

### 10.3: Consultancy, Patents, Commercialization of Technology

#### Revenue Generation

The Bt Referral lab generated revenue Rs. 7.22307 lakhs through sale of Bt express, Bt Quant, GUS detection kits in 2012-13.

#### Patented Technology published in IPINDIA website

Bacterial biopesticidal formulation derived from Entopathogenic nematodes for management of sucking pests of crops: Application No. 1854/MUM/2010 was published in [www.ipindia.gov.in](http://www.ipindia.gov.in) on 27-07-2012. A formulation developed from an isolate of bacteria *Paenibacillus* found associated with heat tolerant isolate developed of Entomopathogenic nematodes *Heterorhabditis indica* along with other additives for use as insecticides against sucking pests of Agricultural crops. This formulation when sprayed was found to cause mortality of nymphs of sucking pests as aphid *Aphis gossypii*, leaf hopper *Amrasca devastans*, White fly *Bemisia tabaci*, thrips *Thrips tabaci* etc. This formulation can also be used for controlling pests as *Bracon* sp, in biocontrol laboratories where bioagents as *Trichogramma* are cultured on *Corcyra* larvae. The formulation developed has no tangible adverse effect on natural biocontrol agents as *Trichogramma* etc.

#### ITMU Meeting

ITMU Meeting was held on 16-06-2012. The committee approved the reconstitution of terms and condition for commercialization of Bt-strips with Innovative Biosciences, Nagpur. Patent applications submitted for filing was reviewed. Ergonomically designed cotton picking bag submitted for design patent was suggested to publish the design for the benefit of public. Mealy Quit (Bio-formulated Insecticide) and Mealy Kill applications has to be submitted to ZTM&BPD Unit CIRCOT to seek interested entrepreneur for commercialization.

### 10.4: Significant Decisions of RAC, IRC, IMC and Other Important Meetings

#### Research Advisory Committee Meeting

The RAC Meeting was held at CICR, Nagpur on 21-22nd Feb 2013 and the following RAC members were present

Dr. S.A. Patil, Chairman, RAC

Dr. Srinivasan, Ex Director, CIRCOT, Mumbai

Prof. K.R. Koundal, ICAR-Emeritus Scientist, NRCPB, Delhi

Dr.V.Kumar, Ex-Head, Cotton Research Station, Surat

Dr. Jadhav, Ex-Director of Extension, MAU, Parbhani

Shri. Sharad Tasare, Ex.MLA and Member, IMC, CICR, Nagpur

The proceeding started with the presentation of Action Taken Report of the RAC 2012 by Dr. K.R. Kranthi, Director, CICR and followed by presentations by Heads of Divisions of CICR, Nagpur and Regional Stations.



#### Specific recommendations of the RAC

1. The future research programmes attempted in the Institute should be oriented to specific agro-ecological conditions.
2. A team of Economists from CICR should prepare and publish a consolidated statistical report (40-50 pages) of Indian cotton production and productivity in changing global scenario to help the farmers and policy makers.
3. Production of ELS cotton should be enhanced in the country considering the low production in ELS cotton producing countries such as Egypt, USA, and Sudan. Opportunities for the ELS cotton in unconventional areas may be attempted.
4. CICR should intensify research programmes on management of jassids in cotton.
5. CICR should make video films depicting the cotton cultivation practices adopted by the champion farmers in different regions (success stories) to demonstrate their technologies to other cotton farmers in different parts of the country.
6. Instead of single gene, cassette of genes (bollworm, leaf curl virus, biotic and abiotic stress) should be explored for future gene constructs. Construction of fusion gene with cry + lectin for durable resistance in transgenic cotton may be explored.
7. Concern was raised about the exclusion of cotton entries in AICCIP trials which showed poor yield but exhibited good fibre quality properties. It was informed that many entries have been knocked out during the initial evaluation owing to their low yield

performance. The RAC felt that there should be separate window in the AICCIP trials to test the entries only of fibre quality attributes. The promising accessions in the germplasm and also 20-25 elite cultivars can be tested for its quality attributes in three locations for three years to study the impact of weather parameters on fibre quality to use in future conventional breeding programs.

