



CPCRI News



Views and News on Advances in Coconut, Arecanut and Cocoa



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RAC meeting

The third meeting of the fourth Research Advisory Committee of the Institute was held at CPCRI, Kasaragod during March 2013 under the chairmanship of Dr. P.L. Gautam, Former Chairperson, PPV & FRA. The RAC members Dr. R. Siddaramappa, Retired Emeritus Scientist, Bangalore;



Dr. P.L. Gautam, Chairman, RAC, addressing the scientists of CPCRI

Dr. D. Veeraraghavathatham, Former Dean, HC&RI, TNAU, Coimbatore; Dr. Sisir Mitra, Professor, Department of Fruits and Orchard Management, BCKVV, Kalyani, West Bengal; Dr. D. Alexander, Former Director of Research, KAU; Dr. L. Jose, Head of Division, Botany, St. Alberts College, Ernakulum and Dr. K. Muralidharan, Head, Social Science Division, CPCRI, Kasaragod (Member Secretary) were present during the meeting. Dr. George V. Thomas, Director, CPCRI

presented the activities and salient achievements of the Institute during 2012-13. The RAC reviewed the progress of research programmes and offered suggestions for further improvement.

Awareness on Protection of Plant varieties and Farmers' Rights Act

Awareness programmes on "Protection of Plant Varieties and Farmers Rights" were conducted, at Kayamkulam, Kasaragod and Vittal in association with Protection of Plant Varieties and Farmers Rights Authority, New Delhi. In a programme conducted at CPCRI, Regional Station, Kayamkulam on 11-01-2013, over 150 delegates including officials from Department of Agriculture, Krishi Vigyan Kendra (Alappuzha and Pathanamthitta), Officers from CPCRI, progressive farmers, NGOs (Kuttanadu Vikasana Samithi, Gandhi Smaraka Grama Sewa Kendram, Nava Sakthi Trust), entrepreneurs involved in nursery business, faculty and students from colleges participated. The need for conserving traditional varieties and the efforts required to conserve the rich biodiversity were highlighted. During the technical sessions, lectures on 'IPR in agriculture with special reference to

PPV & FR Act', 'Legal Issues of PPV & FR Act', 'DUS guidelines in coconut' and 'Plant Genome Saviour Awards' were delivered. The winners of Plant Genome Saviour Community Award for the year 2010-11 was honoured during the function. Mr. K. A. Thomas, Secretary (Pokkali Rice Farming Community), winner of Plant Genome Saviour Award 2010-11 shared his experience. Few registered geographical indications of Kerala (Pokkali Rice, Central Travancore Jaggery & Aranmula Kannadi) and unique varieties of coconut & medicinal plants were displayed in the exhibition arranged along with the training programme.

The second program was conducted at CPCRI, Kasaragod on 23-3-2013. Dr. George V. Thomas, Director, CPCRI, Kasaragod explained



Dr. V.A. Parthasarathy, Formerly Director, IISR inaugurating the PPV & FRA awareness programme at Kasaragod

in brief about Protection of Plant Variety and Farmers Right Act, 2001 and the activities of the PPV& FR Authority and the need to protect both farmer's varieties and varieties developed by the research institutions. Dr. V. A. Parthasarathy, Emeritus Scientist Former Director IISR, Kozhikode inaugurated the programme and spoke on the Protection of Plant Variety and Farmers Rights Act and he presented

the IPR issues which are important on this aspect. He highlighted the importance of geographical indicators and presented examples of GI's registered in the country. Over 150 participants including farmers, students and teachers attended the program. During the technical sessions provisions of PPV&FR Act, DUS principles and DUS testing guidelines developed for rice, coconut, spices, mango and vegetables crops were detailed. Mr. Dinesh Nayak, Sasya Shyamala Trust, Vittal made a presentation on "Present Perspectives of Medicinal Plants in Western Ghats".

Third programme in the series was held on 26-03-2013 at CPCRI, RS, Vittal. 150 stakeholders covering scientists, progressive farmers, developmental workers, processing representatives from industry and college students participated in the programme. Shri Konkodi Padmanabha, President, CAMPCO inaugurated the programme. Dr. George V Thomas, Director, CPCRI highlighted the role of the PPV & FRA in safeguarding the interest of the farming community and other stakeholders in the system. As part of the training, lecture cum discussions on Protection of plant varieties & Farmers' Rights Act 2001, geographical indicators in horticultural crops, PPV & DUS testing in rice, DUS guidelines for cashew, DUS guidelines for coconut, arecanut and cocoa and registration of plant varieties, aesthetic and economically important forest species and medicinal plants and endangered species of Western Ghats were handled by scientists/ experts. Exhibits on varieties, agronomic

practices, nursery management, pest and disease management and harvesting of arecanut and cocoa, medicinal and aromatic plants, milching machine, agricultural equipments/tools, fruits and vegetables, seeds etc. were displayed.



