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TRANSFER TECHNOLOGY FOR TRANSFORMING AGRICULTURE

Transformation of Indian agriculture is possible only through effective transfer of technology, says Padmabhushan Dr. R. S. Paroda, Director General, Indian Council of Agricultural Research and Secretary, Dept. of Agriculture Research and Education, Govt. of India. Transfer of Technology should be given the same importance as for the development of technology; farmers should directly benefit out of research, then only agriculture in the country can further prosper; Krishi Vigyan Kendra (KVKs) can play a crucial role in this regard, added the Director General.

Dr. Paroda was inaugurating the Krishi Vigyan Kendra's new block at Peruvannamuzhi. The Krishi Vigyan Kendra, Peruvannamuzhi established in 1992 and attached to the Indian Institute of Spices Research, Kozhikode is one among the nine KVKs now functioning in Kerala out of the 161 KVKs in the country. The KVK Peruvannamuzhi imparts training in Agronomy, Animal husbandry, Horticulture, Home science, Fisheries and Plant Protection.



Dr. R. S. Paroda inaugurating the KVK's new block at Peruvannamuzhi



Indian Institute of Spices Research
P.B. No: 1701; Marikunnu P.O; Kozhikode - 673 012, Kerala

RESEARCH HIGHLIGHTS

Pre-treat rock phosphate for better solubility

Incubating rock phosphate (Rajphose) with FYM for a week before application increases its recovery and agronomic efficiency as reflected in the yield of ginger and turmeric in the acid soils of Peruvannamuzhi, Kozhikode.

Soil nutrients buffer power

The nutrients buffer power values of major pepper growing soils viz., Ambalavayal, Thamarassery and Peruvannamuzhi with respect to zinc were worked out as 3.5, 1.58 & 0.73, respectively.

Biochemical basis of nematode resistance

Monitoring of biochemical changes in nematode susceptible (Panniyur 1) and tolerant ('Pournami') black pepper lines after inoculation of *Meloidogyne incognita* indicated a hypersensitive reaction of the host as reflected in the lower activities of the scavenging enzymes like superoxide dismutase, peroxidase and catalase, while polyphenol oxidase showed a consistently higher activity. Tolerant lines had lower amino acid levels which also accounted for the incompatibility of the host.

High quality cassia cinnamon

Twenty five Chinese cassia accessions were analyzed for bark oil, bark oleoresin and leaf oil. The bark oil ranged from 1.2 to 4.9% and leaf oil from 0.4 to 1.61%. The bark oleoresin varied from 6-10.5%. Accessions D1, D3 and D5 had high bark oil and A₁ and C₁ possessed maximum bark oleoresin.

High gingerol ginger line

An accession of ginger rich in 6 gingerol, the major pungent principle in ginger oleoresin is identified.

Organization of ginger and turmeric germplasm based on isozyme

Phenetic analysis of ginger and turmeric germplasm based on isozyme profiles revealed a geographical/genetic basis in these crops. Isozyme study of ginger and turmeric germplasm has also revealed several identical accessions (duplicates).

New database for cataloguing spices

A database programme for cataloguing germplasm of spices is developed at IISR using MS Access 97.

Garcinia germplasm.

Garcinia collection at IISR is enriched with the addition of new species like *G. xanthochymas*. New collections of *G. gummi-gutta* (Syn. *G. cambogia*) (9) and *G. indica* (1) were also made.