8. The RAC suggested using PA255 instead of RG-8 in *arboreum* and Suraj in *hirsutum* for transgenic cotton development. It was also suggested to try *cry1Ac* and *cry2Ab* in combination and as separate constructs to test the transformation efficiency in Suraj cotton.
9. The RAC suggested testing Pusa 'Hydrogel' a water conservation technique developed by IARI, New Delhi in cotton production to improve water use efficiency in rainfed systems.
10. The RAC strongly felt that CICR should be supported with sufficient manpower to take up intensive research to tackle the emerging pest problems.
11. Research on Plant Type for HDPS and for Machine picking must be intensified.
12. Development of varieties with Bt gene may be attempted in all the cultivated species.

The Chairman and members of RAC also had discussion with the Coordinators of the HDPS programme in cotton of various districts. The meeting ended with the vote of thanks by Dr.P.K.Chakrabarty, Head, Division of Crop Improvement, CICR, Nagpur.

#### **Institute Research committee (IRC) meeting**

The Annual Institute Research committee (IRC) meeting of CICR was conducted in two sessions. A special IRC for CICR, Nagpur Scientists on 16<sup>th</sup> March 2013 and a combined IRC for all the centres from 21-23<sup>rd</sup> March 2013 at CICR, Nagpur.

Dr M.V. Venugopalan, Member Secretary, RAC presented the specific recommendations of Research Advisory Committee meeting held on 21-22 Feb 2013. K. Velmourougane, Secretary IRC presented the Action Taken Report of the previous IRC (2012). The IRC confirmed the minutes of the last IRC meeting.

The results of research projects at CICR, Nagpur, RS, Coimbatore and RS, Sirsa were presented by individual Project leaders and discussed in IRC. Technical programme for 2013-14 was also finalized for each project. The meeting was chaired by the Dr. K.R. Kranthi, Director, CICR and scientists of Nagpur, Coimbatore and Sirsa participated in the deliberations.

The Chairman in his concluding remarks appreciated the work of all the Scientists and assured every possible help for good research in terms of research facility and manpower. The Chairman also urged to bring out Annual book of recommendations and package of practices each year for the benefit of cotton researchers and farmers. There was also discussion on testing and release of technologies through AICCIP as an alternative to AGRESCO. The IRC meeting ended with vote of thanks by the Dr. J. H. Meshram, Joint Secretary.

#### **Institute Management Committee (IMC) Meeting**

The 50<sup>th</sup> Meeting of Institute Management Committee of CICR, Nagpur was held on 16<sup>th</sup> June, 2012 at CICR, Nagpur under the Chairmanship of Dr. K. R. Kranthi, Director, CICR, Nagpur. The following Committee Members were present during the meeting:

1.	Dr. K.R.Kranthi, Director, CICR, Nagpur	Chairman
2.	Shri J.C.Bhutada, Joint Director of Agriculture, Govt. of Maharashtra, Nagpur	Member
3.	Shri Sharad Tasare, Ex M.L.A., Amravati	Member
4.	Dr Dilip Monga, Head CICR Regional Station, Sirsa.	Member
5.	Dr P.K.Chakrabarty, Head Division of Crop Improvement, CICR, Nagpur	Member
6.	Dr G.Balasubramani, Sr.Scientist, CICR Nagpur	Member
7.	Dr (Mrs.) Sandhya Kranthi, Head Division of Crop Protection CICR Nagpur.	Spl. Invitee
8.	Dr Blaise Desouza, Head Division of Crop Production, CICR, Nagpur	Spl. Invitee
9.	Shri Deepak Maheshwari, F. & A.O., CICR Nagpur	Spl. Invitee
10.	Dr R.B.Singandhupe, Pri. Scientist & I/c KVK CICR , Nagpur	Spl. Invitee
11.	Shri Sachin Agnihotri, Sr. Admn. Officer CICR Nagpur	Member Secretary

The Committee members noted the progress on Financial Management / Progress of works/ Farm Development / KVK activities and Research Achievements of the Institute and expressed their satisfaction. The meeting ended with thanks to Chair and the Members by the Member Secretary.

#### **Results -Framework Document (RFD) Committee**

A RFD Committee has been re-constituted in 2011 as per the guidelines of the ICAR with the following officials of this institute.

Name	Designation
Dr. K.R. Kranthi	Director
Dr. M.V. Venugopalan	Nodal Officer ( Principal Scientist and Head, PME Cell)
Shri. Sachin Agnihotri	Administrative Officer
Shri. Deepak Maheshwari	Finance & Accounts Officer
Dr. (Mrs.) S.B. Singh	Co –opted Member
Dr. P.K. Mukherjee	Co –opted Member
Dr. (Mrs.) Mukta Chakrabarty	Co- Nodal Officer & 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.

