



SPICES NEWS



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RESEARCH HIGHLIGHTS

Characterization of traded cardamom

PCR amplifiable genomic DNA is isolated from the dried capsules of cardamom with a view to characterize the traded Indian cardamom from the point of Geographical Indication Appellation.

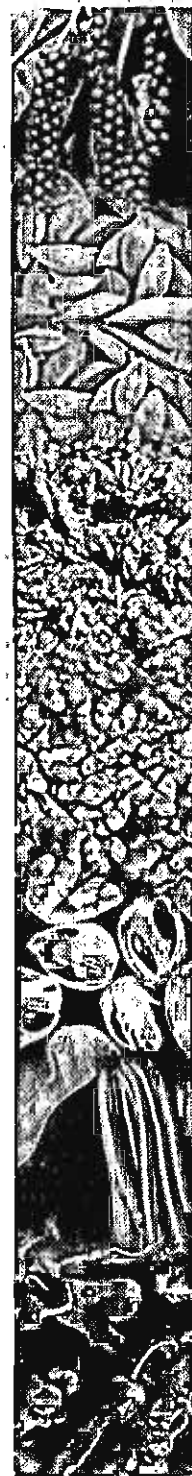
Phyllody disease of black pepper- Association of Phytoplasma

Using polymerase chain reaction (PCR), phytoplasma is detected in black pepper vines with phyllody symptoms. A 1.20 kb DNA fragment encoding the portion of phytoplasm 16S rDNA consistently amplified by nested PCR is cloned and sequenced. The sequenced region contained 1230 nucleotides. Sequence analyses showed that the gene is most closely related to members of aster yellows group (16 Sr I) of phytoplasm. The sequence identify with members of aster yellows group (16 Sr I) is

>98% while that with members of other groups (16 Sr II to 16Sr XV and other undesignated groups) ranged from 88 to 96%. On the basis of sequence identify, it is concluded that phytoplasma infecting black pepper in India belongs to aster yellows group.

Transmission of *Badna virus* through citrus mealy bug

Citrus mealybug (*Planococcus citri* (Risso)), commonly found associated with black pepper (*Piper nigrum* L.) in India is shown to transmit the *Badnavirus* associated with stunted disease of black pepper by symptomatology and polymerase chain reaction using *Badnavirus* specific primers.



Markers for *Phytophthora* tolerant black pepper

RAPD profiles of *Phytophthora* tolerant lines, P-24, HP-780, HP-3, HP-1, C-1090, C-1095 showed a distinct band of ~300 bp (OPA 01) in all the lines. This band was eluted, further amplified by PCR using the same primer and cloned in *E.coli*. The fragment is being sequenced in order to develop SCAR marker, which could be used for screening large population of seedlings.

Seedling progenies exhibit variation for *P. capsici* infection

Selfed progenies of Panniyur-1, Subhakara, P-24 and crossed seedlings of Panniyur-1 x Subhakara screened for their reaction to *P. capsici* exhibited varying degrees of resistance to *P.capsici* as revealed by the lesion size.

Vanilla andamanica - cytology and seed culture

Cytological study of *Vanilla andamanica* revealed a chromosome number of $2n=40$. Presence of super numary chromosomes are also observed.

Crossed and selfed seeds of pink and white flowered types of *Vanilla andamanica* are germinated *in vitro*.

Cytology of true turmeric seedlings

Cytological analysis of three true seedlings of turmeric viz., 126/1, 126/4 and 126/6 revealed varying chromosome numbers such as $2n=84$, 78 and 78, respectively.

Field evaluation of tissue cultured black pepper plants in farmer's plots

Three hundred tissue cultured black pepper plants (Subhakara-100, Panchami-200 Nos.) are planted in three farmers' fields in Karnataka state for onfarm performance evaluation.

Spike shedding in black pepper

Spike shedding studies in black pepper at higher altitudes indicated that the incidence varied from 9 to 87 % in different field situations, spike infection varied from 13-83.4% and maximum infection was recorded in the plants under high shaded conditions. Anthracnose infection, as a cause for spike shedding, recorded on 11 released varieties and 14 popular cultivars revealed that Panniyur-1 and Panniyur-3 are highly susceptible while the cultivars 'Chumala', 'Thevanmundi', 'Karimunda', 'Chettalli selection', 'Aimpirian' and 'Arakulammunda' are having field tolerance to Anthracnose incidence.

Promising PGPR isolates

Promising isolates of rhizobacteria suppressing nematodes, *Radopholus similis* and *M. incognita*, screened against *Phytophthora capsici* revealed that the PGPRs, IISR-658, IISR-853 and IISR-869 are also good in inhibiting *P. capsici* under laboratory studies. These organisms are good phosphorus solubilizers as well. Studies with different isolates of PGPR against soft rot disease of ginger showed that PGPR isolates IISR-13, IISR-51, IISR-151, IISR-152 and IISR-906 are effective in reducing the disease incidence to less than 5%.

Endobacterial consortium is also found to suppress *Ralstonia solanacearum* infection in ginger.

Turmeric - a host of *R. solanacearum*

Turmeric is identified as a host for ginger strain of *Ralstonia solanacearum*.

GIS on stunted disease of black pepper

Plotting the percentage incidence of black pepper stunted disease on the map and correlating with the environmental factors revealed a direct correlation with high altitude, low temperature and rainfall.

