

# RESEARCH-FARMER-EXTENSION INTERFACE ON COCONUT AND ARECANUT

- AN EFFECTIVE STRATEGY FOR BRIDGING THE KNOWLEDGE GAP

*Farmers first .....*

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## FOREWORD

Coconut and Arecanut crops play an important role in providing livelihood security to the millions of families in Karnataka. Coconut and Arecanut are cultivated mainly in Dakshina Kannada, Udupi, Chickmagalore, Shimoga, Uttara Kannada, Chitradurga, Davanagere, Hassan, Tumkur, Mysore, Mandya, Chamaraajanagar and Ramanagar districts of Karnataka. In the recent past both the crops are facing a number of field problems namely, pests and diseases, improper nutrient management, shortage of labour, price fluctuations, low price, lack of value addition etc. which affect the livelihood security of the coconut and arecanut growers. CPCRI has been pioneering in doing research on coconut for almost one century and on arecanut for more than five & half decades. The scientific research resulted in number of technologies which are disseminated to the farmers and other clients through various transfer of technology programmes. Scientists of State Agricultural Universities, Subject Matter Specialists of Krishi Vigyan Kendras, Officers of Department of Horticulture/Agriculture, Officers of other development departments and progressive farmers are involved in transfer of technologies to farmers and other clients. But still there exists a weak linkage between research-farmer-extension in solving field problems of coconut and arecanut growers.

In this context CPCRI took initiative and had organized research-farmer-extension interface programmes on coconut and arecanut in 13 districts of Karnataka during August to October, 2013 for the benefit of farming community and other clients. I am happy to know that these programmes were organized in collaboration with State Agricultural/Horticultural Universities, Krishi Vigyan Kendra's, Department of Horticulture, Farmers organizations and NGO's.

I congratulate the Director and Scientists of CPCRI for having taken steps to bring out this book for the benefit of policy makers, scientists, officers of KVK's, officers of development departments, progressive farmers and those who are interested in coconut and arecanut farming.

**( S. AYYAPPAN )**

Date: 03.03.2014



## PREFACE

Coconut and Arecanut are the important plantation crops which are being cultivated in many districts of Karnataka. CPCRI has been pioneering in doing research on coconut and arecanut. The scientific research resulted in number of technologies which are disseminated to the farmers and other clients through various transfer of technology programmes. Scientists of State Agricultural Universities, Subject Matter Specialists of Krishi Vigyan Kendra's, Officers of Department of Horticulture/Agriculture, Officers of other development departments and progressive farmers are involved in transfer of technologies to farmers and other clients. But still there exists a weak linkage between research-farmer-extension in solving field problems of coconut and arecanut growers.

In this context we had organized research-farmer-extension interface programmes on coconut and arecanut in 13 districts of Karnataka during August to October, 2013 for the benefit of farming community and other clients.

This book covers details on Research-Farmer-Extension interface programmes organized in 13 districts of Karnataka, field problems expressed by farmers, feedback of the farming community, list of resource persons and media coverage.

We hope that this book will be a useful resource material for policy makers, scientists, officers of KVK's, officers of development departments, progressive farmers and those who are interested in coconut and arecanut farming.

We sincerely thank Vice-Chancellors of State Agricultural/Horticultural Universities, Programme Coordinators of KVK's, Officers of Department of Horticulture, Progressive Farmers, Media Personnel and coconut & arecanut growers for their timely help, keen interest and moral support for organizing the interface programmes successfully.

We are indeed grateful to **Dr. S. Ayyappan**, Secretary, DARE & Director General, ICAR, New Delhi for mooted the idea of conducting interface programmes by providing valuable guidance and wholehearted support.

We are also grateful to **Dr. N. K. Krishna Kumar**, Deputy Director General (Horticulture), ICAR, New Delhi for his constant guidance and encouragement for the programme.

We thank all the scientists and technical staff of the institute for their valuable help for preparing this book.

**Authors**

## CONTENTS

S.No.	Title	Page No.
1	Introduction	1
2	Technologies for improving productivity of coconut and arecanut	3
3	Genesis of research-farmer-extension interface programmes on coconut and arecanut	7
4	Methodology	9
5	Organization of district level interface programmes	12
6	Summary of feedback from coconut and arecanut growers	53
7	Strategy for strengthening interface programmes	55
	APPENDIX (I-III)	
I	Media coverage (Press and Television)	60
II	Contact addresses of KVKs and other line departments	67
III	Members of organizing committee	68

## 1. INTRODUCTION

The coconut palm is referred to as 'Kalpavriksha' – 'Tree of Heaven' as each and every part of the palm is useful to mankind in one way or other. It provides food, drink, fuel, timber etc. Millions of families in India depend on coconut for their livelihood either directly or indirectly. In India, most of the acreage under coconut palm (90%) lies in the four southern states *i.e.*, Kerala, Tamil Nadu, Karnataka and Andhra Pradesh. In India, Karnataka ranks second with respect to area and production of coconut (Table 1). Productivity of coconut in Karnataka is 11627 kg/ha which is eighth in position and lesser than the productivity of Tamil Nadu (13717 kg/ha) and Andhra Pradesh (13976 kg/ha).

Arecanut (*Areca catechu* L.) is one of the important commercial crops grown in parts of Karnataka, Kerala, Assam, Meghalaya, West Bengal and Andaman & Nicobar Islands. The cultivation has also been extended to other states like Tamil Nadu, Andhra Pradesh and Maharashtra. Arecanut plays an important role in the religious, social, cultural, political and economic life of our people irrespective of caste, creed or social status. Arecanut is known to have several medicinal properties. It has the quality of supplying stimulation to nervous system and increasing secretion of saliva in the mouth. It aids digestive system and it possesses the quality of removing bad odour from the mouth and creates a sense of general well being. Arecanut sector provides large number of employment opportunities both directly and indirectly for lakhs of farmers especially marginal and small farmers. India is the largest producer and consumer of arecanut in the world holding 62% of the area and 60% of the production. In India, Karnataka ranks first with respect to area, production and productivity of arecanut when compared to other states (Table 1).