RFD Cell has been constituted as per the guidelines of the ICAR with the following officials to manage the activities of the RFD.

S. No	Category	Name & Designation
1	RFD Nodal Officer	Dr. M. V. Venugopalan, Principal Scientist (Agronomy) and Head, PME Cell
2	One Scientist	Dr. K. P. Raghavendra, Scientist (Biotechnology)
3	One Technical Officer	Dr. M.S.Yadav, Technical Officer (T-9)
4	One Administrative Staff	Mr. Ghanshyam D. Sakhare Lower Division Clerk & Typist

The Institute set a high performance standard and achieved a total composite score of 93% in the Annual (April 1,2012 to March 31, 2013) Performance Evaluation Report.

#### QRT Meeting

The Indian Council of Agricultural Research constituted the Quinquennial Review Team (QRT) vide letter F.No.5(2)/2006-IA.IIII dated 03<sup>rd</sup> July 2012, to review the functioning and progress of the Central Institute for Cotton Research (CICR), Nagpur and the All India Coordinated Cotton Improvement Project (AICCIP) for the period from 2007 to 2012. Subsequently, in October, 2012, the QRT was asked to extend the review period till Feb, 2013.

The Team consisted of Dr. C.D. Mayee, Former Chairman, ASRB as QRT Chairman; Dr. S.S. Mehetre,

Former Director Research, Mahatma Phule Krishi Vidyapeeth Rahuri; Dr. (Mrs.) Usha Barwale, Director, Mahyco Life Sciences Research Centre, Jalna; Dr. H.C. Sharma, Principal Scientist (Entomology), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru; Dr. D.P. Biradar, Registrar, UAS Raichur and Dr. D.K. Marothia, President, National Institute of Ecology as QRT members. Dr.M. V. Venugopalan, Principal Scientist, Agronomy and Head PME Cell, CICR acted as the Secretary of the QRT.

The QRT visited CICR, Nagpur, its Regional Stations at Coimbatore and Sirsa and reviewed the research work carried out at these places. The members visited most of the centres of AICCIP and interacted with the Scientists and assessed the progress made at the centres.

The details of the visits to various centres are given below:

Date	Place	Station Reviewed
20.10.12	Sirsa	CICR (RS, Sirsa), PAU Ludhiana, CCSHAU Hisar, RAU Sriganaganagar, MPUA&T Banswada
21.10.12	Hisar	Field demonstration of CCSHAU (Hisar)
17.12.12	Nagpur	CICR(Nagpur)
18.12.12	Akola	Dr.PDKV (Akola), RVSKV (Khandwa and Indore)
19.12.12	Jalna	MKV (Parbhani), MPKV (Rahuri & Pune)
09.01.13	Surat	NAU (Surat), JAU (Junagarh)
10.01.13	Mumbai	CIRCOT (Fibre quality issues)
21.02.13-23.02.13	Coimbatore	CICR(RS, Coimbatore) + TNAU (Coimbatore), UAS(Dharwad), UAS (Raichur), ANGRAU (Guntur), OUAT(Bhubaneswar), CSAUT &T (Kanpur).



QRT members visit - CICR, Nagpur





**QRT members visit at Surat and CICR, Regional Station, Sirsa**

The QRT had detailed discussions on 17 December 2012 at Nagpur with Director, HODs and Scientists of CICR, Nagpur. The members visited major experimental fields, important laboratories and other facilities. Views of the representatives of public and private sector stakeholders on cotton related issues and the opinions from them were elicited for shaping or fine tuning of the cotton research agenda. The recommendations are being finalized.

### **Project Monitoring and Evaluation Committee (PMC)**

The Project Monitoring and Evaluation Committee of the Central Institute for Cotton Research (CICR) re-constituted as per the ICAR guidelines to review and evaluate the progress of ongoing research projects of the institute consisted of the following members from CICR, Nagpur.