Shri Ramesh Chennithala, MLA inaugurating harvest festival of cool season vegetables

Harvest Day of cool season vegetables at Alappuzha

Shri Ramesh Chennithala, MLA inaugurated the harvest of the cool season vegetables under the demonstration on coastal sandy soil management at Arattupuzha and declared this plot as the ATMA field school for technology transfer in coastal tracts on 09-02-2013. District Panchayat member Mr. John Thomas, other ward members, Assistant Director of Agriculture, Muthukulam Block, Agriculture Officer, Arattupuzha and around 100 farmers participated in the meeting.

ICAR - Industry Day

ICAR Industry Day was observed at Kasaragod on 31st January 2013. Coconut processing techniques developed at the Institute were demonstrated to entrepreneurs. A total of 78 participants were provided with first hand information on coconut based value addition through



Dr. George V. Thomas, Director addressing young and Enterprising youth during ICAR - Industry Day

production of coconut chips, virgin coconut oil and snow ball tender nut.

Field Day

CPCRI Regional Station Vittal had established two demonstration plots on 'Integrated management of root grubs in arecanut' at farmers' gardens at Ujire. Field day was organized at the beneficiary's garden, Ujire, Belthangady taluk on 08-01-2013 to convince the farmers on root grub management techniques. Over 100 farmers from Belthangady Taluk



A view of the 2nd IMC meeting held at CPCRI, Kasaragod

participated in the field day and were convinced about the IPM technologies for managing arecanut root grubs.

IMC meeting

IMC meeting was held on 25-03-2013, at CPCRI, Kasaragod. Management Decisions were taken related to the ongoing activities of the Institute.

Seminar on 'Challenges and prospects of arecanut and cocoa

Seminar on 'Challenges and prospects of arecanut and cocoa under the changing climate scenario' was organized on 25-09-2012 at CPCRI, RS, Vittal. Over 54 delegates including scientists, farmers, officials from KVKs, CAMPCO, Department of Horticulture and Cadbury India Ltd. participated in the seminar. Shri Manchi Srinivas Achar, President, All India Arecanut Growers Association, inaugurated the seminar. Dr. George V. Thomas, Director, CPCRI, Kasaragod in his presidential address emphasized the importance of cropping system approach, organic

farming, nutrient management, value addition and mechanization to increase the productivity and profitability of farming. Dr. P. L. Saroj, Director, Directorate of Cashew Research, Puttur, Dr. H.P. Maheswarappa, Project Coordinator, AICRP (Palms), CPCRI, Kasaragod, Mr. N.T. Bhat, Former Joint Director, CPCRI, Regional Station, Vittal and Dr. Homey Cheriyan, Director (Actg.), Directorate of Arecanut and Spices Development, Calicut were the guests of honour. Dr. D. Balasimha, Principal Scientist, Regional Station, Vittal delivered a keynote address on the topic 'Impact of climate change on plantation crops'.



Dignitaries on the dias during the seminar on "Challenges and prospects of arecanut and cocoa"

RESEARCH HIGHLIGHTS

Coconut sugar from inflorescence sap

Coconut sap is rich in sugar. Fresh saps with pH 7.5 and above is ideal for the preparation of sugar crystals without the addition of any chemicals. The sugar is brown in color. Comparative studies on biochemical and minerals constituents revealed that the total sugar content is less in coconut sap sugar (91.57 g/100 g) compared to refined cane sugar (97.7 g). Hence, this is an ideal for diabetic patients as it has low glycemic index (GI-35) compared to cane sugar (GI-75). In addition the protein content in cane sugar is times higher and than cane sugar. It is rich in minerals like sodium, potassium and phosphorus compared to cane sugar.



Coconut sugar

Coconut flaking machine

Processed coconut flakes is a common ingredient in confectionaries, bakery items and in 'payasam', a common sweet dish served in temples and ceremonial functions. The flakes are made from mature coconut kernal manually using a knife. The process is cumbersome and laborious. More over uniformity of the flakes depends mostly on the skill of the person. Under manual operated

condition it is difficult to get coconut flakes with uniform shape. This prompted to design and develop a prototype of a coconut flaking machine. Prime mover of the machine is a 220V, 1440rpm Induction motor with a power rating of 0.2hp. The machine makes coconut flakes in two stages. Coconut kernal is fed manually. The machine is provided with two sets of cutting blades to produce coconut flakes of 5mm and 10mm thickness. The machine has a capacity to make 3kg coconut flakes in one hour. Energy



Coconut kernel flaking machine

consumption is 0.03kwh (0.03units). The machine could reduce the drudgery involved in coconut flaking and is women friendly. It would be useful for entrepreneurs engaged in confectionaries and bakery products where coconut flakes is an ingredient.

First record of coconut inflorescence moth from Minicoy



Coconut inflorescence moth infestation and damage at various stages

Pest surveillance conducted at Minicoy revealed occurrence of coconut inflorescence moth, *Batrachedra arenosella* Walker from South and Northern region of the Island. Larvae feed on the male flowers within the inflorescence (visible gummosis) as well as after blooming causing male flowers to remain intact even after drying. At times larvae scraps female buttons too causing lesions on the developing buttons which falls immaturely. *B. arenosella* was found to prefer dwarf cultivars in Andamans (Niu Lekha), however, it was found feeding on dwarf as well as tall cultivars in Minicoy. It was also reported infesting CGD palms in Kasaragod.