**Table 1. Area, production and productivity of coconut and arecanut in Karnataka in 2012**

<b>Crop</b>	<b>Area (lakh ha)</b>	<b>Production (lakh metric tons)</b>	<b>Productivity (kg/ha)</b>
Coconut	5.06	37.7	11627
Arecanut	2.16	3.5	1620

It is estimated that more than 10 million people in Karnataka are dependent on coconut and arecanut, as they are engaged in cultivation, processing, marketing and other

related activities. Different agencies *viz.*, Central Plantation Crops Research Institute (CPCRI), State Agricultural and Horticultural Universities (SAHUs), Coconut Development Board, Directorate of Arecanut and Spices Development (DASD), Central Arecanut & Cocoa Marketing & Processing Cooperative Ltd. (CAMPCO), Department of Horticulture, Farmers Organizations and Self Help Groups (SHG's) are doing research and extension activities for coconut and arecanut development. Through the systematic research conducted by CPCRI, a substantial number of viable technologies related to crop improvement, production, protection and processing have been evolved for enhancing coconut and arecanut production.

However, farmers are not able to exploit the production potential from these technologies to the extent desirable. Extent of adoption of the recommended practices plays a crucial role in improving productivity and income from coconut and arecanut farming. The present scenario of technology adoption in coconut and arecanut calls for strengthening the technology dissemination programmes with the active participation of beneficiaries.

Research-farmer-extension interface programme is an approach for strengthening the transfer of technology efforts for the development of coconut and arecanut sector in the state. In this approach, researchers, extension personnel and farmers are brought together on a common platform to streamline the activities for the sustainable development of coconut and arecanut. In this context, CPCRI has organized research-farmer-extension interface programmes on coconut and arecanut in 13 districts of Karnataka during August 2013-October 2013 to create awareness about the technological options and developmental opportunities available to address the problems and enhance the profitability of farming. These programmes were organized as a collaborative effort with SAHUs, KVKs and Department of Horticulture in Karnataka. Thematic sessions related to crop improvement, crop production, crop protection and value addition were covered in the interface programmes, in which scientists from CPCRI, SAUs/SHUs of Karnataka and KVKs, extension personnel from Department of Horticulture and farmers had participated.

## **2. TECHNOLOGIES FOR IMPROVING PRODUCTIVITY OF COCONUT AND ARECANUT**

CPCRI has a history of almost a century of coconut research and more than five and half decades of arecanut research with high yielding varieties, package of practices, post harvest technologies. The demand for CPCRI technologies like high yielding varieties/ hybrids of coconut and arecanut, vermicomposting using coconut and arecanut wastes, integrated nutrient management with judicious, balanced and split application of organic and inorganic fertilizers, natural enemies/ predators in coconut and arecanut ecosystem and bio-control agents and integrated pests and diseases management practices for coconut and arecanut has been very high among the farming community and other clientele. Research and extension activities are changed as per the demands of clients *viz.*, farmers, agricultural/ horticultural officers, agro processors, self help groups, college/school students etc. Assessment and refinement of technologies is done through co-operation of Developmental Departments/ Boards by organizing various programmes with the active participation of farmers.

### **Technologies on coconut**

**Crop improvement:** Coconut varieties namely, Chandra Kalpa, Kera Chandra, Chowghat Orange Dwarf, Kalpatharu, Kalpa Jyothi, Kalpa Surya and Kalpa Haritha were released from CPCRI which are suitable for Karnataka. High yielding hybrids namely, Chandra Sankara, Kera Sankara, Chandra Laksha were released for Karnataka region. Dwarf varieties *viz.*, Chowghat Orange Dwarf, Kalpa Jyothi, Kalpa Surya were released exclusively for tender coconut. Kalpa Haritha, Chandra Sankara were released as dual purpose varieties suitable for copra and tender nuts. Chandra Kalpa and Kalpatharu are relatively tolerant to drought. Kalpa Haritha is comparatively free from eriophyid mite infestation amidst heavily infested palms of other varieties. Kalpatharu is released for ball copra production.

**Crop production:** Recommended fertilizer dose is 500: 320: 1200 g of N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O per palm/ year in 2 splits 1/3<sup>rd</sup> fertilizer in May-June and 2/3<sup>rd</sup> along with organics during September-October. Water requirement as 200 l/palm and irrigation frequency is once in 5 days. Drip irrigation and fertilizer application through drip irrigation has been standardized. Vermicomposting of coconut wastes using two cultured species of

earthworms, *Eudrilus eugineae* and *Eisenia foetida* was proved as an efficient method of composting. For maximizing economic returns, high value medicinal and aromatic crops, and flower crops have been recommended in the palm based cropping system. Vegetables like snake gourd, ridge gourd, bottle gourd, amaranthus, coccinia, brinjal and bitter gourd, tuber crops like ginger, turmeric, greater yam, colocasia and greater yam are compatible for intercropping in coconut gardens. A number of perennials like cocoa, clove, nutmeg, coffee, pepper, mulberry, jack, bread fruit, mango, sapota, papaya and timber yielding trees were found to be suitable mixed crops in coconut garden. Mixed farming in coconut with various subsidiary enterprises such as dairy, poultry, and sericulture with coconut cultivation by raising fodder crops, mulberry etc. in the interspaces was found to be quite advantageous.

**Crop protection:** Integrated pest management practices for insect pests *viz.*, eriophyid mite, rhinoceros beetle, red palm weevil, leaf eating caterpillar, root eating white grub, coried bug, slug caterpillars, mealy bugs, scale insects, termite and mammalian pests (rats) have been standardized. Integrated disease management practices for diseases *viz.*, bud rot, leaf rot, stem bleeding disease, thanjavur wilt/ ganoderma, leaf blight or grey leaf spot, root (wilt), mahali or fruit rot and nut fall and disorder like crown choking have been standardized. Judicious use of various management practices namely, cultural, biological, mechanical and chemical methods are emphasized in managing pests and diseases.

**Post harvest processing and mechanization :** Agricultural implements/gadgets such as power operated sprayer, copra dryers using different energy sources and capacities, coconut splitting device, coconut deshelling machine, coconut grating machine, tender coconut cutter, tender nut punching machine, coconut chips slicing machine, a simple coconut palm climbing device and a safety device for coconut climbing, have been developed by CPCRI. Technologies for making value added products like snowball tender nut (SBTN), coconut chips of various flavours, virgin coconut oil, kalparasa, coconut sugar, coconut charcoal etc. have been developed and are being promoted vigorously among prospective entrepreneurs.

## **Technologies on arecanut**

**Crop improvement:** Arecanut varieties namely, Mangala, Sumangala, Sreemanagala, Mohithnagar, Swarnamangala were released from CPCRI which are suitable for Karnataka.