'Mahima's resistance to nematodes – further confirmation

Studies conducted by the Nematology Department, Anand Agricultural University, Anand, Gujarat not only confirmed the resistance of 'Mahima' ginger variety of IISR, Kozhikode against *M. incognita* but also revealed its resistance against *M. javanica* (pathotype 1) as well.

High coloured Paprika

Higher total extractable colour (ASTA units) value is recorded in accessions EC-171, ICBD-10, EC-6, ICBD-11 and Kt-pl-19. The capsaicin content varied from 0.006 (EC-490) to 0.13% (ICBD-14).

Irrigation of cardamom

Sprinkler irrigation studies on cardamom conducted in farmers' field revealed that six hours sprinkler irrigation once in 10-12 days from second year (yielding year) onwards during February to end of May or until good rains gives maximum yield.

Optimum Zinc level for ginger

The optimum zinc dose for maximum rhizome yield in ginger is determined as 6 kg ha⁻¹ and response was obtained upto a soil DTPA extractable Zn level of 3.4 mg kg⁻¹.

Effect of Zinc on black pepper

In zinc deficit soils, foliar application ZnSO₄ (0.5%) gave 20% increase in yield of black pepper.

Yield variability in black pepper during pre-yield stabilization period

Ten black pepper (*Piper nigrum* L.) lines viz., Sreekara, Subhakara, Panchami, Pournami, P-24, Panniyur-1, Panniyur-2, Panniyur-3, Panniyur-4 and Panniyur-5 studied for their yield performance during the pre yield stabilization

period revealed variability for yield per vine among the lines.

GERMPLASM COLLECTION

Eleven accessions of paprika and paprika like chillies are collected and added to the germplasm repository, raising the total collections to 58.

Dr. Johnson K. George, Dr. B. Sasikumar, Mr. K.V. Saji and Mr. S. Baburaj explored areas of Thiruvananthapuram, Kollam and Kottayam Districts from 12-07-2004 to 17-07-2004 and collected a total of 47 spices accessions. The important collections made are *Garcinia imberti*, *G. wightii*, *G. morella*, *Cinnamomum filipedicellatum* (from TBGRI, Palode), wild *Piper* Spp., cultivated black peppers, *Myristica*, *Curcuma* Spp. and *Vanilla aphylla*.

Five *G. gummigatta* (from NBPGR RS, Thrissur), 12 accessions of *G. indica* (from South Karnataka) are also added to the tree spice genebank by Sri. P.A. Mathew.

An extra bold ginger is obtained from a farmer in Wynad District and added to ginger genebank.

PIPER GENE BANK

A new *exsitu* wild *Piper* genebank is established by planting 300 wild *Piper* collections at IISR, experimental farm, Peruvannamuzhi. The important collections from Silent valley forests, Nelliampathy, North-East, India, Karnataka and Andaman & Nicobar Islands are planted in this genebank simulating the forest habitat.

PARTICIPATION IN SYMPOSIA/ SEMINARS/TRAINING/ MEETING/WORKSHOP

All scientists and Sr. Technical officers: Commercialization of Spices, Medicinal and Aromatic

Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode.

Anke Gowda, S.J

Crop diversification in coffee based cropping system. Corporation Bank, Madikeri, 31 July 2004, Madikeri, Karnataka.

Vanilla seminar, Vanilla Growers Association, Kodagu and Lions Club, Sidapur, 3 October 2004, Sidapur, Karnataka.

Seminar on 'Organic Agriculture', Lions Club, Sidapur, 12 October 2004, Suntikoppa, Karnataka.

Devasahayam, S

Technical Committee Meeting on management of *Phytophthora* wilt disease of black pepper, 15-16 October 2004, IISR, Kozhikode.

Vth Discussion meeting on Dimensions of Molecular Entomology, 27 November 2004, Chennai.

Hindi Workshop on noting and drafting, 15 September 2004, Kozhikode.

Hamza, S

Short course on Heavy metals in foods, 1-3 September 2004, CFTRI, Mysore.

Iswara Bhat, A

Workshop on Agricultural Bioinformatics, 16-17 October 2004, IISR, Kozhikode.

Microarray Technology – a potential detection tool, NATP sponsored training programme, 30 September 2004, NRC on Banana, Trichy.

Jacob, T.K

Annual Review meeting of KVKs of Zone VIII, 24-27 September 2004, KVK, Hulkoti, Dharwad, Karnataka.

Kandiannan, K

National Seminar on Coconut, 17-18 July 2004, Coconut Development Board, Bangalore.

Second National Symposium on Alternative Farming Systems: Enhanced income and employment generation options for small and marginal farmers. Farming Systems Research and Development Association, Project Directorate for Cropping Systems Research and ICAR, New Delhi, 16-18, September 2004, Modipuram, Meerut.

National Symposium on Resource Conservation and Agricultural Productivity. Indian Society of Agronomy & Punjab Agricultural University, Ludhiana, 22-25, November 2004, Ludhiana.

Kumar, A

Ginger platform meeting. Directorate of Horticulture, Sikkim, 14-18 June 2004, Gangtok.

Workshop on Agricultural Bioinformatics, 16-17 October 2004, IISR, Kozhikode.

