



SPICES NEWS



Indian Institute of Spices Research
Marikunnu (P.O.), Calicut, Kerala, India.

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Research Update

Germplasm enrichment

Thirty two accessions of *Piper* and eighteen accessions of *Garcinia*, collected from the forests of Charmadi, Mudigere, Kalasa and Kudermugh in Karnataka were added to the germplasm repository. Myristicin (45-60%) rich oil was observed in a collection of *Piper nigrum* from northern Karnataka.

Summer irrigation and nutrient management for high yield of black pepper

Irrigating black pepper vines once in fortnight from March to May @ 50 litres/vine is suggested for higher yield.

Nutrient requirement studies conducted at Mrigarajendra Estate, Madapura, Madikeri for obtaining targeted yield of black pepper resulted in 39-104% increase in yield.

Evaluation of *Cassia* progenies

Among the 4 elite cassia lines evaluated at Appangala, line D1 was superior with regard to plant height, width and number of main branches/plant and line B2 with respect to quality parameters, namely, bark oil, oleoresin and cinnamaldehyde contents. The cassia line, IC No.370400 was registered with NBPGR, New Delhi (Reg. No. INGR08045), for high cinnamaldehyde content (81.5%) in bark oil.

PGPRs from spices

Fifty-five rhizobacterial strains, 24 from black pepper and 31 from ginger were isolated from soil samples collected from Kerala and Karnataka, making the total collection to 174; 74 from black pepper and 100 from

ginger. Four isolates from black pepper and six from ginger were short-listed as efficient, based on their *in vitro* antagonistic activity against *Phytophthora*, *Pythium* and *Fusarium*. The identity of the isolates was confirmed through 16S rDNA sequence analysis. Three of these isolates belonged to *Pseudomonas aeruginosa*, two were *Serratia marcescens* and one each belonged to *Klebsiella*, *Bacillus amylolequifaciens* and *Bukholderia pyrrocinia*. The sequences of five of these isolates were deposited with National Centre for Biotechnology Information databases.

Phytophthora resistant/tolerant lines

Piper ornatum was found to be resistant to *Phytophthora capsici* and nematodes affecting pepper. A promising *Phytophthora* tolerant line, C-1090, was identified as rootstock for black pepper.

Seed transmission of *Piper yellow mottle virus* (PYMoV) in black pepper

Immunocapture PCR studies of black pepper berries and the seedlings raised from PYMoV infected berries confirmed true seed transmission of PYMoV in black pepper.

Pathogenicity studies of *Colletotrichum* spp. infecting black pepper, cardamom and turmeric

Pathogenicity studies carried out with five predominant black pepper

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and cardamom isolates of *Colletotrichum* spp. and one turmeric isolate (Appangala) on three varieties/ cultivars of black pepper and cardamom and a local cultivar of turmeric indicated that, *Colletotrichum* isolates have the potential to infect the varieties/ cultivars of crops other than their natural hosts.

Field screening of black pepper to pollu beetle

One hundred and thirteen cultivars and seventy two hybrids of black pepper were screened against the pollu beetle (*Longitarsus nigripennis*). The lowest berry damage was recorded on Acc. No. 1636 (1.75%) followed by Acc. No. 1423 (2.74%) among the cultivars, and Acc. No. 1388 and Acc. No. 1726 among the hybrids.

Field screening of turmeric to shoot borer (*Conogethes punctiferalis*)

Nine hundred and fifteen accessions of turmeric were field screened against the shoot borer (*Conogethes punctiferalis*). The maximum shoot damage (80%) was observed on accessions 345, 525 and 882. Twelve accessions recorded 75% shoot damage. Forty-four accessions remained free from the shoot borer attack.

Maintenance of katte, kokke kandu and Nilgiri necrosis isolates

7 *Katte* isolates (2 from Karnataka and 5 from Kerala) and one Nilgiri necrosis isolate (from Kerala) were collected and established under insect proof glass house conditions.

BIOLOG for automated microbial identification



A new automated system to identify bacteria and fungi based on conventional phenotypic tests has been installed at IISR, Calicut. The Biolog System rapidly identifies over 1,900 species of aerobic bacteria,

anaerobic bacteria, yeast and filamentous fungi. This easy to use System provides reference laboratory quality identifications without the labour-intensive conventional microbiological assays.

Personalia

Awards/Honours/Recognitions

Biju CN

Consultant to TATA Coffee Limited.

Devasahayam S

Co-Chairman, Crop Protection Session, Group Meeting of Research workers of AICRP (Spices), 7 June 2009, Coimbatore.

Deputation abroad

Prasath D

Deputed to University of Guelph, Ontario, Canada for a period of twelve months w.e.f 16 May 2009 under DST's BOYSCAST fellowship programme 2008-09.

Parthasarathy VA

Nominated by ICAR, to General Council of KAU & Executive committee.

Participation in Symposia/Seminars/Workshops/Conferences/Meetings

Anandaraj M

Meeting on 2nd Plant Genome Savior Community Recognition Award, 12 February 2009, NASC Complex, New Delhi, 10-13 February 2009.

Launch of Network Project on *Phytophthora*, *Fusarium* and *Ralstonia*, NASC Complex, New Delhi, 22-23 February 2009.

Brain storming session on seed spices, NRC for Seed spices, Ajmer, 21-23 March 2009.

Brain storming session on germplasm, NBPGR New Delhi, 21 April 2009.

National Horticultural Conference, Capt. Amit Singh Memorial Foundation, Muzzaffarpur, 28-30 May 2009.

Meeting on working of AICRPS in Horticulture University at Bagalkot, Karnataka, KAB II, New Delhi, 16 June 2009.

Anandaraj M

Bhat AI

Devasahayam D

Johny A K

Kandiannan K

Madan MS

Parthasarathy VA

Rema J

Shiva KN

Srinivasan N

XX AICRPS Group Meeting, TNAU, Coimbatore, 6-8 June 2009.