Two arecanut dwarf hybrids viz., VTLAH1 (Hirehalli Dwarf x Sumangala) and VTLAH2 (Hirehalli Dwarf x Mohithnagar) were also released for Karnataka region. Recently two more new high yielding varieties viz., Madhuramangala and Nalbari were released and notified by Central Variety Release Committee.

**Crop production:** Agro techniques for arecanut such as spacing (2.7 X 2.7 m), fertilizer dose (100: 40: 140 g NPK respectively and 20kg FYM per palm per year) and irrigation of 30 mm water at 30 mm pan evaporation have been standardized. Technology for production of Oyster mushroom (*Pleurotus sajor caju*) from areca leaf sheath has been standardized. Vermicomposting of areca wastes using two cultured species of earthworms, *Eudrilus eugineae* and *Eisenia foetida* was proved as an efficient method of composting. High density multispecies cropping system involving arecanut, banana, pepper and cocoa had resulted in higher net return of almost 85-100 % over arecanut monocropping system. Black pepper, betelvine, banana, cocoa, lemon/ acid lime are some of the common intercrops in arecanut gardens. Experimental studies have indicated the feasibility of growing various medicinal plants viz., vetiver, shatavari, long pepper, brahmi, *Nilagiranthus ciliatus*, periwinkle, aloe vera and aromatic plants viz., lemon grass, palmarosa, basil, davana, patchouli in arecanut plantations. Technologies for fertigation and mixed farming in arecanut (dairy+fodder+fishery) have been standardized.

**Crop protection:** Integrated pest management practices for pests viz., mites, spindle bug, root grubs, pentatomid bug and scale insects have been standardized. Integrated disease management practices for diseases viz., Mahali/fruit rot, bud rot/ crown rot, inflorescence die back/ button shedding, anaberoaga/foot rot, band disease, nut splitting have been standardized. For managing Yellow Leaf Disease, research trials are being taken up. Judicious use various management practices namely, cultural, biological, mechanical and chemical methods are emphasized in managing pests and diseases.

### **Outreach programmes**

Training programmes are conducted for farmers, agricultural/ horticultural officers, Self Help Groups etc. based on the need and request. Establishment of Front Line Demonstrations in farmers' gardens on proven technologies to convince the farmers regarding technical feasibility and economic viability of the technologies. Method demonstrations on Bordeaux mixture preparation, method of application of fertilizers



etc. are organized. A multi-disciplinary team of scientists visit farmers' fields and give professional advice for solving some problems related to coconut and arecanut cultivation. Agriculture Information Centre provides information/technologies on coconut and arecanut. Seminars, Meetings, Field days, Kisan Mela and Exhibition are organized in different parts of the country from time to time based on the need.

## **Publications on Coconut and Arecanut**

Institute is bringing out publications on proven technologies in the form of extension folders, pamphlets, technical bulletins, training manuals, books etc. for distribution to the farmers and other stakeholders.

### ***Technical bulletins***

- Coconut cultivation practices- English, Kannada
- Arecanut cultivation practices- English, Kannada
- Arecanut calendar-English, Kannada

### ***Extension folders***

- Crown rot management in arecanut- English, Kannada
- Integrated management of root grubs in arecanut - English, Kannada

### ***Books***

- Coconut
- Arecanut

### ***Training Manuals***

- Market-led production strategies for Arecanut
- Arecanut production technology

### ***E-media***

- CDs
- Website: [www.cpcri.gov.in](http://www.cpcri.gov.in)

### ***Magazines/Journals***

- CPCRI Newsletter (Quarterly)
- Indian Journal of Plantation Crops - Kasaragod
- Annual Report of CPCRI

### **3. GENESIS OF RESEARCH-FARMER-EXTENSION INTERFACE PROGRAMMES ON COCONUT AND ARECANUT**

Considering the scope and importance of improving the coconut and arecanut scenario in the state and the availability of improved technologies, CPCRI had planned to organize a series of interface programmes in different districts of Karnataka where coconut and arecanut are the important crops. The main aim of the interface programme was to create awareness about the technological options and developmental opportunities available to address the problems for enhancing the profitability of coconut and arecanut farming.

#### **Objectives**

1. To organize a comprehensive interface among researchers, extension personnel and farmers on coconut and arecanut cultivation.
2. To discuss the technologies developed on coconut and arecanut and the necessity for timely adoption of technologies.
3. To showcase improved technologies through exhibition and demonstration.
4. To assess the constraints in the adoption of technologies.
5. To collect feedback from the stakeholders.
6. To suggest suitable follow up measures and recommendations for improving productivity and profitability from farming.

#### ***Planning for interface programmes***

CPCRI has decided to organize interface programmes in 13 districts of Karnataka with the active participation of all the stakeholders. Schedule for interface programmes was finalized after consulting the officials of SAUs/SHUs, KVKs, Department of Horticulture and progressive farmers in different districts. The details on purpose of the interface programme, topics to be covered, venue, date, resource persons, guests and participants to be invited were informed to the respective collaborative institutions/agency for making necessary arrangements.

Based on the discussion with officials of SAUs/SHUs, KVKs, Department of Horticulture and progressive farmers, schedule for interface programme for 13 districts were proposed as given in the Table 2.

**Table 2. Proposed interface schedule**

<b>S.No.</b>	<b>District</b>	<b>Collaborating Institute/ Agency</b>	<b>Crops to be covered</b>	<b>Date</b>
1	Udupi	KVK and ZAHRS, Brahmavar	Coconut & Arecanut	24.08.13
2	Dakshina Kannada	Department of Horticulture, Sullia	Coconut & Arecanut	27.08.13
3	Shimoga	KVK, Shimoga	Coconut & Arecanut	30.08.13
4	Chamarajanagar	KVK, Chamarajanagar	Coconut & Arecanut	04.09.13
5	Ramanagar	KVK, Ramanagar	Coconut & Arecanut	05.09.13
6	Mandya	KVK, Mandya	Coconut	06.09.13
7	Tumkur	KVK, Tiptur	Coconut & Arecanut	12.09.13
8	Mysore	KVK, Mysore	Coconut & Arecanut	13.09.13
9	Chitradurga	KVK, Chitradurga	Coconut & Arecanut	24.09.13
10	Davanagere	KVK, Davanagere	Coconut & Arecanut	25.09.13
11	Chickmagalore	AHRS, Sringeri	Arecanut	07.10.13
12	Uttara Kannada	KVK & College of Forestry, Sirsi	Coconut & Arecanut	09.10.13
13	Hassan	HRS, Arasikere	Coconut	10.10.13
14	Hassan	KVK, Hassan	Coconut & Arecanut	11.10.13

## **4. METHODOLOGY**

### ***Planning***

As per the guidance of Dr. S. Ayyappan, Secretary, DARE & Director General, ICAR and Dr. N. K. Krishna Kumar, DDG (Horticulture), ICAR, series of meetings were convened for successful conduct of the interface programmes. Dr. George V. Thomas, Director, CPCRI had convened a meeting with Heads of Divisions, Head, CPCRI, Regional Station, Vittal and Scientists of CPCRI to discuss about the organization of interface programmes in Karnataka. The following decisions were taken during the meeting.