Botanical cake for the management of black beetle

A soap comprising of hexane and methanolic extracts of *Clerodendron infortunatum* and *Eupatorium* sp. was developed for prophylactic leaf axil filling against rhinoceros beetle infestation in coconut. Botanical soap @ 5-10% induced 66-77.8% aberrations in larval-pupal transformation of *Oryctes rhinoceros* in the laboratory.

Research article

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Popular article

- Maheswarappa H.P. 2013. Coconut based cropping systems providing organic manure is environment friendly. *Agriculture column - The Hindu*. March 7th, 2013.
- Jaganathan, D., Elain Apshara, S. and Jose, C. T. 2013. Arecanut based multispecies cropping system A success story. *Indian J. Arecanut, Spices and Medicinal Plants*. **15** (1). pp 3.
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- Nihad, K., and Krishnakumar, V. 2013. Organic floriculture. *Haritabhoomi* **3**(10): 14-15 (in Malayalam).

Book

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- Alagar, M. Cocoa pests and their management. pp. 73-82.
- Balasimha, D. Impact of climate change on cocoa. pp. 46-54.

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Sarath Babu, S. Integrated disease management in cocoa. pp. 65-72.

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Model Training Course (MTC) for extension personnel on Coconut based integrated farming'

The model training course for extension personnel on 'Coconut based integrated farming' sponsored by Directorate of Extension, Ministry of Agriculture, Govt. of India, was conducted at CPCRI, Kasaragod during 15-22 January 2013. Fifteen officers Tamil Nadu, Odisha and Kerala attended the MTC.



Participants of MTC on coconut based integrated farming with Dr. George V. Thomas, Director CPCRI

Field Experience Training (FET)

Field Experience Training (FET) programme of six Agricultural Research Service (ARS) scientists of 97th FOCARS was conducted at CPCRI,



Shri K. Kunhiraman, MLA inaugurating the FET village seminar at Perumbala

Kasaragod from 23-02-2013 to 15-03-2013. A Scientist-Extension-Farmer interface programme on 'Technologies

for sustainable agriculture' was organized at Perumbala village as part of the FET programme on 05-03-2013. Mr. K. Kunhiraman, MLA Udma, inaugurated the village seminar. Dr. George V. Thomas, Director, CPCRI delivered the key note address and also handed over the biodiversity document prepared by the scientist trainees based on a field survey to Mrs. Sahadulla, President, Chemnad Grama Panchayat.



Exposure visit-cum-training programme for tribal captains of Car Nicobar

Kasaragod in collaboration with Central Agricultural Research Institute, Andaman and Nicobar Islands for captains of tribal villages of Car Nicobar island on 'Coconut based integrated farming systems and value addition' during 17-03-2013 to 19-03-2013. Five tribal leaders along with technical officer from KVK car Nicobar attended the exposure visit-cum-training programme.

Special Training Programme for farmers

During the quarter, four special training programmes on coconut production technology and value addition were organised at CPCRI, Kasaragod for farmers in collaboration with ATMA project of Department of

Exposure visit-cum-training programme for tribal captains of Car Nicobar

An Exposure visit-cum-training programme was organized at CPCRI,



Participants of training programme on coconut production technology

Agriculture as per the following details.

Agriculture, Padannakkad on 28-01-2013.

participated in the training programme.

Topic	Collaborating agency	Date	No. Of Participants
Value addition in coconut	ATMA, Krishi Bhavan Balal	28-01-2013	40
Coconut production technology	ATMA, Kanhangad Block	18-02-2013	65
Coconut production technology	ATMA, Anamalai Block, Pollachi	25-02-2013 to 27-02-2013	10
Value addition in coconut	ATMA, Kunnummal Block	19-03-2013 to 20-03-2013	25

A training programme for farmers from Vettaikaranpudur on 'Mass production technology of parasitoids of *Opisina arenosella*' was organised at Kasaragod from 11-01-2013 to 13-01-2013.

Dr. C. Thamban, Sr. Scientist (Agrl. Extension) participated in the Technology clinic for promotion of small and micro enterprises under food and agro-based sector organized by District Industries Centre at Kannur on 09-01-2013 and presented a paper on 'Opportunities for micro-enterprises on value added coconut products'. He has also participated in the workshop on 'Strengthening extension services of Village Resource Centres and Counseling Centres of Wayanad District' organized by Community Agro-biodiversity Centre, MSSRF, Kalpetta on 30-01-2013. Participated in the pilot meeting under the project sponsored by State Planning Board, Kerala on 'Identification and mapping of innovations in agriculture: Documentation of promising technological innovations in agriculture in Kasaragod District for further scaling up' held at College of



Participants of cocoa training programme along with faculty members

An one day training on 'Cocoa Production and Post Harvest Technology for Women Beneficiaries' was conducted at Vittal on 23-03-2013 with DCCD funding, in which 57 members participated.

A total of 610 farmers and college/school students visited the Research Station, Vittal and had exposure to various research and extension activities.

