topic of talks were Dr. K. S. Mohan on "Bt Resistance reports including India", Dr. G. T. Behere on "Mechanisms of resistance to Bt crops", Dr. K. P. Raghavendra on "



RNAi approaches to break resistance", Dr. P. Srinivas on "Issues with resistance management options".

The house discussed various issues at length and came out with some recommendations *viz.*, 1) Establishing National Referral laboratory for resistance management, 2) Management of refuge along with farmers' awareness, 3) Creating baseline susceptible population for monitoring insecticide resistance and toxins, 4) Standardizing procedures for monitoring and scouting techniques, 5) Promoting new technologies like RNAi and 6) Public- private partnership in research and extension to combat resistance and effective implementable IRM strategies. Certificate of participation and mementos were distributed to all the participants. Rapporteurs were Dr. Vishlesh Nagrare, Mr. Joy Das, Mr. Rakesh Kumar and Miss Suvarna Khadakkar. The symposium concluded with vote of thanks proposed by Dr. K. R. Kranthi.

Review meeting on CICuD, PBM and HDPS

Review meeting to finalize action plan for Cotton Leaf Curl Virus disease (CLCuD), Pink bollworm management (PBM) and High density planting system (HDPS) was held under the chairmanship of Dr. J. S. Sandhu, Deputy Director General (Crop Science) on Feb. 21, 2015. Dr. Sandhya Kranthi welcomed the dignitaries and introduced Dr. J.S. Sandhu to the audience. Dr. K.R.Kranthi, Director, CICR emphasized on importance of meeting as many issues related to Cotton Leaf Curl Virus disease, Pink bollworm management and High density planting system need to be resolved.

First session on cotton leaf curl disease was chaired by Dr. J. S. Sandhu, DDG (CS). He emphasized on need for sustainability and importance of seed quality. Dr. A. H. Prakash presented evaluation report of released and prerelease Bt hybrids and classified them into tolerant and susceptible based on PDI and progress of the disease.

DDG suggested that the number of entries should be restricted. He stressed that old hybrids should be withdrawn every year and government should be informed as and when seed companies bring new hybrids every 3 years. DDG also pointed out



the need for DNA finger printing of Bt hybrids released by private sector.

Second session on pink bollworm management was chaired by Dr. Raju Barwale, MD, Mahyco. Dr. K. S. Mohan, Consultant, Monsanto India presented talk on "Results of the 'Refuge-In-Bag' trials and Recommendations". To sustain the Bt technology, planting of structured refuge is mandatory. However, farmers are not adopting it. Thus problem of resistance is inevitable in due course of time. He told that Monsanto, on its own and also in collaboration with CICR conducted field trials at various locations for the last three years. The findings of the trials indicated that with 5% refuge in bag (RIB) with isogenic line of counterpart hybrid there was no significant decrease in yield. However, he cautioned and stated that while implementing the RIB seed companies must undertake responsibility of educating farmers, spraying of insecticides and availability of counterpart non Bt hybrid. He told that proposal in dossiers have been submitted to ICAR/ GEAC for approval and gazette notification on the implementation was awaited.

Third session was on High Density Planting Systems and was chaired by DDG (CS) Dr J.S. Sandhu. Dr. Sandhu in his introductory remarks said that HDPs was tested on experimental fields as well as on farmer's participatory mode for the past three years by the Public Sector & Seed Industry and a lot of confidence has been developed.

The first presentation by Dr. M. V. Venugopalan



Dr J.S. Sandhu, DDG (CS), ICAR

provided an insight of the research projects undertaken at CICR and the partners in AICCIP since 2010-11 till date. The second presentation by Dr Blaise Desouza, Head Crop Production Division was on the results of the National Food Security Mission (NFSM). An overview of the on-farm trials undertaken in Vidarbha and other regions in 2012-13 and 2014-5 were also presented. Dr Ramasami, MD Rasi Seed made a presentation of the HDPS trials for Bt hybrids in Maharashtra and South India. Dr Ritesh Mishra, Mahyco and Dr Ashwin Kashikar from Ankur Seeds Pvt Ltd orally briefed the house about the trials conducted by Mahyco and Ankur seeds. Dr Vipin Dagaonkar, Bayer India Ltd informed that response of PGR differs from genotype to genotype and ginning percent needs to be increased for higher productivity.

DDG surmised that the concept of HDPS was good as shown by experimental results from the trials carried out over the past five years and also extensive field trials conducted by CICR and seed companies in farmers fields over the past three years. He suggested a zone-wise analysis on the success or failure of HDPS trials.

Seminar cum workshop on non Bt Cotton seed at CICR, Nagpur

A two day Seminar cum workshop on "Non Bt Cotton Seed" was organized by the Organic and Fair Trade Cotton Secretariat (OFCS) and Central Institute for Cotton Research at CICR, Nagpur on March 24-25, 2015. The workshop was attended by organic cotton stakeholders, organic cotton farmers and scientists of CICR, Nagpur. Dr. K.R. Kranthi, Director, CICR, Nagpur welcomed all the participants. Mrs. Prabha Nagarajan briefed about the agenda of the workshop mainly the issues on availability and production of non Bt cotton seeds. Dr. Kranthi, ascribed the low cotton productivity to cultivation of long duration hybrids and late sowing and suggested that adapting early maturing varieties (150 days duration) and undertaking early sowing can overcome the problems of pests as well as drought. Dr. Sandhya Kranthi, Head, Crop Protection, CICR, Nagpur

presented the information on “Pest management for organic cotton”. Dr. Suman Bala Singh, Head, Crop Improvement, CICR, Nagpur gave a talk on “Historical perspective in cotton breeding in India”. She mentioned about the archaeological excavations of cloth used during Harappa and Mohenjodaro civilisation that were made from *Desi* cotton. Dr. Blaise Desouza, Head, Crop Production, CICR, Nagpur gave a presentation on “Packages of practices for sustainable organic cotton production”. He mentioned that the *Desi* cotton due to its robustness and low input requirements, are more suitable for organic cotton cultivation. Dr. M.V. Venugopalan, Principal Scientist, CICR, Nagpur discussed about the difference between climate variability and climate change and provided an overview of the HDPS on cotton using non Bt varieties. Mr. Arun Ambatipudi (Chetna) discussed the challenges of organic cotton cultivation especially the problem of convincing farmers in taking up non Bt seed compared to the attractively labelled Bt cotton seed packets. Mr. Dharmendra Wele (Arvind - Agri) informed that availability of non Bt seeds as a major problem in organic cotton cultivation. In the

session on “Experiences of seed production” Dr. Rajasekhar (CSA), Dr. Subramaniam (Bloom Biotech), Dr. Ramprasad, Mr. Avinash Kamerkar (Pratibha), Mr. Yogender (Bio Re) and Ms. Latabai Madavi (Seed Farmer) shared their views and experiences. Dr. Vinita Gotmare, Principal Scientist, CICR, Nagpur presented “Spectrum of non-Bt varieties/hybrids-quality and biotic /abiotic stress reactions. She discussed the list of varieties released by CICR, State Agricultural Universities for North, Central and South zones. Dr. V. Santhy, Senior Scientist, CICR, Nagpur presented “Seed production-Regulatory aspects” on the first day and “Guidelines on how to start seed production project and seed testing procedures” on the second day. She discussed the legislative aspects of seed quality control including the specific standards for seed production. Miss. Usha, SRF, CICR, Nagpur made a presentation on ways to detect genetic contamination of organic cotton seeds by G M cotton. In the concluding remarks, Mrs. Prabha Nagarajan appreciated all the speakers. She mentioned High Density Plant System (HDPS) as one of the useful systems to increase the cotton yield in the country.

10.6: Results – Framework Document (RFD) Committee

The RFD Committee was re-constituted with the following officials of this institute.

Name	Designation
Dr. K.R. Kranthi, Director	Chairman
Dr. (Mrs.) Vinita Gotmare, Pr. Scientist	Nodal Officer
Dr. V. Santhy, Pr. Scientist	Co - Nodal Officer
Shri. Sachin Agnihotri, SAO	Member
Finance & Accounts Officer	Member
Dr. M.V. Venugopalan, Principal Scientist & Head, PME Cell	Co-opted member
Dr. H.B. Santosh, Scientist	Co-opted member
Dr. V.S. Nagrare, Sr. Scientist	Co-opted member
Dr. J. Annie Sheeba, Scientist	Co-opted member
Dr. K. P. Raghavendra, Scientist	Co-opted member

The committee meets periodically to discuss the success indicators of the monthly RFD report before sending to ICAR. This committee also finalizes the mid-term and annual RFD performance achievement reports.

The Institute set a high performance standard and achieved a total composite score of 96% (Ranked in Excellent category) in the Annual Performance Evaluation Report (April 1, 2013 to March 31, 2014). The details are given in Annexure-I.



10.7: Participation of Scientists in Seminars/Symposia/Workshops/Meetings

Sr. No.	Seminars/Conferences/Symposia/ Workshops/ Meetings	Place and Date	Participants
1.	Annual Group Meeting of All India Coordinated Cotton Improvement Project	PAU, Ludhiana 6-8 April, 2014	Dr. K.R. Kranthi, Dr. A.H. Prakash, Dr. S. Manickam, Dr. K. Rathinavel, Dr. S. Usha Rani, Dr. K.P.M. Dhamayanthi, Dr. B. Dharajothi, Dr. MV Venugopalan, Dr. S.Kranthi Dr. S.M.Palve Dr. T.R.Loknathan Dr. Punit Mohan Dr. V.N.Waghmare
2.	Meeting on CLCuV in Bt cotton	Krishi Bhawan, New Delhi 17 April, 2014	Dr. K.R. Kranthi
3.	XXIX Annual Group Meeting of NSP (Crops)	S.K. U A & T, Srinagar(J&K) 24-26 April, 2014	Dr. P. R. Vijaya Kumari
4.	Meeting on Performance of HDPS before Hon'ble Agriculture Minister	28 April, 2014	Dr. K.R. Kranthi Dr. MV Venugopalan
5.	XII Plan EFC meeting of DARE/ICAR	30 April, 2014	Dr. K.R. Kranthi
6.	Annual students function	TNAU, Coimbatore 6 May, 2014	Dr. K.R. Kranthi
7.	Annual Review Workshop of TMC MM I	DOR, Hyderabad 8 May, 2014	Dr. S. Manickam Dr. S.M. Wasnik, Dr. MV Venugopalan, Dr. Blaise Desouza, Dr. JH Meshram
8.	Annual Review Workshop of TMC MM II - HDPS - IRM	Department of Agronomy, ANGRAU, Hyderabad 9 May, 2014	Dr. S. Manickam, Dr. B. Dharajothi, Dr.K. Sankaranarayanan, Dr. S.M. Wasnik, Dr. M.V. Venugopalan, Dr. Blaise Desouza, Dr. J.H. Meshram
9.	TMC MM I Annual Review workshop (Central Zone)	CICR, Nagpur 19 May, 2014	Dr. S.Kranthi, Dr. S.M. Wasnik
10.	Resistance Management Workshop	PJTSAU, 27 May, 2014	Dr. S.Kranthi
11.	21 st General Body meeting and the Foundation day programme	NAAS, New Delhi 4-5 June, 2014	Dr. K. R. Kranthi

12.	Essentially Derived Variety Committee meeting at Protection of Plant Varieties and Farmers Rights Authority	New Delhi 5 June, 2014	Dr. A.H. Prakash, Dr. K. Rathinavel
13.	Workshop on 'Impact of Capacity building programme under NAIP'	NASC, Pusa New Delhi 6-7 June, 2014	Dr. K.R. Kranthi Dr. Vinita Gotmare Dr. V. S. Nagrare
14.	Central Insecticide Board meeting at Mantralaya	Mumbai 12 June, 2014	Dr. K.R. Kranthi
15.	HDPS meeting	Main Cotton Research Station, NAU, Athwa farm, Surat 13 June, 2014	Dr. K. R. Kranthi
16.	Review Meeting of Cotton TAP	Dept. of Commerce, GOI, New Delhi 16 June, 2014	Dr. Blaise Desouza
17.	Sixth Meeting of Asian Cotton Research and Development Network	Dhaka, Bangladesh 18-20 June, 2014	Dr. K.R. Kranthi, Dr. Loknathan, Dr. M.V. Venugopalan, Dr. Vinita Gotmare, Dr. S.M. Palve, Dr. K. P. Raghavendra, Dr. A.H. Prakash, Dr. S. Usha Rani, Dr. D. Monga, Dr. Rishi Kumar
18.	High Density Planting System meeting	Directorate of Cotton Development Mumbai 1 July, 2014	Dr. K.R. Kranthi
19.	'Current status and experiences with production of Coloured cotton'	New Delhi 21 July, 2014	Dr. K.R. Kranthi
20.	ICAR Foundation Day and Conferences of Directors of ICAR Institutes and Vice Chancellors of SAUs	New Delhi 29 - 30 July, 2014	Dr. K.R. Kranthi
21.	Meeting on promotion of naturally coloured cotton	Office of the Textile Commissioner Mumbai 4 August, 2014	Dr. K.R. Kranthi, Dr. Vinita Gotmare Dr. M.V. Venugopalan
22.	Brain Storming meeting on "Insecticide Resistance Management "	IIHR, Bangalore 30 August, 2014	Dr. K. R. Kranthi
23.	4 th meeting to discuss on Collaborative Cotton Mechnization projects of FICCI, Industry Partners M/x Bayer, M/s John Deere and M/s Nuzivedu	Krishi Bhawan, New Delhi 22 Sept., 2014	Dr. K.R. Kranthi
24.	IX Annual Review Meeting of ICAR Seed Project- " Seed Production in Agricultural Crops"	ANGRAU, Hyderabad 22-23 Sept., 2014	Dr. P. R. Vijaya Kumari



25.	IBSC Meeting	MPKV, Parbhani 30 Sept., 2014	Dr. S. Kranthi
26.	Meeting on Naturally coloured cotton	Textile Commissioner at the Office of the Textile Commissioner, Nishtha Bhawan, Mumbai 1 Oct., 2014	Dr. Vinita Gotmare Dr. M.V. Venugopalan
27.	23 rd meeting of ICAR Regional Committee No. VII	IGKV, Raipur 17-18 Oct., 2014	Dr. K. R. Kranthi Dr. M.V. Venugopalan Dr. M.S. Yadav Dr. B. Balasubramani Dr. K. P. Raghavendra Dr. H.B. Santhosh Mrs. Vandana Satish
28.	3 rd International Conference on Agriculture and Horticulture	Hyderabad International Convention Centre, Hyderabad 27-29 Oct., 2014.	Dr. J. GulsarBanu
29.	National Symposium on "Crop Improvement for Inclusive Sustainable Development"	PAU, Ludhiana 7-9 Nov., 2014	Dr. M. Sarvanan, Dr. S. Manickam, Dr. S. L. Ahuja, Dr. D. Monga, Dr. Neha Saxena, Dr. S. M. Palve, Dr. V. N. Waghmare, Dr. T. R. Loknathan
30.	7 th NEEC 2014	ICAR, Research Complex, Umiam, Meghalaya 8-11 Nov., 2014	Dr. Usha Rani
31.	Meeting on Vision 2050 and Institute project prioritization	Krishi Bhawan, New Delhi 10 Nov, 2014	Dr. K.R. Kranthi
32.	National Symposium on Pest Management organised by Entomological society of India	14 - 15 Nov., 2014 IARI, New Delhi	Dr. K.R. Kranthi
33.	National Symposium on Agriculture Diversification, for Sustainable Livelihood and Environmental Security"	PAU, Ludhiana. 18-20 Nov., 2014	Dr. M.V. Venugopalan Dr. P. Nalayini, Dr. K. Sankaranarayanan, Dr. D. Kanjana
34.	International Conference -Cotton India 2014	Mumbai 25 Nov., 2014	Dr. K.R. Kranthi Dr. M.V. Venugopalan
35.	QRT meeting of NSP (Crops)	UAS, Bangalore 11-12 Dec., 2014	Dr. K. Rathinavel