- Expenditure for the interface programmes may be met from CPCRI fund.
- Coordinators, resource persons and exhibitors to be identified for the interface programmes.
- Interface programmes to be conducted during the months of August 2013 - October 2013.
- Coordinators may contact collaborative institutes for arranging logistic and other necessary requirements.
- Technologies to be discussed/popularized in the interface meeting may be finalized and to be informed to the resource persons.
- Resource persons should make their presentations in Kannada language and emphasis may be given on field oriented problems.
- Exhibition stall of CPCRI may be arranged in all the interface programmes to showcase the improved varieties, technologies on production, protection and processing of coconut and arecanut.
- Publications on package of practices for coconut and arecanut may be brought out in Kannada language for distribution to the farmers during interface.
- Interface kits containing literature, folder, pen, writing pad etc. to be provided to participants.
- Food (breakfast, lunch and evening snacks) may be provided for the participants.
- Rapporteurs may note down the proceedings/feedback of the interface programmes.

- Wide media coverage (print, radio, TV, internet) may be given for the benefit of large number of farmers.
- Proceedings of the interface programmes may be brought out as a follow up action and also for streamlining the research and extension activities for coconut and arecanut sector in Karnataka.

### ***Preparation***

As decided in the Director's meeting with Heads of Divisions, Head, CPCRI, Regional Station, Vittal and Scientists of CPCRI, the following arrangements were made.

- Interface expenditure to be met from CPCRI, Vittal.
- Dr. K. S. Ananda, Dr. Ravi Bhat, Dr. Vinayaka Hegde, Dr. C. Thamban, Dr. C. T. Jose, Dr. D. Jaganathan, Dr. Rajkumar, Dr. Nagaraja, N. R. were identified as coordinators for interface programmes.
- Scientists representing different disciplines from CPCRI, Kasaragod, Regional Station, Vittal and Regional Station, Kayamkulam were identified as resource persons for interface programmes. Dr. George V. Thomas, Dr. H. P. Maheswarappa, Dr. K. B. Hebbar, Dr. K. S. Ananda, Dr. Ravi Bhat, Dr. Vinayaka Hegde, Dr. C. Thamban, Dr. Chandrika Mohan, Dr. D. Jaganathan, Dr. Rajkumar, Dr. Nagaraja, N. R., and Dr. V. H. Prathibha were identified as resource persons.
- Scientists/officials of SAUs/SHUs, KVKs, Department of Horticulture and progressive farmers were also identified as resource persons.
- Coordinators contacted Scientists/officials of SAUs/SHUs, KVKs, Department of Horticulture and progressive farmers and arranged all logistic and other necessary requirements.
- Technologies on crop improvement, production, protection and processing of coconut and arecanut which are suitable for Karnataka were discussed and finalized.
- Exhibits on improved varieties, technologies on production, protection and processing of coconut and arecanut were arranged for showcase during interface for giving first hand information to farmers.
- Publications on package of practices for coconut and arecanut were brought out in Kannada language for distribution to the farmers during interface programmes.

### ***Research-Farmer-Extension interface on coconut and arecanut***

- Interface kits containing extension literature, folder, pen, writing pad etc. were arranged for giving to participants.
- Arrangements were made for giving food (breakfast, lunch and evening snacks) to the participants.
- Arrangements were made for documenting the proceedings/feedback of the interface programmes.
- Arrangements were made for the coverage of interface programmes in all districts through mass media (print, radio, TV, internet) for the benefit of large number of farmers.

### ***Implementation***

Research-Farmer-Extension interface programmes were organized in 13 districts of Karnataka during August 2013 - October 2013 as per the proposed methodology.

## 5. ORGANIZATION OF DISTRICT LEVEL INTERFACE PROGRAMMES

The district level interface programmes were organized in 13 districts of Karnataka in which 1930 farmers had participated and the details are given in Table 3.

**Table 3. Interface programmes in Karnataka**

S.No.	Name of the programme	Date	Collaborating Institute/agency	No. of Participants
1	Research-Farmer-Extension interface on Coconut and Arecanut in Udupi	24.08.13	KVK and ZAHRS, Brahmavar	180
2	Research- Farmer -Extension interface on Coconut and Arecanut in Dakshina Kannada	27.08.13	Department of Horticulture, Sullia	153
3	Research- Farmer -Extension interface on Coconut and Arecanut in Shimoga	30.08.13	KVK, Shimoga	130
4	Research- Farmer -Extension interface on Coconut and Arecanut in Chamarajanagar	04.09.13	KVK, Chamarajanagar	104
5	Research- Farmer -Extension interface on Coconut and Arecanut in Ramanagar	05.09.13	KVK, Ramanagar	101
6	Research- Farmer -Extension interface on Coconut in Mandya	06.09.13	KVK, Mandya	139
7	Research- Farmer -Extension interface on Coconut and Arecanut in Tumkur	12.09.13	KVK, Tiptur	208
8	Research- Farmer -Extension interface on Coconut and Arecanut in Mysore	13.09.13	KVK, Mysore	110
9	Research- Farmer -Extension interface on Coconut and Arecanut in Chitradurga	24.09.13	KVK, Chitradurga	123



***Research-Farmer-Extension interface on coconut and arecanut***

10	Research- Farmer -Extension interface on Coconut and Arecanut in Davanagere	25.09.13	KVK, Davanagere	151
11	Research- Farmer -Extension interface on Arecanut and Coconut in Chickmagalore	07.10.13	HRS, Sringeri	190
12	Research- Farmer -Extension interface on Coconut and Arecanut in Uttara Kannada	09.10.13	KVK & College of Forestry, Sirsi	122
13	Awareness cum demonstration on management of black headed caterpillar in coconut in Hassan	10.10.13	HRS, Arasikere	107
14	Research-Farmer-Extension interface on Coconut and Arecanut in Hassan	11.10.13	KVK, Hassan	112
<b>Total</b>				<b>1930</b>

The details of venue, thematic areas covered, resource persons and coordinators of the interface programmes are given in Table 4.