Directorate of Arecanut and Spices Development, Calicut, Kerala sponsored training programme on 'Arecanut Based Multispecies Cropping System' for Puttur Taluk farmers was organised at CPCRI Research Center, Kidu on 16th March, 2013 by CPCRI Regional Station, Vittal. More than 100 farmers were



Training on arecanut based multispecies cropping system at CPCRI, RC, Kidu

Total of 288 persons visited CPCRI Kayamkulam and acquainted regarding the activities.

A total of 61 visitors (Farmers, Scientists, Lectures and Students) were acquainted on various research and extension activities of CPCRI Research Center and International Coconut Gene Bank for South Asia, Kidu.

A total of two numbers of one day on

training on crop diversification in plantation garden with spices and nursery techniques of plantation crops were conducted at Mohitnagar on 26-03-2013 and 30-03-2013.

About 95 farmers of different locality of North Bengal visited Mohitnagar



Field Day on arecanut at Vittal

Centre and the queries of the farmers were answered during this period.

Six training programmes cum exposure visits on 'Arecanut and cocoa production technology' were organized at Vittal for the benefit of stakeholders.

Over 250 farmers from Delampady Panchayat, Kasaragod; Mudigere, Chickmagalur; Shrivardhan, Raigad; Hosanagar, Shimoga; Karkala, Udupi visited CPCRI, RS, Vittal.

Diagnostic field visit

Surveillance in Morigaon, Kamrup and Goalpara districts of Assam Ri-Bhoi and East Garo Hills of Meghalaya indicated minor incidence (<1%) of red palm weevil in coconut. Eriophyid mite incidence in coconut was found to be low to medium (20-30%). Stem bleeding (5%) and bud rot (2-3%) were the major diseases recorded on coconut. Basal stem rot (*Ganoderma* sp.)

was found to be a devastating disease in the region affecting arecanut plantations. Endemic regions recorded incidence as high as 40%. The invasive pest *Brontispa longissima* was not reported from any of the areas surveyed

Interface programme

An Interface programme between scientist-extension-farmer was organized by CPCRI, Research Centre, Minicoy and Department of Agriculture, Kalpeni on 20-03-2013. A training-cum-demonstration of coconut climbing devise was conducted and 10 machines were supplied to tribal youths.



Farmer - scientist interface and distribution of climbing device at Kalpeni

Participation in exhibitions

CPCRI Exhibition stalls were arranged at where benefit of stakeholders. Large number of farmers, college and school students, industrialists and other general public visited the exhibition stall and acquired knowledge regarding CPCRI technologies.

Kayamkulam centre participated in an exhibition organized in connection with Kerala Science Congress held at K a n a k a k k u n n u P a l a c e , Thiruvananthapuram during 28-01-13

to 03-02-13 and also in an exhibition held at International Stadium, Kaloor during 22-25 February, 2013.

CPCRI (RS) Vittal had an Belthangady taluk, Dakshina Kannada district, Karnataka on 08.01.13 in connection with 'Field day on Integrated management of root grubs in arecanut'.

CPCRI Research Centre, Kidu, Puttur taluk, Dakshina Kannada district, Karnataka on 16.03.13 in connection with training on ' Arecanut based multispecies cropping system'.

CPCRI Regional Station, Vittal in connection with 'Awareness cum training programme on PPV & FR Act 2001.

Exhibition stall of CPCRI was arranged by CPCRI Research Center, Kidu at Panja, Sullya (Tq.), Dakshina Kannada (Dist.), Karnataka from 05-2-2013 to 06-2-2013 on the occasion of "Krishi Mela 2013". Thousands of farmers, Agriculture and Horticulture Department officers, teachers, students, industrialists and other general public visited the exhibition stall and acquired knowledge.



Shri Konkodi Padmanabha, President,

Radio talks/ TV programmes

A radio talk in Kannada on "Water and nutrient management in coconut" was

delivered by Dr. H.P. Maheswarappa, Project Coordinator (Palms) on 06-02-2013.

Documentation of success story 'Duck and fish farming' was broadcasted on 12-03-2013, in *Krishi Darshan* of Doordarshan.

Radio talk on 'Friends of Coconut tree: Follow up activities and role of KVK' (in Malayalam) on 27-2-2013 by Dr. P. Muralidharan.

Krishi Vigyan Kendra, Kasaragod

During the period 35 training programmes were conducted with the participation of 1017 participants which includes 431 men and 586 Women. Out of these 18 trainings were on-campus with 368 trainees which include 149 men and 219 women. 17 trainings were off-campus with 649 trainees with the participation of 282 male and 367 female. Some of the important activities are given below:

On farm trials

A total of 11 on farm trials, including one for refinement of technology, were undertaken during the year. The trial on management of leaf roller in paddy using biocontrol agents was conducted in four panchayaths (Manjeswar, Mangalpaday, Mogral Puthur and Ajanur) in an area of 6 ha. Application of biocontrol agent, *Bacillus thuringiensis* (Bt) was found to be most effective (7% pest incidence) with a yield of 3.5 t ha⁻¹. However, application of *Beauveria bassiana* was found to be cost effective with a B:C ratio of 1.9 as against 1.5 with Bt.