Anandaraj M

Parthasarathy VA

Santhosh J Eapen

Launch of Out Reach Project on *Phytophthora*, *Fusarium* and *Ralstonia*, NASC Complex, New Delhi, 22-23 February 2009.

Ankegowda S J

Conference on *Sustainable production and marketing of coffee and future strategies*, Pallibetta and Madikeri, 22-23 February 2009.

Training programme on *The right to information Act-2005*, Bhubaneswar, 29-30 May 2009.

Biju CN

Regional Seminar on Pepper and Cardamom, IISR, Cardamom Research Centre, Appangala, 23 March 2009.

Devasahayam S

Sixth Meeting of Institute Management Committee, Central Tuber Crops Research Institute, Trivandrum, 10 February 2009.

Workshop on Production and Post-harvest Technology of ginger and turmeric for Uttaranchal, Dehradun, 5-7 March 2009.

Interaction Meeting of Entomologists of Horticultural Crops, Lucknow, 10-11 June 2009.

Hamza S

Rashid Pervez

Flavors, Nutraceuticals and food colors from Horticultural Crops, IISR, Calicut, 7-28 January 2009.

Jayarajan K

Sayed Mohammed VV

Training on e-Procurement, Administrative Staff College of India, Hyderabad, 4-6 May, 2009.

John Zachariah T

Workshop on PME support for Consortia based Research Projects in Agriculture at NAARM, Hyderabad, 3-7 February 2009.

Consortium Advisory Committee Meeting of NAIP *Studies on cryogenic grinding for retention of flavour and medicinal properties of some important Indian spices*, IIT Kharagpur, 19-20 February 2009.

Consortium Implementation Committee Meeting of NAIP, CIPHET, Ludhiana, 10 June 2009.

Kandiannan K

Review meeting of ICAR Mega Seed Project on Seed Production in Agricultural Crops and Fisheries, NAAS Complex, New Delhi, 5-6 January 2009.

National Workshop cum Seminar on Status and Future Strategies for Horticulture Development in Andaman & Nicobar Islands, Central Agricultural Research Institute, Port Blair, 23-25 January 2009.

Workshop on Crop Knowledge Models and Agropedia, ICRIASAT, Hyderabad, 19-20 February 2009.

Krishnamoorthy B

Prasannakumari N

43rd TOLIC Meeting, Hotel Malabar Gate, Calicut, 27 April 2009.

Kumar A

Fifth Annual Meeting of the Ecogenomics Consortium, Amsterdam, The Netherlands, 16-17 April 2009.

Mathew PA

Gramasabha meeting, Nalanda Auditorium, Calicut, 18 June 2009.

Mathew PA

Prakash KM

Convergence Meeting of KVK & ATMA, KVK, Kannur, 4 April 2009.

Action Plan Meeting of KVKs at Zonal Project Directorate, Bangalore, 28-29 April 2009.

Mathew PA

Prakash KM

Shanmughavel S

Pre-review meeting of Action Plan of KVKs, KAU, Trichur, 21 April 2009.

Nirmal Babu K

Workshop for DBT Nominees and IBSC Members for Strengthening Regulatory Compliance by IBSCs, 2 February 2009, MSSRF, Chennai.

Nirmal Babu K**Sali P V**

Residential Training Programme for CPIOs/ APIOs on RTI Act-2005, Institute of Public Administration, Bangalore, 2-3 March 2009.

Parthasarathy VA

Directors' Conference, NASC, Delhi, 14-16 January 2009.

Consultative Group Meeting of Geographical Indications Registry, GIR, Chennai, 9 April 2009.

AICRPS Group Meeting - Pre-review, TNAU, Coimbatore, 25 May 2009.

The Executive Committee Special Meeting, KAU, Trichur, 18 June 2009.

Prakash KM

Seminar on protection of Plant varieties & Farmers Rights Act, Calicut, 23 March 2009.

Trainers training on Commodity futures, KAU, Trichur, 27 March 2009.

Rajeev P

Review meeting of the Village Resource Expert Centres under the RSYV/VSAT programme at Kerala State Planning Board, Trivandrum, 15 March 2009.

Rashid Pervez

Training course on *Production and processing technology in major spices*, Indian Institute of Spices Research, Calicut, 23-25 March 2009.

Santhosh J Eapen

BTIS Coordinators, Meeting, NEHU, Shillong, 3-4 February 2009.

Board of Studies (Bioinformatics) Meeting, Calicut University, Calicut, 13 February 2009.

Workshop on Bioinformatics, National Institute of Technology, Calicut, 1 April 2009.

Sathyanath V**Senthil Kumar R**

Application of GIS in Plant Biodiversity and Horticulture, Indian Institute of Spices Research, Calicut, 25 February - 6 March 2009

Sheeja TE

Workshop on Spices Statistics, DASD, Calicut, 20-21 May 2009.

Srinivasan V

Training on Spices Production Technology under the Central Sector Scheme on Technology Mission for Integrated Development of Horticulture in NE states, Department of Horticulture, Tripura, Agarthala, 3-5 Feb 2009.

Annual group Meeting of Network Project on Organic Farming, CSK HPKV, Hill Agriculture Research and Extension Centre, Bajaura (Kullu), 4-6 March 2009.

Suseela Bhai R

Launch of the project *Harnessing arbuscular mycorrhizae for biofertilization in Horticultural Crops*, NASC Complex, New Delhi, 5 May 2009.

Thankamani C K

Meeting for *Preparation of package of practices for black pepper in Idukki District*, DASD, Calicut, 21 June 2009.

Membership in committees/ professional societies**Anandaraj M**

Member, DPC, CPCRI, Kasaragod.

Bhat AI

Chairman, Board of Examiners of PhD, Department of Applied Botany, Mangalore University.