The discussion / feedback from the participants of 14 interface programmes are given in Table 5.

**Table 4. Details of Research-Farmer-Extension interface programmes in Karnataka**

S. No.	District	Date	Venue	Thematic areas covered	Resource persons	Coordinators
1	Udupi	24.8.13	Dharmavaram Auditorium, Udupi	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Activities of KVK, Brahmar</li> <li>■ Developmental activities of Department of Horticulture</li> </ul>	Dr. George V.Thomas Dr. H.P. Maheswarappa Dr. K.S. Ananda Dr. K.B. Hebbar Dr. Vinayaka Hegde Dr. Nagaraja, N. R. Dr. Rajkumar Dr. Prathibha, V. H. Dr. S. Keshava Bhat Dr. M. Hanumanthappa Dr. Jayalaxmi N Hegde	Dr. C. Thamban Dr. D. Jaganathan
2	Dakshina Kannada	27.8.13	Town Hall, Sullia	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of Department of Horticulture</li> </ul>	Dr. George V.Thomas Dr. K.S. Ananda Dr. K.B. Hebbar Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Nagaraja, N. R. Dr. Rajkumar Dr. Prathibha, V. H. Dr. S. Keshava Bhat Mr. Praveen, K.	Dr. D. Jaganathan Dr. Nagaraja, N. R.
3	Shimoga	30.8.13	KVK, Shimoga	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Nagaraja, N. R. Dr. Rajkumar Dr. Nagarajappa Adivappan Dr. B. C. Hanumanthaswamy Dr. Lakshminanth	Dr. Ravi Bhat Dr. Nagaraja, N. R.

4	Chamarajanagar	04.9.13	KVK, Chamarajanagar	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	<p>Dr. K. S. Ananda Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Nagaraja, N. R. Dr. D. Jaganathan Dr. Rajkumar Dr. C. Doreswamy Mr. Girish</p>	Dr. C. T. Jose Dr. K. S. Ananda
5	Ramanagar	05.9.13	KVK, Ramanagar	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	<p>Dr. K. S. Ananda Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Nagaraja, N. R. Dr. Rajkumar Dr. Annaiah Dr. K. H. Nagaraj</p>	Dr. Rajkumar Dr. D. Jaganathan
6	Mandya	06.9.13	KVK, Mandya	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	<p>Dr. K. S. Ananda Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Nagaraja, N. R. Dr. Rajkumar Mr. T. Vijayendrakumar Dr. V. B. Sanathkumar</p>	Dr. Rajkumar Dr. D. Jaganathan
7	Tumkur	12.9.13	KVK, Tiptur	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	<p>Dr. George V. Thomas Dr. K. S. Ananda Dr. K. B. Hebbar Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. G. M. Sujith</p>	Dr. K. S. Ananda Dr. C. T. Jose

8	Mysore	13.9.13	KVK, Suttur, Mysore	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	Dr. K. S. Ananda Dr. K. B. Hebbar Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Arun Balamatti	Dr. C. T. Jose Dr. K. S. Ananda
9	Chitradurga	24.9.13	KVK, Chitradurga	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	Dr. K. S. Ananda Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Rajkumar Dr. Chandrappa Dr. Devaraj	Dr. Vinayaka Hegde Dr. K. S. Ananda
10	Davanagere	25.9.13	KVK, Davanagere	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	Dr. K. S. Ananda Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Rajkumar Dr. T. N. Devaraja	Dr. Vinayaka Hegde Dr. K. S. Ananda
11	Chickmagalore	07.10.13	Sri Chapparada Anjaneya Temple, Sringeri	<ul style="list-style-type: none"> <li>■ Crop improvement in arecanut</li> <li>■ Crop production in arecanut</li> <li>■ Pests management in arecanut</li> <li>■ Diseases management in arecanut</li> <li>■ Value addition in arecanut</li> <li>■ Developmental activities of AHRS &amp; Department of Horticulture</li> </ul>	Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Rajkumar Dr. Nagaraja, N. R. Dr. B. S. Shivakumar	Dr. C. Thamban Dr. D. Jaganathan

12	Uttara Kannada	09.10.13	College of Forestry, Sirsi	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	<p>Dr. George V. Thomas Dr. L. Krishna Naik Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Rajkumar Dr. Nagaraja, N. R. Dr. D. Jaganathan Dr. H. R. Naik Dr. Roopa S. Patil</p>	<p>Dr. Ravi Bhat Dr. Nagaraja, N. R.</p>
13	Hassan	10.10.13	Govt First Grade College, Arasikere	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut</li> <li>■ Crop production in coconut</li> <li>■ Pests management in coconut with special reference to Management of black headed caterpillar in coconut</li> <li>■ Diseases management in coconut</li> <li>■ Value addition in coconut</li> <li>■ Field visit - Demonstration on release of parasitoids for the management of black headed caterpillar in coconut</li> </ul>	<p>Dr. George V. Thomas Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Chandrika Mohan Dr. Rajkumar Dr. Nagaraja, N. R. Dr. S. Basavaraju</p>	<p>Dr. Chandrika Mohan Dr. D. Jaganathan</p>
14	Hassan	11.10.13	KVK, Hassan	<ul style="list-style-type: none"> <li>■ Crop improvement in coconut &amp; arecanut</li> <li>■ Crop production in coconut &amp; arecanut</li> <li>■ Pests management in coconut &amp; arecanut</li> <li>■ Diseases management in coconut &amp; arecanut</li> <li>■ Value addition in coconut &amp; arecanut</li> <li>■ Developmental activities of KVK &amp; Department of Horticulture</li> </ul>	<p>Dr. George V. Thomas Dr. K. S. Ananda Dr. Ravi Bhat Dr. Vinayaka Hegde Dr. Rajkumar Dr. Nagaraja, N. R. Dr. B. S. Basavaraj Mr. Shakeel Ahamad</p>	<p>Dr. K. S. Ananda Dr. C. T. Jose</p>