On farm trial on vegetable cultivation

In the trial on organic cultivation of bhindi (*var.* Salkeerthi), application of farm yard manure (FYM) as basal dose of fertilizer and fish meal in split dose for top dressing gave highest yield of 14.03t ha⁻¹. For yard long bean (*var.* Vellayani Jyothika), higher yield (17.35 t ha⁻¹) was obtained with FYM as basal dose of fertilizer and poultry manure in split dose for top dressing, with a B:C ratio of 3.71. In the OFT on effectiveness of organic methods in controlling black pod disease of cocoa, 5-10% disease incidence was observed in the treatment where pods were sprayed with *Pseudomonas fluorescens* and given a basal application of *Trichoderma harzianum*, 20 -30% in the treatment with 1% Bordeaux mixture (BM) and severe disease incidence in the control. In the trial on management of rhizome rot of ginger through biocontrol agents, no incidence of rhizome rot was noticed in ginger sprayed with 1% BM as well as with the basal application of *Trichoderma* and spraying and drenching with *Pseudomonas fluorescens*. Assessment of the effect of plant growth promoting *Rhizobacteria* (PGPR) on *Amaranthus* cultivation indicated no incidence of

Cercospora leaf spot, besides enhancement of growth in the plants treated with PGPR mix-2.

Trial for enhancement of palatability of Nutrimix by adding flavours showed that vanilla and cocoa flavour was more acceptable compared to badam, strawberry, cardamom and pista. Trials on the safety device for the Chemberi model of coconut climbing device conducted at KVK, Kasaragod was approved by the Zonal Project Director for adoption by other KVKs too for the next season.

Frontline demonstrations

Popularizing cassava biopesticides for management of pseudo-stem weevil of banana The RKVY project on popularisation of cassava biopesticides against pseudo-stem weevil of banana was launched on 1st March 2013 at Periya and Madikkai villages. A total of 32 farmers participated in this programme which envisages treating 10000 banana plants with cassava bio pesticides.

District Honey Fest 2013

In collaboration with State Horticulture Mission-Kerala,



Shri K.S. Kuriakose, Vice President, Kasaragod District Panchayath inaugurating the Honey Fest 2013

Agriculture Department and KRDS, Kolichal, two day Honey Fest was organized at CPCRI, Kasaragod on 25th and 26th March 2013. A training programme for bee keepers was conducted as part of the programme and around 350 farmers representing all panchayaths of the district participated in the programme.

Krishi Vigyan Kendra, Alleppey

Harvest festival of Technology demonstration on "Integrated Crop Management" in paddy

Under the NICRA project being implemented by KVK Alleppey in Muttar village, a technology demonstration programme on integrated paddy crop management was conducted during the second season in an area of 35 acres. Technologies integrated in the demonstration were use of drum seeder for sowing, soil test based lime application, soil health cards for fertilizer recommendation, use of biocontrol agents like trichocards and *Pseudomonas* for pest and disease control, and fertilizer scheduling using leaf colour charts (LCC). Harvest festival of the demonstration was inaugurated by Shri V.K. Venugopal, President, Veliyanad Block Panchayth on 15-03-2013 at Kalayankary padasekharam. In his inaugural address he pointed out the need of mechanisation, liming and reduced use of chemicals in paddy cultivation. Smt. Beena Joseph, President, Muttar Grama Panchayath, presided over the

function. Partner farmers shared their experiences and benefits of the technologies demonstrated. Dr. S. Leenakumari, Professor and Head, RRS, Moncompu led the scientist extension - partner farmer outside farmer interface that followed in which about 100 farmers and extension officials participated.

Demonstration of drum seeder in Farmer Field School inaugurated

The demonstration on drum seeder in the Farmer Field School on integrated paddy management conducted at Kizhakke parambikkeri B Block padasekharam in Harippad panchayath was inaugurated by Shri Ramesh Chennithala, Hon. MLA, Harippad on 10-01-2013. Drum seeder is suitable for sowing paddy seeds requiring only 15-20 kg of seeds/acre, saving more than 50% of the requirement in usual broadcasting.

Field day of the FLD on improved processing technique of turmeric

Field day of the frontline demonstration on 'Introduction of high yielding turmeric *var.* Sobha and improved processing technique' conducted by KVK Alleppey at Karuvatta panchayath was organised on 18-03-2013. Sobha is a high yielding variety of turmeric released by KAU, and is suitable for intercropping in coconut gardens. Earlier, handing over of Turmeric Boiler to the farmer groups for processing turmeric was done on

04-02-2013 in a function participated by Shri K. Haridasan, President, Karuvatta Gramapanchayath, Smt. Geetha, Ward Member, Dr. P. Muralidharan, Programme coordinator, KVK and partner farmers. The turmeric boiler was developed by TNAU, Coimbatore which requires only 45 minutes for boiling 100 kg turmeric compared to 3.5 hrs in the conventional method and leading to less fuel consumption. Smt. C. Sujatha, President Harippad Block panchayath who inaugurated the field day and released the organic turmeric powder named '*Aishwarya*', emphasised the benefits of using organic turmeric products. Shri K. Haridas, President, Karuvatta Panchayath, Dr. P. Muralidharan, Programme coordinator, Smt. Gangadevi, Agrl. Officer, Smt. Anitha N., Village Extension Officer and Smt. Jissy George, SMS, KVK spoke on the occasion. More than 50 farmers including 10 demonstration partners attended the programme. The partner farmers opined that the turmeric boiler has definite advantage over the normal processing method.