Devasaham S

Member, Institute Management Committee, Central Tuber Crops Research Institute, Trivandrum.

Lectures delivered**Anandaraj M**

Technological interventions for enhancing productivity and profitability of spices, Capt. Amit Singh Memorial Foundation, Muzzaffarpur, 28 -30 May 2009.

Ankegowda S J

Improved method of cultivation and processing of cardamom, Regional Seminar on Pepper and Cardamom, Cardamom Research Centre, Appangala, 23 March 2009.

Organic cultivation practices in spice farming, Regional Seminar on Cardamom, Spices Board, Bhagamandala, 25 March 2009.

Spices in coffee based cropping system, Conference on Sustainable Production and Marketing of Coffee, Pollibetta, 22 February 2009.

Bhat A I

Microarray- A future potential detection tool ? Winter School on Molecular techniques for plant virus characterization and diagnostics, CRIJAF, Kolkata, 14 January 2009.

Present status on characterization and diagnosis of Tospo- and Ilar viruses in India, Winter School on Molecular techniques for plant virus characterization and diagnostics, CRIJAF, Kolkata, 14 January 2009.

Transgenic approaches for the enhancement of nutrition and quality of plants, Winter school on Flavors, nutraceuticals and food colors from horticultural crops, IISR, Calicut, 24 January 2009.

Molecular disease diagnosis in plantation crops, Short course on *In vitro* techniques in plantation crops, CPCRI, Kasargod, 21 January 2009.

Application of GIS in disease forecasting, Short course on Application of GIS in plant biodiversity and horticulture, IISR, Calicut, 3 March 2009.

Microarray Technology, Summer training on Biochemistry, Biotechnology and Bioinformatics, IISR, Calicut, May 6 - June 5, 2009.

Molecular approaches for detection and identification of viral pathogens, Summer training programme on Bioinformatics and Biotechnology, IISR, Calicut, 6 May - 5 June 2009.

Plant molecular farming. Summer training programme on Biochemistry, Biotechnology and Bioinformatics, IISR, Calicut, 6 May - 5 June 2009.

Isolation of RNA and RT-PCR Summer training programme on Biochemistry, Biotechnology and Bioinformatics, IISR, Calicut, 6 May - 5 June 2009.

Plasmid isolation (E. coli). Summer training programme on Biochemistry, Biotechnology and Bioinformatics, IISR, Calicut, 6 May - 5 June 2009.

Biju CN

Integrated Pest and Disease Management in Black pepper and Cardamom, Regional Seminar on Pepper and cardamom, Cardamom Research Centre, Appangala, 23 March 2009.

Jacob TK

Insect pests of black pepper, Farmers meet, Balussery, Calicut, 17 January 2009.

Insect pests of ginger and turmeric, Training course for officers of the Department of Horticulture, UP, IISR, Calicut, 25 March 2009.

John Zachariah T

Processing and Value Addition in Spices for Entrepreneurship Development, District Industries Centre, Calicut, 9 January 2009.

Quality traits of Spices Winter School on Flavors, nutraceuticals and Food colors from Horticultural Crops, IISR, Calicut, 8 January 2009.

Kumar A

Black pepper associated endophytic bacteria and their exploitation for *Phytophthora* suppression, Wageningen University and Research, Wageningen, The Netherlands, March 2009.

Leela N K

Flavours of tree and seed spices, Winter School on Flavors, Nutraceuticals and Food Colors from Horticultural Crops, IISR, Calicut, 10 January 2009.

Bioactive compounds from spices, Summer training programme on Biochemistry, Biotechnology and Bioinformatics, IISR, Calicut, 12 May 2009.

Parthasarathy VA

Management of innovation and R & D, National Institute of Technology, Calicut, 29 May 2009.

Saji KV

Biodiversity in spice crops, Winter school on Flavors, nutraceuticals and food colors from Horticultural crops, IISR, Calicut, 7-28 January 2009.

Spices conservation and database preparation, Short course on Application of GIS in plant biodiversity and horticulture, IISR, Calicut, 25 February-6 March 2009.

Shamina A

Functional Foods and Nutraceuticals, Department of Biotechnology and Microbiology, Kannur University, Thalassery, 28 February 2009.

Protein Structure and Function, Regional Science Centre, Calicut, 23 April 2009.

Functional Foods and Nutraceuticals, Summer training programme on Biochemistry, Biotechnology and Bioinformatics, IISR, Calicut, 13 May 2009.

Sheeja TE

Biotechnology of the flavor Industry, Winter School on Flavors, Nutraceuticals and Food Colors from Horticultural Crops, IISR, Calicut, 23 January 2009.

Transgenics, Science Planatorium, Calicut, 19 May 2009.

Ethical Issues in Transgenics, International Seminar on Hundred years of the journey of Gene, Providence College, Calicut, 9 January 2009.

Transgenics- current issues, Providence College, Calicut 20 April 2008

Santhosh J Eapen

An introduction to Bioinformatics, Winter School on Flavours, Nutraceuticals and Food Colors from Horticultural Crops, IISR, Calicut, 19 January 2009.

Bioinformatics to handle chemical data, Winter School on Flavours, Nutraceuticals and Food Colors from Horticultural Crops, IISR, Calicut, 20 January 2009.

Bioinformatics databases developed at IISR, XXV BTIS Coordinators Meeting, North Eastern Hill University, Shillong, 3 February 2009.

Biological databases, Bioinformatics Workshop, National Institute of Technology, Calicut, 1 April 2009.

Molecular evolution, Regional Science Centre, Calicut, 24 April 2009.

Effective library usage, Summer training programme on Biotechnology, Biochemistry and Bioinformatics, IISR, Calicut, 11 May 2009.

Effective scientific presentation, Summer training for MSc Students on Biochemistry, Biotechnology and Bioinformatics, IISR, Calicut, 22 May 2009.

Srinivasan V

Organic farming and quality characteristics of horticultural crops. Winter School on Flavors, Nutraceuticals and Food Colors from Horticultural Crops, IISR, Calicut, 7-28 January 2009.

Ginger production technology, Central Sector Scheme on Technology Mission for Integrated Development of Horticulture in NE states, Department of Horticulture, Tripura, Agarthala, 3-5 Feb 2009.

Suseela Bhai R

Diseases of Ginger and Turmeric, Training programme for officers of Department of Horticulture and Food Processing, UP, IISR, Calicut, 23 March 2009.

Thankamani C K

Black pepper production technology, Training programme on Production and processing technologies of major spices, IISR, Calicut, 23 March 2009.

Utpala Parthasarathy

Digital mapping and GIS for boosting Horticulture, Winter School on Flavours, Nutraceuticals and Food colors from Horticultural Crops, IISR, Calicut, 7-28 January 2009.

Application of GIS, GPS and Satellite imagery in Agriculture, Short course on Application of GIS in Plant bio-diversity and Horticulture, IISR, Calicut, 25 February - 5 March 2009.

GIS - A tool for biodiversity study, Summer training programme on Biochemistry, Biotechnology and Bioinformatics, IISR, Calicut, 6 May - 5 June 2009.

Membership in Societies**Mathew PA**

Life Member - Horticultural Society of India

Life Member - Indian Society for Spices and Aromatic Crops

Life Member - Indian Society for Plantation Crops

Life Member - Indian Society of Root Crops

Video conference

Insect pests of Erythrina spp. with special reference to Erythrina gall wasp, 13 March 2009 (Jacob T K).

Production Management of Cardamom, 3 February 2009 (Biju CN).

T V Programme

Pest management in black pepper, Krishidarshan Programme, Doordarshan Kendra, Bangalore, 27 January 2009 (Ankegowda S J).

Black pepper cultivation, Krishidarshan Programme, Doordarshan Kendra, Bangalore, 24 February 2009 (Ankegowda S J).

Rambutan and langsat, Jeevan TV, 8 June 2009 (Mathew P A)

Radio talk

Cardamom and pepper cultivation practices in summer season, AIR, Madikeri, 17 April 2009 (Ankegowda S J).

Control of quick wilt disease of black pepper, AIR, Calicut, 8 June 2009 (Thankamani C K).

News and Events

Research Advisory Committee Meeting

Research Advisory Committee meeting of the Institute was held during 28-29 April 2009 under the chairmanship of Dr. N Mohanakumaran, Former Director of Research, KAU, Trichur, discussed the progress made during the last one year in various on-going research projects.

Institute Research Committee Meeting

IRC meeting held on 19-20 May 2009 under the chairmanship of Director, IISR, Calicut, reviewed the progress of the research projects, that are being executed at the Institute.

News from Bioinformatics Centre

The Bioinformatics Centre and Regional Science Centre, Calicut, jointly organized a Bioinformatics camp for higher secondary students during 20-25 April 2009. During January-June 2009, studentship was offered to three Bioinformatics post graduate students.

In silico tools were used to identify miRNAs in ginger, turmeric, paprika and a nematode *Radopholus similis* from the publicly available EST data. Presence of several novel miRNAs was proved and their structures were predicted using bioinformatics tools. A database of cardamom germplasm accessions maintained at CRC, Appangala, was developed.

News from Human Resource Development

During the period, fourteen days' In-house training programme was conducted for the Supporting Staff of IISR Calicut, in three batches. Thirty five persons attended the training. The following training programmes conducted at the institute were sponsored by ICAR:

- Winter School on *Flavors, Nutraceuticals and Food colors from Horticultural Crops*, 7-28 January 2009
- Short course on *Application of GIS in Plant Bio-diversity and Horticulture*, 25 February-5 March 2009
- Summer training on Biochemistry, Biotechnology and Bioinformatics, 6 May-5 June 2009 for MSc students.

Institute Management Committee Meeting

Second meeting of the 6th Institute Management Committee was held on 27 April 2009 under the chairmanship of Dr VA Parthasarathy, Director, IISR, Calicut. The following members participated:



Mr Umesh Srivastava, ADG(Hort.)

Mr R P Shukla, Principal Scientist, CISH, Lucknow
Dr M Unnikrishnan, Principal Scientist, CTCRI, Trivandrum

Dr Jagadish Singh, Principal Scientist, IIVR, Varanasi
Dr D Alexander, DOR, KAU, Trichur

Dr S Natarajan, Dean, HC& RI, Periyakulam, Tamil Nadu
Dr G Sudharshanan, JD (Agric.), Calicut.

Mr G P Sarma, Senior Finance & Accounts Officer, CMFRI, Kochi

Mr M J Ummen, Kannur

Mr Rathikumar, Kollam

Dr M Anandaraj, P C (Spices)

Mr C Padmanabhan, AAO, IISR Calicut.

Institute Joint Council Meeting

The Institute Joint Council Meetings were held on 30 March 2009 and 27 June 2009 under the chairmanship of Dr. VA Parthasarathy, Director, IISR, Calicut.

Consultancy Processing Cell

During January-June 2009, Rs. 1.28 lakh was generated through the following activities: nutrient analysis of manure samples from farmer's clusters and private entrepreneurs, analysis of biocontrol agents, summer training for MSc students and visits to private farms based on requests.

News from library

IISR library made significant improvement in its infrastructure as well as technical resources during the reporting period. New computer systems and printers were added and Wi-Fi connectivity was established in the library for better and smooth networking. The library added 89 reference books, seven each technical reports and theses, one project report and 72 gratis publications during the period. The library started subscribing the online databases, CAB Abstracts online and Academic Search. Access to these databases was extended to CRC, Appangala and IISR Experimental Farm, Peruvannamuzhi. To familiarize

EBSCO databases, a training-cum-demonstration was organized on 12 February 2009.

