

on this occasion. He distributed certificates of participation to the participants and enlightened them on several aspects of cotton cultivation besides the thrust areas of research that needs to be tackled by the Scientists and the challenges that are before the State extension personnel.

INAUGURATION OF PLANT CLINIC CENTER IN TAMIL NADU



Dr N. Gopalakrishnan PC & Head, CICR Regional station Coimbatore in farmer's Field

Under the project TMC MM-II-Insect Pest Resistance Management (IPRM), a plant clinic center was inaugurated by Dr N. Gopalakrishnan, PC and Head, CICR, Regional Station, Coimbatore on December 2, 2007 in Thennampillaiyar village of the Atur Block of Salem District in Tamil Nadu to educate the farmers about different practices of IPRM technology. Dr B. Dharajothi, Senior Scientist (Entomology) and District Coordinator of the Project explained the farmers about the activities of the project and the significance of the plant clinic center and requested them to make use of the knowledge gained from the plant clinic center for effective control of cotton pests in an economic and environmentally sustainable manner. Dr N. Gopalakrishnan urged upon the farmers for increasing the cotton area in Tamil Nadu and to rededicate themselves to increase the cotton productivity in this region so that our country can compete with other major cotton producing countries of the world.

Shri M. Sabesh, Scientist (Senior Scale) also interacted with the farmers in this occasion.

COTTON GERmplasm REGISTERED FROM CICR REGIONAL STATION SIRSA

Sr. No.	Germplasm	Registration Date	Characteristics
1.	BNARB - 16	11th August, 2005	BN-ARB-16, a Bollworms and Jassid tolerant, Cytoplasmic Diverse strain of <i>G. hirsutum</i> Cotton, BN (Bikaneri Nerma) with <i>G. arboreum</i> cytoplasm (INGRNo.05020;IC471864) was registered with NBPGR.
2.	BNTOM - 277	11th August, 2005	BN-TOM-277, a Bollworms and Jassid tolerant Cytoplasmic Diverse strain of <i>G. hirsutum</i> Cotton, BN (Bikaneri Nerma) with <i>Gossypium tomentosum</i> cytoplasm(INGRNo.05019;IC471863)was registered with NBPGR.
3.	BN - Red	14th May, 2007	BN-Red: A Bollworms and Jassid tolerant Cytoplasmic Diverse strain of <i>G. hirsutum</i> Cotton, BN (Bikaneri Nerma)with <i>Gossypium tomentosum</i> cytoplasm (INGRNo.05019;IC471863) registered with NBPGR
4.	BN - Okra	14th May, 2007	BN-Okra: A Bollworms and Jassid tolerant Cytoplasmic Diverse strain of <i>G. hirsutum</i> Cotton, BN (Bikaneri Nerma) with <i>Gossypium arboreum</i> cytoplasm (INGRNo.05020;IC471864) registered with NBPGR
5.	CSPF - 1 (Pink color)	14th May, 2007	CSPF-1: is a spontaneous mutant with pink petals and was identified in a plant during 2003-04 crop season from the F3 population of T-7 x LSC-5, involving both <i>G. hirsutum</i> cultivars (Flower of T-7 has cream petals, yellow anther and that of LSC-5 is cream petal segregating for anther colour cream or yellow). The mutant identified bred true to type. The mutant has been registered with NBPGR as - No.INGR07035.
6.	CPF - 1 (Pink color)	14th May, 2007	CPF-1: Pink anther filament was identified as a spontaneous mutant with pink anther filament during 2003-04 crop season from the population of AKH-0308 (a strain derived from the combination of <i>Gossypium species</i> (<i>G. hirsutum</i> x <i>G. barbadense</i>) x <i>G. hirsutum</i>) x Derivative (<i>G. hirsutum</i> x <i>G. anomalum</i> x <i>G. sturtianum</i>). The mutant has been registered with NBPGR as No.INGR07036.

A NEW NAIP PROJECT LAUNCHED IN COLLABORATION WITH CIRCOT, MUMBAI

Significant improvement in cotton production has placed India in second position with respect to cotton production at Global level. Recently, there is an effort for value addition to Cotton involving the entire production to consumption chain, which will further add to the income of the farmers. Taking into account the importance of this concept, a National Level NAIP Project on "Value Chain for Cotton Fibre, Seeds and Stalks: An innovation for higher economic returns to farmers and allied stakeholders" has been sanctioned by National Agricultural Innovation Project at a budgetary outlay of Rs.9 crores during January, 2008 to June, 2012. Large scale demonstration of proven interventions in cotton cultivation in NAIP mode through farming system approach with farmers participation will provide opportunity to refine technologies and make them more technically suitable and economically feasible, practically viable and socially acceptable.