Harvest festival of Vegetables in NSS camp

KVK-Alleppey in association with the MSM College, Kayamkulam initiated vegetable cultivation in a large area at Koipalli Karazhma as a part of the NSS

camp of students of the college. Ten different types of vegetable seeds were sown in plots laid out in 50 cents of land and managed by the camp members under the guidance and supervision of KVK expert. On 7th March, the harvesting of the crops was inaugurated by Dr. M. Salim, Principal, MSM College and the harvested 20 kg vegetables were handed over to the students of Koipalli Karazhma UP School where the NSS camp was held.

Training programmes

Organized 19 training programmes (5 on campus, 12 off campus and 2 sponsored) benefitting a total number of 521 farmers/rural youths during the period. One batch of six day residential training programme “Friends of coconut tree” sponsored by Coconut Development Board was conducted from 25-02-2013 to 02-03-2013.

Eighteen trainees attended in the programme from various Panchayaths of the district.

KVK-ATMA Linkage

Conducted an interface programme on “Upscaling of successful technologies in crop production” for the ATMA functionaries of the district on 06-03-2013.

A training programme on dairy cow management was conducted for 18 farmers at Kanjikuzhi on 05-03-2013

under ATMA activities.

Conducted field visit of 36 farmers of Kanjikuzhi block to Integrated farming system units under NICRA project at Muttar panchayath on 19-03-2013.

KVK experts attended as resource persons in the Kissan Goshties at Alappuzha (23-02-2013), Chengannur (05-03-2013), and Cherthala (16-03-2013) and the District farmer extension linkage at Alappuzha (16-02-2013).



ATMA interface programme at Chengannur

SUCCESS STORY

Bio-suppression of alien invasive papaya mealybug infestation in Minicoy

The invasive pest, papaya mealybug, *Paracoccus marginatus* Williams and Granara de Willink (Pseudococcidae : Hemiptera) severely infested on papaya leaves and fruits in the Minicoy Island bringing down the production quite significantly. The affected trees failed to flower and bear fruits and got dried up in severe infestation. Classical introduction and three releases of the exotic parasitoid, *Acerophagus papayae* Noyes & Schauff (Encyrtidae: Hymenoptera) obtained from NBAIL, Bengaluru during 2012 has reduced the pest population and thereafter the infested trees were revitalized and started flowering. Success rate on the establishment of the parasitoid is comparable with that of the mainland.



Papaya plants succumb to pest attack, (A) Colony of parasitoid *Acerophagus papayae*, (B) Establishment of predator - *Spalgus epius*

HUMAN RESOURCE DEVELOPMENT

Trainings within India

Name and Designation	Title of training course	Place and duration
Dr. K. Muralidharan, Head, Social Sciences and Dr. Vinayaka Hegde, Acting Head, Crop Protection	Statistical Approaches for Genome Data Analysis	IASRI, New Delhi 07-01-2013 to 19-01-2013
Dr. P. Anithakumari, Principal Scientist	Strengthening Gender Perspective in Agricultural Research and Extension	DRWA, Bhubaneswar 12-01-2013 to 25-01-2013
Dr. S. Kalavathi, Principal Scientist	MDP Workshop on Information and Communication Technologies for Farm Women	NAARM, Hyderabad 18-01-2013 to 24-01-2013
Shri C.B. Harisha, Farm Asst. and Shri A. Sanjeeva, JTA	Advances in soil and plant analysis	CAZRI, Jodhpur 21-01-2013 to 26-01-2013
Ms. V. Selvamani, Scientist management	GIS applications for natural resource management	NAARM, Hyderabad 20-2-2013 to 23-2-2013
Dr. Arun Kumar Sit, Senior Scientist	Scientific Report Writing and Presentation	NAARM, Hyderabad 04-03-2013 to 07-03-2013
Mrs. Jissy George, SMS	Application of High Pressure for food processing	CIFT, Cochin 12-03-2013
Shri M.P. Ramesh Kumar, Technical Officer, Library	Website development and hosting	IASRI, New Delhi 18-3-2013 to 23-3-2013

Awards / Honours

Dr. A. Joseph Rajkumar, Senior Scientist (Ag. Entomology) was conferred the SPPS Fellow Award - 2013 of the Society of Plant Protection Sciences. The Fellow award was presented by His Excellency Shri

Bharat Vir Wanchoo, Governor of Goa on January 27, 2013 at ICAR Research Complex for Goa.

The paper entitled 'Toxicity of newer insecticide molecules on palm cuticle grubs, *Leucopholis coneophora* Blanch' by Pratibha, P.S., Subaharan, K. and

Kumar, A.R.V. has won the third Best Poster Award during the 4th International Conference on Insect Science (ICIS - 2013) held at Bangalore from 14-02-2013 to 17-02-2013.