1. <b>Chairman</b>	Dr. K. R. Kranthi, Director
2. <b>Members</b>	Dr. P.K. Chakrabarty, Head, Crop Improvement Dr. Sandhya Kranthi, Head, Crop Protection Dr. Blaise Desouza, Head, Crop Production
3. <b>Member Secretary</b>	Dr. M. V. Venugopalan, I/c, PME Cell

The committee evaluated the projects as given below:

Division	Date
Crop Production	26 Nov. 2012
Crop Improvement	27 Nov. 2012
Crop Protection	01Dec. 2012
Biotechnology Section & Laboratories	03 Dec. 2012

The Chairman and the members visited experimental fields and verified the implementation of the IRC approved technical programme. Modification of the approved technical program was suggested to derive additional information.

### **22<sup>nd</sup> meeting of ICAR Regional Committee No.VII**

The 22<sup>nd</sup> meeting of ICAR Regional Committee No.VII was held during November 9-10, 2012 at the International Centre, Goa hosted by ICAR Research Complex, Goa under the Chairmanship of Dr S. Ayyappan, Secretary, DARE & Director-General, ICAR.

The meeting was inaugurated on November 9, 2012 by His Excellency, the Governor of Goa, Shri Bharat Vir Wanchoo in the presence of Dr. Ramkrishna Kusmaria, Hon'ble Minister of Farmer welfare and Agriculture Development, Government of Madhya Pradesh. Nine Vice Chancellors of State Agricultural and Veterinary Universities located in the region VII, five DDGs and five ADGs of ICAR, Secretaries, Agricultural Commissioner and Senior Government Officers from the State Departments, members representing ICAR Society & NGOs, Directors of ICAR Institutes, PCs of AICRPs, Heads of Regional Stations, special guests and invitees were present on this occasion.

The inaugural function was presided over by Secretary, DARE & Director-General, ICAR Dr S. Ayyappan. Dr. N. P. Singh, Director ICAR Research Complex for Goa and Chairman Local Organizing Committee, welcomed the participants. Dr. M. M. Pandey, DDG (Engineering) & Nodal Officer, Regional Committee VII, in his opening remarks stated that the meeting assumes significance because of the on-the-spot recommendations on all the



key issues of the region covering all aspects of agriculture, livestock and fisheries. The meeting is unique because it brings together all stake holders and provides a platform to discuss issues confronting the region and provide immediate recommendations.

Speaking on the occasion Dr. S. Ayyappan, Secretary, DARE & DG, ICAR, and Chairman of the Regional Committee, expressed a sense of pride and satisfaction that the agriculture sector of the country performed well and contributed enormously to enhancement of production and productivity of agricultural commodities, whereby food grain production assumed a new height of 257 million tonnes during last year. While lauding the contribution of the region-VII in National prosperity, Dr. Ayyappan informed the participants that the region contributed 15.5% of food grain produced in the country. Besides contributing nearly 12% each of rice and wheat to food grain bowl of the country, 58% sorghum production of the country came from this region. Similarly the region-VII contributed 25% each of cotton and sugarcane and 27% of fruit production of the country along with the sizeable production of oilseeds, pulses, vegetables, poultry and fish. He minced no words in acknowledging the roles and efforts of Indian farmers, agricultural scientists and state governments of the region, backed by strong technical support from 15 ICAR institutes, 10 agricultural and veterinary universities and 100 KVKs. While expressing his happiness in agricultural development and contribution of the region in national agricultural prosperity including production of efficient breeds of poultry, pigs, cows and fish, Dr. Ayyappan expressed concern regarding the potential challenges of the region that could hinder the speed of agricultural development and improvement of productivity. These challenges arose due to major areas in the region being tilled under rainfed conditions, vulnerability to climatic aberrations, fractured land holdings, expensive and scarce availability of labour on account of rural migration, etc. Large portions of livestock produce in the region are non-descript and low productive and lack of availability of good quality fish seed. To overcome these challenges, the efforts need to be intensified to make agriculture more lucrative and more remunerative. In addition to re-revolutionizing green revolution, we should aim at strengthening blue revolution ushering an era of blue-green revolution, exploiting the marine and fresh water resources that this region is richly endowed with. To make agricultural sector more viable, vibrant and farmer-accepted profession, Dr. Ayyappan announced efforts of ICAR in initiating three specific programmes that include i) Farmer-First programme, ii) Student-Ready programme and iii) Retain-youth-in- agriculture programme.