36.	National seminar on Extension Strategies for Sustainable Agriculture – Challenges and Opportunities	AC and RI, Madurai 12 Dec., 2014	Dr. Usha Rani
37.	NAAS Silver Jubilee symposium '25 Years of Research on Insect Resistance to Toxins	Central Institute for Cotton Research (CICR) Nagpur 27 Dec., 2014	Dr. K. R. Kranthi, Dr. S. Kranthi, Dr S.B.Nandeshwar, Dr B. Dharajothi, Dr. Raghavendra, Dr. Nagrare, Dr. N. Gokte Narkredkar, Dr. China Babu
38.	International Symposium	Prof. Jaishankar Telangana Agricultural University, Hyderabad 7 Jan., 2015	Dr. K.R. Kranthi
39.	The Second International Conference on Bio – Resource and Stress Management Hyderabad	PJTSAU, Hyderabad 7-10 Jan., 2015	Dr. P.Nalayini, Dr. K. Sankaranarayanan, Dr. D. Kanjana
40.	Annual Breeder Seed Review Meeting	ICAR, RC, NEH, Shillong 7-8 Jan., 2015	Dr. P. R. Vijaya Kumari, Dr. A.H. Prakash, Dr. S Manickam
41.	National Nematology Symposium on “Nematode Management: A Challenge to Indian Agriculture in the changing climate”	Yashwantrao Chavan Academy of Development Administration (YASHDA), Pune 8-10 Jan., 2015	Dr. Nandini Gokte-Narkhedkar
42.	National Seminar on Sustainable Management of Land Resources for Livelihood Security by ISSLUP, Nagpur	NBSS&LUP Nagpur 28-30 Jan., 2015	Dr. M.V. Venugopalan
43.	12 th Agricultural Science Congress (ASC)	NDRI, Karnal 3 Feb., 2015	Dr. K.R. Kranthi
44.	Cotton Advisory Board on coloured cotton	UAS, Dharwad 9 Feb., 2015	Dr. K.R. Kranthi, Dr. S. Kranthi
45.	National Seminar on “Water Management & Climate Smart Agriculture	Junagadh Agri. University, Junagadh Gujarat 13-14 Feb., 2015	Dr. R.B. Singandhupe
46.	Global Social Science Congress 2015 on ‘Management of Sustainable Livelihood Systems’	OUAT, Bhubaneswar 14- 17 Feb., 2015	Dr. S.M. Wasnik
47.	Workshop of In-charges of PME cell in ICAR institutes	NASC, New Delhi 23 Feb., 2015	Dr. M.V. Venugopalan
48.	Meeting on GM crop Technology	Delhi University 23 March, 2015	Dr. K. R. Kranthi



10.8: Distinguished Visitors

Name & Designation	Organisation	Date
Nagpur		
Delegates from Afghanistan	Afghanistan	Nov. 17, 2014
Dr. K. P. Wasnik, Addl. Commissioner	Ministry of Agril, Govt. of India	Dec 31, 2014.
Shri C.K. Bawankule, Minister for Energy, New and Renewable Energy	Maharashtra State and Guardian Minister of Nagpur District	Jan. 17, 2015
Dr. A. K. Singh, DDG (AE)	ICAR, New Delhi	Jan. 18, 2015
Mrs. Roja Sethumadhavan, Dy. Secretary	Division of Extension, ICAR, New Delhi	Jan. 18, 2015
Prof. Chun Xi Zhang	Institute of lifesciences, Zhijiang University, Hangzhou, China	Feb. 7, 2015
Dr. K.P. Arun Kumar, Staff Scientist & Group Leader	Laboratory of Molecular Genetics, Centre for DNA fingerprinting and Diagnostics Hyderabad	Feb. 7, 2015
Dr. J. S. Sandhu, DDG(CS)	ICAR, New Delhi	Feb. 21, 2015
Dr. M. S. Swaminathan , Chairman	M. S. Swaminathan Research Foundation (MSSRF)	Feb. 22 and 23, 2015
Sirsa		
Dr. J. S. Sandhu	Agriculture Commissioner, GOI	6th Sept., 2014
Dr. Gehlawat	Additional Director (Seeds), Govt of Haryana	6th Sept., 2014



10.9: Personnel

Director K R Kranthi, Director, krkranthi@gmail.com
Project Coordinator (Cotton)
Coimbatore A.H. Prakash, P.C. (Cotton) & Head, prakashcicr@gmail.com
Biotechnology
Nagpur G Balasubramani, Principal Scientist, bala77bio@gmail.com Smt. J Amudha, Senior Scientist, jamudhacicr@gmail.com K P Raghavendra, Scientist, kpraghavendra@gmail.com Joy Das, Scientist (Joined on 09.04.2014), uasjoy@gmail.com Rakesh Kumar, Scientist (Joined on 09.04.14)rakesh.goswami12@gmail.com
Plant Breeding
Nagpur Smt. S. B. Singh, I/c Head & PS, sumanbalasingh2009@gmail.com T R Loknathan, Principal Scientist, loknathantr14@gmail.com S M Palve, Principal Scientist, smpalve2kl@yahoo.com V N Waghmare, Principal Scientist, vijayvnm@yahoo.com M Saravanan, Scientist, msaraniari@gmail.com H B Santosh, Scientist, santoshgpb@gmail.com
Coimbatore S Manickam, Principal Scientist, manickam.cicr@gmail.com
Sirsa S L Ahuja, Principal Scientist, slahuja2002@yahoo.com O P Tuteja, Principal Scientist, optuteja2001@yahoo.co.in S K Verma, Principal Scientist, surenderkumar64@yahoo.co.in
Genetics & Cytogenetics
Nagpur S B Nandeshwar, Principal Scientist, sbn3@rediffmail.com Smt. Vinita Gotmare, Principal Scientist, vinitag22@gmail.com
Coimbatore Smt. K P M Damayanthi, Principal Scientist, dhamayanthikpm@yahoo.com
Seed Technology
Nagpur Smt. P R Vijayakumari, Principal Scientist, rachelvk123@gmail.com Smt. V Santhy, Senior Scientist, santhy100@gmail.com
Coimbatore K Rathnival, Principal Scientist, krathinavelus@gmail.com
Sirsa R A Meena, Principal Scientist, rameenacotton@rediffmail.com
Economic Botany
Nagpur Punit Mohan, Principal Scientist, punitmohan@gmail.com
Agronomy
Nagpur Blaise Desouza, Head, Crop Production, blaise_123@rediffmail.com M V Venugopalan, Principal Scientist, mvvenugopalan@gmail.com A R Raju, Principal Scientist, bumaraju@gmail.com
Coimbatore K Sankaranarayanan, Principal Scientist, sankaragro@gmail.com Smt. P Nalayani, Principal Scientist, nalayiniganesh@gmail.com
Soil Science
Nagpur A Manikandan, Scientist, poonamani223@gmail.com
Coimbatore Smt. D Kanjana, Scientist, kanjana16@rediffmail.com
Agricultural Engineering
G Majumdar, Scientist, gama62@rediffmail.com

Plant Pathology
Nagpur A Sampath Kumar, Scientist, sampath_a@rediffmail.com (on study leave)
Sirsa Dilip Monga, Head of Station, dmonga2009@gmail.com
Entomology
Nagpur Smt. S. Kranthi, Head, Crop Protection, sandhya.kranthi@gmail.com V S Nagrare, Senior Scientist, vs.nagrare@gmail.com Chinna Babu Naik V, Scientist, chinnaenton@gmail.com
Coimbatore Smt. B Dhara Jothi, Principal Scientist, dhara56@yahoo.co.in Smt. M Amutha, Scientist, amuento@yahoo.co.in
Sirsa Rishi Kumar, Senior Scientist, rishipareek70@yahoo.co.in
Nematology
Nagpur Smt. Nandini Narkhedkar, PS, nnarkhedkar@rediffmail.com
Coimbatore Smt. J Gulsar Banu, Principal Scientist, gulsarsci@gmail.com
Plant Physiology
Nagpur J H Meshram, Scientist, j.h.meshram@gmail.com J Annie Sheeba, Scientist, anniephysiology@gmail.com
Coimbatore S E S A Khader, Principal Scientist, sesakhader@gmail.com
Biochemistry (PS)
Nagpur Smt. M. Chakrabarty, Scientist, budiya12@yahoo.com (Transferred to IARI New Delhi on 02.08.2014)
Microbiology (PS)
Nagpur K Velmourougane, Scientist, velicar@gmail.com (on study leave)
Live Stock Management
S N Rokde, Principal Scientist, sunilrokde_2007@rediffmail.com (LMP)
Agriculture Extension
Nagpur S M Wasnik, Principal Scientist, wasniksm2012@gmail.com
Coimbatore Usha Rani, Senior Scientist, ushajoshua@rediffmail.com
Agricultural Economics
Nagpur Smt. Anuradha Narala, Scientist, anuradhanarala@gmail.com
Coimbatore Smt. Isabella Agarwal, Senior Scientist, is_agarwal@rediffmail.com
Computer Applications
Coimbatore M Sabesh, Scientist, sabesh23@gmail.com
KVK
Nagpur R B Singhandhupe, Principal Scientist, rbsingandhupe@gmail.com
PME Cell
M S Yadav, Nodal Officer, cicrremunit@yahoo.co.in
Administration
Sachin Agnihotri, Senior Admin Officer, sach_agni123@rediffmail.com S N Rokde, I/c FACO, finance.cicr@rediffmail.com

10.10: Other Information

Cotton Action Plan 2014

Dr. S. Ayyappan, Director General, Indian Council of Agricultural Research (ICAR), released contingency plan advisories for cotton titled 'Cotton Action Plan 2014' in a function held on 19th July, 2014 in Nagpur. The action plan was jointly prepared by the Central Institute for Cotton Research (CICR), the National Bureau of Soil Survey & Land Use Planning (NBSS, LUP), Nagpur and the Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad. The 'Cotton action plan 2014' bulletin contains advisories for 70 main districts of five major cotton growing states with focus on action plans to ensure healthy crop growth for high yields despite the unforeseen delay in the onset of monsoon across the country. The conditional probabilities of dry spells were

calculated by Dr YG Prasad, Principal Scientist, CRIDA, based on 40 year data on seasonal rainfall and weather patterns using Markov Chain probability.

Dr. S. Ayyappan expressed happiness and lauded the contribution of the three ICAR institutions in their efforts to combat the climatic aberrations resulting from delayed monsoon. The cotton contingency action plans contain details of the package of practices to be followed and precautions to be taken especially in fields where cotton sowings were delayed. The contingency advisories are available on the institute website www.cicr.org.in. Dr K.R. Kranthi, Director, CICR, Dr S. K. Singh, Director, NBSSLUP, Dr. M. S. Ladaniya, Director, NRCC, Dr M.V. Venugopalan, Principal Scientist, CICR, Dr R.B. Singandhupe, Dr. Mahendra Singh Yadav and other scientists of the ICAR institutes were also present on the occasion.



ICAR Director General Dr. S. Ayyappan releasing "Cotton Action Plan 2014". Also seen are CICR Director Dr. K.R. Kranthi, NBSS & LUP Director Dr. S.K. Singh, NRCC Director Dr. M.S. Ladaniya and others

Tribal Sub Plan (2014-15)

Imparted training on High Density Planting System (HDPS) of Variety Suraj and cultivation of Surgical Cotton (*G. arboreum*) var. Phule Dhanwantary for Tribal farmers of Jiwati Taluka of Chandrapur District.

An Audio & Video CD was also prepared for the benefit of farmers interested to cultivate a straight



variety in Chandrapur District. The CD depicts the success stories of farmers who have demonstrated cultivation of Suraj on their farm.

Seeds of Suraj, fertilisers and pesticides have been procured for distribution among the Tribal farmers for the next cropping season 2015-16.

Topic	Winner
New Ideas to develop Institute Facilities	Mr. K. Velmourougane (I Prize), Dr. S.N. Rokde (II prize), Miss Usha Satija (SRF) (III Prize)
Ideas for cotton farmers' prosperity	Dr. Anuradha Narala (I Prize), Mr. K. Velmourougane (II prize), Mr. Raju (SRF) (III Prize)
Wild Idea on cotton 2050	Dr. J. Annie Sheeba (I Prize) , Mr. Sampath Kumar (II prize)
What do you like about CICR	Mr. Izaj Ahmed (I Prize), Dr. Chinna Babu Naik (II prize) and Mr. Muchli (III Prize)
Three steps to end corruption in India	Dr. Anuradha Narala (I Prize), Dr. K.P. Raghavendra (II prize) and Dr. V.S. Nagrare (III Prize)
Do we need a dictator in India	Dr. R. R. Gupta (I Prize)
Advertise a Product to sell Cotton boll	Mr. Sampath Kumar (I Prize)

Swachh Bharat Abhiyan

Swachh Bharat Mission which was launched by Hon'ble Prime Minister on 2nd October, 2014, the birth anniversary of Mahatma Gandhi was also celebrated at CICR, Nagpur and CICR, RS, Coimbatore and Sirsa. Dr. K.R. Kranthi, Director, CICR, initiated the program at CICR, Nagpur with a brief introduction about the program. Mr. Sachin Agnihotri, Senior Administrative Officer, administered oath for maintaining cleanliness as a responsible Indian citizen to all the CICR staff members. It was decided that each person will devote 100 hours in a year towards cleanliness and also motivate hundred persons about the importance of cleanliness. Oath for Swachh Bharat was also administered to staff members at Regional Stations at Sirsa and Coimbatore. Later on, all the staff members carried out cleaning of office premises and office building at Nagpur and its regional stations at Sirsa and Coimbatore.

CICR Participation in Agrovision - 2014

Sixth Agrovision 2014 was held at Reshimbag ground, Nagpur from December 4-9 in which workshops, exhibitions and symposiums on agricultural issues were conducted. Chief Minister of Maharashtra, Shri. Devendra Fadnavis

CICR Foundation Day Celebration

CICR Foundation Day was celebrated on 1st April, 2014, Dr. G. Balasubramani, gave the introductory remarks and conducted the event "Express your ideas in one minute" under the different topics. The winners under each category were awarded with prizes.

inaugurated the Agrovision-2014 as Dr. C.D. Mayee, Chairman of Advisory Council of Agrovision and other dignitaries looked on. The event hosted free workshops for farmers to create awareness and to inform them about new technologies in the farm sector. The technologies developed at CICR were showcased in a stall as a part of technology dissemination. The event also showcased a wide range of agricultural equipment and products from public and private sectors. Expert Panel Discussion on GM crops was held on 5th December, 2014. Dr. K. R. Kranthi, Director, CICR, Nagpur and Advisory Council Member, Agrovision, participated in the 'Expert Panel Discussion' on "Modern tools for Crop Productivity Improvement and Environment Concern" at 'Agrovision' on 5th December 2014. The issue of Genetically Modified Crops was discussed in the session.

Dr. Kranthi said that every concern about GM crops must be addressed, but let the science not be stopped. He added that experiments and field trials are needed and opined that no country has progressed without science. Dr. C. D. Mayee, Chairman of Advisory Council of Agrovision and Dr. Swapan Kumar Datta, Deputy Director

General, Crop Science, ICAR, were among the expert participants in the discussion. Dr Mayee said 65% of the Indian agriculture is rainfed and Indian scientists have the potential of solving agriculture related problems. He suggested that guidelines should be formed for environmental and health tests. Dr. Datta suggested that there should be clear vision on policy making. He added that agriculture has to progress and it cannot remain in nostalgia. Shri Narayan Suresh, Group editor of BioSpectrum (India and Asia) moderated the session.

ICAR ZONAL Tournament (Central Zone)

Mrs. Sunita Chauhan, Subject Matter Specialist, KVK, Nagpur and Ms. Kalpna Singh, Assistant, CICR, RS, Sirsa won First prize in Javelin throw (women) and Discus throw (women) respectively in ICAR Zonal Tournament (Central Zone) held at NBSS & LUP, Nagpur from September 16 to 20, 2014.



Library

Additions

In the period from 2014-15, the Library purchased 42 new books and 34 Hindi books. The Library subscribed to 11 Foreign Journals and 15 Indian Journals.

Documentation services

Library has developed computerized bibliographic database on Cotton to provide comprehensive and updated information on cotton. About 4675 bibliographic references along with abstracts have been stored in it. Based on this bibliographic database the Library publishes a current awareness bulletin namely "COTTON

RESEARCH ABSTRACTS". The Bulletin is circulated to all the scientists of the Institute and to all AICCIP Centers in India. In the reported period, four issues of COTTON RESEARCH ABSTRACTS (V28, (No. 1-4), January - December 2014) were published and circulated.

The Library is actively participating in the E-Journal Consortium by responding regularly through e-mails and thus also receiving updates. More than 2000 on-line journals on agriculture and crop science are made available over the network through this consortium.

Four User Terminals installed in the Library have facilitated the library users to access the databases uploaded in the Library Server. Users can also access the Internet on these terminals. Similarly the entire catalog of the library has been downloaded on these terminals for ease of use.

The WebOPAC version of the Library software SLIM21 was updated and by using this Library Application Software, the entire catalogue of holdings of the Library (books and bound volumes) is available on all terminals within the Institute. By its virtue, the entire holdings and the catalogue of the Library are visible on the LAN terminals within the Institute by clicking on the following link. Library Catalogue Web-OPAC Link <http://10.0.0.52/w20/>

Progressive Use of Hindi

Hindi Fortnight Celebrations

The Central Institute for Cotton Research Nagpur and Regional Station, Coimbatore celebrated "Hindi Fortnight-2014" with great enthusiasm from 15.9.2014 to 27.9.2014. At CICR, Regional Station, Sirsa, Hindi *Diwas* was celebrated on 26.09.2014.

At the closing ceremony held at CICR, Nagpur on 27th September, Dr Narendra Chaudhary, Director VNIT, Nagpur was the Chief Guest while Dr C. D. Mayee, Ex-Chairman, ASRB was the Guest of Honour. The two-week celebrations included competitions on English News to Hindi translation, Hindi songs to English translation, spot translation of film dialogues, poetry, singing, quiz, logic-connection, elocution, essay writing and

debate. Dr Narendra Chaudhary appreciated the enthusiasm with which the programmes were conducted. He said that there was an imminent need to conduct day-to-day working in Hindi, and also to plan ahead for the Hindi translation of technical terminologies which formed the core of research papers. In his presidential address, Dr. C. D. Mayee narrated his hilarious experiences with the different accents of Hindi in various parts of the country. He said that his experience in Germany as a Humboldt fellow taught him the tremendous importance of mother tongue in the pursuit of



Exhibiting CICR technologies Coimbatore

The technologies, products, inputs and services available at CICR, Regional Station, Coimbatore were exhibited in the exhibition conducted by Tamil Nadu Agricultural University, Coimbatore during the Southern Regional Agricultural Fair and State Level Farmers' day from 6th to 9th January 2015 at TNAU campus. Farmers, Agricultural scientists and those involved in the agricultural business from Kerala, Karnataka, Andhra Pradesh, Telangana and Union Territories visited the stall. Many cotton growers registered their mobile numbers for e-Kapas network. The stall was also visited by the dignitaries, Shri. O. P. Dhahiya, Director, Farm Information, Ministry of Agriculture, Shri. C. Rajendran, Joint Secretary,

science. Dr. K.R. Kranthi, Director and Chairman of the Rajbhasha Committee felicitated the guests. Two publications, Shwet Swarnima and Kapas Samachar were released on the occasion. Prize winners were awarded cash prizes and certificates. Dr. Sandhya Kranthi, Dr. Blaise Desouza, Dr. T. R. Lokanathan, Dr. M. V. Venugopalan, Dr. Suman bala Singh, Dr. S. N. Rokade, Dr. G. Balasubramani, Shri Sachin Agnihotri, Shri Gulbir Singh and Shri Rajnikant Chaturvedi conducted the competitions all through the fortnight and coordinated the Closing ceremony.



Department of Agriculture, Tamil Nadu and Dr. K. Ramasamy, Vice Chancellor, Tamil Nadu Agricultural University, Coimbatore.

The technologies available at CICR, Regional Station, Coimbatore were also exhibited in the exhibition in the "FARM TO FINISH EXPO 2015" as a part of the TEXFAIR 2015 during January 9-12, 2015 at the CODISSIA Trade Fair Complex, Avanashi Road, Coimbatore. Thousands of business visitors, including overseas buyers covering Managing Directors/Directors/ Executives and farmers visited the stall displayed by CICR, Coimbatore. The programs were coordinated by the institute exhibition committee (Convener: Dr. (Mrs.) S. Usha Rani, Senior Scientist and Co convener: Dr. (Mrs.) Isabella Agarwal, Senior Scientist).



10.11: Weather

Nagpur

Month	Temperature (°C)		Relative Humidity (%)		Rainfall (mm)	No. of Rainy Days
	Max.	Min.	Max.	Min.		
June, 2014	40.05	28.15	65.88	42.29	39.0	5
July, 2014	31.9	23.34	79.50	52.90	454.0	15
August, 2014	32.44	24.56	86.09	69.56	181.0	7
September, 2014	31.44	23.77	91.50	81.70	210.0	9
October, 2014	32.43	20.77	86.63	66.72	0	0
November, 2014	31.52	15.55	79.50	50.04	0	0
December, 2014	27.52	10.65	69.21	48.49	0	0
January, 2015	27.07	11.58	79.95	46.21	0	0
February, 2015	32.07	14.69	73.62	60.28	41.0	3
Total					925	39

Coimbatore

Month	Temperature(°C)		Relative Humidity (%)		Rainfall (mm)	No. of rainy days
	Max.	Min.	Max. RH	Min. RH		
Aug. 2014	30.6	23.1	81.9	59.3	75.8	7
Sept. 2014	31.8	22.7	85.3	55.0	90.4	5
Oct. 2014	30.1	22.5	93.0	68.0	352.1	15
Nov. 2014	29.5	21.3	90.1	57.8	3.4	0
Dec. 2014	28.8	21.0	88.5	58.7	16.3	3
Jan.2015	30.1	19.2	85.9	47.1	0.0	0
Jan.2015	30.8	19.5	83.2	39.2	0.0	0
Total					538.0	30

Sirsa

Month	Temperature (°C)		Rainfall (mm)	No. of rainy days
	Max.	Min.		
April 2014	35.7	18.2	10.2	1
May 2014	38.8	24.5	36.2	3
June 2014	40.4	27.2	10.7	2
July 2014	37.5	28.2	114.6	3
August 2014	36.1	27.8	2.4	1
September 2014	33.4	24.3	101.7	6
October 2014	25.9	15.6	0	0
November 2014	23.4	8.3	0	0
Total			275.8	16

10.12: Cotton Scenario

State-Wise Cotton Area, Production and Productivity

Zone/State	2013-2014*			2014-2015*		
	Area (Lakh ha)	Production (Lakh bales)	Productivity (kg/ha)	Area (Lakh ha)	Production (Lakh bales)	Productivity (kg/ha)
Punjab	4.46	21.00	800	4.5	14.00	529
Haryana	5.36	24.00	761	6.39	25.00	665
Rajasthan	3.93	14.00	606	4.54	17.00	637
North Zone	13.75	59.00	729	15.43	56.00	617
Gujarat	25.19	124.00	837	30.08	108.00	610
Maharashtra	41.92	84.00	341	41.92	83.00	337
Madhya Pradesh	5.14	19.00	628	5.78	18.00	529
Central Zone	72.25	227.00	534	77.78	209.00	457
Telangana	-	-	-	16.92	57.00	573
Andhra Pradesh	23.89	78.00	555	7.74	27.00	593
Karnataka	6.62	23.00	591	8.55	30.00	596
Tamil Nadu	1.52	5.00	559	1.73	5.00	491
South Zone	32.03	106.00	563	34.94	119.00	579
Others	1.57	6.00	650	1.56	6.00	654
Grand Total	119.60	398.00	566	129.71	390.00	511

1 bale= 170 kg.

Source: Cotton Advisory Board, Ministry of Textile, Govt. of India.* - As estimated by CAB in its meeting held on 31.03.2015



Annual (April 1, 2013 to March 31, 2014) Performance Evaluation Report in respect of RFD 2013-2014 of RSCs i.e. Institutes

Name of the Division : Crop Science
 Name of the Institution : Central Institute for Cotton Research, Nagpur
 RFD Nodal Officer : Dr. M.V. Venugopalan

Objectives	Wt (%)	Actions	Success Indicators	Unit	Wt (%)	Target/ Criteria Value					Achievements	Performance		Percent achievements of 90% column	Reasons for shortfalls or excessive achievements, if applicable
						Excell ent	Very Good	Good	Fair	Poor		Raw Score	Weight ed Score		
						100%	90%	80%	70%	60%					
1.Genetic enhancement and development of improved cultivars	57	Evaluation of genetic material	Breeding and germplasm lines evaluated	No.	25	120	115	90	80	70	138	100	25	120	
		Development of improved cultivars / hybrids	Entries contributed for AICRP multilocation trial	No.	24	40	38	34	32	30	39	95	22.8	102.6	
			Varieties identified for release	No.	8	3	2	1	0	0	2	90	7.2	100.0	
2.Technology dissemination and capacity building	20	Demonstrations conducted	Front line demonstrations and on farm trials conducted	No.	12	100	90	80	70	60	134	100	12	148.9	
		Farmers/ Extension officials training programmes organized	Trainings organized	No.	8	4	3	2	1	0	7	100	8	233.3	Additional unanticipated trainings were warranted to familiarize the concept of HDPS among farmers and field scouts

3. Development and identification of appropriate crop production & protection technologies	12	Development & testing of new technologies	New technologies tested and validated	No.	12	5	4	3	2	1	5	100	12	125.0	
Efficient Functioning of the RFD System	3	Timely submission of Results for RFD (2012-13)	On-time submission	Date	1	01/05/2013	02/05/2013	05/05/2013	06/05/2013	07/05/2013	27/04/2013	100	1		
Administrative Reforms	4	Implement ISO 9001 as per the approved action plan	% Implementation	%	2	100	95	90	85	80	0	0	0		
		Prepare an action plan for Innovation	On-time submission	Date	2	30/07/2013	10/08/2013	20/08/2013	30/08/2013	10/09/2013	27/07/2013	100	2		
Improving internal efficiency /responsiveness / service delivery of Ministry / Department	4	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	2	100	95	90	85	80	100	100	2		
			Independent Audit of implementation of public grievance redressal system	%	2	100	95	90	85	80	100	100	2		
Total													96		

Total Composite Score: 96.0

Rating : Excellent

Procedure for computing the Weighted and Composite Score

1. Weighted Score of a Success Indicator = Weight of the corresponding Success Indicator x Raw Score / 100
2. Total Composite Score = Sum of Weighted Scores of all the Success Indicator