PARTICIPATION IN MEETINGS/ SYMPOSIUM/ SEMINAR

Name and designation	Title of the programme	Place and date
Dr. George V. Thomas, Director	National Seminar on Emerging Trends in Biological Sciences	St. Agnes College, Mangalore 08-01-2013
	National Workshop on Strategies and Action Plan for Plant Health Management in XII Five Year Plan	Thiruvananthapuram 08-02-2013
	Consultative Meeting of experts to discuss the proposal to declare tender coconut water as "National healthy drink of India".	Nirman Bhavan, New Delhi 18-03-2013
Dr. A. Joseph Rajkumar, Sr. Scientist	10 th National Symposium on Biotechnological Approaches for Plant Protection: Constraints and Opportunities	ICAR Res. Complex for Goa 27-01-2013 to 29-01-2013
Dr. Chandrika Mohan, Principal Scientist, Dr. A. Joseph Rajkumar, Sr. Scientist and Mrs. P.S. Prathibha, Scientist	4 th International Congress on New Horizons in Insect Science	UAS, Bengaluru 14-02-2013 to 16-02-2013
Dr. K. Subaharan Sr. Scientist	Delivered two invited lectures - 'Single cell recording with reference to pheromone research' and 'Scope of pheromone use in IPM of plantation crops	TNAU, Coimbatore 25-02-2013
	Nanotechnology for pest management	IWST, Bangalore 01-03-2013
Dr. S. Elain Apshara, Sr. Scientist and Nagaraja, N. R. Scientist	National Workshop on Foresight and future pathways of agricultural Research Through Youth in India	NASC Complex, New Delhi 01-03-2013 to 02-03-2013
Dr. H.P. Maheswarappa, PC (Palms)	Oil Palm Stakeholders Meet	Directorate of Horticulture, Bangalore 02-03-2013

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Extension Pamphlet

Lekha, G. and Muralidharan, P. 2013. Mushroom spawn production small scale enterprise (in Malayalam).
Jissy George and Muralidharan, P. 2013. Value added products from coconut (in Malayalam).

Training Manual

Elain Apshara, S. and Venkatesh N. Hubballi. 2013. *Cocoa to chocolate*. Training Manual. CPCRI. 10 p.
Jaganathan, D., Alagar, M., Elain Apshara, S. and Nagaraja, N. R. 2012. *Training Manual on Advances*

in Arecanut and Cocoa Production Technology. CPCRI Regional Station, Vittal, Karnataka, 225 p.

CELEBRATIONS

Republic Day

Republic Day was observed in the headquarters, Regional Stations and Research Centres on 26-01-2013 in a befitting manner. Dr. George V. Thomas, Director, delivered Republic Day speech at Kasaragod.

World Water Day

World Water Day was celebrated in a befitting manner on 22-03-2013 by organizing a special lecture to commemorate 2013 as the International Year for Water Cooperation. In the meeting attended by all scientists, officers and staff at the

CPCRI, Regional Station, Kayamkulam, Dr. K.G. Padmakumar, Associate Director of Research (Retd.), RARS, Kumarakom was the chief guest who delivered an inspiring talk on water and its utilization in agriculture with special emphasis on fish culture for higher profitability and ecological sustainability. The meeting was presided by Dr. V. Krishnakumar, Head wherein he highlighted the importance and conservation of water for the sustained survival of mankind.

Hindi Workshop

Conducted one day's Hindi Workshop

on 26-2-2013 which was inaugurated by Dr. C.T. Jose, Head i/c of the Station in the presence of Shri Shivadasan, Teacher, Jawahar Navodaya Vidhyalaya, Mudipu, Dakshina Kannada District and Shri Prakash G. Bhat, Technical Officer, DCR Puttur. Employees of this Station as well as from members' organizations of TOLIC have participated. Shri Shivadasan and Shri Prakash G. Bhat have guided the participants regarding grammar and usage of Hindi in day-to-day administration. In the afternoon Shri U.S. Vishweshwara Bhat, Lecturer, PU College, Vittal gave a lecture.

WOMEN'S CELL ACTIVITIES

International Womens' Day

International Women's Day was celebrated on 8-3-2013 in the Institute. At Kasaragod, Smt. Mumtas Shukkur, President, Kasaragod Block Panchayat was the chief guest of the function. Smt. Mumtas delivered a talk on rights of women at workplaces. Smt. Lakshmi Bhat, Smt. Pramila Vinod and Smt. Kadeeja Mohammed, women entrepreneurs were honoured during

the programme. At Kayamkulam, Dr. Thankamoni, Head of Division (RTD), College of Engineering, Thiruvananthapuram, Dr. Maria Liza Mathew, Joint Director AH (RTD) and Mrs. Lopa, Winner of Kendra Sahitya Academy Yuva Puraskar were the guests of honour. Dr. George V. Thomas, Director, CPCRI distributed prizes to women farmers for the best technical questions. A compilation of



Inauguration of International Womens' Day at Kayamkulam

'Women friendly coconut technologies' was distributed during the programme.



Women staff of CPCRI during exposure visit on the occasion of International Womens' Day

COMMERCIALISATION OF TECHNOLOGY

Virgin coconut oil (VCO) is the oil obtained from fresh, mature endosperm (kernel-meat) of the coconut by mechanical or natural means, with or without use of heat, no chemical refining, bleaching or deodorizing and maintains the natural aroma and nutrients. It is called "virgin" because the oil obtained is pure, raw and pristine. Virgin coconut oil is suitable for human consumption in its natural form. It is the purest form of coconut oil, crystal clear, contains natural vitamin E and with very low,

free fatty acid content (0.1%). The VCO production technology has been transferred non-exclusively to M/s Dinesh Foods, Kannur for Rs. 25,000.