While appreciating the overall agricultural development in the region, Dr. Ramkrishna Kusmania, Hon'ble Minister of Farmer welfare and Agriculture Development, Government of Madhya Pradesh and Guest of Honor of the inaugural function expressed concerns about the deteriorating soil conditions and depletion of traditional agricultural practices and breeds of animals from most of the states of the region. He expressed pride in telling that sizable areas in his state still enjoy the privilege of being organic in agricultural practices, probably by chance and may not be by choice. He stressed the need to strengthen research on organic cultivation practices to preserve soil health which often suffers damage due to excess use of inorganic fertilizers. Based on his own experience, he spoke with strong conviction that higher productivity with good soil health could be maintained by following traditional agricultural practices and cropping patterns. He urged upon the scientific community in the region to protect and preserve natural breeds of animals which by its enormous potential cater to the needs of farming community from time immemorial. He expressed concerns that agricultural development can never be one sided exclusively with inorganic inputs. Stressing the need for an alternate practices, he urged upon ICAR to initiate first of its kind University for Organic Agriculture in the State of Madhya Pradesh, most regions of which practice organic agriculture with great promise.

While expressing happiness on the overall development of Agriculture in the region, His excellency, the Governor of Goa, Shri Bharat Vir Wanchoo, Chief Guest of the inaugural function, expressed concerns that the people in the region in particular and country in general still face the challenge of poverty, malnutrition and insecurity. He stressed that the living conditions of the farming community need improvement. While inaugurating the meeting, he remarked that Agricultural development plays a predominant role in socio-economic development and forms the backbone of economy of the country. Recalling the words of the past Prime Minister of the country Smt Indira Gandhi that "no country can prosper if It can't feed its people", he stressed upon the stake holders to rededicate their cause for improving the quality of lives of the farmers and people in general. If farmers prosper, the country would prosper. He urged upon the functionaries to work sincerely and concertedly to make agriculture more vibrant and dynamic so that it can become a way of life rather than a source of income. He also stressed that all those who matter in development of agriculture of the region and the country should play roles sincerely, to become agents of change and the angels to growth. He further stressed that small land holdings and low farm productivity prevents agriculture in Goa and makes it as a difficult proposition



to serve as a sole source of income for the farmers. He urged upon the Government agencies and ICAR to rededicate their cause for reinvigoration of agriculture in the state and motivate young generation to adopt it as a viable source of livelihood with renewed vigor.

A number of useful publications in the form of bulletins, CDs, books from ICAR institutes and SAUs were released.

Dr. K.R. Kranthi, Director, Central Institute for Cotton Research, Nagpur and Member Secretary of the ICAR Regional Committee No.VII, proposed the vote of thanks.

Dr S Ayyappan, Secretary, DARE & DG, ICAR chaired all the Interactive sessions. The action points along with the proceedings have been finalized and submitted to the ICAR for approval.

### **National Seminar on "New Initiatives for Cotton Research"**

The Central Institute for Cotton Research, Nagpur in collaboration with the Indian Society for Cotton Improvement, Nagpur organized a National Seminar on "New Initiatives for Cotton Research" at Nagpur on 17th September, 2012. The inaugural session was Chaired by Dr. C.D. Mayee, Former Chairman ASRB, New Delhi and President ISCI. Dr. Atanu Purkayastha, IAS, Joint Secretary, TMC, Govt. of India, Dr. N.K. Krishna Kumar, Deputy Director General (Horticulture), ICAR, New Delhi and Dr. N. Gopalakrishnan, Assistant Director General (CC), ICAR, New Delhi were the Guests of Honour. The special guests who graced the occasion included Dr. S. K. Chattopadhyay, Director, CIRCOT, Mumbai, Dr. Dipak Sarkar, Director, NBSS&LUP, Nagpur, Dr. V.J. Shivankar, Director, NRCC for Citrus, Nagpur, Dr. Anupam Barik, Additional Commissioner Agriculture, Govt. of India and Dr. J.C. Bhutada, Joint Director Agriculture, Nagpur Division. In his introductory remarks Dr KR Kranthi, Director CICR and Chairman, Nagpur Chapter of ISCI, emphasized that the aim of the seminar was to identify critical research gaps which need to be tackled during the 12th Plan period. Dr. N. Gopalakrishnan, in his address informed that the R&D programmes during the 12th plan period will focus on knowledge based technologies, a shift from the traditional input based techniques and hoped that the next phase of the Technology Mission on Cotton will further consolidate the research outputs. Dr. N.K. Krishna Kumar, DDG (Horticulture) hoped that the new research initiatives on cotton will have spillovers and ramifications beyond the cotton crop and other crops would also benefit. He stressed on the need for intensifying research on vector dynamics of viruses. Dr.