National Group Meeting of AICRPS

The All India Coordinated Research Project on Spices, organized its XX Workshop and National Group Meeting on Spices during 6-8 June 2009 at Tamil Nadu Agricultural University, Coimbatore. The workshop was inaugurated by Dr. H.P. Singh, Deputy Director General (Hort.), ICAR, New Delhi. Over 100 spice workers from various centres participated in the workshop. Thirteen new varieties of spices were recommended for release at State/National level. Ten new technologies including three in cardamom, two each in black pepper and coriander and one each in ginger, turmeric and fenugreek, developed from different research projects were recommended for release. The Plenary session was chaired by Dr P Rethinam, Former ADG (Plantation Crops) who stressed the need for multidisciplinary work in maintaining/exploiting germplasm and highlighted the need for technology package as a whole for cropping system. The meeting came to an end with the vote of thanks by Dr M Anandaraj, Project Coordinator, AICRP (Spices).

Outreach project on *Phytophthora*, *Fusarium* and *Ralstonia*



The outreach project on *Phytophthora*, *Fusarium* and *Ralstonia* diseases of Horticultural and Field Crops was launched by Dr. H.P. Singh, DDG (Hort.), ICAR on 23 February 2009 in a meeting held at NASC Complex, New Delhi, with a total outlay of Rs.19.65 crores. The outreach programme, *PhytoFuRa*, was formulated with nodal centre at Indian Institute of Spices Research, Calicut, involving 17 research Institutes cutting across the divisions of Horticulture and Crop Science. The web portal of this project (<http://www.phytofura.net.in/>) was also launched during the occasion, to bring in more transparency and networking among the collaborating Institutes. Dr. M. Anandaraj is the Nodal Officer of the network project.

News from SARANI

SARANI, the recreation club of the Institute, hosted farewell functions in connection with the superannuation of the Institute staff. Demonstrations were arranged on popularization of recently launched schemes from LIC and SBI for the benefit of employees. Annual day of the Institute was celebrated on 26 June 2009. During the occasion sports and quiz competitions were held for the staff. Dr K N Kurup, Principal Scientist (Retd.), IISR, Calicut, was the chief guest. Dr. Kurup distributed prizes for the winners of various competitions and merit awards for the students who scored highest marks among the children of staff, in standard X / CBSE public examination.

हिन्दी अनुभाग

जनवरी से जून 2009 तक की अवधि में राजभाषा कार्यान्वयन समिति की तिमाही बैठकें दो बार आयोजित हुईं। संस्थान के अधिकारियों एवं कर्मचारियों को हिन्दी के प्रति रुचि पैदा कराने के लिये दो बार हिन्दी कार्यशालायें आयोजित कीं। दिनांक 30.03.2009 को डा. ई. राधाकृष्णन, हिन्दी प्राध्यापक, हिन्दी शिक्षण योजना ने 'हिन्दी टिप्पण एवं आलेखन' के बारे में कक्षा चला दी। दिनांक 17.06.2009 को श्री. वी. सत्यनाथ, रिसर्च असोशियट ने 'कम्प्यूटर में हिन्दी के प्रयोग' के बारे में अधिकारियों एवम कर्मचारियों को अवगत कराया। दिनांक 27.04.2009 को होटल मलबार गेट में आयोजित नगर राजभाषा कार्यान्वयन समिति की बैठक में श्री. बी. कृष्णमूर्ती एवं सुश्री. एन. प्रसन्नकुमारी ने भाग ली।

जुलाई - दिसंबर 2009 को जारी किये 'स्प्राइसेस न्यूज' एवं 'आई आई एस आर अट ए गलान्स' का हिन्दी रूपान्तर प्रकाशित किया। संस्थान की पत्रिकायें 'हल्दी' एवं 'अदरक' का हिन्दी रूपान्तर प्रकाशित किया। पिछली छमाही में राजभाषा कार्यान्वयन समिति की बैठकें दो बार आयोजित हुईं। रिपोर्टाधीन काल में राजभाषा कार्यान्वयन संबंधी दो तिमाही रिपोर्ट, एक वार्षिक रिपोर्ट एवं एक अर्ध वार्षिक रिपोर्ट तैयार करके भेज दिया। सुश्री. एन. प्रसन्नकुमारी, हिन्दी अनुवादक ने मार्च 12-13 को नगर राजभाषा कार्यान्वयन समिति द्वारा कालिकट में आयोजित 'हिन्दी में कम्प्यूटर प्रशिक्षण' में भाग लिया। हिन्दी अनुभाग ने दो हिन्दी पुस्तकें खरीद ली। चार नाम पट एवं छः रबड़ की मोहरें द्विभाषी रूप में तैयार किया।

Republic day

Republic day was celebrated on 26 January. Dr V A Parthasarathy, Director, IISR, Calicut, hoisted the flag and delivered the Republic day speech.

Transfer of Technology

Technology inputs and advisory services from ATIC

During January to June 2009, the total revenue generation from ATIC amounted to Rs. 1,21,343 though the sale of planting material, biocontrol agents and the sale of publications. During the period, 393 farmers including 225 from out side Kerala State, 77 from Calicut district and 91 from other districts of Kerala availed advisory services from ATIC and 377 students visited the Institute on study tour. The Institute participated in two exhibitions; one at national level at Patna and another at Narikuni in Calicut. Under the RSVY/VSAT Project, 6 video conferencing sessions for 4 Village Resource Centers (VRCs) in Wynad district of Kerala were telecast.

Training of extension functionaries

Under the Technology Mission for Integrated Development of Horticulture in NE states including Sikkim two programmes were organized : Spices Production-Potential and Prospects in Tripura at Horticulture Research Complex, Nagechera, Tripura during 3-5 February 2009 and Production and Processing Technology of Major spices in Uttarakhand at Dehradun during 5-7 March 2009. Training programme on Production and Processing Technology of Major Spices, sponsored by State Horticulture Mission, Uttar Pradesh, was organized during 25-27 March 2009.

Krishi Vigyan Kendra

During the period, 58 training programmes were conducted by KVK, for 1793 beneficiaries which included 256 extension functionaries and 142 rural youth and the remaining were practicing farmers. Forty nine persons were trained as gardeners under State Horticulture Mission programme. Twenty five chief volunteers of VVV clubs of NABARD and 33 SHG leaders were trained in entrepreneurship development. A total of 495 farmers visited KVK and seven study tours of farmers were arranged. The animal health centre extended 834 advisory and treatment services,

supplied 964 layer chicks and 2 heifers, and 162 artificial inseminations and 7160 vaccinations were carried out. The centre had conducted 4 field days, 3 campaigns and 1 video conference. A revolving fund scheme was operated providing inputs namely, plant materials, vermicompost, worms and chicks worth Rs.2.5 lakhs, to farmers during the period.

SAC meeting



The 11th SAC meeting of KVK was conducted on 15 June 2009 at IISR, Chelavoor, Calicut, in which Dr. S. Prabhukumar, Zonal Project Director, Zonal Project Directorate, Hebbal, Bangalore and Dr. M.K. Sheela, Director of Extension, KAU, Trichur participated.

Front Line Demonstration

During the period under report, four Front Line Demonstrations in Crop Science and three in Animal Science were implemented. Demonstrations of HYV of IISR black pepper varieties, bush pepper technology, bud rot control in coconut, *in situ* green manuring of coconut, control of ecto- and endoparasites in cattle, feeding of bypass fat to dairy cattle, broiler goat production are in progress.

On Farm Testing

The OFT programmes on integrated management of foot rot of black pepper, control of stem bleeding in coconut using hexaconazole, soft rot and bacterial wilt of ginger using hexaconazole, soft rot and bacterial wilt of ginger using endophytic bacteria, control of parasites with ivermectin in goats and enhancing growth rate in calves using effective microorganisms (EM) conducted by KVK are in progress.

Publications

Research papers

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- Ankegowda S.J. & Krishnamurthy K.S. 2008 Evaluation of small cardamom accessions for moisture stress, *Journal of Spices and Aromatic Crops* 17(2):172-176.
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- Leela, N. K., Vipin T. M., Shafeekh K. M., Priyanka, V. & Rema J. 2009 Chemical composition of essential oils from aerial parts of *Cinnamomum malabratrum* (Burman f.) Bercht & Presl., *Flavour and Fragrance Journal* 24(1): 13-16.
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- Ankegowda S.J. 2008 Pest and disease management in spices nursery, *Spice India* (Kannda): 21(12):8-11.
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help of experts' advice (Farmer's note book), The Hindu daily, Science and Technology/Agriculture, 19 February 2009, p16.

Books

Eapen, S.J., Kumar, A., Anandaraj, M. (Eds). *Plant Pathogens and their Biocontrol Agents-Diagnostics and Characterization 2008*, Indian Institute of Spices Research, Calicut, 262p.

Shamina, A., Krishnamurthy K.S., Shiva K.N., Leela N.K., Chempakam B. (Eds.) *Flavors, Nutraceuticals and Food Colors from Horticultural Crops*, 2009, Indian Institute of Spices Research, Calicut, 238p.

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John Zachariah, T. 2009 *Flavour profile of Spices*, In: Utpala Parthasarathy, T. John Zachariah (Eds.) *Application of GIS in Plant Biodiversity and Horticulture-Course manual*, IISR, Calicut, pp124-132.

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Nirmal Babu K 2009 *Tissue culture as a tool for in vitro production of flavour, colour and nutraceuticals in Spice crops*, pp 108-113, In: A Shamina, KS Krishnamurthy, KN Shiva, NK Leela, B Chempakam (Eds.) *Flavours, Nutraceuticals and Food colours from Horticultural Crops*, Indian Institute of Spices Research, Calicut-673012, Kerala, India.

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and Horticulture, Indian Institute of Spices Research, Calicut - 673012, Kerala, India.

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Kandiannan, K., Thankamani, C. K., Srinivasan, V., Rajeev, P. 2008 *Turmeric*, Indian Institute of Spices Research, Calicut, 11p.

Prasannakumari, N., Krishnamoorthy, B., Pervez, R. 2009 *Adrak*, Indian Institute of Spices Research, Calicut, 12p.

Prasannakumari, N., Krishnamoorthy, B., Pervez, R. 2009 *Bhartiya Masala Fasal Anusandhan Sansthan-Ek Jhalak*, Indian Institute of Spices Research, Calicut, 16p.

Prasannakumari, N., Krishnamoorthy, B., Pervez, R. 2009 *Haldi*, Indian Institute of Spices Research, Calicut, 12p.

Prasannakumari, N., Krishnamoorthy, B., Jyothy, P.N. 2008 *Masala Samachar (Hindi)*. 19(2), Indian Institute of Spices Research, Calicut, 4p.

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Thankamani, C.K., Srinivasan V., Dinesh, R., Santhosh J Eapen., Rajeev, P. 2008. *Black pepper*, Indian Institute of Spices Research, Calicut. pp. 23.

Training manual

Rajeev, P. (Ed.) *Training manual of MM1 Sponsored Workshop on Spices Production- Potential and Prospects in Tripura*, 2009, Indian Institute of Spices Research, Calicut, 100p.

Rajeev, P. (Ed.) *Training manual of MM1 Sponsored Workshop on Production, Processing and Prospects for Major Spices in Uttarakhand*, 2009, Indian Institute of Spices Research, Calicut, 97p.

Shamina, A., Krishnamurthy K.S., Shiva K.N., Leela N.K., Chempakam B. (Eds.) *Training manual on ICAR sponsored Winter school on Flavors, Nutraceuticals and Food Colors from Horticultural Crops*, 2009, Indian Institute of Spices Research, Calicut, 180p.