## **1. Interface programme on coconut and arecanut at Brahmavar**

Interface programme was organized in collaboration with Krishi Vigyan Kendra, Brahmavar and Zonal Agricultural and Horticultural Research Station, Brahmavar, Udupi. Shri. Pramod Madwaraj, MLA, Udupi inaugurated the State level Scientist-Farmer-Extension interface programme on 24-08-2013 at Dharmavar auditorium, Brahmavar, Udupi. He stressed the importance of effective utilization of technologies for making coconut and arecanut farming remunerative. In his inaugural address he told that substantial number of technologies have been developed by CPCRI for enhancing productivity, and for value addition through product diversification in coconut and arecanut. Urgent steps should be taken to facilitate the utilization of these technologies in farmers' fields. Dr. K. M. Udupa, Managing Trustee, Bharatiya Vikas Trust, Manipal presided over the inaugural function. Addressing the gathering, Dr. George V. Thomas, Director, CPCRI, Kasaragod emphasized the CPCRI technologies on crop production and value addition for enhancing the productivity and profitability in coconut and arecanut farming. As a part of interface programme, technologies developed by CPCRI on coconut and arecanut were displayed for the benefit of farming community in the exhibition which was inaugurated by Shri Pramod Madhwaraj. Dr. H. P. Maheshwarappa, Project Coordinator (Palms), Dr. M. Hanumanthappa, ADR, ZAHRS, Brahmavar and Dr. C. Thamban, CPCRI Kasaragod have offered felicitations. Dr. K. S. Ananda, Head, CPCRI, Vittal welcomed the guests and gathering. Dr. Jayalakshmi N. Hegde, Programme Coordinator, KVK, Brahmavar proposed vote of thanks. Scientists from CPCRI made presentations on technological options for increasing the productivity and profitability in coconut and arecanut. Around 200 farmers participated in the interface programme.



Inauguration by Shri. Pramod Madwaraj  
MLA, Udupi



Dignitaries visiting exhibition stall



Inaugural address by Shri. Pramod Madwaraj  
MLA, Udupi



Remarks by Dr. George V. Thomas  
Director, CPCRI, Kasaragod



Participants of interface programme



Farmer-Scientist interaction



## **2. Interface programme on coconut and arecanut at Sullia**

Interface programme was organized on 27.8.2013 at Town hall, Sullia, Dakshina Kannada district in collaboration with Department of Horticulture, Sullia. Dr. K. S. Ananda, Head, CPCRI, Regional Station, Vittal welcomed the guests and farmers. Dr. George V. Thomas, Director, CPCRI, Kasaragod explained about the technological options in coconut and arecanut to enhance the profitability of farmers. Shri B. Ramanatha Rai, Hon. Minister for Forest, Ecology & Environment, Government of Karnataka was the Chief Guest and inaugurated the interface programme. During his inaugural address, he advised the farmers to adopt the technologies developed by the CPCRI to enhance the production and income especially by following the high density multispecies cropping system and also mixed farming system. He also emphasized the importance of processing and value addition in coconut and arecanut to enhance the profitability. He promised that the government will provide compensation to the arecanut farmers for the loss due to koleroga/ mahali disease. He informed that the government has taken a decision to form agriculture commission to look after the problems of farming communities in Karnataka. Shri S. Angara, MLA, Sullia Constituency presided over the function. In his presidential address, he emphasized the importance of scientific management of diseases of arecanut and coconut. He also requested the government to provide compensation to farmers for the loss due to mahali/koleroga and Yellow Leaf Disease of arecanut. Smt. Gunavathi Kollanthadka, President, Taluk Panchayat, Mr. T. M. Shahid, Member, Coir Board, Kochi and Mr. Praveen Kumar, Assistant Director of Horticulture, Mangalore were the Guests of Honors'. Scientists from CPCRI Kasaragod and Vittal and Officers from Department of Horticulture had interacted with farmers regarding production, protection & processing technologies and developmental programmes on coconut, arecanut and cocoa. Mrs. P. K. Suhana, Sr. Asst. Director of Horticulture, Sullia proposed vote of thanks. Exhibits related to varieties, agronomic practices, nursery management, pest and disease management and harvesting of coconut, arecanut and cocoa were displayed for giving first hand information to the farmers.



Dignitaries visiting exhibition stall



Inaugural address by Shri B. Ramanatha Rai  
Hon. Minister for Forest, Ecology &  
Environment, Government of Karnataka



Participants of interface programme



Participants at exhibition stall



Remarks by Dr. George V. Thomas  
Director, CPCRI, Kasaragod



Farmer-Scientist interaction

### **3. Interface programme on coconut and arecanut at Shimoga**

Central Plantation Crops Research Institute, Kasaragod, Krishi Vigyan Kendra, Shimoga and Department of Horticulture, Shimoga jointly organized Research-Farmer-Extension interface programme on coconut and arecanut at KVK, Shimoga on 30.08.2013. The programme was inaugurated by Dr. P. M. Salimath, Special Officer, University of Agriculture and Horticultural Sciences, Shimoga. During the occasion while addressing the farmers he told due to heavy rainfall and uncongenial weather arecanut crop is affected by diseases. In order to create awareness about control measures of arecanut diseases University scientists visited various arecanut growing areas and interacted with farmers. Dr. Ravi Bhat, Head, Crop Production, CPCRI, Kasargod delivered inaugural speech and told CPCRI is organizing Farmer-Scientist interaction in various arecanut and coconut growing areas of Karnataka. Dr. Lakshmikanth, SADH, Department of Horticulture, Shimoga addressed the farmers about various schemes of Horticulture Department. Dr. T. H. Gowda, Associate Director of Extension, University of Agriculture and Horticultural Sciences, Shimoga presided over the function. Dr. Vinayaka Hegde, Head, Crop Protection, CPCRI, Kasargod, Dr. Narayanaswamy, Scientist, Arecanut Research Station, Shimoga, Dr. B. C. Hanumanthaswamy, Programme Coordinator, KVK, Shimoga and all the SMS's of KVK, Shimoga were present in the programme. 116 farmers from various parts of Shimoga had participated in the programme and interacted with scientists. Exhibits related to varieties, agronomic practices, nursery management, pest and disease management and harvesting of coconut, arecanut and cocoa were displayed for giving first hand information to the farmers.