Newer proposed technologies include soil moisture conservation through opening of ridges after last interculture, multi-tier cropping system under irrigated condition, adoption of low cost drip system and poly mulch technology that are potential enough to make break through in production, productivity, profitability of cotton production system. Besides, water saving, chemical nutrient savings and ensuring sustainability of the system are the other benefits that shall accrue. The Best Crop Management Practices (BCMP) developed by CICR include using quality seeds, seed treatment package including sequential seed dressing with useful molecules, proper land shaping, weed control strategies, intercultural operations, integrated nutrient and water management practices, need based foliar application of nutrients and hormones besides dynamic integrated pest management practices. Large scale on farm testing of newer proposed technologies in proper mode with holistic approach with involvement of technology developer, user and industries shall help in revised assessment and refinement to modify the innovations and carry the

thrust generated in adoption of newer technologies.

The newer proposed cotton production technologies that have been developed shall be disseminated through NAIP mode and test validated in farmers' fields in and around Coimbatore, Salem, Erode, Perambalur districts besides select areas in Nagpur (Maharashtra) and Sirsa (Haryana). Besides, reduction in contaminants in cotton by adopting on-farm and off-farm management practices, labeling of cotton bales with fibre attributes after appropriate ginning, scientific extraction of cotton seed oil, seed meal, edible protein, preparation of yarn, fabric and garments in modern textile mills and manufacture of eco-friendly textiles in handloom sector by using CIRCOT technology for bio-scouring and natural dyes, proper use of waste cotton stalks for mushroom production, briquetting, particle board making etc., are the other activities that are envisaged in this Mega Project sanctioned by NAIP of Indian Council of Agricultural Research, New Delhi. The major partners in this prestigious Project are Central Institute for Research on Cotton Technology, Mumbai & Coimbatore, Central Institute for Cotton Research, Nagpur and Coimbatore and Super Spinning Mills, Coimbatore. The whole Innovative Project is slated to be carried out at a budgetary outlay of **Rs. 9 crores for a period of four years** from January 2008 to June 2012.

Dr.R.P.Nachane, CIRCOT, Mumbai, Dr.N. Gopalakrishnan, Project Coordinator (Cotton), Central Institute for Cotton Research, Coimbatore and Mr.S.Karthikeyan, Senior Technical Manager, Super Spinning Mills, Coimbatore are the Principal Investigators. A team of dedicated Scientists and technicians from these institutions will be collaborating in this Public-Private Sector partnership mode programme for economic upliftment of cotton farmers and ensuring overall vibrant cotton scenario in the country in the years to come so that India attains number one position from the present status of number two in the world.

KVK ROUNDUP

Trainings organized: KVK conducted training courses in different disciplines for various clientele viz. practicing farmers, rural youth and extension functionaries.

Sr. No.	Discipline	No. of courses	No. of practicing farmers	No. of rural youth	No. of extension functionaries	Total participants	Course conducted by
1	Agronomy	3	43	15	--	58	Shri A.S. Tayade
2	Horticulture	5	47	22	17	86	Shri GulbirSingh
3	Plant Protection	4	47	24	---	71	Dr .RamRatan Gupta
4	Veterinary Science	11	82	89	25	196	Dr. S.N. Rokde,Dr U.V. Galkate & Dr. P.B. Deulkar
5	Home Science	4	75	--	---	75	Mrs. Sunita Chauhan
6	Extension	2	39	35	---	74	Shri. Subhash Patil
	Total	29	333	185	42	560	

Sponsored training programmes:

In addition to these, the number of sponsored training programmes conducted in Agronomy, Horticulture, Veterinary Science were 3, 1 and 2 respectively benefiting 24, 28 and 24 participants respectively.

Front line demonstrations:

The number of front line demonstrations conducted in various disciplines viz. Agronomy, Plant protection, Horticulture, Veterinary Science and Home Science were 3, 2, 2, 1 and 2 respectively.