Vanilla

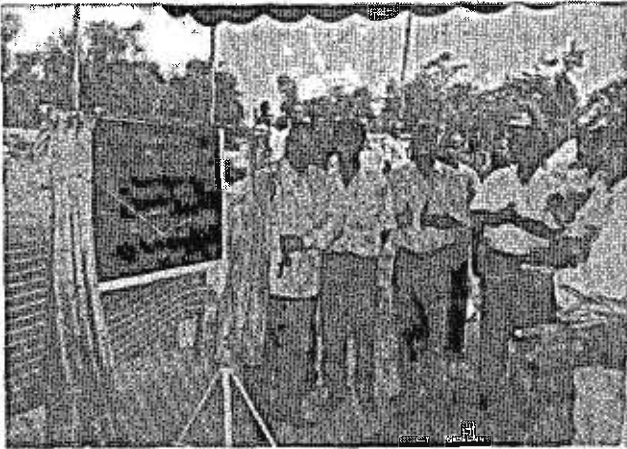
Vanilla aphylla is not existing in India? One of the leafless forms of vanilla maintained at some research institutes in India may be *V. vatsalae* and not *V. aphylla*, as believed.

Foot rot disease tolerant black pepper

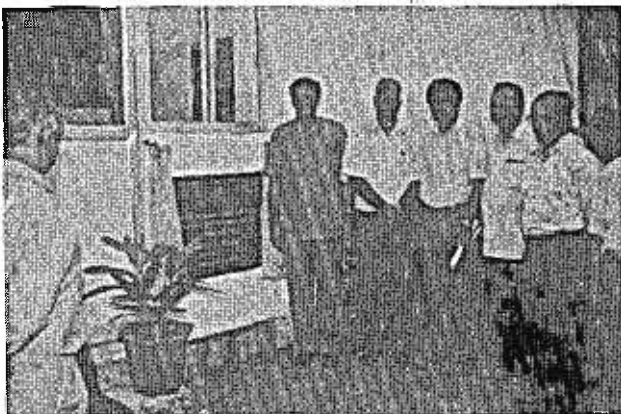
A black pepper cultivar highly tolerant to foot rot disease under field conditions is identified from a collaborative study between IISR, Kozhikode and Tata Tea Ltd., Valparai. A clone of Neelamundi, this cultivar gives an average yield of 4.25 kg fresh berries/vine at the third year, in a highly disease affected area of Valparai (Tata Tea Ltd.)

DR. R. S. PARODA AT IISR, KOZHIKODE

Padmabhushan Dr. R. S. Paroda, Director General, ICAR and Secretary, DARE, visited IISR, Kozhikode on 7th December, 1998. He addressed farmers and staff at Peruvannamuzhi. Dr. P. Das, DDG(Extn.) presided over the meeting, Dr. K. Gopakumar, DDG, (Fisheries), Dr. M. Devaraj, Director, CMFRI, Cochin and Dr. D. Pushkaran, Director of Extension, KAU, Thrissur also participated.



Dr. R. S. Paroda inaugurating the residential complex of KVK at Peruvannamuzhi. Mr. Abubacker Koya, (Farm Supdt) Dr. K. V. Peter (Director) and Dr. P. Das (DDG, Extn.) are also seen.

SPICES INFORMATION CENTRE AT IISR, KOZHIKODE

Dr. S. L. Mehta (DDG, Edn.) immediately after the inauguration of the informatic centre, Dr. K. V. Peter, Mr. P. A. Sheriff, Mr. Balan Nair and Dr P. N. Ravindran are also seen.

The National Informatic Centre for Spices, a facility for documenting information on spices was inaugurated on 28th November, 1998 at IISR, Kozhikode by Dr. S. L. Mehta, DDG (Education), ICAR, New Delhi.

NATIONAL SYMPOSIUM ON SPICES, MEDICINAL AND AROMATIC PLANTS (NS-SMAP)

The Golden Jubilee National Symposium on Spices, Medicinal and Aromatic Plants (NS-SMAP): Biodiversity, Conservation and Utilization was held during 10-12 August, 1998 at the Regional Science Centre, Kozhikode. The symposium marked the golden jubilee of ICAR and was jointly organized by ICAR, Indian Society for Spices and Regional Science Centre, Kozhikode.

The Symposium was inaugurated by Dr. K. N. Shyamasundaram Nair, Vice Chancellor, Kerala Agricultural University and presided over by Dr. S. P. Ghosh, Deputy Director General (Hort.) ICAR, New Delhi. About 250 delegates participated in the symposium and 73 papers were presented in four sessions.

