

STAFF NEWS

Ms. Richa Sood	Appointed as Assiatant w.e.f 19.11.2012
Mr. M. Bathrinath, T-3, Technical Assistant	Probation cleared w.e.f. 27.12.2012
Smt. K. Mariyammal, Skilled Supporting Staff	Granted first financial upgradation under MACP w. e. f. 17.10.2011

Name	Promoted to	w .e. f
Dr. R. Thangavelu	Senior Scientist to Principal Scientist	01.01.2009
Dr. R. Selvarajan	Senior Scientist to Principal Scientist	25.07.2009
Mr. T. Sekar	T-3, Technical Assistant to T-4	10.03.2012
Mr. V. Selvaraj	T-3, Technical Assistant to T-4	05.03.2012
Mr. A. Subramanian	T-2, Driver to T-3	29.06.2011
Mr. P. Mohan	T-2 Driver to T-3	08.07.2011
Mr. V. Manoharan	T-2 Driver to T-3	18.06.2012

OTHER INFORMATIONS

Hindi Week Celebrations

National Research Centre for Banana celebrated 'Hindi Week' from 3-8th October 2012. Dr.K.J.Jeyabhaskaran Senior Scientist welcomed the gathering. Colonel S. Ved Nayagam, NCC Commander, Tiruchirappalli graced the occasion as Chief Guest and distributed prizes to the winners on 12th October 2012 at the Centre. In his address, emphasized the importance of promoting Hindi as official language and the necessity of learning Hindi as 'Rajbhasha' by every citizen. Dr. M. M. Mustafa, Director, NRC Banana delivered the Presidential address and spoke on Hindi week celebrations. Dr. K.N. Shiva, Senior Scientist & Member-Secretary, Official Language Implementation Committee of the Centre proposed vote of thanks.

Deputy Director General (Hort.) ICAR visits NRCB

Dr. N. K. Krishna Kumar, DDG (Hort.), ICAR, New Delhi visited National Research Centre for Banana on 24.12.2012 and inaugurated the Net House at NRCB,

Tiruchirapalli. In his inaugural address Dr. N. K. Krishna Kumar informed that the Indian Council of Agricultural Research has introduced new policies in which, priority will be given to find solutions to the problems faced by the farming community by the research organizations. He encouraged the scientists to go for more research finding of the technologies to find the solutions of the farmer's problems and also to give priority for benefit of banana farmers. Dr. N. K. Krishna Kumar visited the NRCB research farm, all laboratories and appreciated the on-going research at NRC for banana for the benefit of the farmers.



Dr. N. K. Krishna Kumar, DDG (Hort.), ICAR, New Delhi opening the Net House facility



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NRCB News

National Research Centre for Banana
Tiruchirapalli - 620 102, Tamil Nadu



Oct. 2012 - Mar. 2013

FROM THE DIRECTOR'S DESK



India has become the largest producer of banana in the world and thanks to the improved technologies developed by the researchers and adoptions by the banana growers. Still a long way to go and there is a scope to increase the production and productivity of banana. There is a great demand for disease free quality planting material and there is wide gap between the demand and supply of the planting material. Though the TC plants are produced to a tune of 80 million plants by many certified TC companies, still there is a great demand which has to be met. The cost of the TC plants is the major constraint in this endeavour. At NRCB, efforts have been initiated to reduce the cost by employing low cost technologies. Also technologies have been developed for large scale multiplication of traditional banana varieties. Fertilizer adjustment equations developed by NRCB validated at different banana growing areas indicated its effectiveness so that the production cost can be minimized. Application of rhizospheric and endophytic fungal agents along with or without fungicides resulted in increase in bunch weight and reduction in wilt disease. Liquid formulation has been developed for *Trichoderma* sp. for the management of wilt disease. Farmers from different banana growing areas are trained in technologies relating to banana production, protection and value addition. Also organized an "ICAR sponsored training program on 'Advances in gene identification and molecular markers development'" for the benefit of the researchers. During the period participated in many exhibitions to disseminate the technologies developed at the Centre to the various stake holders. As a part of the HRD, many scientists were trained in 'niche' areas.

RESEARCH HIGHLIGHTS

In situ propagation of Udhayam

Application of Ethrel at three concentrations viz., 300, 400 and 500 ppm on three months old mother plants of Udhayam for *in situ* propagation indicated that removal of apical meristem followed by application of Ethrel at 300 ppm induced 3 shoots per corm in 15.3 days during primary decortications and 4 shoots in 11.5 days during secondary decortications.

Low cost tissue culture protocol for mass multiplication

A blend of sago and isabgol produced the maximum shoots in Udhayam and Rasthali Sago alone produced the maximum shoots in Grand Naine banana.

Evaluation of protocols for banana rooteomics analysis

The Phenol-Ammonium Acetate (PAA) protocol produced highest protein yield with protein concentration and resolved 584 protein spots in 2-DE gels with highest sum of total spot quantity and average spot intensity and was found most suitable for banana rooteomics analysis. In addition, one gram of root tissues in 1:3 ratios of root tissues to extraction buffer, overnight precipitation at -20 °C produced best results of protein yield from banana root tissues.

TRANSFER OF TECHNOLOGY

Training

About 3000 persons belong to various groups' viz., banana farmers/ entrepreneurs/ horticultural/ agricultural officers/ college students were sensitized on Improved Production Technology including Post Harvest Management and Value Addition in Banana.

NRC BANANA CONGRATULATES DR. S.K. MALHOTRA

Dr. S.K. Malhotra has assumed the office of Assistant Director General (Hort. II), ICAR HQ, New Delhi on April 16, 2013. NRC Banana takes this opportunity to congratulate and wish him all success in his endeavors in this new assignment.



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Assisted by : Mr. P. Ravichamy

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Radio Talks were given by the Scientists through All India Radio, Tiruchirapalli

Name	Topic	Broadcasted on
K.J. Jeyabaskaran	Micronutrient management in banana-Question & Answer	02.11.2012
K.N. Shiva	Post-harvest management in banana	26.12.2012

Exhibitions

Name of the Event	Organiser(s)/ Venue	Date
National Level Banana Seminar - 2012	Dept. of Horticulture & Plantation Crops, Govt. of Tami Nadu, National Horticulture Mission and NRCB at Theni, Tamil Nadu	3 rd -4 th Nov., 2012
Western Ghats Banana Fest -2012	Kadamba marketing Ltd. and State Horticultural Department at Sirsi, North Karnataka	17 th - 18 th Nov., 2012
Tuber Fest -2012	Central Tuber Crops Research Institute at Sreekariyam, Thiruvananthapuram, Kerala	29 th - 31 st Nov., 2012
Tamil Nadu Banana Festival - 2012	CII & TN State Horticulture Department at Chennai Trade Centre, Chennai	21 st - 22 nd Dec., 2012
Agri Expo - 2013	Dinamalar Daily & TNAU at Karur, Tamil Nadu	4 th - 7 th Jan., 2013
XI Agricultural Science Congress	NASS at OUAT at Bhubaneswar	7 th - 9 th Feb., 2013
Agri Expo - 2013	Puthiyathalaimurai-Media/ 'G' Corner at Tiruchirapalli	15 th - 17 th Feb., 2013

AWARDS AND RECOGNITIONS

Best Annual Report Award for NRCB by ICAR

National Research Centre for Banana, Tiruchirapalli received the “**Best Annual Report Award**” for 2011-2012 among the small ICAR Institutes.

Name of the Awardees	Name of the Award	Awarded by/ Organizer/ Date
Dr. M.M. Mustafa	Fellow of Horticulture Society of India	Horticulture Society of India during the 5 th National Horticulture Congress held at PAU, Ludhiana on 6.11.2012
Dr. S. Uma	Shri Girdhari Lal Chadha Memorial Gold Medal for 2011	Horticulture Society of India during the 5 th National Horticulture Congress held at PAU, Ludhiana on 6.11.2012
	Fellow of Indian Society of Plant Genetic Resources for 2010	ISPGR during the 5 th National Horticulture Congress held at PAU, Ludhiana on 27.10.2012
Dr. K. N. Shiva	Best Oral Presentation Awards for the Research papers entitled Valam tharum vazhayin madhiputtapatta porutgal and 'Vazhai kalyivugalyin payangal Oru kannottam'	21 st National Seminar on Scientific Tamil, organized by CIAE, Coimbatore & All India Tamil Scientific Association, Thanjavur, Tamil Nadu at Santhalinga Adigalar Arts & Science College, Coimbatore on 9-10.2.2013.



Dr. S.Uma receiving the 'Fellow of Indian Society of Plant Genetic Resources' for 2010 at NBPGR, New Delhi



Dr. K.N.Shiva receiving the Best Oral Presentation Award at 21st National Tamil Scientific Seminar, Coimbatore

CONSULTANCY SERVICES AND COMMERCIALIZATION OF TECHNOLOGIES

- * A total of 8,780 mother culture samples had been tested for the presence of virus under contract service for virus indexing.
- * Polyclonal antiserum produced for CMV, BBrMV and BBTV has been supplied to tissue culture companies and also to the State Agricultural Universities viz., KAU, APHU and Department of Horticulture, Kerala.
- * Conducted a Contract Research on Performance of 'Repol', a polypropylene based nonwoven fabric as bunch sleeves on bunch characteristics and fruit quality in certain commercial cultivars of banana funded by Reliance Industries Ltd., Chennai.
- * Production technology of Banana flower *thokku* (pickle), Banana flour and Postharvest handling, pre-treatments, packing and storage of Banana Central Core Stem was transferred.

PUBLICATIONS

Research Papers

Anuradha, C., Gupta, G. P., Sasikumar, K. and Ananda Kumar, P. 2012. Antagonistic effect of *Bacillus thuringiensis* toxins Cry1Ac and Cry1Jb on the cotton boll worm, *Helicoverpa armigera*. *Ind. J. Ag. Sci.* 82: 9002.

Elayabalan, S., Kalaiponmani, K., Pillay, M. Chandrasekar, A., Selvarajan, R., Kumar, K. K. and Balasubramanian, P. 2013. Efficient regeneration of the endangered banana cultivar 'Virupakshi' (AAB) via

embryogenic cell suspension from immature male flowers. *African J. Biotech.* 12:563-569.

Elayabalan, S., Kalaiponmani, K., Subramaniam, S., Selvarajan, R., Panchanathan, R., Muthuvela-youtham, R., Kumar, K.K. and Balasubramanian, P. 2013. Development of agrobacterium-mediated transformation of highly valued hill banana cultivar Virupakshi (AAB) for resistance to BBTV disease. *World J. Microbiol. & Biotech.* 29:589-96.

Krishna Surendar, K., Durga Devi, D., Ravi, I., Jeyakumar, P., Ramesh Kumar, S., and Velayudham, K. 2013. Studies on the impact of water deficit on plant height, relative water content, total chlorophyll, osmotic potential and yield of banana (*Musa* spp.) cultivars and hybrids. *Int. J. Horticulture*, 3:52-60.

Krishna Surendar, K., Durga Devi, D., Ravi, I., Jeyakumar, P., Velayudham, K. 2013. Effect of water deficit on relationship between yield and physiological attributes of banana cultivars and hybrids. *Int. J. Hort.* 3:61-69.

Ravi, I. and Mustafa, M. M. 2013. Starch and amylose variability in banana cultivars. *Ind. J. Pl. Physiol.* DOI 10.1007/s40502-013-0014-2.

Ravi, I., Uma, S., Mayil Vaganan, M. and Mustafa, M. M. 2012. Phenotyping bananas for drought resistance. *Front. Physiol.* 4:1-15. DOI: 10.3389/fphys.2013.00009.

Selvarajan, R. and Balasubramanian, V. 2013. Natural Occurrence of Banana bunchy top virus in *Ensete superbum*, *Ind. J. Virol.* DOI1007/s13337-012-0123-y.

Thangavelu, R., Ganga Devi, P., Gopi, M., Mustafa, M.M. 2013. Management of Eumusae leaf spot disease of banana caused by *Mycosphaerella eumusae* with Zimmu leaf extract, *Crop Prot.* 46:100-105.

TRAININGS OFFERED

Title	Date
ICAR short course on 'Advances in Gene identification and molecular markers development	01-12.10.2012
DBT funded 'Awareness and training programme for the regeneration of near extinct landraces of banana in Kolli Hills, Tamil Nadu	19.2. 2013
Production of value added products from banana (under ATMA scheme)	23.2.2013
Isolation, identification and characterization of banana pathogens to AICRP Scientists	21-23.3.2013

DISTINGUISHED VISITORS

Name & Address	Date
Dr. G. L. Kaul, Former VC, AAU.	30.11.2012
Dr. R. K. Tyagi, Head, Division of Germplasm, NBPGR, Pusa, New Delhi.	30.11.2012
Dr. G. Chandra Sekar, Head, Dept. of Plant Pathology, TNAU, Coimbatore.	30.11.2012
Dr. N. K. Krishna Kumar, DDG (Hort.), ICAR, New Delhi	24.12.2012