EXHIBITIONS

CICR Nagpur has participated in four exhibitions namely Agro-vision (October 15-18, 2007) at Kasturchand Park, Nagpur, Agro-technology week - 2007 at Agril. College ground, Akola (15-20 October 2007), Dhammchakra Pravartan day (October 21-22, 2007) and 8th Rashtriya Kisan Mela on Citrus (October 30-31 2007) at NRCC, Nagpur organized respectively by Vidarbha Economic development Council (VED), Nagpur, Dr. Panjabrao Krishi Vidyapeeth Akola, State Agril Dept., Govt. of Maharashtra and NRC for Citrus, Nagpur. CICR depicted its exhibits in Marathi through photographs and charts related to various cotton production technologies of the institute like agro-technology, intercropping, IPM, IRM, Bt detection Kit, cotton planter/ harvester, etc. for the benefits of various users such as cotton farmers, extension workers, students and professionals. Live samples of cotton planter and Bt detection kit were the main attractions both at Nagpur and Akola. CICR stall was awarded 3rd Prize in the exhibition organized at Dr.PDKV, Akola during "Agro- Technology week" (15-20 October, 2007). Many dignitaries viz. Sh. Anil Deshmukh, Minister, Govt. of Maharashtra and Sh. Datta Meghe, M.P. & Member, Governing Body ICAR visited the stall at Kasturchand Park Nagpur. Dr.C.D. Mayee, Chairman, ASRB, ICAR, New Delhi visited the stall during Citrus exhibition. Hon. Agril. Minister Sh. Sharad Pawar, Chief Minister Sh. Vilasrao Deshmukh and Sh. Balasaheb Thorat, Agril. Min. Govt. of Maharashtra were the prominent personalities at Akola Mela. The exhibitions were coordinated by Dr S.M. Wasnik, Senior Scientist (Extension).

CICR, Nagpur also participated in International Trade Agriculture Fair (KRISHI-2007) organized by ICAR and held at Nashik from Nov.29, 2007 to Dec.3, 2007. More than 6000 farmers visited CICR stall and sought information on various technologies developed by CICR, Nagpur.

KISAN MELA ORGANIZED

- Kisan Mela was organized by Mrs. Sunita Chauhan along with other KVK staff under IRM project at village Bhadangi in Kalmeshwer Tehsil on Oct.8, 2007. Dr B. M. Khadi, Director, CICR presided over the function and addressed the



CICR Stall Awarded 3rd Prize in Exhibition at Akola farmers.

- Dr. RamRatan Gupta and Dr. P. B. Deulkar organized a Kisan Mela at village Aajni in Saoner Tehsil on Nov.2, 2007. More than 300 farmers participated in the Mela. Dr. G. Malvi, Retd. Professor and Dr. P.R. Bharambe, Head, Crop Production provided technical guidance to the farmers.
- Dr. RamRatan Gupta and Dr. Deulkar organized a Kisan Mela at village Malegaon and village Boruzwada both in Saoner Tehsil on Nov.5 and Nov.6, 2007 respectively. Dr. G. Malvi, Retd. Professor and Dr. R.T. Gahukar addressed the farmers on IRM strategies in both the programmes.

RESEARCH HIGHLIGHTS

New system of Genetic Male Sterility in diploid cotton

In diploid cotton (*G. arboreum* and *G. herbaceum*) genetic male sterility system has been exploited to develop popular hybrids. A main drawback of this system is the maintenance of male sterile line which, when crossed with maintainer line segregates into male sterile and male fertile plants in 1:1 ratio. Identification and rouging of 50% male fertile plants from such progeny will be time consuming and laborious. A mutant in GMS lines of *G. arboreum* showing partial or full reversion to fertility under certain temperature regimes identified at UAS, Dharwad have been stabilized at CICR, Nagpur. The system is called Thermo Sensitive Genetic Male Sterility system (TGMS). Fifteen TGMS lines have been stabilized by now. The plants in these lines produce completely sterile flowers during high temperatures when the mean max/min. temperatures are 30°C/ 22°C. The flowers turned fertile when the night temperature or the mean minimum temperature declined to 18°C and below. These lines are promising for two line hybrid seed production in cotton once the critical sterility and critical fertility temperatures are confirmed in controlled environment conditions which are being studied.

B. M. Khadi, V.Santhy and I.S.Katageri

Five loculed *G. arboreum* cotton

Introgressed lines of *G. arboreum* having five loculed bolls have been obtained from the cross *G. arboreum* race bengalense X *G. arboreum* race cernum X *G. anomalum*. These lines have been stabilized by selfing which are in F1 generation. They also have superior fibre qualities especially staple length (>30mm). No reduction in the mean number of bolls per plant or boll weight have been observed due to more number of locules. Mean boll weight observed was 3.5g with 75-80 bolls/plant.

B. M. Khadi, V.Santhy, I.S.Kategeri and V.Gotmare

Trypsin inhibitor mediated bollworm

(*Helicoverpa armigera*) tolerant cotton

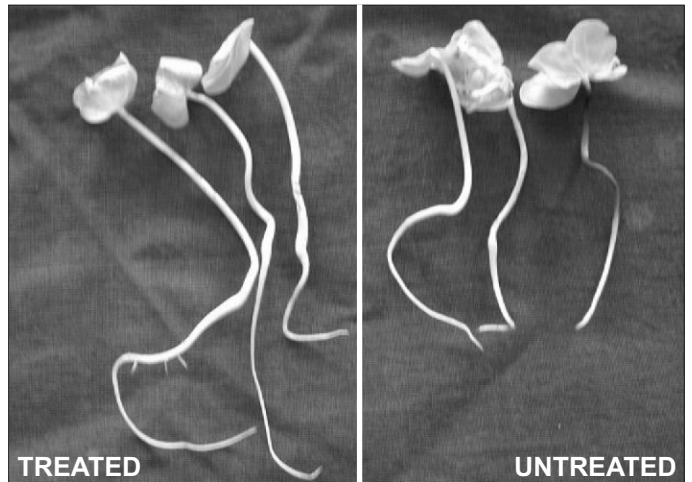
During a screening program for bollworm tolerance, germplasm lines EC345771, EC314435, EC 140834, EC 314451, EC 345760, EC 345767, EC 345768 were found tolerant to *H. armigera*. An attempt was made to transfer the trait of bollworm tolerance into good yielding Indian genotypes with sucking pest tolerance using EC 140834 (a bollworm tolerant but jassid susceptible poor yielding line). The progeny were selfed and the resultant F₂ segregants were screened for bollworm tolerance and jassid resistance. Most promising plants were maintained continuously as separate lines through selfing and progressive selection for bollworm tolerance and jassid resistance. The process was continued until F₅ generation to obtain stable genotypes with high levels of tolerance to bollworms and jassids. Stable genotypes isolated from boll to row progeny of the most tolerant genotypes were subjected to biochemical analysis to identify the factors responsible for tolerance to bollworms. The presence of trypsin inhibitor (Ti) in the bollworm tolerant genotypes was found to be responsible in conferring tolerance to *H. armigera*. *In vitro* trypsin inhibitory assays and bioassays with semi-synthetic diet were conducted. Mortality and growth regulatory effects were found to be correlated to the Ti levels in the plant part tested. Ti was detected in the boll rind that was highest in 10-day old bolls of the F₅ progeny derived from high bollworm tolerant lines of the previous generation. The two genotypes thus developed are CINHTi1 and CINHTi2.

S.No	Unique feature	CINHTi1	CINHTi2
1	Leaf	Normal	Okra
2	Jassid tolerance	Grade I	Grade I
3	Per plant yield	92g	108g
4	Insect Bioassay		
	Larval Mortality1	60%	52%
	Growth inhibition2	90%	92%
5	Trypsin inhibition3	87.3%	83.5%
6	TIU (mg)	5.97	7.73

1	Against white stage larvae of <i>H. armigera</i> through diet incorporation after 7 days
2	((Larval Weight (LW) in control- LW in treatment)/ LW in control) X 100 after 7 days
3	<i>in vitro</i> enzyme inhibitor assay TIU= Trypsin Inhibitory Unit defined as the amount of inhibitor in mg required to inhibit 1 U of trypsin

S. Kranthi, K. R. Kranthi, M. Kshirsagar, N. Zade, V. V. Singh and B. M. Khadi

Pink Pigmented Facultative Methylophs (PPFM) isolated from cotton phyllosphere enhanced the vigour index of cotton



Pink Pigmented Facultative Methylophs (PPFM) are ubiquitous in nature found in variety of habitats including soil, dust, fresh water lake sediments, leaf surface and nodules. These organisms are capable of growing on compounds containing one carbon. These bacteria influence the seed germination and seedling growth by producing plant growth regulators like Zeatin and related cytokinins. Hence, there is a possibility of increasing the effectiveness of the conventional bio inoculants by co-inoculating with PPFMs. Keeping this in mind an attempt has been made to isolate PPFM from the phyllosphere of cotton (CV.LRA 5166). Fresh leaf was collected and impregnated on Ammonium mineral salt medium supplemented with 0.5 % cyclohexamide. Here, 0.5 % methanol was used as carbon source. After seven days of incubation at room temperature, pink colonies of PPFM appeared which belongs to the genus *Methylobacterium*. These PPFMs isolated from LRA 5166 and other growth promoting rhizobacteria were used to study the vigour index of cotton CV. LRA 5166 and the results revealed that cotton seeds soaked in PPFMs isolated from the phyllosphere of LRA 5166 and *Azospirillum lipoferum* produced significantly higher vigour index over other rhizo bacteria studied under axenic condition.

P.Nalayini and R.Anandham

AWARDS AND HONOURS

- Dr K.K. Bandyopadhyay, Senior Scientist (Soil Science) was selected as an Associate of the National Academy of Agricultural Sciences under Natural Resource Management Section for a period of 5 years i.e. from Jan.1, 2008 to Dec.31, 2012.
- Dr. P.K.Chakravarty, Principal Scientist, Crop Improvement Division was elected Fellow of the Maharashtra Academy of Sciences, Pune.
- Shri Rahul Chavahan, SRF was awarded best paper award for the oral presentation on “Molecular characterization of diversity among race 18 strains of *Xanthomonas axonopodis* pv. *malvaearum* (Chavhan, R.L., Chakrabarty, P.K and Mohan K.S.) in National Symposium on Potentials of Bio-control agents in Agriculture Prospects and Perspectives, Society of Mycology and Plant pathology at College of Agriculture, Nagpur on Oct 27-28, 2007.
- Dr. P.K.Chakravarty, Principal Scientist, Crop Improvement Division was selected as Topic Organizer, Diagnosis of plant pest-the technology interface. In National Symposium on Plant Protection-Technology Interface, Association for Advancement in plant Protection, BCKVV, Kalyani, W. Bengal held on Dec. 28-29, 2007.

PUBLICATIONS

Sankaranarayanan, K., C. S. Praharaj, Anderson Amalan Kumar and P. Nalayini (2007). Multi-tier vegetables intercropping system for higher productivity and economic return in cotton. *Journal of Cotton Research Development* 21 (2): 260-266.

Nalayini, P., Raja, R. and Anderson A. Kumar (2006) ET based scheduling of irrigation through drip for cotton (*Gossypium hirsutum* L.). *Indian Journal of Agronomy*. 51 (3): 232-235.

Rokde, S.N. (2007). Effect of probiotic supplementation on certain nutritional parameters of crossbred calves. *The Royal Veterinary Journal of India*. 3(2): 84-88.

R A Meena, D. Monga and Rajiv Kumar (2007). Undescriptive Cotton Cultivars of North Zone: An Evaluation. *J. Cotton Res. & Dev.* 21(1) 21-23.

R.A. Meena, D.Monga V.V. Singh, Phundan Singh and B.M. Khadi (2007). Cotton Germplasm Bulletin-I Published by Head, CICR, Regional Station, Sirsa.

R.A. Meena, D. Monga, S.L. Ahuja, O.P. Tuteja and S.K. Verma (2007). (Hindi) Cotton Production for North Zone- Published by Head, CICR, Regional Station, Sirsa.

PRESENTATION IN CONFERENCES /WORKSHOPS

- Dr K.K. Bandyopadhyay - “Simulation of growth and yield and input use efficiency of Bt cotton

under different irrigation and nitrogen management strategies in a Vertic Ustropept.” In : 72nd annual convention of the Indian Society of Soil Science held at the Birsa Agricultural University, Ranchi during 2-5, November, 2007

- Dr K. Natarajan- “Management of cotton whitefly with neem products.” In : World Neem Conference held at Coimbatore during 21-24 November, 2007.
- Dr. P. K. Chakrabarty- Molecular approaches in diagnosis and management of plant diseases. In: National Symposium on Potentials of Bio- Control agents in Agriculture Prospects and Perspectives, Society of Mycology and Plant pathology, College of Agriculture, Nagpur, Oct 27-28, 2007.
- Dr. Nandini Gokte-Narkhedkar - Role of nematodes in cotton IPM. In: National Symposium on Potentials of Bio- Control agents in Agriculture Prospects and Perspectives, Society of Mycology and Plant pathology, College of Agriculture, Nagpur, Oct 27-28, 2007.
- Dr. P. K. Chakrabarty - Diagnosis of plant Pathogen- Novel Approaches. In: National Symposium on Plant Protection- Technology Interface, Association for Advancement in plant Protection, Bidhan Chandra Krishi Viswavidyalaya, Kalyani, W. Bengal, 28-29th Dec, 2007.
- Dr. J. Amudha -Development of transgenic cotton for leafcurl virus resistance. In “International Conference on Emerging and Re- emerging Viral diseases of the Tropics and Sub-tropics,” from Dec 10th to 14th organized by Indian virology Society at New Delhi.
- Dr. J. Amudha - Gene tagging and cloning of Cotton leaf curl virus resistance gene. In “National Conference on Current trends in Biochemistry, organized by University Dept of Biochemistry, Nagpur.

TALKS/LEAD LECTURES

Following resource persons from CICR delivered the lectures in the Training Course on “Bt Cotton: A change in pest scenario and integrated management” organized by NCIPM, New Delhi in collaboration with AICCP and Dr. P.D.KV, Akola at Akola on November 19-26, 2007.

- Dr. K.R.Kranthi, Head, Crop Protection Division - Concept of development of Bt transgenic with special reference to cotton and six years of Bt cotton experience in India
- Dr. Nandini Gokte-Narkhedkar, Sr. Scientist- Role of Entomopathogenic nematodes on Bt cotton
- Dr. S.Kranthi, Sr. Scientist - Qualitative and quantitative detection of Bt gene (BG I & II) in different plant parts

- Dr. S.Vennilla, Sr. Scientist -Systems approach to manage insect pest of cotton

Dr. P.K.Chakrabarty, Principal Scientist “Targeted gene silencing using RNA interference” at SRTM university, Nanded, Sept 24, 2007.

Dr. P.K.Chakrabarty - “Scope of Biotechnology” in Priyadarshini College of Engineering, Nagpur on Oct 12, 2007.

Dr. P.K.Chakrabarty -“Role of Biotechnology” in Kamala Nehru College of Engineering, Nagpur on Oct 18, 2007.

HUMAN RESOURCE DEVELOPMENT

Shri A.S. Tayade, SMS (Agronomy) participated in training on, 'Cotton Mechanization' organized by CIAE, Bhopal on 14 -15 September, 2007, 'Low cost Production Technologies for Oilseed crops' organized by Directorate of Rice Research, Hyderabad on Sept. 19 -26, 2007 and Cotton Byproduct Utilization 'organized by CIRCOT, Nagpur Hyderabad Sept. 28 -29,, 2007.

Dr S. Usha Rani (Scientist Senior Scale) (Agricultural Extension) received Ph.D. degree from Tamil Nadu Agricultural University for her dissertation entitled “Adoption and impact of genetically engineered cotton (Bt Cotton) in cotton based farming- An empirical analysis.

VISITS ABROAD

- Dr. B.M.Khadi, Director, Dr. K.R.Kranthi, Head Crop Protection Division, and Dr. P.K. Chakrabarty, Principal Scientist, Crop Improvement Division, CICR, Nagpur participated in World Cotton Congress at Lubbock, Texas on Sept. 10-14, 2007. Dr. Khadi presented paper titled 'Impact of Bt cotton on Agriculture in India (Khadi, B.M., Kranthi, K.R. and Jain, K.C.)'. Paper titled 'Challenges in detecting GM crops (Kranthi K.R., Kranthi S., Khadi B.M. and Jain K.C.)' was presented by Dr. Kranthi. Dr. Chakravarty presented paper titled 'Development of Sensitive Molecular Diagnostic Tools for Detection of Economically Important Fungal Pathogens in Cotton' (Chakrabarty, P.K., Chavhan, R.L., Sable Suchitra, Narwade, A.V., Monga, D. and Khadi. B. M.)
- Dr. Nandini Gokte Narkhedkar, Sr. Scientist (Nematology), CICR, Nagpur was deputed for six months (March 1, 2007 to August 31, 2007) at National University of Ireland, Maynooth under DBT Overseas Associateship (Short Term). During this period she worked on identification of Entomopatho-genic nematodes by amplification of ribosomal 18 ITS, Biolistic Transformation of Nematodes, RNAi In All strain of *Steninerema Carpopapsae* and Expression of RIC1 Gene. Protocol was standardized for Biolistic

transformation of Nematodes. Expression of Green florescent protein was used as marker for transformation.