Know-how on 'Mass multiplication technique of *Goniozus nephantidis* the parasitoid of coconut black headed caterpillar, *Opisina arenosella*' has been transferred to Shri Arvind Sabapathy, Vettaikaran Podur, Pollachi for Rs. 2,000/-. Know-how on 'Coconut leaf vermicomposting' and know-how on 'Utilization of *Metarhizium anisopliae* culture' have been transferred to DeeJay



Director, CPCRI exchanging MOA with Secretary, Dinesh Foods, Kannur

Consultancy Services, Bangalore, for Rs. 5,000/- each.

DISTINGUISHED VISITORS

Name & Designation	Place and Date	Purpose of visit
Prof. V.L. Chopra, Chancellor, Central University of Kerala	CPCRI, Kasaragod 05-01-2013	Interaction with scientists and acquaint with the ongoing activities of the Institute
Dr. P. V. Varaprasad, Associate Professor and Director, Great Plains Sorghum Improvement and Utilization Center, Kansas State University, USA	CPCRI, RS, Vittal and RC, Kidu 10-01-2013	Interaction with scientists regarding research and extension activities.
Dr. P.L. Saroj, Director, DCR, Puttur	CPCRI, Kasaragod 16-11-2012	Inauguration of MTC on value addition
Dr. Wasakha Singh Dhillon, Assistant Director General (Horticulture), ICAR, New Delhi	CPCRI, RS, Vittal 20-01-2013	Review of ongoing research and extension activities.
	CPCRI Kasaragod 21-01-2013	-do-
	CPCRI, RC, Kidu 22-01-2013	-do-
Dr. S. K. Dutta, Deputy Director General (Crop Science), ICAR, New Delhi and Dr. Agarwal, Registrar General PPV&FRA, New Delhi	CPCRI, RC, Mohitnagar 15-03-2013	To acquaint with the ongoing activities of the Centre



Prof. V.L. Chopra, Chancellor, Central University of Kerala on his visit to Agro-Processing Centre at CPCRI Kasaragod

PERSONALIA

APPOINTMENTS

Name of official	Designation	Place	w.e.f.
Shri Aneesh E.M.	SSS	CPCRI, Kasaragod	07-01-2013

TRANSFERS

Name of the staff / Designation	From (Place)	To (Place)	w.e.f.
Smt. Prasanna Sarangan, P.A	ICAR Research Complex, NEH Centre Arunachal Pradesh	CPCRI, RS, Kayamkulam	17-01-2013

PROMOTIONS

Name of the staff	From (Designation)	To (Designation)	w.e.f.
Dr. C. Thamban	Sr. Scientist (Extension), CPCRI, Kasaragod	Pr. Scientist (Extension), CPCRI, Kasaragod	30-05-2010
Dr. S. Kalavathi	Sr. Scientist (Extension), CPCRI, RS, Kayamkulam	Pr. Scientist (Extension), CPCRI, RS, Kayamkulam	01-01-2009
Dr. P. Anithakumari	Sr. Scientist (Extension), CPCRI, RS, Kayamkulam	Pr. Scientist (Extension), CPCRI, RS, Kayamkulam	05-01-2010
Shri Saran Kumar Rizal	T7, Farm Superintendent, CPCRI, RC, Mohitnagar	T9, Farm Superintendent, CPCRI, RC, Mohitnagar	01-09-2010
Shri K. Shyama Prasad	T6 Programme Asst. (Audio Visual), CPCRI, Kasaragod	T7-8 Programme Asst. (Audio Visual), CPCRI, Kasaragod	01-01-2011
Smt. Preethi K.	LDC, CPCRI, Kasaragod	UDC, CPCRI, Kasaragod	04-03-2013
Shri Paulson Sam George	LDC, CPCRI, Kasaragod	UDC, CPCRI, Kasaragod	04-03-2013

RETIREMENTS

Name	Designation	Place	Superannuation on
Shri G.V. Nair	Administrative Officer	CPCRI(RS), Kayamkulam	31-01-2013
Smt. P. Savithri	Lab Attender	CPCRI, RS, Vittal	31-03-2013
Smt. N. Sarojini	Assistant	CPCRI, Kasaragod	28-02-2013
Shri Moosa Manikfan	SSS	CPCRI, Kasaragod	28-02-2013
Shri Fredrick Crasta	Assistant	CPCRI, Kasaragod	28-02-2013



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 Photo credits: Shri K. Shyama Prasad, E.R. Asokan and S.N. Mohana Gowda
 Central Plantation Crops Research Institute, Kudlu P.O., Kasaragod, Kerala - 671 124
 Phone: 04994 232893, 232894, 232895, 233090, 232333 (Director); Fax: 04994 232322
 E-mail: cpcri@nic.in, cpcri@yahoo.com; website: www.cpcri.gov.in