TECHNOLOGY MISSION IN BLACK PEPPER

A Govt. of Kerala sponsored programme to promote and increase the productivity of black pepper in Kerala to an anticipated level of 600 kg ha⁻¹ and the production to 1.12 lakh tonnes by 2002 has started. To achieve the target, separate mini mission programmes under research, production, storage, marketing and quality improvement and export promotion are envisaged with a budget of outlay of 221.62 crores over a period of seven years, starting from 1997-98 onwards. The research component of

the programme (mini mission-1) has a budget outlay of 15.39 crores for seven years period with the following objectives.

- To identify and popularize high yielding local/released varieties.
- To evolve technology for sustainable production
- To develop cost effective technology for disease management
- To develop cost effective Integrated Plant Nutrient Management (IPNM) system and Integrated Plant Disease Management (IPDM).

The research activities are proposed to be undertaken by IISR, Kozhikode; KAU, Trissur and RRL, Thiruvananthapuram. The research activities on varietal improvement, production, protection and nucleus planting material production are to be carried out by IISR and KAU while RRL will be carrying out the research on storage and quality control. The research work of KAU will be taken up in the districts of Idukki, Kottayam, Pathanamthitta, Kollam and Ernakulam, whereas activities of IISR will be confined to the northern districts of Kerala viz., Kozhikode, Kannur, Kasaragod and Wayanad. The research activities proposed to be undertaken through IISR in the northern districts are:

I Varietal Improvement

- i) Identification of location specific varieties
- ii) Identification of low input responsive varieties for sustainable production.

II Crop Production

- i) Use of organic/biofertilizers for yield and quality of black pepper
- ii) Standardization of low input technology for yield and quality of black pepper

III Crop Protection

- i) Incorporation of biocontrol agents in nursery against *Phytophthora* disease
- ii) Use of biocontrol agents for checking *Phytophthora* disease (at field level)

IV Nucleus planting material production

- i) Standardization of rapid methods for generating planting material of high yielding varieties (HYV's) of black pepper

WOMEN'S CELL

The Women's cell at IISR, Kozhikode was inaugurated on 18th November, 1998 by Mrs. M. M. Padmavathy, Hon. Mayor of Kozhikode in a function presided over by



Mrs. M. M. Padmavathy inaugurating the Women's Cell. Dr. K. V. Peter, Mrs. Indira Krishnakumar and Dr. (Mrs) B. Chempakam are also seen.

Mrs. Indira Krishna Kumar, PMG, Northern Circle, Kerala. Dr. (Mrs.) B. Chembakam, Sr. Scientist at IISR, Kozhikode is the convenor of the cell.

PUBLICATIONS

Research Articles

John Zachariah, T. and Sasikumar, B. 1998. Variability of oil, oleoresin and other components in selected ginger accessions. Proc. National Sem. Potential Aromatic Plants of India, Exploration and Utilization, 30-31 July, 1998, RRL, Bhubaneswar. p. 55. (Abstract).

John Zachariah, T., Chempakam, B. and Sasikumar, B. 1999. Crude fibre estimation in ginger- A retrospect, National Symposium on Analytical Techniques. Organized by Indian Soc. of Analytical Scientists, Nov 24-25, 1998, Bangalore.

John Zachariah, T., Sasikumar, B and Peter, K. V. 1999. Salted ginger for export - Identifying suitable lines. 4th Agricultural Science Congress, Feb 20-24, 1999, Jaipur.

John Zachariah, T., Sasikumar, B and Nirmal Babu, K. 1998. Diversity for quality components in ginger and turmeric germplasm and interaction with environment. Golden Jubilee National Symposium on Spices, Medicinal and Aromatic Plants - Biodiversity, Conservation and Utilization, 10-12 Aug, 1998, Kozhikode.

Krishnamoorthy, B. Rema, J. and Mathew, P. A. 1998. Tree spices biodiversity, conservation and utilization. Golden Jubilee National Symposium on Spices, Medicinal and Aromatic plants:

Biodiversity, Conservation and Utilization. 10-12, August, 1998. Kozhikode.

Markose Baby Lissy., Abdul Wahab, Rajan, S. and Peter, K. V 1998. Development of a near isogenic line of chilli for field resistance of bacterial wilt. ACIAR Bacterial Wilt News Letter, No. 15 : 5-6.

Nirmal Babu, K., Minoo, D., Geetha, S. P., Samsudeen, K., Rema, J., Ravindran, P. N. and Peter, K. V. 1998. Plant Biotechnology - Its role in improvement of spices. Indian J. Agric. Sci. 68(8) : 533-547.

Peter, K. V. 1998. Spices Research. Indian J. Agric. Sci. 68(8): 527-532.

Rajeev, P., Sasikumar, B. and Saji, K. V. 1998. *In vitro* conservation of medicinal plants species by the 'Kurichair' tribe in Wayanad district: An analysis of intitution and institutional changes. Golden Jubilee National Symposium on Spices, Medicinal and Aromatic Plants: Biodiversity, Conservation and Utilization. 10-12 Aug, 1998, Kozhikode.

Ravindran, P. N., Nirmal Babu, K., Sasikumar, B and Johnson K George and Saji, K. V. 1998. Genetic resources of black pepper in India and its conservation. Golden Jubilee National Symposium on Spices, Medicinal and Aromatic Plants: Biodiversity, Conservation and Utilization 10-12 Aug. 1998, Kozhikode.

Rema, J and Krishnamoorthy, B. 1998. Effect of packing materials and storage of scions on graft success in nutmeg (*Myristica fragrans* Hout.). J. Spices and Aromatic Crops. 7(2) : 147-148.

- Sadanandan, A. K. and Hamza, S. 1998. Effect of organic farming on nutrient uptake, yield and quality of ginger (*Zingiber officinale*) Proc: National Seminar on Water and Nutrient Management for Sustainable Production and Quality of Spices (Eds). Sadanandan, A. K. et al., IISR, Kozhikode 5-6 Oct. 1997, pp 89-94.
- Sadanandan, A. K. and Hamza, S. 1998. Effect of organic farming on yield and quality of spices in India (Abst). 16th World Congress of Soil Sciences. Montpellier, France, 20-26, Aug, 1998, p-738.
- Sadanandan, A. K. and Hamza, S. 1998. Effect of organic manure's on nutrient uptake, yield and quality of turmeric (*Curcuma longa* L.) In : Development in Plantation Crops Research (Eds) Mathew, N. M. and Kuruvilla Jacob, C. Allied Publishers Limited, New Delhi. pp 175-181.
- Sadanandan, A. K. and Hamza, S. 1998. Studies on heavy metal residues due to continuous application of rock phosphate for sustainable black pepper : National Symposium on "Combating Pollutants Accumulation in Ecosystem for Sustainable Agriculture" 27th - 28th Oct. 1998. Allahabad Agricultural Institute, Allahabad - P - 8 (Abstract) (Adjudged as best paper).
- Sadanandan, A. K. and Hamza, S. 1998. Studies on nutritional requirement of bush pepper (*Piper nigrum* L.) for yield and quality. In : Development in Plantation Crops Research (Eds) Mathew N. M. and Kuruvilla Jacob, C. Allied Publishers Limited. New Delhi. pp 223-227.
- Sadanandan, A. K., Hamza, S., Bhargava, B. S. Ragupathi, H. B. 1998. Diagnosis and Recommendation Integrated System (DRIS) norms for black pepper (*Piper nigrum* L.) growing soils of South India. PLACROSYM - XIII Dec, 16-18, 1998, Coimbatore. P. 27 (Abstract).
- Sadanandan, A. K., Kandiannan, K. and Hamza, S. 1998. Soil Nutrient and Water Management for Sustainable Spice Production. In Proc. National Seminar on Water and Nutrient Management for Sustainable Production and Quality of Spices (Eds). Sadanandan A. K. et al., IISR, Kozhikode. 5-6 Oct., 1997, pp. 12-20.
- Sadanandan, A. K., Srinivasan, V. and Hamza, S. 1998. Agronomic efficacy of rock phosphate source on ginger and turmeric in ustic humitropept. National Seminar on Development in Soil Science - 1998. 16-18th Nov. 1998. CCS Haryana Agricultural University, Hissar.
- Sajna, A., Mini, P. M., John C. Zacharia., Nirmal Babu, K., Ravindran, P. N. and Peter, K. V. 1998. Micropropagation of large cardamom (*Amomum subulatum* Roxb.) J. Spices and Aromatic Crops, 6(2) : 145-148.
- Santhosh J. Eapen., Ramana, K. V., Sasikumar, B and Johnson K. George, 1998. Screening ginger and turmeric germplasm for resistance against root knot nematode. National Symposium on Recent Approaches in Nematode Management for Sustainable Agriculture. Nov. 23-25, 1998 p. 55. Anand, Gujarat.
- Sasikumar, B, Chembakam, B, Johnson K. George, Remasree, A. B., Devasahayam, S., Dhamayanthi, K. P. M., Ravindran, P. N. and Peter, K. V. 1999. Characterization of two interspecific hybrids of *Piper*. J. Hort. Sci. & Biotech. 74 : 125-131.

Sasikumar, B., John Zacharia, T and Shamina, A. 1998. Characterization of ginger germplasm based on isozyme polymorphism. PLACROSYM - XIII, Dec 16-18, 1998, Coimbatore, P. 34. (Abstract.)

Sasikumar, B., Ravindran, P. N. and Peter, K. V. 1998. Genetic resources of ginger and its conservation in India. Golden Jubilee National Symposium on Spices, Medicinal and Aromatic plants - Biodiversity, Conservation and Utilization, 10-12 Aug, 1995, Kozhikode.

Shamina, A., John Zacharia, T., Sasikumar, B. and Johnson, K. George. 1998. Biochemical variation in turmeric [*Curcuma longa* Lin.]. accessions based on isozyme polymorphism. *J. Hort. Sci. & Biotech.* 73 : 479-483.

Sheela, K. B., George, T. E. and Peter, K. V. 1998. Studies on floral biology of bell pepper (*Capsicum frutescens*). Silver Jubilee National Symposium - Emerging Scenario in Vegetable Research and Development, 12-14, December, 1998. P 11. (Abstract).

Popular Articles

John Zachariah, T. 1998. Medicinal value of spices. *Spice India (Mal.)* 11(7) : 19.

John Zachariah, T. 1998. Harvesting and processing of ginger and turmeric. *Karshakashree (Mal.)* December, 1998, P. 30-33.

Johny A. K. 1998. "Amba" - the first variety in mango ginger. *Spice India (Mal.)* 11(8) : 22.

Johny, A. K. 1998. Production of black pepper rooted cuttings, *Karshakan (Mal.)* July, 1998. 53-54.

Johny, A. K. 1998. Rapid multiplication of high quality black pepper planting material, *Karshakan (Mal.)* 7 : 45-46.

Krishnamoorthy, B. 1998. Cassia. *Spice India (Tamil)*. 11 (4) : 2-4

Krishnamoorthy, B. 1998. Biodiversity and conservation of spices & medicinal plants. A Report of the National Symposium : Kerala *Karshakan (Mal.)* 44 (1) : 5-6.

Krishnamoorthy, B. 1998. Important diseases of black pepper. *Spice India (Tamil)* 11 (12) : 16-18.

Krishnamoorthy, B. 1998. Saffron. *Spice India (Tamil)*, 11(8) : 17-19 & 21.

Krishnamoorthy, B. 1998. Conservation of allspice germplasm. *ICAR News*, 4 (2) : 6-7.

Peter, K. V. 1998. A success story - Farmers technology to boost cardamom productivity, *Indian Hort.* 431 : 20-22.

Peter, K. V. and Sasikumar, B. 1997. Spices. *Silver Jubilee Souvenir. Ind. Soc. Plantation Crops.* 105-115.

Sasikumar, B. 1998. Lessons not of less importance - Biopiracy. *Indian Spices*, 35(1) : 6-7.

Sasikumar, B. 1998. Biotechnology research makes strides - opposition also increases. *Karshakashree (Mal.)* July 1998. P. 54-55.

Sasikumar, B. 1998. Black turmeric. *Spice India (Mal.)*, 11(9) : 21.

Sasikumar, B. 1998. Farmer's right in jeopardy, *Karshakan (Mal.)*. October, 1998, p. 63.

Sasikumar, B. 1998. Garlic. *Spice India*, (Mal.) 11(2): 6-7.

Sasikumar, B. 1998. Lang pepper - not a lone species. *Indian Spices*, 359(3) : 2.

Sasikumar, B. 1998. Many turmeric in the disguise of 'Kasturi' turmeric. *Spice India* (Mal.) 11(6) : 11.

Sasikumar, B. 1999. Medicinal plants used in the treatment of jaundice. *Karshakasree*, (Mal.) January 1999. P 54-55.

Sasikumar, B. 1998. Of *Piper* and gardening. *Indian Spices*, 35(2) : 6.

Technical publications

AICRPS Research Highlights. 1997-98. (Eds.) Sadanandan, A. K. & Johny, A. Kallupurakal, IISR, Kozhikode.

IISR Annual Report. 1997. (Eds.) T. John Zacharia & Santhosh J. Eapen, IISR, Kozhikode.

PARTICIPATION IN SYMPOSIUM/SEMINARS

A. K. Sadanandan

Technology Mission on the Integrated Development of Horticulture in the North - Eastern Hills Region. Presented a paper on 'Status Research on spices and future thrust with special reference to NE Hill Region Shillong 6-7 July, 1998.

B. Chembakam

Aromatic Industry at Cross Roads IIHR, Bangalore. 24th July, 1998.

T. John Zachariah

Potential Aromatic Plants of India. Exploration

& Utilization, RRL, Bhubaneswar, Orissa, 30-31 July, 1998.

M. S. Madan

Workshop on ARIS. NBPGR, New Delhi. 17-18 August, 1998.

K. P. Prabhakaran Nair.

16th World Soil Science Congress. Presented an invited research paper, 'The nutrient buffer powder concept - a conceptual change for precise quantification of nutrient bioavailability'. 20-26 Aug. 1998, Montpellier, France.

Rajendra Hegde and S. J. Anke Gowda

Workshop on Western Ghats Forestry Project - Phase II, Karnataka Forest Department, Madikeri 27th October, 1998.

K. V. Peter

One day Workshop on Plant Biotechnology, CTCRI, Thiruvananthapuram 28th October, 1998.

V. Sreenivasan

Sixty third annual convention of Indian Society of Soil Science. Presented two papers (1) Kinetics of potassium transformation - a mechanistic model. (2) Agronomic efficacy of rock phosphate sources in yield and quality of ginger and turmeric in an ustic huncrocept. 16-19 November, 1998.

T. John Zachariah

XIII National Symposium on Analytical Techniques : 24-25, November, 1998. Bangalore.

K. V. Ramana & Santhosh J. Eapen

National Symposium and Rational Approaches in Nematodes Management for Sustainable Agriculture, 23-25 November, 1998, Anand, Gujarat.

J. Jayarajan

Basic & prospective application of ARIS hardware & linux network operating system, 23-27 November, 1998, Anand, Gujarat.

V. S. Korikanthimath, K. Kandiannan, Rajendra Hegde

First International Congress, 23-25, November, 1998, New Delhi.

A. Kumar

International symposium on microbial biotechnology for sustainable development and productivity, 14-16 November, 1998, Jabalpur, Madhya Pradesh.

K. V. Peter

Silver Jubilee National Symposium on Emerging Scenario in Vegetable Research and Development, 12-14 Dec. 1998, P. D. V. R., Varanasi.

K. V. Peter., P. N. Ravindran., A. K. Sadanandan, Y. R. Sarma, K. V. Ramana, V. S. Korikanthimath, B. Chembakam, M. Anandaraj, John T. Zachariah, B. Sasikumar, Santhosh J Eapen, M. S. Madan, K. Kandiannan, R. Hegde, K. S. Krishnamoorthy, P. Padmini, and S. Hamza

PLACROSYM XIII, 15-18 December, 1998, Coimbatore, Tamil Nadu.

S. Devasahayam

International Conference on Pest and Pesticide Management for Sustainable Agriculture, 11-13 December, 1998, Kanpur, UP.

B. Krishnamoorthy

Hindi Workshop, 25-28, December, 1998, NAARM, Hyderabad.

RESEARCH ADVISORY COMMITTEE (RAC)

The Research Advisory Committee of IISR, Kozhikode has been reconstituted with Prof. V. L. Chopra, National Professor, as the Chairman. Dr. T. N. Ananthakrishnan, Dr. A. M. Michael, Mr. C. V. Jacob, Dr. K. R. Maurya, Dr. Man Singh Manohar, Dr. K. V. Peter, and Dr. R. N. Pal as members. Dr. P. N. Ravindran, is the member secretary.

ICAR - IISR ANNUAL DAY

The ICAR and IISR joint annual day was celebrated on 16th July, 1998 at IISR, Kozhikode. Dr. K. K. N. Kurup, Vice - Chancellor, Calicut University, was the chief guest.

GUEST LECTURES DELIVERED/INVITED PAPERS PRESENTED**Femina Hassan.**

Fresh water fish culture. Farmer's meeting, Maruthonkara, 18th July, 1998

M. Anandaraj

Foot rot management in black pepper. Training

for Agricultural Officers, FIB, Kozhikode, 25 July, 1998.

T. John Zachariah.

Post harvest technologies of spices. Summer School, CPCRI, Kasaragod. 5th August, 1998.

B. Chembakam

Post harvest technology of arecanut - Summer School, CPCRI, Kasaragod. 5th August, 1998.

K. M. Prakash

Scientific cultivation of pepper. Farmer's meeting, Maruthonkara. 1st August, 1998.

K. M. Prakash

Importance of organic manures. Farmer's meeting at Changaroth 17th August, 1998.

T. John Zachariah

Post harvest processing of spices. Workshop on International Trade Opportunities on Spices (INTOP), Kozhikode. 22 Aug. 1998.

K. Kandiannan

Production technologies for black pepper. Agricultural officers and assistants conference, Kerala State, Spices Board, Kozhikode. 10th November, 1998.

T. John Zacharia

Post harvest processing of black pepper. UPASI Annual Conference, Conoor. 7th September, 1998.

Rajendra Hegde

Pepper and cardamom production technology - Farmers meeting, Sampaje, Coorg, 14 September, 1998.

TRAINING ATTENDED

K. Kandiannan

Training programme on pressurized irrigation system for efficient water management at MPKV, Rahuri, Maharashtra. 14-23, July, 1998.

S. S. Veena

Short term training on Immuno technology in disease diagnosis. Veterinary College, Madras 19th August 8th September, 1998.

Femina Hassan

Training on culture, processing and marketing of edible oyster, TTC, CMFRI, Tuticorin, 16-25 September, 1998.

C. Vasugi

63rd Foundation Course for Agricultural Research Management, NAARM, Hyderabad, 5th June -30th September, 1998.

K. V. Saji

Training on data management and documentation for genetic resources, NBPGR, New Delhi 23 October - 7th November, 1998.

HONOURS/AWARDS

National Award to Dr. K. V. Peter

Dr. K. V. Peter, Director, IISR, Kozhikode bagged the Silver Jubilee Memorial Gold Medal for the outstanding contributions to vegetable research, Instituted by the Indian Society of Vegetable Science.

J. S. Pruthi Award

Dr. P. N. Ravindran, Mr. R. Balakrishnan & Dr. K. Nirmal Babu jointly received the Second **J. S. Pruthi Award** for the best research paper published in the **Journal of Spices & Aromatic Crops**, during 1997.

TRANSFER OF TECHNOLOGY

Consultancy service

Mr. Jose Abraham, Dr. M. S. Madan and Mr. K. Kandiannan visited M/s. Harison & Malayalam Ltd., Alepetta Tea Estate, Wayanad for a pre-harvest yield survey in black pepper during the first week of November, 1998.

Dr. Y. R. Sarma, visited Sikkim during 22nd July - 2nd August and 1998, 14-30 November, 1998 as part of the consultancy work in ginger at ISPS, Gangtok

Training

Dr. B. N. Pancha, Pathologist, BCKVV, Pundibari (West Bengal) was trained on laboratory techniques for studying rhizome rot of ginger in the

Plant Pathology section at IISR, Kozhikode. 13-18 July, 1998.

Radio Talks

T. John Zacharia

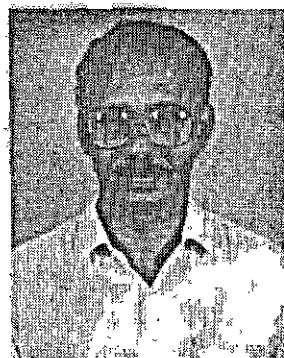
Harmfull effects of chemicals used in food products for quality. AIR, Kozhikode, 8 December, 1998.

Femina Hassan

Breeding techniques of ornamental fishes. AIR, Kozhikode, November, 12.

PERSONALIA

New Project Coordinator (Spices)



Dr. P. N. Ravindran

Dr. P. N. Ravindran, Principal Scientist and Head, Crop Improvement & Biotechnology, IISR, Kozhikode has taken over as Project Coordinator (Spices).

Retirements

Dr. A. K. Sadanandan, Project Coordinator (Spices) and Head, Division of Crop Production

& Post Harvest Technology retired on superannuation on 30 November, 1998, after over three decades of service in ICAR.

B. J. Lakkaiah, SS. Gr. III CRC, Appanagala retired on superannuation on 30th September, 1998.

Transfer

Dr. K. Samsudeen, Technical Assistant (T-II-3) is relieved on 14.8.1998 to join as a scientist (Econ. Botany) at CRRI, Cuttak, Orissa.

S. Hreendra Kumar, Jr. Clerk is transferred to CTCRI, Thiruvananthapuram, w.e.f. 02.07.1998.

Promotions

Name	Promoted as	With effect from
Mr. K. M. Abdulla Koya	Scientist (SG)	01.07.1996
Dr. K. Nirmal Babu	Sr. Scientist	31.12.1997
Dr. T. John Zacharia	Sr. Scientist	14.01.1998
Dr. B. Sasikumar	Sr. Scientist	29.04.1998
Mr. R. Ramakrishnan Nair	Scientist (Sr. Scale)	06.06.1997

Appointments

Name	Designation	Place of posting	Date of joining
Mr. P. Heartwin Amal Das	Scientist (Agricultural Structure & Process Engineering)	IISR Farm, Peruvannamuzhi.	03.09.1998
Ms. A. M. Suvarna Viswanathan	SRF Phytonet Scheme	IISR, Kozhikode	01.07.1998

Wedding

Mr. Dominic Joseph, Research Associate (Biotechnology) with Ms. Jomol on 3rd September, 1998.

Congratulations!

Editor: **Dr. B. Sasikumar**, Members: **Dr. Johny Kallapurackal**, **P.A. Sherief**, IISR, Kozhikode.

Published by **Dr. K.V. Peter**, Director, IISR, Kozhikode, Telephones : 371410, 370906,

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Email : iisrspices @x400.nicgw.nic.in

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