Ramana, K.V

National Nematology Symposium, 17-19 November 2004, UAS, Bangalore.

PLACROSYM XVI, 16-17 December 2004, CPCRI, Kasaragod.

Ravi, S

Workshop-cum-training on livestock and poultry management and disease prevention, 6-10 September 2004, Madras Veterinary College, Chennai.

Rema, J

Workshop on Agricultural Bioinformatics, 16-17 October 2004, IISR, Kozhikode.

Sheeja, T.E

Training on molecular markers (SSR), 16-19 August 2004, CPCRI, Kasaragod.

Bioinformatics and Biotechnology Application in Agricultural Research, 26 September to 16 October 2004, IISR, Kozhikode.

Santhosh J. Eapen

National Nematology Symposium, 17-19 November 2004, UAS, Bangalore.

Intel Business Advantage Seminar, 17 September 2004, Kozhikode.

Suseela Bhai, R

Workshop on 'Vanilla - sustainable solutions', 22 December 2004, Confederation of Indian Industry, Cochin.

Utpala Parthasarathy

PLACROSYM XVI, 14-17 December 2004, CPCRI, Kasaragod.

GUEST LECTURES DELIVERED/PAPERS PRESENTED

Anandaraj, M

'Initiatives for the management of *Phytophthora* problems in horticultural crops'. First Horticulture Congress 2004, 6-9 November 2004, Horticultural Society of India, Delhi.

'Potential Plant Growth Promoting Rhizobacteria for plant disease management'. XIII Southern Regional Conference on Microbial Inoculants, 3-5 December 2004, University of Agriculture Sciences, Dharwad, Bijapur.

'Use of mycorrhiza for managing soil born diseases in spice crops'. Short term training programme on mycorrhiza, 1-10 December 2004, CPCRI, Kasaragod.

'Molecular characterization of *Phytophthora*. National Symposium on crop surveillance, disease forecasting and management. Indian Phytopathological Society & Indian Agricultural Research Institute, 19 February 2004, New Delhi.

'*Phytophthora* research in horticultural crops'. UGC sponsored Refresher Course in Plant Pathology, 22 March 2004, Annamalai University, Annamalai Nagar, Chidambaram.

Anke Gowda, S. J

'Ginger cultivation'. Seminar on ginger cultivation, 19 July 2004, Zuary Industries Limited, Bangalore and Nalkanadu farmer club, Napoklu, Coorg.

'Cardamom and black pepper cultivation'. Seminar on cardamom and black pepper, farmers' meet, 20 September 2004, Spices Board VSSSN Bank and Vikas Vahini Club, Bhagamandala.

'Black pepper cultivation practices'. Seminar on black pepper and vanilla, 5 October 2004, Spices Board and Vevasaya Seva Sahakara Bank, Sampaje.

'Black pepper propagation'. Seminar on black pepper and vanilla, 6 October 2004, Spices Board and farmer's club, Amaldur, Kukujadka.

Devasahayam, S

'Management of insect pests of spices'. Training Programme, Pepper Development Scheme, 25 October 2004, IISR, Kozhikode.

'Management of insect pests of spices'. Training Programme for youth on Good Agricultural Practices of Spices, 28 October 2004, IISR, Kozhikode.

'Management of insect pests of spices'. Training Programme for horticultural officers from North-East India, 4 December 2004, IISR, Kozhikode.

Hamza, S

'Soil and plant nutritions'. Seminar on Sustainable Agriculture, 18 December 2004,

Centre for Overall Development (COD), Thamarasserry, Kozhikode.

'Role of biofertilizers in crop production'. Seminar on Scientific Awareness, 8 December 2004, Darshana Cultural Organization, Chelavoor, IISR, Kozhikode.

Ishwara Bhat, A

'Role of bioinformatics in the plant virus classification and phylogeny', Agri. Bioinformatics Workshop, 16-17 October 2004, IISR, Kozhikode.

'Production of polyclonal antiserum and preparation of immunoglobulin enzyme conjugates'. NATP sponsored training programme, 29 September 2004, NRC on Banana, Trichy.

'Transgenic plants resistant to viruses'-Andhra Pradesh Academy of Science and Technology, 31 August 2004, Nagarjuna University, Nagarjuna Nagar, Guntur, Andhra Pradesh.

John Zachariah, T

'Processing of black pepper'. Officers and Agri. Assistants Training, Dept. of Agril., Govt. of Kerala 27 October 2004, Kannur.

'Post harvest management in spices'. Farmers meet, Dept. of Agril. 16 November 2004, Thalassery.

'Processing and value addition in pepper', 20 November 2004, Dept. of Agril. Govt. of Kerala, Mathil, Payyannur.

Kumar, A. 2004. 'Evaluation of genetic diversity of rhizobacteria obtained from spice crops. Agri. Bioinformatics Workshop, 16-17 Oct. 2004, IISR, Kozhikode.

Mathew P.A., Krishnamoorthy, B. and Rema, J

'Collection, handling and *ex situ* conservation of germplasm of tree spices'. Training for CCPIs of Zone II, NATP, NBPGR RS, 6 October 2004, Thrissur.

Mathew, P.A

'Vanilla cultivation', VW club members, 19 August 2004, KVK, Peruvannamuzhi, Kozhikode

'Tree spices'. Training programme for youth on Good Agriculture Practices of Spices, 27 October 2004, KVK, Peruvannamuzhi, Kozhikode.