For studies on RNA i In All strains of *Steninerema Carpopapsae* nine genes were taken up. These were- His 60, eft-3, inf-1, calmond (Ca²⁺/calmodulin- dependent protein phosphatase), mlc 3Unc, act-4 (actin-4), kin-2 (AMP dependent protein kinase), Isocitrate lyase and Adaptin.

RIC1 gene in *Panagrolaimus* EST database was taken up for expression of protein through expression systems. The selected gene was cloned in frame into the pET15b vector for use in expression system (Novagen). Recombinant protein was purified through binding of the His tag to NINTS His column (Aiagen).

VISITS

Dr. B.M.Khadi, Director, CICR, Nagpur participated in National Conference on seeds organized by Center for Agricultural and Rural Development at Hyderabad on Oct. 3-4, 2007 and made a presentation on 'Hybrids and Transgenics', inaugurated National Level Training Programme at MPKV, Rahuri on Bt cotton and delivered lecture on Bt cotton scenario Problems and Prospects in India, participated in valedictory session of Short Training Course on Bt cotton at CRS, GAU, Surat on Oct. 31, 2007 and delivered lecture on Bt cotton.

Dr. B.M.Khadi participated in RCGM meeting at DBT, New Delhi on Nov. 1, 2007, participated in Seminar on Transgenic cotton at MAU, Parbhani on Dec. 7, 2007, and delivered lecture 'Bt cotton Problems and Prospects in India' in training programme on Bt cotton :a change in pest scenario and integrated management.

Dr. N. Gopala Krishnan, PC and Head, CICR visited Ongole, Guntur, Dharwad and Bangalore from 16th to 21st December to attend cotton production and Bt cotton awareness program organized at Ongole and delivering lectures for cotton farmers, monitoring Bt trials at Guntur (Andhra Pradesh) and Dharwad (Karnataka).

Dr N. Gopala Krishnan visited New Delhi from 17th to 19th December to participate in the meeting on consultation on protection of transgenic crops under PPV & FRA, New Delhi with special focus on Bt cotton and participated in Project Review Committee Meeting pertaining to NAIP project on Value Addition to cotton at New Delhi from 22nd to 25th October, 2007.

Dr. G. Balasubramani, Senior Scientist (Biotech.) attended the Workshop of the GEF- World Bank Capacity building project on Biosafety held on November 6, 2007 in India Habitat Centre, New Delhi.

CICR ACTIVITIES



Dr. Khadi, Director CICR with farmers at village Bhadangi on Farmer's day



Sterile at High Temp.



Fertile at <18°C

Thermo Sensitive Genetic Male Sterility System in cotton



Five loculed arboreum Cotton
Staple length : > 30mm



CINHT1



CINHT2

Two genotypes developed with Trypsin inhibitor mediated Tolerance to bollworm



Polyhouse facility created at CICR, Nagpur to grow transgenic cotton plants under controlled conditions



Demonstration on Bt. Cotton Seed testing in the Rashtriya Kisan Mela held at NRCC, Nagpur

Compiled & Edited by :

Dr. Nandini Gokte Narkhedkar (Sr.Scientist)

Produced & Published By :

Dr. B.M. Khadi, Director

Central Institute for Cotton Research

Post Bag No. 2, Shankar Nagar P. O., Nagpur - 440 010

Phones : 07103-275536/275538

Fax : 07103-275529 Gram : Kapassanathan

E-mail : cicrngp@rediffmail.com

CICR NewsLetter also available at Website : www.cicr.nic.in

CONTENTS

Inauguration of plant Clinic Center.....	2
Cotton Germplasm registered	2
KVK Round up	3
Exhibitions	4
Research Highlights	4
Awards and Honours	6
Publications	6
Talks/Lead Lectures	6
Human Resource Development	7
Visits Abroad	7