Dignitaries visiting exhibition stall



Inauguration by Dr. P. M. Salimath  
Special Officer, UAHS, Shimoga



Inaugural address by Dr. P. M. Salimath  
Special Officer, UAHS, Shimoga



Participants of interface programme



Participants of interface programme



Farmer-scientist interaction

#### **4. Interface programme on coconut and arecanut at KVK, Chamarajanagar**

Interface programme was organized on 04.09.13 at Krishi Vigyan Kendra, Chamarajanagar. Dr. Nagaraja, N. R., Scientist, CPCRI, Vittal welcomed the guests and farmers. Dr. K. S. Ananda, Head, CPCRI, Regional Station, Vittal addressed the gathering about the production, protection and processing technologies on coconut and arecanut developed by CPCRI. Mr. B. Shivappa, Deputy Project Director (ATMA), Chamarajanagar was the Chief Guest and inaugurated the interface programme. During his inaugural address, he advised the farmers to adopt the improved technologies developed by CPCRI to enhance the productivity and profitability. He also emphasized the importance of allied enterprises like dairy, poultry, sericulture etc to enhance the income from horticulture. Shri Girish, Deputy Director of Horticulture, Chamarajanagar presided over the function. In his presidential address, he emphasized the importance of water saving technologies to sustain the production of coconut and arecanut due to deficit in rainfall for the last three years. Dr. Ravi Bhat, Head, Crop Production and Dr. Vianayaka Hegde, Head, Crop Protection from CPCRI, Kasaragod offered felicitations. Scientists from CPCRI Kasaragod and Vittal and Scientists from Krishi Vigyan Kendra, Chamarajanagar and Officers from Department of Horticulture had interacted with farmers regarding production, protection & processing technologies and developmental programmes on coconut and arecanut. Dr. C. Doreswamy, Programme Coordinator, KVK, Chamarajanagar addressed the gathering and delivered vote of thanks. Exhibits related to varieties, agronomic practices, nursery management, pest and disease management and harvesting of coconut and arecanut were displayed for giving first hand information to the farmers. More than 100 farmers had participated and interacted with scientists regarding coconut and arecanut technologies.





Inauguration by Mr. B. Shivappa, Deputy Project Director (ATMA), Chamarajanagar



Inaugural address by Mr. B. Shivappa, Deputy Project Director (ATMA)



Participants of interface programme



Registration of participants



Participants visiting exhibition stall



Participants visiting exhibition stall

## **5. Interface programme on coconut and arecanut at KVK, Ramanagar**

Interface programme was organized on 05.09.13 at Krishi Vigyan Kendra, Ramanagar. Dr. Rajkumar, Scientist, CPCRI, Kasaragod welcomed the guests and farmers. Dr. K. S. Ananda, Head, CPCRI, Regional Station, Vittal addressed the gathering about the production, protection and processing technologies on coconut and arecanut developed by CPCRI. In his address, he emphasized the importance of entrepreneurial skills among farmers for taking up farming as a business for which CPCRI has initiated Business Planning and Development Unit for the benefit of entrepreneurs. Dr. Annaiah, Joint Director (Agriculture) was the Chief Guest and inaugurated the interface programme. During his inaugural address, he stressed the importance of soil and water management practices for increasing the productivity of coconut and arecanut. He also urged the farmers to adopt improved technologies developed by CPCRI. Dr. K. H. Nagaraj, Programme Coordinator, Ramanagar presided over the function. In his presidential address, he emphasized the importance of water saving technologies and mixed cropping system to sustain the production of coconut and arecanut. Dr. Ravi Bhat, Head, Crop Production and Dr. Vianayaka Hegde, Head, Crop Protection from CPCRI, Kasaragod offered felicitations to the interface programme. Scientists from CPCRI, Kasaragod and Vittal and Scientists from Krishi Vigyan Kendra, Ramanagar and Officers from Department of Horticulture had interacted with farmers regarding production, protection & processing technologies and developmental programmes on coconut and arecanut. Dr. Kamala Bai, SMS, KVK, Ramanagar proposed vote of thanks. Exhibits related to varieties, agronomic practices, nursery management, pest and disease management and harvesting of coconut and arecanut were displayed for giving first hand information to the farmers. More than 100 farmers had participated and had interaction with scientists regarding coconut and arecanut technologies.





Inauguration by Dr. Annaiah, Joint Director  
(Agriculture), Ramanagar



Inaugural address by Dr. Annaiah, Joint Director  
(Agriculture), Ramanagar



Registration of farmers



Scientist-farmers interaction



Participants of interface programme



Farmers-Scientists interaction

## **6. Interface programme on coconut at KVK, VC Farm, Mandya**

Interface programme was organized on 06.09.13 at Krishi Vigyan Kendra, V. C. Farm, Mandya. Dr. D. Jaganathan, Scientist, CPCRI, Regional Station, Vittal welcomed the guests and farmers. Dr. K. S. Ananda, Head, CPCRI, Regional Station, Vittal addressed the gathering about the production, protection and processing technologies on coconut developed by CPCRI. In his address, he emphasized the importance of entrepreneurial skills among farmers for taking up farming as a business for which CPCRI has initiated Business Planning and Development Unit for the benefit of entrepreneurs. Dr. K. T. Pandurangegowda, Dean, College of Agriculture, Mandya was the Chief Guest and inaugurated the interface programme. During his inaugural address, he stressed the importance of value addition in coconut for increasing the farm income from coconut. He also urged the farmers to adopt improved technologies developed by CPCRI. Dr. T. A. Sriramasetty, Associate Director of Research, Zonal Agricultural Research Station, Mandya presided over the function. In his presidential address, he emphasized the importance of nutrient management and mixed cropping system to sustain the production of coconut. Mr. T. Vijendrakumar, Senior Assistant Director of Horticulture, Mandya, Dr. Ravi Bhat, Head, Crop Production and Dr. Vianayaka Hegde, Head, Crop Protection from CPCRI, Kasaragod and Dr. Nagaraj, Dean, Diploma Agricultural College, Mandya offered felicitations to the interface programme. Scientists from CPCRI Kasaragod and Vittal and Scientists from Krishi Vigyan Kendra, Mandya and Officers from Department of Horticulture had interacted with farmers regarding production, protection & processing technologies and developmental programmes on coconut. Dr. V. B. Sanathkumar, Programme Coordinator, KVK, Mandya proposed vote of thanks. Exhibits related to varieties, agronomic practices, nursery management, pest and disease management and harvesting of coconut, arecanut and cocoa were displayed for giving first hand information to the farmers. More than 150 farmers had participated and had interaction with scientists regarding coconut technologies. About 300 students from College of Agriculture and Diploma Agricultural College had visited the exhibition stall of CPCRI and got acquainted with CPCRI technologies.