'Indigenous technical knowledge with reference to block pepper', In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode.

'Spices in Kerala', Sustainable Agriculture Seminar, 18 December 2004, Centre for Overall Development, Thamarasserry, Kozhikode.

Parthasarathy, V.A. and Kandiannan, K

'Spices under coconut'. National Seminar on Coconut, 17-18 July 2004, Bangalore.

Parthasarathy, V.A., Saji, K.V. and Sasikumar, B

'Achievements in spices crop improvement and future strategies'. First Indian Horticulture Congress, 2004, 6 November 2004, New Delhi.

Rajeev, P

'Vermi compost in crop production', Agriculture Seminar on Scientific Awareness, 8 December 2004, Darshanam Cultural Organization, Chelavoor, IISR, Kozhikode.

Rema, J

'Tree spices - an overview'. III Annual Conference of UPASI Coonoor, 6-7 September 2004, UPASI, Coonoor.

Saji, K.V

'Post collection handling and *ex situ* conservation of black pepper germplasm and wild relatives' Training for CCPTs, Zone II, NATP, NBPGR RS, 6 October 2004, Thrissur.

'Biodiversity Informatics'. Trainees of Bioinformatics and Biotechnology – Applications in Agricultural Research, 26 Sept. to 16 Oct. 2004, IISR, Kozhikode.

Santhosh J. Eapen

'Biology to Bioinformatics - Finding the secrets of life with tiny worms'. 16 August 2004, St. Berchman's college, Changanacherry.

'Bioinformatics - Unravelling the secrets of life'. 23 September 2004, Brennen College, Tellicherry.

'Worms on the web'. Agri Infomatics Trainees, 15-16 October 2004, IISR, Kozhikode.

'Nematode problems in black pepper', 26 October 2004, Agricultural Department, Kozhikode.

'Nematode problems in spices'. Training youth on Good Agriculture Practices of Spices, 28 October 2004, IISR, Kozhikode.

'Nematode Problem in spices and their management'. Hort. officers from North East, 4 December 2004, IISR, Kozhikode.

Sasikumar, B

'Intellectual Property Right'. Trainees of Bioinformatics and Biotechnology Application in Agricultural Research. 26th September 2004 to 16th October 2004, IISR, Kozhikode.

'Post collection handling and *ex situ* conservation of germplasm of turmeric, ginger and their wild relatives', CCPI of Zone II, NATP, 6th October 2004, NBPGR, Regional Station, Thrissur.

'Breeding of black pepper varieties', 27 October 2004, Agricultural officers and Agricultural Assistants, Department of Agri. (Govt. of Kerala), Kannur.

'Varieties of spices'. Training youth on Good

Agriculture Practices of Spices, 26 October 2004, IISR, Kozhikode.

'Spices-myths and truths', 26 October 2004, KVK Panniyur.

'Varieties and breeding of black pepper'. Farmer's training (Dept. of Agril.), 20 November 2004, Kannur.

'Methods of plant transformation'. Trainees of Bioinformatics and Biotechnology Application in Agricultural Research. 26th September 2004 to 16 October 2004, IISR, Kozhikode.

'New generation spices'. Karshakasree Seminar, 20 December 2004, Kodencherry, Kozhikode.

'New generation spices'. Karshokosree Seminar, 21 December 2004, Sulton Battery, Wynad.

Srinivasan, S

'Organic farming in spices'. Agril. Officers and field assistants training, Dept. of Agril., Govt. of Kerala, 27 October 2004, Thaliparamba, Kannur and 25 November 2004, Wynad.

Susheela Bhai, R

'Biocontrol agents in crop protection'. Agriculture Seminar on Scientific Awareness, 8 December 2004, Darshanam Cultural Organization, Chelavoor, IISR, Kozhikode.

Thankamani, C.K

'Establishment and management of black pepper plantations'. Spices production technology training for Horticultural officers of North-Eastern States, 2-4 December 2004, IISR, Kozhikode.

'Organic farming in spices'. Navajeevan Farmer's Club, Muthucad, 18 December 2004, KVK, Peruvannamuzhi, Kozhikode.

Lead Talks

Parthasarathy, V.A

'Improvement of spices', 1st Nat. Hort. Congress, 6-9 November 2004, New Delhi.

Parthasarathy, V.A, Chempakam, B., Kandiannan, K and Srinivasan, V

'Spices in Farming Systems'. Second National Symposium on Alternative Farming System. Enhanced income and employment generation options for small marginal farmers, 16-18, September 2004. Project Directorate of Cropping Systems Research, Modipuram.

PUBLICATIONS

Research Articles

Anuradha Upadhyay, K., Jayadev, R. Manimekalai and Parthasarathy, V.A. 2004. Genetic relationship and diversity in Indian coconut accessions based on RAPD markers. *Scientia Horticulturae*, 99: 353-362.

Aravind, R., Dinu Antony, Santhosh J. Eapen, Kumar, A. and Ramana, K.V. 2004. Isolation and *in vitro* evaluation of endophytic bacteria against root-knot nematodes infesting black pepper (*Piper nigrum* L.). National Nematology Symposium, 17-19 November 2004, UAS, Bangalore (Abstr.), p.55.

Bhat, A.I., Faisal, T.H., Madhubala, R., Hareesh, P.S. and Pant, R.P. 2004. Purification, production of antiserum and development of enzyme linked immunosorbent assay-based diagnosis for cucumber mosaic virus infecting black pepper. *J. Spices & Aromatic Crops*, 13: 16-21.

Bimi, G.M., Anandaraj, M., Kumar, A., Amaldhas, H. and Sarma, Y.R. 2004. Changes in microbial load of black pepper (*Piper nigrum* L.) during processing. *J. Food Sci. Technol.* 41: 77-79.

Geethalakshmi, P. Niral, V. and Parthasarathy, V.A. 2004. Allozyme variation in population of dwarf coconut cultivars. *J. Plant. Crops*, 32:13-15.

Gobinath, P., Murugavel, P. and Chempakam, B. 2004. *In vitro* evaluation of antimicrobial activity of essential oil from black pepper, turmeric and clove. In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode (Abstr.), p.23.

Hamza, S and Sadanandan, A.K. 2004. Comparison of sources and methods of zinc application on yield and quality of black pepper. In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode (Abstr.), p.12.

Hamza, S, Sadanandan, A.K. and Srinivasan, V. 2004. Influence of soil physico-chemical properties on black pepper yield. *J. Spices & Aromatic Crops*. 13: 6-9.

Hareesh, P.S., Sabija, S. and Sasikumar, B. 2004. Ampicillin promotes growth and differentiation of ginger callus. *Phytomorphology*, 54: 35-38.

Hazarika, B.N., Parthasarathy, V. A. and Nagaraju, V. 2004. Influence of *in vitro* preconditioning of *Citrus* species microshoots with sucrose on their *ex vitro* establishment. *Indian J. Hort.* 61: 29-31.

John Zachariah, T, Mathew, P.A. and Gobinath, C.P. 2004. Chemical quality of berries from black pepper varieties grafted on *P. colubrinum*. In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2, November 2004, IISR, Kozhikode (Abstr.), p.32.

Kandiannan, K., Krishnamurthy, K.S., Thankamani, C.K. and Mathew, P.A. 2004.

Variability in black pepper yield during pre-yield stabilization period. In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode (Abstr.), p.8.

Kandiannan, K. and Chandaragiri, K.K. 2004. Production technologies on yield and returns from turmeric. In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode (Abstr.), p.13-14.

Karun, A., Siril, E. A., Radha, E. and Parthasarathy, V.A. (2004). Somatic embryogenesis and plantlet regeneration from leaf and inflorescence explants of arecanut. *Curr. Sci.*, 86:1623-1628.

Kumar, A. 2004. Methods for screening ginger for bacterial wilt-resistance. In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode (Abstr.), p.19.

Kumar, A., and Sarma, Y.R. 2004. Characterization of *Ralstonia solanacearum* causing bacterial wilt of ginger in India. *Indian Phytopath.* 57:12-17.

Kumar, A., Sarma, Y.R. and Anandaraj, M. 2004. Evaluation of genetic diversity of *Ralstonia solanacearum* causing bacterial wilt of ginger using Rep-PCR and PCR-RFLP. *Curr. Sci.*, 87 : 1555-1561.

Leela, N.K., Gobinath, P., John Zachariah, T., Krishnamoorthy, B., Rema, J. and Mathew, P.A. 2004. Chemical evaluation of clonal progenies of Chinese cassia. In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode (Abstr.), p.5.

Mathew, P.A., Rema, J. and Krishnamoorthy, B. 2004. A note on interspecific grafting in *Garcinia*. *Indian J. Arecanut Spices & Medicinal Plants*, 6 : 55-58.

Mrudula Jose, Syamkumar, S. and Sasikumar, B. 2004. Isolation and PCR amplification of genomic DNA from dried capsules of cardamom. In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode (Abstr.), p.2.

Remya, R., Syamkumar, S. and Sasikumar, B. 2004. Isolation and amplification of DNA from turmeric powder. *British F.J.*, 106: 673-678.

Sasikumar, B., Haridas, P., Johnson K. George, Saji, K.V., John Zachariah, T., Ravindran, P.N., Nirmal Babu, K., Krishnamoorthy, B., Mathew, P.A. and Parthasarathy, V.A., 2004. 'IISR Thevam', 'IISR Malabar Excel' and 'IISR Girimunda' - three new black pepper (*Piper nigrum* L.) clones. *J. Spices & Aromatic Crops*, 13: 1-5.

Sasikumar, B., Haridas, P., Johnson George, K., Saji, K.V., and Parthasarathy, V.A. 2004. Phenotypic stability for berry yield in black pepper (*Piper nigrum* L.). *Indian J. agric. Sci.* 74: 279-280.

Sasikumar, B., Syamkumar, S., Remya, R. and John Zachariah, T. 2004. PCR based detection of adulteration in market samples of turmeric powder. *Food Biotech.* 18: 299-306.

Sasikumar, B. and Jayarajan, K. 2004. Phenotypic stability for fresh rhizome yield in turmeric. *JMAPS*, 26: 277-278.

Shanmugam, V., Kumar, A. and Sarma, Y.R. 2004. Survival of *Ralstonia solanacearum* in ginger seed rhizomes stored at different temperature. *Plant Disease Research*, 19: 40-43.

Sheeja, T.E. and Mandal, A.B. 2004. 'In vitro' propagation in *Stevia reubandiana*, In: Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode (Abstr.), p.6.

Srinivasan, V., Hamza, S., Krishnamoorthy, K.S. and Thankamani, C.K. 2004. Threshold level of soil zinc for optimum production of ginger (*Zingiber officinale* Rosc.), *J. Spices & Aromatic Crops* 13 : 55-57.

Suseela Bhai, R., Kishore, V. K., Kumar, A., Anandaraj, M. and Eapen, S. J. 2004. Efficiency of rhizobacterial cultures in managing soft rot disease of ginger. In: *Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1)*, 1-2 November 2004, IISR, Kozhikode (Abstr.), p.20.

Thankamani, C.K., Sreekala, K. and Anandaraj, M. 2004. Effect of *Pseudomonas fluorescens* (IISR-6) and *Trichoderma harzianum* on growth of black pepper varieties in the nursery. In: *Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1)*, 1-2 November 2004, IISR, Kozhikode (Abstr.) p.11.

Tresa, T., Preethi, N., Devasahayam, S. and Koya, K.M.A. 2004. Evaluation of plant materials for mass multiplication of root mealy bug infesting black pepper in the laboratory. In: *Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1)*, 1-2 November 2004, IISR, Kozhikode (Abstr.), p.23.

Utpala Parthasarathy, Kumaran, P.M. and Das, M. M. 2004. Application of satellite imagery to identify vegetation types. *J. Plant. Crops (Suppl.)*, 32: 229-231.

Utpala Parthasarathy, Bhat, A.I., Devasahayam, S., Jayarajan, K., Shareef, B.H.A. and Parthasarathy, V. A. 2004. GIS studies on the influence of environmental factors on stunted disease of black pepper. In: *Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1)*, 1-2 November 2004, IISR, Kozhikode (Abstr.), p.18.

Popular Articles

Anke Gowda, S.J. 2004. Cardamom planting and its agronomic practices. *Spice India (Kannada)*, 17(5): 24-27.

Anke Gowda, S.J. 2004. Soil and water conservation practices in cardamom cultivation. *Spice India (Kannada)*, 17(6): 6-7.

Anke Gowda, S.J. 2004. Cultivation practices in ginger. *Spice India (Kannada)*, 17(7): 25-28.

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AWARDS/HONOURS

Best Ph.D. Thesis Award

Indian Society of Agronomy, New Delhi awarded best Ph.D Thesis award to **Dr. K. Kandiannan**, Sr. Scientist for his thesis entitled 'Influence of

varieties, time of planting, spacing and nitrogen levels on growth simulation modeling and yield forecast in turmeric', done at TNAU, Coimbatore.

Dr. Alapatti Prasada Rao Award

Tresa, T., Preethi, N., Devasahayam, S. and Koya, K.M.A. have bagged the above poster awarded for the poster paper entitled 'Evaluation of plant materials for mass multiplication of root mealy bug infesting black pepper (*Piper nigrum* L) in the laboratory' presented in the Symposium on Commercialization of Spices, Medicinal and Aromatic Crops (SYMSAC-1), 1-2 November 2004, IISR, Kozhikode.

Institute Awards – 2004

Awards of Excellence instituted for administrative, technical and supporting staff of the institute below the pay scale of Rs. 5500-9000 from the interest amount of the best ICAR Institute Award bagged by the Institute, for the year 2004 are received by the following staff members.

Supporting staff (two awards)

1. - **Mr. P.K. Belliappa**, IISR, CRC, Appangala, Coorg
2. **Mr. T. Ahammed Koya**, IISR, Kozhikode

Administrative staff (one award)

Mr. R.N. Subramanian, IISR, CRC, Appangala, Coorg.

The award carries a cash prize of Rs.1000, a certificate and a plaque.

Jawaharlal Nehru Award

Dr. R. Ramakrishnan Nair, Sr. Scientist, IISR, Kozhikode has bagged Jawaharlal Nehru Award for post graduate research in agriculture for the year 2003.

Scientific Session Chairing

Mr. B. Krishnamoorthy, Head, I/C, Division of Crop Improvement & Biotechnology chaired Technical Session I - **Biotechnology and Genomics** in the DBT sponsored workshop Agri Informatics

2004 (15-16 October 2004) organized by Bioinformatics centre, IISR, Kozhikode.

Dr. V.A. Parthasarathy chaired a session on 'Commercialization-case studies', Director's Workshop on Commercialization of Technologies, NAARM, 2 December 2004.

Dr. V.A. Parthasarathy elected as the Member, Editorial Committee, *Indian J. Hort.* & Fellow of Horticultural Society of India.

Dr. K.V. Ramana, chaired Crop Protection Session, **PLACROSYM XVI**, 16 December 2004, CPCRI, Kasaragod.

TRANSFER OF TECHNOLOGY

Consultancy

Dr. K. Kandiannan, Sr. Scientist (Agron.) gave consultancy service on 'Possibilities of intercropping black pepper in tea gardens', to M/s. Parry Agro Industries Limited, Iyerpadi, Valparai, Coimbatore (Dt.), Tamil Nadu, July, 2004.

Extension pamphlet

'Bioinformatics at IISR, Kozhikode'. (Ed.), Santhosh J. Eopen, p. 3.

Radio talks

Santhosh J. Eopen

Nematode problems of black pepper in Wynad. 14 August 2004, AIR, Kozhikode.

Prakash, K.M

Propagation methods for pepper. 8 November 2004, AIR, Kozhikode.

Training

Trained one Mali from District Agricultural Farm, Kozha on nutmeg grafting at IISR farm, Peruvannamuzhi on 25 September 2004.

Success stories of spices varieties

The IISR ginger varieties Varada, Mahima and Rejatha are becoming more and more popular. The TAR-IVLP success stories compendium brought out by the Agro Ecosystem Directorate (Coastal), Central Tuber Crops Research Institute, Thiruvananthapuram and *Spice India* 17(9): 2004 carried success stories of the varieties.

Expert System Developed

Expert system (Soil Lab) for fertilizer recommendation to major spices, plantation and some vegetable crops was developed based on soil test results by Srinivasan, V., Hamza, S and Jayarajan, K.

Software on Soil Lab

A software for soil status based nutrient recommendations was developed by Srinivasan, V., Hamza, S. and Jayarajan, K.

MIDTERM SRC-2004

The midterm review of research projects (Staff Research Council) of the Indian Institute of Spices Research, Kozhikode was held between 29 and 30 November 2004 at Silver Jubilee Hall, IISR, Kozhikode under the chairmanship of Dr. V.A. Parthasarathy, Director, IISR, Kozhikode. The 41 institute projects, 22 externally funded projects and 9 Ph.D programme under various Divisions were reviewed during the meeting. Recommendations of Research Advisory Committee (RAC) and Quinquennial Review Team (QRT) were discussed and Action Taken Report was presented by Heads of the Divisions. The institute research programmes were fine-tuned in the light of RAC and QRT recommendations.

IISR LENDS SUPPORT TO THE CENTRAL DROUGHT ASSESSMENT TEAM

The Institute provided technical support and information to the central team on drought

headed by the Joint Secretary (Agrl.), Govt. of India, during their recent visit to the drought affected districts of Kerala. The Institute scientists, Drs. M. Anandaraj, K.S. Krishnamurthy, K. Kandiannan and V. Srinivasan prepared a report on 'Impact of drought on black pepper production in Kerala' and submitted to the team. The scientists also accompanied the team to field for spot assessment of drought-affected black pepper gardens.

KVK Roundup

A total of 49 training programmes of varying duration on topics such as goat rearing, bush pepper production, embroidery, vermicomposting, fresh water fish culture, bee keeping, vanilla processing, poultry, dairy animal management, fabrication and installation of microsprinkler, plant propagation were organized by KVK.

KVK also organized 5 seminars viz., vanilla cultivation and processing, bee keeping, organic farming, black pepper production technology and Anthurium cultivation and prospects.

A total of 420 farmers visited KVK during the period.

FLD Programme

Under field level demonstrations, 5 demonstrations in drought management of coconut, 3 in high density planting of tissue cultured Nendrabanana, 102 in egg production by using commercial hybrid layer chicken were carried out.

OFT Programme

Under OFT Programme, 2 onfarm testing in horticultural crops are conducted.

IMC

The 5th meeting of the 4th Institute Management Committee was held on 15 December 2004 at IISR, Kozhikode under the Chairmanship of Director, IISR, Kozhikode.

SYMSAC-1

Indian Society for Spices has adapted the new acronym for its symposium – Symposium on Spices and Aromatic Crops (SYMSAC). The first symposium was held at the Silver Jubilee Hall of IISR, Kozhikode during 1-2 November 2004. Prof (Dr.) K.V. Peter, Vice Chancellor, Kerala Agricultural University inaugurated the Symposium.

Dr. V.S. Korikanthimath, President, Indian Society for Spices briefed about the symposium and also some of the forthcoming programmes of the society.



Dr. K.V. Peter, Vice Chancellor, Kerala Agricultural University inaugurating the SYMSAC-1 by lighting the lamp. Also seen are (L→R) Dr. K.V. Ramana, Project Coordinator (Spices), Dr. T.J. Zachariah, Secretary, Indian Society for Spices and Dr. V.S. Korikanthimath, President, Indian Society for Spices.

Chief guest Dr. K.V. Peter presented the Dr. J.S. Pruthi Award for best paper published in Volume 12 of Journal of Spices and Aromatic Crops to Dr. (Mrs.) K.P.M., Dhamayanthi, now Sr. Scientist, CICR RS, Coimbatore.

Dr. T. John Zachariah, Organizing Secretary, SYMSAC-1, proposed vote of thanks.

IJSC

As per the provision contained in article 11 of the Joint Council Scheme of the ICAR, the VI

IJSC (2004-2007) of this Institute was constituted with effect from 2-8-2004 with the following members.

Dr. V.A. Parthasarathy, Director Chairman; Dr. R. Dinesh – Secretary (official side), Dr. M.N. Venugopal, Dr. T.K. Jacob, Dr. A.K. Johny (all official side members); Mr. M.K. Sachidanandan – Assistant Finance and Accounts Officer; Mr. A.P. Sankaran - Assistant Administrative Officer; Mr. V.P. Sankaran – Secretary (staff side); Mr. C. Ramesh Babu, Mr. V.C. Sunil, Mr. L. Balakrishna, Mr. B.T. Velayudhan, Mr. B.M. Chenniappa (all staff side members).

The first meeting of the VI IJSC was held at IISR, Kozhikode on 17 September 2004.

NEW PROJECTS SANCTIONED

Cloning of *Phytophthora* resistance and defense genes from *piper colubrinum* (ICAR).

Strengthening the cause of geographical indication appellation of major spices using molecular and quality profiling techniques (ICAR).

Molecular characterization and maintenance of national repository of *Phytophthora* (ICAR).

Preservation and management of mycotoxins in commercially important agricultural commodities (ICAR Network project).

VIGILANCE AWARENESS WEEK

Vigilance Awareness Week was celebrated during 1-6 November 2004. The celebrations started with the administering of the pledge by the Director, IISR to the staff members. Slogan writing competition in English, Hindi, Malayalam, Tamil, Kannada and Telugu was held among the staff members. Mr. T.C. Jose, IRS, Joint Commissioner, Customs and Central

Excise, Kozhikode was the Chief Guest in the valedictory function.

HINDI CELL

Two Official Language Implementation Committee meetings were conducted during July - December 2004. A separate IISR Spices News (in Hindi) was brought out during Hindi Week Celebrations of 2004. Hindi Week was celebrated from 14th to 25th September 2004. During this period various competitions like essay writing, noting and drafting, elocution, extempore speech, paragraph reading, song etc were conducted besides a workshop. Discussion programme on drafting and evidence sub-committee of the committee of Parliament on Official Language with the Chairman and members of the Town Official Language Implementation Committee, Kozhikode were held on 28.12.2004.

NEWS FROM BIO INFORMATICS CENTRE

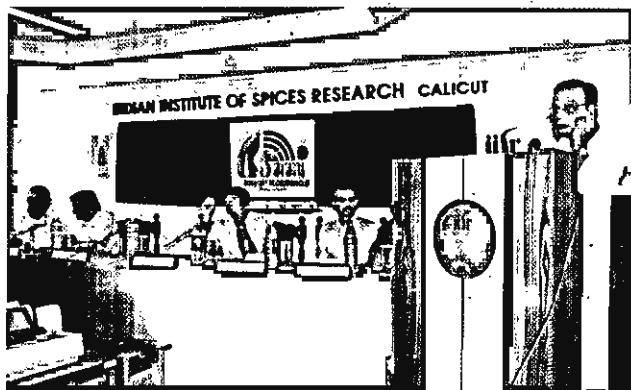
The Bioinformatics Centre has organized two major training programmes sponsored by DBT, New Delhi. The first programme was an intensive training programme of 21 days duration titled 'Bioinformatics and Biotechnology – Applications in Agriculture Research' held during 26 September to 16 October 2004. Nine scientists/teaching faculty from different research organizations /universities took part in the training.

'Agri-Informatics 2004' was a two day workshop held during 15-16 October 2004 to deliberate on the role of Bioinformatics in Agriculture. Apart from the scientists and research fellows of the institute, 38 delegates (including invitees and trainees) took part in this workshop.

ICAR FOUNDATION DAY

ICAR Foundation Day was celebrated on 24 July 2004. Dr. E.J. James, Executive Director,

CWRDM, Kozhikode was the chief guest. IISR Awards of Excellence were also distributed on this occasion.



Dr. E.J. James, Executive Director, CWRDM, Kozhikode delivering the Foundation Day address. Also seen are (R->L) Mr. R. Senthil Kumar, Dr. V.A. Parthasarathy, Dr. K.V. Ramana and Dr. K.N. Kurup.

SADBHAVANA DIWAS & COMMUNAL HARMONY FORTNIGHT

The Sadbhavana Diwas and Communal Harmony Fortnight were observed at the Institute during 20 August to 5 September 2004. All the staff members took the Sadbhavana Pledge on 20 August 2004. D. V. Rajagopal, Director, CPCRI, Kasaragod was the chief guest. During the fortnight various competitions and cultural programmes were organized by SARANI (IISR Staff Recreation Club). Dr. M.M. Basheer, renowned Malayalam litterateur was the chief guest for the closing ceremony held on 3 September 2004. Onam, the harvest festival of Kerala was also celebrated with a traditional 'Onam Sadya' and 'Pookalam Competition' on 25 August 2004 by SARANI.

PERSONNEL

Promotions

Name	Promoted to	w.e.f
Dr. N.K. Leela	Sr. Scientist	20-05-2003
Dr. (Ms) E. Jayasree	Scientist (Sr. Scale)	15-12-2003
Dr. Santhosh J. Eapen	Sr. Scientist	27-01-2004
Dr. Minoo Divakaran	Technical Assistant (T4)	05-03-2004
Mr. K.V. Saji	Scientist (SG)	12-04-2004
Mr. H.C. Ratheesh	Driver (T2)	16-06-2004

Retirement

Mr. P.K. Belliappa, SS Grade III, Watchman, CRC, Appangala retired on 31 December 2004.

Editor: Dr. B. Sasikumar, Members: Dr. Johny Kallapurackal and P.A. Sheriff, IISR, Kozhikode.

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