Atanu Purkayastha, IAS, expressed his concern that new technologies are being debated in public even before they are evaluated properly. He felt that the future of GM technology depends upon how strategically we place and evaluate our Bt cottons. In his inaugural address, Dr. C.D. Mayee, expressed concern over the stagnation in cotton yield despite widespread adoption of Bt hybrids and urged the scientists to develop better management techniques to reverse this trend. He opined that breeding short, compact varieties and transferring Bt genes into varieties should top the agenda for new research initiatives from the public sector.



Dr. Atanu Purkayastha, and other dignitaries visited the experimental fields and research laboratories and had a quick interaction with the scientists.

The next session was a technical session held from 11:30 hrs. to 13:30 hrs. This was chaired by Dr. C.D. Mayee and there were four lead presentations in this session.

1. Dr.S.K. Chattopadhyay : Quality requirements of textile sector and breeding of cultivars.
2. Dr. V.N. Waghmare : New initiatives in Marker Assisted Breeding.
3. Dr. O.M. Bambawale : Technology dissemination in the new ICT era.
4. Er.Gautam Majumdar : Mechanization needs and indigenous cotton-picker designs.

During the post-lunch session, held under the Chairmanship of Dr. N. Gopalakrishnan, Assistant Director General (CC), ICAR, Dr. K.R. Kranthi, Director, CICR, outlined the research programmes proposed to be taken up during the 12<sup>th</sup> plan period under Technology

Mission on Cotton, focusing on their specific objectives and deliverables. The 12 individual projects which were formulated were discussed in detail and the strategic partners within NARS (AICCIP Centres, ICAR Institutes) and outside NARS were tentatively identified. The Chairman in his remarks expressed satisfaction over the manner in which the projects were reformulated based on the outcome of previous deliberations. He wanted a comprehensive socio-economic feasibility study of the products and technologies developed. He also wanted a more stringent monitoring of the targets assigned keeping the timelines fixed for each target.

In all 73 delegates comprising of scientists, administrators, officials from seed, pesticide and textile industry attended the seminar. The seminar ended with a vote of thanks proposed by Dr. A.R. Reddy, Member Secretary, TMC Cell, Nagpur.

### 10.5: Participation of Scientists in Seminars/ Symposia/ Workshops

Sr. No.	Seminars/Conferences/Symposia / Workshops/Trainings	Place and Date	Participants
<b>Seminars</b>			
1.	AICCIP Workshop	Hyderabad 9 to 11 April 2012	Dr. K. R. Karnthi, Dr. Blaise Desouza, Dr. M. V. Venugopalan, Dr. S. M. Wasnik, Dr.A.H.Prakash, r.S.Manickam, Dr.B.Dhara Jothi, Dr. Dhamayanthi, Dr. S.Usha Rani
2.	Brain storming session on Entomopathogenic nematodes	NBAII, Bangalore in April 2012.	Dr. Nandini Gokte-Narkhedkar
3.	IAFS Workshop, IL&FS	New Delhi, 13 April 12	Dr. Blaise Desouza
4.	European Geosciences Union General Assembly 2012	Vienna, 23 to 27 April 2012	Dr. Blaise Desouza
5.	Inception Workshop of UNEF/GEF Supported Phase II capacity Building Project on Biosafety	NASC Complex, Delhi 18-19 June, 2012	Mrs.Mukta Chakrabarty
6.	IAFS Launch workshop in Uganda	CDO, Kampala, 28 June 2012	Dr. Blaise Desouza
7.	IAFS Launch workshop in Malawi	Blantyre, 3 July 2012	Dr. Blaise Desouza
8.	National Seminar on New Initiatives for Cotton Research organized by Indian Society for Cotton Improvement on Nagpur Chapter	Central Institute for Cotton Research, Nagpur. 17 September 2012	Dr. Blaise Desouza, Dr. M. V. Venugopalan, Dr. R. B. Singandhupe, Dr. J. Singh, Dr. S. M. Wasnik, Dr. A. R. Raju, Mrs. M. Chakrabarty, Er. G. Majumdar, Dr. A. R. Reddy, Dr. K. Velmourougane
9.	International Cotton Genome Initiative Research Conference12	Raleigh, North Carolina, USA on 9-12 October12.	Dr. S.K.Verma
10.	International Symposium on "Global cotton Production Technologies vis-à-vis climate change	CCS Haryana Agricultural University, Hissar 10 - 12 October, 2012	Dr. R. B. Singandhupe, Dr. J. Singh, Dr. S. M. Wasnik, Dr. A. R. Raju, Er. G. Majumdar, Dr. A.R. Reddy, Dr. Nandini Gokte-Narkhedkar,