Inauguration by Dr. K. T. Pandurangegowda  
Dean, College of Agriculture, Mandya



Inaugural address by Dr. K. T. Pandurangegowda,  
Dean, College of Agriculture, Mandya



Registration of farmers



Farmers at exhibition stall



Participants of interface



Interaction between farmers-scientists

## **7. Interface programme on coconut and arecanut at KVK, Tiptur**

An interface programme between the Scientists of Central Plantation Crops Research Institute and the Farmers of Tumkur District was held at KVK, Konehalli on 12.09.13. About 250 coconut and arecanut farmers and entrepreneurs attended the interface programme. While inaugurating the programme, Dr George V. Thomas, Director, CPCRI, Kasaragod enlisted the crop improvement, production, protection and value addition technologies developed at CPCRI, Kasaragod and Regional Station, Vittal to enhance the productivity of both coconut and arecanut and to improve the livelihood of the farmers dependent on coconut and arecanut. Dr. K. S. Ananda welcomed the gathering and also gave information about the improved varieties of coconut and arecanut available for different end products suitable for different agroclimatic conditions. Dr. Ravi Bhat addressed the gathering about the soil, plant, water and nutritional aspects to enhance the productivity and profitability from unit land. He emphasized the need of restoring the soil health for sustainable production. The pest and diseases of coconut and arecanut and their management was dealt in detail by Dr. Vinayaka Hegde. He informed the house that CPCRI is ready to take up demonstrations on management of black headed caterpillar and anabe disease in collaboration with KVK, Tiptur and Department of Horticulture. Dr. K. B. Hebbar highlighted the importance and possibilities of enhancing the profitability of coconut growers through value addition. He demonstrated how coconut sap (neera) can be collected in fresh and hygienic way and promoted as a health drink and byproducts like natural sugar, jaggery and honey can be prepared without the use of chemicals. The sugar thus produced has less glycemic index and ideal for diabetic patients. Dr. G. M. Sujith, Programme Coordinator, KVK, Tiptur narrated the KVK activities undertaken for the benefit of coconut and arecanut farmers. Throughout the presentations farmers showed keen interest in knowing the latest technologies and were clarifying the doubts about the cultivation, protection and value addition in coconut and arecanut. The officials from Department of Horticulture, Coconut Producers Associations, Dharmasthala Rural Development Unit, SHGs and different farmers' organizations were part of the programme. An exhibition depicting the technologies on coconut and arecanut were arranged which attracted large number of farmers.





Inauguration by Dr. George V. Thomas  
Director, CPCRI, Kasaragod



Presidential address by Dr. G. M. Sujith  
Programme Coordinator, KVK, Tiptur



Registration of farmers



Interaction between farmers – scientists at  
exhibition stall



Farmers during interface



Interaction between farmers-scientists

## **8. Interface programme on coconut and arecanut at JSS KVK, Mysore**

Interface programme was organized in collaboration with JSS KVK, Suttur on 13.09.13. About 110 coconut and arecanut farmers and entrepreneurs attended the interface programme. While delivering the introductory remarks about the programme Dr. K. S. Ananda, Head, CPCRI, Regional Station, Vittal enlisted the crop improvement, production, protection and value addition technologies developed at CPCRI, Kasaragod and Regional Station, Vittal to enhance the productivity of both coconut and arecanut and to improve the livelihood of the farmers dependent on coconut and arecanut. Shri. N. M. Shivashankarappa, Director of Horticulture, JSS Mahavidyalaya, Mysore inaugurated the programme and highlighted that it is a golden opportunity and farmers should take full advantage of the programme. Dr. K. M. Indires, Dean, College of Agriculture, Tandavpura highlighted the plight of coconut farmers in this region because of the drought and pest attack. Dr. Ravi Bhat, Head, Crop Production welcomed the gathering and also gave information about the soil, plant, water and nutritional aspects to enhance the productivity and profitability from unit land. He emphasized the need of restoring the soil health for sustainable production. The pest and diseases of coconut and arecanut and their management was dealt in detail by Dr. Vinayaka Hegde, Head, Crop Protection. Dr. K. B. Hebbar, Head, PB&PHT highlighted the importance and possibilities of enhancing the profitability of coconut growers through value addition. He demonstrated how coconut sap (neera) can be collected in fresh and hygienic way and promoted as a health drink and products like natural sugar, jaggery and honey can be prepared without the use of chemicals. The sugar thus produced has less glycemic index and ideal for diabetic patients. Mr. Shivalingappa, SADH, Nanjanaguduru felicitated the programme. Dr. Arun Balamatti, Programme Coordinator, KVK, Suttur, narrated the KVK activities undertaken for the benefit of coconut and arecanut farmers. Throughout the presentations farmers showed keen interest in knowing the latest technologies and were clarifying the doubts about the cultivation, protection and value addition in coconut and arecanut. The officials from Department of Horticulture, coconut producers associations, were part of the programme. An exhibition depicting the technologies on coconut and arecanut were arranged which attracted large number of farmers.





Inauguration by Shri. N. M. Shivashankarappa  
Director of Horticulture, JSS Mahavidyalaya  
Mysore



Presidential address by Dr. K. M. Indiresch  
Dean, College of Agriculture, Tandavapura



Registration of participants



Dignitaries visiting exhibition stall



Farmers during interface



Interaction between farmers-scientists

## **9. Interface programme on coconut and arecanut at KVK, Hiriya**

Interface programme was organized on 24.09.2013 at Krishi Vigyan Kendra, Hiriya. Dr. Ravi Bhat, Head, Crop Production, CPCRI, Kasaragod welcomed the guests and farmers. Dr. K. S. Ananda, Head, CPCRI, Regional Station, Vittal addressed the gathering about the production, protection and processing technologies on coconut and arecanut developed by CPCRI. In his address, he emphasized the importance of entrepreneurial skills among farmers for taking up farming as a business for which CPCRI has initiated Business Planning and Development Unit for the benefit of entrepreneurs. Dr. K. T. Rajendraprasad, Senior Farm Superintendent, ZHARS, Babbur farm, