



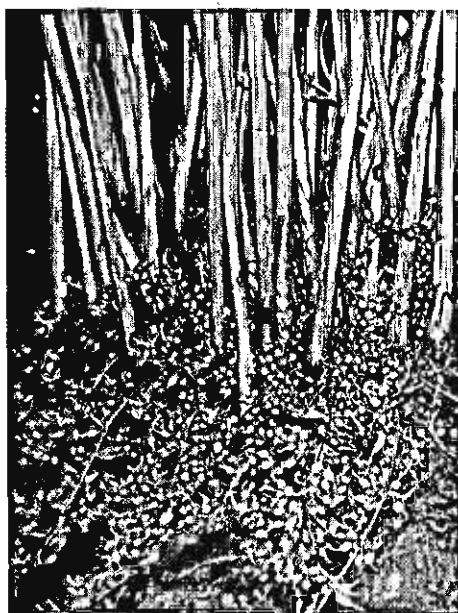
Volume 10 (1)

January-June 1999

IISR
NL-17

THE DECLINING GLORY OF CARDAMOM

Is the Queen of Spices gradually becoming a victim of our own misdeeds? Over the last two decades India's export of cardamom has sharply declined as the Central American Country, Guatemala made strong inroads to the traditional Indian export market. While Guatemala is able to reap productivity over 200 kg per hectare, Indian productivity is around 150 kg/ha only. To sustain the productivity even at this level, urgent steps are needed. There is an emerging school of thought that the low productivity of cardamom in the country is due to rapid degradation of evergreen forest ecosystem within which cardamom is grown. It is also believed that the decline in cardamom cultivation may also adversely influence the forest ecosystem in Western Ghat belt.



Cardamom - reminiscing the past glory



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

Due to ever increasing political-anthropogenic pressures, encroachment to the forests is continuing unabated. It is argued that the settlers in the forests resort to inappropriate crop-mix culture for livelihood by raising crops like rice, coconut, tapioca etc. Introduction of these crops on large scale in areas adjacent to deciduous forests necessitated complete removal of tree growth and led to unsustainable agricultural practices. These also resulted in degradation of forests and soil erosion. The conducive microclimate required for the health and growth of cardamom has also undergone significant alterations.

Gravity of the situation is reflected by the high rate of deforestation taking place in the Cardamom Hill Reserves of Kerala. According to data available with Centre For Earth Science Studies (CES), Thiruvananthapuram, 87% of Idukki District was covered by forests in 1905. By 1965, forest cover reduced to 65% and further declined to 33.4% by 1973. Due to the continuing land hunger of the population, we may have to bear a high social cost of degrading ecosystem and loss of conventional crops like cardamom. The corresponding casualties, thereof, will be natural to follow. To regain the past glory of Indian cardamom, urgent steps are needed to prevent the encroachment and plunder of forests. (Courtesy Dr P Rajeev)

RESEARCH HIGHLIGHTS

Foot rot tolerant black pepper line

A *Phytophthora* tolerant line of black pepper line, P-24 an open pollinated progeny of 'Perambamunda' is in the prerelease stage. P-

24 is a moderate yielding variety with very good dry recovery. Coll 1041, a clone of Neelamudi is also highly tolerant to *Phytophthora* foot rot under field conditions.

PR Proteins of P - 24

The *Phytophthora* tolerant black pepper variety, P-24 expressed higher low molecular weight PR proteins during pathogenesis compared to the susceptible cultivars.

Compatibility studies of biocontrol agents

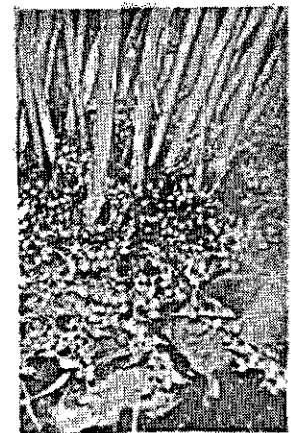
Studies at IISR, Kozhikode confirmed that the biocontrol agent *Trichoderma* is not affected by insecticides such as Chloropyrifos used against mealy bugs and Phorate used against nematodes in black pepper indicating that *Trichoderma* can be applied safely to black pepper even with insecticidal treatment against mealy bugs and nematodes.

Piper peepuloides at IISR genebank

The black pepper genebank at IISR, Kozhikode is enriched with the addition of *P. peepuloides*.

Rhizome rot resistant cardamom variety

A cardamom line, RR1, is resistant to rhizome rot caused by *Pythium vexans* and *Rhizoctonia solani*, is shortlisted for release.



RR1

GINGER GERMLASM FROM NEPAL

Dr B Sasikumar, Sr. Scientist (Plant Breeding) and Sri K V Saji, Scientist (Eco. Botany) visited Nepal during 26th March 1999 to 3rd April 1999 for collecting ginger germplasm. About 35 accessions of ginger including the famous land races of Nepal such as Terahtum, Salyan, Illam, Bhaktapur, Naval Parasi, Palpa etc. were collected. These accessions are bold and plumpy.

AGRICULTURAL TECHNOLOGY INFORMATION CENTRE (ATIC) AT IISR, KOZHIKODE

To cater the needs of researchers of spices, entrepreneurs, traders and farmers, an Agricultural Technology Information Centre (ATIC) started functioning at IISR, Kozhikode. An information and documentation centre, a computer cell, soil testing nutrient analysis and diagnostic service for pest and diseases are available through this single window system. The centre was inaugurated by Dr Kirti Singh, Chairman, ASRB, New Delhi on 17th April, 1999.



Dr Kirti Singh inaugurating ATIC at IISR, Kozhikode. Dr K L Chadha, Dr K V Peter, Dr P N Ravindran, Dr. K. U. K. Nambodiri, Dr. E. V. V. B. Rao etc. are also seen.

CENTRAL TEAM REVIEWED FOOT ROT MANAGEMENT IN BLACK PEPPER

A central team constituted by Government of India to evaluate and assess the foot rot management in black pepper had its final meeting at IISR, Kozhikode on 16th June, 1999. The team visited several pepper gardens in Idukki, Kasargod, Kannur, Wynad & Kozhikode districts where the *Phytophthora* control measures were adopted. The efficacy of chemical control measures of *Phytophthora* was very obvious in the gardens visited.

MASS MULTIPLICATION FACILITY OF BIOCONTROL AGENTS

Based on MoU between the Indian Institute of Spices Research, Kozhikode and Regional Research Laboratory (CSIR) Jammu for the mass multiplication of *Trichoderma harzianum* (biocontrol agent), a fermenter facility was established at IISR, Kozhikode. This facility was inaugurated by Dr S P Ghosh, DDG (Hort.) on 21 March, 1999 at IISR, Kozhikode. This fermenter has a processing and multiplication capacity of 2-3 tonnes of inoculum per month and can also be



Dr S P Ghosh, Deputy Director General (Hort.) inaugurating the fermenter facility at IISR, Kozhikode. Dr. R. N. Pal, ADG (PC & H) is also seen.

utilized for mass multiplication of other biocontrol agents like *Verticillium*, *Chlamydosporium* and *Metarrhizium anisopliae*.

PHYTONET

The National Repository of *Phytophthora* under Phytophthora net work project (Phytonet) was inaugurated by Dr Kirti Singh, Chairman, ASRB on 17th April, 1999. The Molecular Biology Laboratory under PHYTONET was inaugurated by DR K L Chadha, National Professor (Hort.)

PHYTONET REVIEW AT IISR, KOZHIKODE

The first review meeting of the Phytophthora net work project (Phytonet) was held at IISR, Kozhikode during 21-23 March, 1999. The review was made by DR S P Ghosh, Deputy Director General (Hort.) along with Dr R N Pal, Assistant Director General (PC). The Principal Investigators from different coordinating centres participated and presented the progress of research in the respective centres.

RAC MEETING

The Research Advisory Committee Meeting of IISR, was held on 3-4 February 1999. Dr V L Chopra, National Professor and former Director General (ICAR) chaired the meeting. Dr A M Michal, Prof. T N Ananthakrishnan, Mr C V Jacob, Dr K R Maurya, Dr K V Peter and Dr P N Ravindran (Secretary) attended the meeting. All scientists from IISR, Kozhikode also participated in the meeting.

IMC MEETING

The Institute Management Committee Meeting was held on February, 4 1999 Dr K V Peter chaired the meeting. Dr Y R Sarma, Dr V S Korikanthimath, Mr Jose Abraham, Dr K Nirmal Babu, Assistant Administrative Officer & Assistant Accounts Officer attended the meeting.

STAFF RESEARCH COUNCIL

The XIII Staff Research Council Meeting was held during 21-23 April 1999 at Kozhikode. Dr K V Peter, Director chaired the meeting. The progress of all the ongoing projects was reviewed. The plenary session was held on 23rd April, 1999. IISR Research Highlights 1998-1999 was released on the occasion by the Director.

NEW ADHOC SCHEMES SANCTIONED

- 1 Characterization of nutmeg germplasm for quality
- 2 Elucidation of biosynthetic pathways of curcumin in turmeric
- 3 compatibility, stability and potential of biocontrol consortium on suppression of *Phytophthora* foot rot of black pepper and their conservation.

TRANSFER OF TECHNOLOGY

Biocontrol technology transferred

Trichoderma harzianum is one of the highly efficient biocontrol agents against *Phytophthora*. IISR, Kozhikode possesses a rich collection of *T. harzianum* isolates. This biocontrol agent has

become very popular and of great demand among the black pepper growers. In view of the ever increasing demand, mass multiplication technology along with nucleus culture was transferred to five private entrepreneurs in the state who in turn will multiply and supply the same.

Training

A training programme on 'Onfarm processing of spices' was organized at IISR, Kozhikode during 20-21 January, 1998. Twelve delegates from different states participated in the programme.

Trainings conducted by KVK, Peruvannamuzhi

The KVK organized nine one/five days training programmes

1. Foot and mouth disease and its prevention
2. Pickling of fish
3. Vermiculture
4. Introduction of beginners to commercial nursery
5. Five days training programme on fresh water aquaculture
6. Seminar on yellow leaf disease of arecanut
7. Cultivation of medicinal plants
8. *Phytophthora* foot rot management in pepper
9. Preservation and enrichment of forage crops

Exhibitions

KVK & IISR participated in the Science Exhibition held during the 86th Indian Science Congress at

Anna University, Chennai from 3-8 January, 1999.

KVK & IISR participated in exhibition in Agri. Fair 99 by Department of Agriculture, Thiruvananthapuram, 8-11 January, 1999.

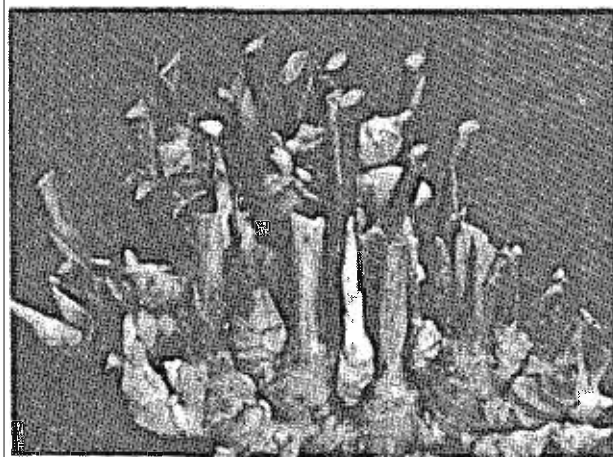
KVK participated in an exhibition organized by Kozhikode District, Panchayath and Malabar Botanical Garden, Olavanna, Kozhikode from January 31 to February 2, 1999.

KVK participated in Flower show 1999, Kozhikode organized by Agri-Hort. Society, Kozhikode, February 4-10, 1999.

Varada Ginger- A Farmers'

Testimony

Feed back from Dr Y P Dalvi of Ekambe, Taq Koregaon, Maharashtra, a retired BARC scientist turned farmer testifies the adaptability potential of IISR Varada, the ginger variety released from IISR, Kozhikode. Dr Dalvtai took 60 kg seed rhizomes of Varada from IISR, Kozhikode in 1998 and grew it along with the local Mahim variety and Bhaise variety of Sikkim.



Varada

Dr Dalvi writes that Varada yielded 10 times more as compared to the local variety and was free from diseases. Encouraged by this result, Dr Dalvi has taken the initiative to popularize Varada in that region.

Radio Talks

B Chempakam

Medicinal aspects of turmeric. AIR, Kozhikode

K M Prakash

Methods of cultivation of ginger & turmeric. AIR, Kozhikode

Santhosh J Eapen

Preservation and treatment of ginger and turmeric for seed purpose. AIR, Kozhikode

P A Mathew

Harvesting of nutmeg and clove. AIR, Kozhikode.

K M Abdulla Koya

Management of root mealy bugs of black pepper. AIR, Kozhikode 15th February

K M Prakash

Care of nutmeg and clove. AIR, Kozhikode.

Y R Sarma

Integrated disease management. AIR, Kozhikode

B Sasikumar

Know your pepper vine. AIR, Kozhikode (Special programme on black pepper)

P A Mathew

Suitable standards for pepper. AIR, Kozhikode (Special programme on black pepper)

K M Prakash

Cultural operations in pepper gardens. AIR, Kozhikode (special programme on black pepper)

John T Zachariah

Whether plants have feelings. AIR, Kozhikode.

P S Manoj

Planting of tree spices. AIR, Kozhikode

Femeena Hassan

Prawn and Carp farming AIR, Kozhikode.

PARTICIPATION IN SYMPOSIA/ SEMINARS

K V Peter

86th Indian Science Congress, Chennai. 4-8 January, 1999.

K V Peter

Meeting on Participatory Technology Development, Thiruvananthapuram. 9 January, 1999.

P S Manoj

VIII National Workshop of KVKs & TTCs, VBKVK, Badgaon, Udaipur. 15-17 January, 1999.

Femeena Hassan

National seminar on Development and transfer of fisheries technology, Fisheries College & Research Centre, Tuticorin. 3-5 February, 1999..

K S Krishnamurthy & S J Anke Gowda

National symposium on Plant Physiology & Biochemistry in relation to agriculture & environment, Indore. 15-17 February, 1999.

K V Peter, V S Korikanthimath & John T Zachariah

4th Agricultural Science Congress, Jaipur. 21-24 February, 1999.

K V Peter & P N Ravindran

Kerala Science Congress, Kasaragod. 26-28 February, 1999.

M Anandaraj

National conference on Mycorrhiza. Baraktulla University, Bhopal. 5-7 March, 1999. Presented a paper on 'Identification of efficient VAM isolates for black pepper'.

Training on Molecular Marker Technology, at Centre for Plant Genome Research JNU, New Delhi. 7-15 March, 1999.

John T Zachariah

Training on Advances in Plant Biotechnology Centre for Advanced studies in Biochemistry, IARI, New Delhi. 20-26 March, 1999

Femeena Hassan

National Symposium on Sustainable Development of Fisheries towards 2020 AD. Opportunities and Challenges-School of Industrial Fisheries, Cochin University of Science & Technology, Cochin. 21-23 April, 1999.

K V Peter

Seventh meeting of central subcommittee on crop standards, notification and release of varieties for horticulture crops. ICAR, New Delhi. May 11, 1999.

John T Zachariah

Seminar on Vicam aflatoxin analysis, Kochi. May 25, 1999.

Y R Sarma

Brain storming session on virus diagnostics in tissue cultured plants, DBT, New Delhi. May 31, 1999.

A Kumar

International conference on frontiers of fungal biotechnology and plant pathogen relations. Osmania University, Hyderabad, January 16-18, 1999

PUBLICATIONS**Review Article**

Sivaraman K, Kandiannan K, Peter K V and Thankamani C K. 1999. Agronomy of black pepper. Journal of Spices and Aromatic Crops, 8(1) : 1-18.

Research Articles

Mathew, P A, Krishnamurthy B, and Rema J 1999. Seedling variance in allspice. Journal of Spices and Aromatic Crops, 8(1) : 93-94.

- Korikanthimath V S, Hiremath, G M and Hosmani M M 1999. Generation of employment potential in coffee-cardamom based cropping system, *Journal of Spices and Aromatic Crops* 8(1) : 29-34.
- Korikanthimath V S, Mathew M J, Ravindra Mulge, Rajendra Hegde and Hosmani M M. 1999. Studies on selection of elite lines of CI-37 seedling progenies of cardamom (*E. cardamom*). *Journal of Spices and Aromatic Plants* 8(1) : 57-61.
- Korikanthimath V S and Anke Gowda S J. 1999. Performance of black pepper (*P. nigrum* L.) variety Panniyur 1 trailed on different shade as lice standards. *Journal of Spices and Aromatic Crops* 8(1) : 97.
- Korikanthimath V S, Venugopal M N, Rajendra Hegde and Anke Gowda S J. 1998. Studies on multiple branching panicles in cardamom (*E. cardamomum*). *Journal of Spices and Aromatic Crops* 7(2) : 125-127.
- Ravindran P N, and Remasree A B, 1998. Anatomy of *Piper colubrinum* L. *Journal of Spices and Aromatic Crops*, 7(2) : 111-123.
- Sherlija K K, Remasree A B, Unnikrishnan K C, Ravindran P N. 1998. Comparative rhizome anatomy of species of *Curcuma*. *Journal of Spices and Aromatic Crops*, 7(2) : 103-109.
- Sherlija K K, Unnikrishnan K C, Ravindran P N. 1998. Bud and root development of turmeric rhizome. *Journal of Spices and Aromatic Crops*, 7(2) : 49-55.
- Sajna A, Mini P M, John C.Z, Nirmal Babu, Ravindran P N, Peter K V, 1999. Micropropagation of large cardamom (*Amomum subulatum* Roxb v.) *Journal of Spices and Aromatic Crops*, 6(2) : 145-148.
- Sasikumar B, Chempakam B, Johnson K George, Ramasree 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(1) : 25-131.

Popular Articles

- Johny A K 1999. Rapid multiplication of cardamom clonal planting material, Karshakan (Mal.) Annual issue pp 80-81.
- Johny A K 1999. Choice of the variety in black pepper. *Spice India* (Mal.) 12(3) 2-4.
- Sasikumar B and Saji K V. 1999. Ginger in Nepal. *Spice India*, (Mal.) 12(7) : 2-16.
- Sasikumar B. 1999. Bush pepper- A Slip of Mangatachen. *Indian Spices*, 36(1) : 2.
- Sasikumar B. 1999. Medicinal uses of spices. *Yojana* (Mal.) 27(10) : 38-40.
- John T Zachariah. 1999. Spices and its commercial names. *Spice India* (Mal.) 12(4); 5&16.
- Peter K V. 1999. Making of a global leader. *The Hindu Survey of Indian Agriculture* 1999, 81-85.
- Peter K V. 1999. Spices Research and Development. *Agri Gold*. Swarna Sadyam II(4) : 36-41.

Peter K V. 1999. Export potential of spices in changing global scenario IV Agricultural Science Congress. Jaipur. 21-25 February, 1999, NAAS, New Delhi.

Hamza S. 1999. How to grow bush black pepper. Karshakasree (Mal.), 4(11) : 31.

Krishnamurthy B. 1999. Conservation and improvement of Chinese Cassia. ICAR news New Delhi. Jan-March 1999.

Krishnamurthy B. 1999. Grow bush pepper in drawing room Spice India (Tamil), 12(3) : 4-6.

Krishnamurthy B. 1999. Caterpillars attacking black pepper leaves. Spice India (Tamil), 12(6) : 2-3.

Krishnamurthy B. 1999. Bush pepper in every house. Valartholi (Tamil P. 60-61.

Rema J and Krishnamurthy B. 1999. Commercial exploitation of Chinese Cassia. Indain Spices 3 (4) : 2-4.

GUEST LECTURES DELIVERED / PAPERS PRESENTED

S S Veena

Management of Phytophthora foot rot disease of black pepper Krishi Bhavan, Thikoddi, Kozhikode 4th January, 1999.

John T Zachariah

Instrument techniques in biological sciences. Academic Staff College, University of Calicut. 12th January, 1999

John T Zachariah

Instrument Techniques in Biological Sciences. Govt. College, Madappally, kannur 11th February, 1999

S Devasahayam

Insects pests of spices and their management, Govt. College Madappally, Kannur 11th February, 1999

John T Zachariah

Processing and value addition of spices. District Industries Centre, Kozhikode 17th February, 1999

S S Veena

Diseases of spices and their management, Theriyode, Kozhikode 25th February, 1999

P A Mathew

Cultivation of nutmeg, and bush pepper Farmers meet Edakkara, Kozhikode 26th February, 1999

John T Zachariah

Processing of pepper, Pepperfest 99, Vythiri, Wynad 2nd March, 1999

P A Mathew

Scope of Spices cultivation in Kerala. Farmers meet. Kallanoda, Kozhikode 7th April, 1999

P S Manoj

Medicinal Plants, Farmers meet. Anakampoyil, Kozhikode 24th April, 1999

P A Mathew

Yellow leaf disease of arecanut, Farmers meet. Anakampoyil, Kozhikode 24th April, 1999.

Y R Sarma

Foot-rot management in black pepper. Farmers seminar. Kalpetta, Wynad 20th May, 1999

K V Peter

Breeding for resistance to biotic and abiotic stress in chillies. Summer School, IARI, New Delhi. 3rd June, 1999.

B Sasikumar & P N Ravindran

Genetics resources, conservation and improvement of major spices through selection and hybridization. Summer School, CPCRI, Kasaragod 21st June, 1999

K V Peter

Spices Development a futuristic approach Summer School, CPCRI, Kasaragod. 25th June, 1999.

TECHNICAL PUBLICATION

AICRPS Annual Report. 1997-1998(Eds.)
Sadanandan A K, Vasugi C & Johny A
Kallapurackal, IISR, Kozhikode

IISR Research Highlights 1998-1999. (Eds.)

John T Zachariah, K S Krishnamurthy & Santhosh
J Eapen

AWARDS / HONOURS

Dr Y R Sarma nominated as a member Editorial Board, Journal of Biocontrol Advancement , Bangalore

Dr M Anandaraj, Fellow, Indian Phytopathological Society and recognised as Ph.D guide in Botany, Calicut University

Bharathiyar University Recognises IISR, Kozhikode

The Bharathiyar University, Coimbatore has recognised the IISR, Kozhikode for offering Ph.D Programme in Botany

AN ARRAY OF AWARDS TO IISR

Awards dominated in 1st half of the year 1999 at IISR, Kozhikode. Three awards have come to IISR, Kozhikode at a single stretch and one more after a brief span; thus a total of four awards to Indian Institute of Spices Research, Kozhikode.

Rafi Ahamed Kidwai Award for outstanding Agricultural Research for the biennium 1996-1998 was bagged by Dr K V Peter and Dr A K Sadanadan, jointly. Jawaharlal Nehru Award



Dr K V Peter



Dr A K Sadanandan



Dr V S Korikanthimath



Dr K Nirmal Babu

for outstanding best Post Graduate Research for the year 1998 is awarded to Dr V S Korikanthimath, Scientist in Charge, Cardamom Research Centre, Indian Institute of Spices Research, Appangala and to Dr K Nirmal Babu, Senior Scientist (Plant Breeding), Indian Institute of Spices Research, Kozhikode.

In the category of small Research Institutes under ICAR, the best Annual Report award for the year 1996-1997 has been bestowed upon the Indian Institute of Spices Research, Kozhikode.

HINDI TRAINING PROGRAMME

B Krishnamurthy, Hindi officer along with Ms N Prasannakumari, Hindi translator and Mr Sunil, Hindi Typist participated in the Hindi Translation Training Programme conducted by Central Translation Bureau, Bangalore at Kozhikode from 10-5-99 to 14.5.99. Mr Krishnamurthy also attended the official language implementation committee meeting at Kozhikode.

PERSONALIA

Appointments

Name	Designation	Posted at	Date of joining
Ms Minoo Divakaran	Technical Assistant, T-11-3	IISR, Kozhikode	5-3-1999
Ms M Seema	SSGr.I	IISR, Kozhikode	20-3-1999
Mr H C Rathish	Driver (T-1)	CRC, IISR, Appangala	16-6-1999

Promotions

Name	Promoted to	Posted at	Date
Dr Rajendra Hegde	Scientist, Senior Scale	IISR, CRC, Appangala	11-11-1997
Dr M S Madan	Senior Scientist	IISR, Kozhikode	7-1-1998
Dr P Rajeev	Scientist, Senior Scale	IISR, CRC, Appangala	3-6-1998
Sri R N Subramanian	Senior Clerk	IISR, Kozhikode	7-1-1999
Mr V V Sayed			
Mohammaed	Junior Clerk (ad hoc)	IISR, Kozhikode	8-1-1999
Mr K Sadanandan	Junior Clerk (ad hoc)	IISR, kozhikode	8-1-1999
Mrs K Padminikutty	Senior Clerk	IISR, Kozhikode	18-1-1999

Transfer

Dr P Rajeev, Scientist Sr. Scale, CRC, Appangala is transferred to KVK, Peruvannamuzhi as Training Organizer.

Mr. D N Subramanian, Senior Clerk, with Ms. Hema

Dr S J Ankegowda, Scientist, Cardamom Research Centre, IISR, Appangala with Ms. Nirmala

Weddings

Dr S Ravi, KVK, Peruvannamuzhi with Ms. Shiny

Mr A Sudhakaran, Artist cum- Photographer, IISR, Kozhikode with Ms. Sumana

Ms. Suvarna Viswanath, Research Fellow, IISR with Mr Kamalakshan

Mr. P Sundaran, Clerk with Ms. Sudha

Congratulations and best wishes to the married couple

KARGIL FUND

A sum of Rs. 41380/- (Rupees Fortyone thousand three hundred and eighty was contributed towards Kargil Fund through Director (Finance), ICAR by the scientists and staff members of Indian Institute of Spices Research, Kozhikode

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