			Dr. O. P. Tuteja, D Monga, Dr. S. L. Ahuja, Dr. S. Manickam, Dr. V.N. Waghmare, Dr.P.Nalayini, Dr.K.Sankaranarayanan, Dr.S.UshaRani, Dr. Nandini Gokte-Narkhedkar, Dr. V. Chinna Babu Naik, Dr. Vinita Gotmare and Dr. M. Saravanan
11.	Nat Sem "Managing land resources for sustainable agriculture"	NBSS&LUP, Nagpur 12-13 Oct 2012,	Dr.K.Velmourougane
12.	Molecular Plant Pathology Research with Special reference to Cotton and its pathogens.	PKV Akola, Oct. 30-31, 2012.	Dr. P.K. Chakrabarty
13.	World Neem Conference	Nagpur from 21st to 24th November, 2012	Dr. (Mrs.) S Kranthi, Shri. A. Sampath Kumar
14.	3 <sup>rd</sup> International Agronomy Congress	New Delhi 26 to 30 November 12	Dr. Blaise Desouza, Dr.P.Nalayini, Dr.K.Sankaranarayanan, Dr.S.UshaRani
15.	National Workshop on "Taxonomy, Ex-situ Conservation and Bioprospecting of Fungi"	Agharkar Research Institute, Pune Nov. 30, 2012.	Dr. P.K. Chakrabarty
16.	Blending Conventional and Modern Plant Pathology for Sustainable Agriculture	4-6 Dec, 2012 at IIHR, Bangalore	Dr. P.K. Mukherjee
17.	International Symposium on Food Security Dilemma: Plant Health and climate change issues.	BCKVV, Kalyani, Dec. 7-9, 2012.	Dr. P.K. Chakrabarty
18.	Review Workshop of PME cells of ICAR Institutes	NDRI, Karnal Dec. 8, 2012	Dr. M.V.Venugopalan
19.	Regional Workshop on Agrarian Crisis and Climate Change	CSA, Hyderabad Dec. 30, 2012	Dr. M.V.Venugopalan
20.	100 <sup>th</sup> Indian Science Congress	Kolkata, 3-7 Jan., 2013	Dr.J.H. Meshram
21.	National convention on India Cotton: Gearing up for Global Leadership	Navsari Agri. University, at Main Cotton Research Station, Surat from 6-8 January, 2013	Dr. K.R. Kranthi, Dr. M.V. Venugopalan, Dr. S. L. Ahuja, D. Monga, Dr A.H. Prakash, Dr. T. R. Loknathan, Dr. P.K. Chakrabarty Dr. S. B. Nandeshwar
22.	Beltwide Cotton Conference 2013	January 7-10, 13 at San Antonio, Texas, USA.	Dr. S. K. Verma
23.	Plant and Animal Genome XXI	January 12-16, 2013 at San Diego, CA, USA.	Dr. S. K. Verma
24.	MDP workshop on PME of Agricultural Research Projects	NAARM, Hyderabad Jan 21-25, 2013	Dr. M.V.Venugopalan
25.	10 <sup>th</sup> Nat symp "Biotechnological approaches for plant protection: Constraints and opportunities"	27.01.13 to 29.01.13. ICAR Research Complex, Goa	Dr.J.Gulsar Banu
26.	National Seminar on Biosafety Environment of India and Challenges Ahead	Feb.7, 2013. Gujarat State Biotechnology Mission, Gandhi Nagar	Dr. P.K. Chakrabarty
27.	International Conference on Insect Science	14.02.13 to 17.02.13 UAS, Bangalore.	Dr.B.Dhara Jothi, Dr.J.Gulsar Banu, Dr.M.Amutha, Dr. V. Chinna Babu Naik