Utpala Parthasarathy, Zachariah T.J. (Eds.) 2009 Manual on ICAR Sponsored Short course on Application of GIS in Plant Biodiversity and Horticulture, Indian Institute of Spices Research, Calicut, 210p.

Papers presented in symposia/ seminars/ workshops /conferences

Devasahayam, S. & Jacob, T. K. 2009 Status of insect pests of spice crops. Interaction Meeting of Entomologists of Horticultural Crops, 10-11 June 2009, Lucknow.

Devasahayam, S., Suseela Bhai, R. & Eapen, S. J. 2009 *Integrated management of pests and diseases of ginger and turmeric*. Workshop on Production and Post-harvest Technology of Ginger and Turmeric for Uttarkhand, 5-7 March 2009, Dehradun.

Kandiannan, K., Srinivasan, V. & Parthasarathy, V.A. 2009 *Cropping System with Spices for Augmenting System Productivity*, National Workshop cum Seminar on Status and Future Strategies for Horticulture

Development in A & N Islands. 23-25 January 2009, CARI, Port Blair.

Mathew, P. A. 2009 *Sompadi jack with commercial potential*, Workshop on jack PANASAM- 09, CARD, KVK, Pathanamthitta, 28-29 May 2009.

Parthasarathy, V.A. Srinivasan, V. & Prasath, D. 2009 Status and strategies of spices cultivation in Island ecosystem. In: National Workshop cum seminar on status and future strategies of horticulture development in A&N Islands, CARI, Port Blair, pp 24-35.

Parthasarathy, V.A., Shiva, K.N. & Krishnamoorthy, B. 2009 Plant genetic resources in improvement of spices in India: An overview. National Seminar on Recent Advances in Seed Spices. 4-5 March, 2009, Ahmedabad, Gujarat, pp 4.

Sithara, K., Riju A., Suja S. Nair, Shamina A. & Santhosh J. Eapen 2009 Screening major spice phytochemicals for their pharmacological fitness. National Conference on Drug Discovery and Development, 21-23 January 2009. University of Delhi, New Delhi.

Externally aided projects

The following externally aided projects were sanctioned during the period amounting to Rs. 169.64 lakhs.

Title of project	Investigators/ Co-ordinators	Funding agency	Period	Outlay (Rs. Lakhs)
Studies on cryogenic grinding for retention of flavour and medicinal properties of some important Indian spices	T John Zachariah & N K Leela	National Agricultural Innovation Project, New Delhi	7-1- 2009 to 6-1-2012	68.89
Mobilizing mass media support for sharing agro-information	V A Parthasarathy & M S Madan	National Agricultural Innovation Project, New Delhi.	Sanctioned in May 2009	42.25
ORP on Management of sucking pests in horticultural crops	S Devasahayam & T K Jacob	ICAR , New Delhi	11-6-2009 to 31-3-2012	8.1
Net work project on Development of Micro-sattelite markers, "Molecular characterization of small (<i>Elettaria cardamomum</i> Maton) & large cardamom, (<i>Amomum subulatum</i> Roxb.), identifying core collections and developing data base of important genotypes"	VA Parthasarathy- Co-ordinator; K Nirmal Babu, & D Prasath - Investigators	Department of Biotechnology, New Delhi	1-4 -2009 to 31-3-2012	50.4
Network Project on <i>Phytophthora</i> , <i>Fusarium</i> & <i>Ralstonia</i> Diseases of Horticultural and Field crops	M Anandaraj, K. Nirmal Babu, R. Suseela Bhai, S J Eapen & Johnson K George	ICAR , New Delhi	2008-2012	771.728

PhD awarded

Mrs Vijaya P

Studies on characterization and variability of <i>Phytophthora</i> species pathogenic to black pepper (<i>Piper nigrum</i> L.)	University of Calicut	Dr.Y.R.Sarma
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Mr Bhadra Murthy V

Identification, molecular characterization and development of diagnostics for the viruses associated with vanilla (<i>Vanilla planifolia</i> Andrews)	University of Mangalore	Dr. A.I.Bhat
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Ph D Registration

Student	Topic	University	Guide
Ms Anupama K	Development of Microsatellite markers for Black pepper (<i>Piper nigrum</i> . L) and related species,	University of Calicut, Kerala	Nirmal Babu K
Mr Chandrasekar A	Development of Expressed Sequence Tag (ESTs) Resources on <i>Curcuma</i>	Mangalore University, Karnataka.	Nirmal Babu K
Ms Jamsheena Aboobacker	Identification of bioactive components in ginger (<i>Zingiber officinale</i> Rosc.)	Kannur University	Shamina A
Mr Siljo Abraham	Characterization and development of diagnostics of viruses infecting cardamom (<i>Elettaria cardamomum</i> Maton.)	Mangalore University, Karnataka.	Bhat A I

M Sc Dissertations

The following MSc. dissertations were carried out at the Institute.

Title	Student	Guide
<i>In silico</i> identification and characterization of micro RNAs in three spices using EST analysis	Manila T.M., Kongunadu Arts and Science College, Coimbatore	S J Eapen
<i>In silico</i> identification of microRNAs in <i>Radopholus similis</i> and development of a comprehensive database of burrowing nematodes.	Lakshmi Priya Darshini K., Karpagam Arts and Science College, Coimbatore	S J Eapen
Isolation, identification and molecular characterization of symbiotic bacteria from entomopathogenic nematodes.	Showkat Ahmad Lone. Vellore Institute of Technology, Vellore.	S J Eapen
Chemical composition of cardamom and its antioxidant potential	Leena Joseph, Dr G R D College of Science, Bharathiyar University, Coimbatore.	N K Leela

Title	Student	Guide
Influence of Processing techniques on the quality traits of ginger and turmeric rhizomes	K Latha Rani, Bharathidasan University, Tiruchirapalli.	T J Zachariah
<i>In silico</i> screening of phytochemicals of five spices for their antimicrobial activity and docking studies using AutoDock targeting <i>Helicobacter pylori</i>	R Sangeetha, Bharathidasan University, Tiruchirapalli.	A Shamina
Study of the role of key phenylpropanoid enzymes in the partitioning of primary and secondary metabolites and effect of temperature on antioxidant potential in high and low curcumin turmeric accessions	V Vani Chitra Bharathidasan University, Tiruchirapalli.	A Shamina
Variation in curcumin levels and other primary and secondary metabolites in a few turmeric accessions	P K Sruthy, Bharathidasan University, Tiruchirapalli.	B Chempakam
Molecular Characterization and Species Interrelationships of <i>Cinnamomum</i> using RAPD Polymorphism	Jency R (2009) Bharathidasan University, Tamil Nadu, India	K Nirmal Babu & B Krishnamoorthy
Plant regeneration, Genetic transformation and Molecular characterization of <i>Piper betle</i> L.	Amritha Vijayan, Vellore Institute of Technology, Vellore.	K Nirmal Babu
Study on the influence of light intensity on the biochemical processes in black pepper	R Ranjusha, Bharathidasan University, Tiruchirapalli.	K S Krishnamurthy
Molecular Characterization of <i>Myristica</i> species 18S rDNA gene sequences	S Naresh, Bharathidasan University, Tiruchirapalli.	T E Sheeja
Development of Sex Linked Scar Markers in <i>Piper betle</i> L	Anto Paul P Bharathiyar University, Coimbatore.	T E Sheeja
Genetic diversity of ginger (<i>Zingiber officinale</i> Rosc.) germplasm assessed by Simple Sequence Repeat (SSR) Markers	Suparna R, Cochin University	D Prasath
Survival of <i>Phytophthora Capsici</i> and <i>Radopholus similis</i> in black pepper soil under Integrated diseases management system	Edna Mary Varghese Vellore Institute of Technology, Vellore.	R. Suseela Bhai
Compatibility of Endophytic and Rhizospheric Bacterial Biocontrol Agents with Agrochemicals in Black Pepper System	Sasmitha Pattnaik. Vellore Institute of Technology, Vellore.	R. Suseela Bhai

Distinguished visitors

Dr S K Naskar	Director, CTCRI, Trivandrum	05-1-2009
Mr Dominic Gonsalves	MLA (Ex), Maharashtra	22-1-2009
Mr J S Samra	CEO, NRRRA, Govt. India, New Delhi	29-3-2009
Mr Umesh Srivastava	ADG (Hort.), ICAR, New Delhi	27-4-2009
Ms Mugdha Sinha, IAS	Registrar, Board of Revenue, Ajmer, Rajasthan	14-5-2009
Dr Ajai Kumar	Director, DARE, New Delhi	28-5-2009
Dr Akali Sema	Director, CIH, Nagaland	22-6-2009

New Appointment

Ms Usha Rani R	Scientist (Biotech.), CRC, Appangala.	20-6-2009
Ms. N. Reena	SRF, IISR, Calicut.	01-5-2009
Ms. K.Sreeja	SRF, IISR, Calicut.	15-4-2009
Ms. E.J. Suraby	SRF, IISR, Calicut.	18-4-2009
Mr. P. Sreenath Sarma	SRF, IISR, Calicut.	20-4-2009
Mr. Vijesh Kumar	SRF, IISR, Calicut.	20-4-2009
Mr. A. Shaji	SRF, IISR, Calicut.	22-4-2009
Ms. T.P. Prameela	SRF, IISR, Calicut.	23-4-2009
Ms. K. B. Vinitha	SRF, IISR, Calicut	27-4-2009
Ms. C. K. Anoop	SRF, IISR, Calicut	01-5-2009
Mr. Sayuj	SRF, IISR, Calicut	04-5-2009
Ms. P.S. Sangeetha	SRF, IISR, Calicut	11-5-2009
Mr Ritto Paul	SRF, IISR, Calicut.	27-5-2009
Ms Anu Cyriac	SRF, IISR, Calicut.	01-6-2009

Promotion

Name	Promoted as	Date
Dr S Devasahayam	Head, Division of Crop Protection	w.e.f 15 April 2009
Sri V C Sunil	Assistant	w.e.f 20 January 2009

Transfer

Sri. K.G. Poonacha	JTA (T1)	Joined at CRC, Appangala on 24 January 2009
Sri. L. Balakrishna	JTA (T2)	Transferred to CHES, Hirehalli on 22 January 2009

Retirement

Name	Designation	Date
1. Sri. K.A. Somanna	Technical Assistant T4	31 January 2009
2. Sri. P. Sreedharan	Supporting Staff Gr. II	31 January 2009
3. Sri. P.T. Madhavan	Supporting Staff Gr. II	28 February 2009
4. Sri. A.P. Sankaran	Asst. Administrative Officer	28 February 2009
5. Sri. A.K. Balan	Technical Assistant T1-3	30 April 2009
6. Sri. K.M.Kunhikanaran	Supporting Staff Gr. II	30 June 2009

Resignation

Ms. K. M. Rehana	Lower Division Clerk	16 May 2009
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Wedding

Ms Anupama N K, IISR, Calicut with Mr Gopnarayanan R G, Ramanattukara, on 23 April 2009. Congratulations!

Obituary



Sri. N. Chandrahasan, Supporting Staff (Rtd.), Indian Institute of Spices Research, Calicut passed away on 7 April 2009. He is survived by wife, son and daughter.

SPICES NEWS

Newsletter of Indian Institute of Spices Research
An Institution of Indian Council of Agricultural Research (ICAR),
Marikunnu P.O., Calicut -673 012, Kerala, India.

A PDF version of the newsletter is also available at <http://www.spices.res.in/newsletter/index.php>

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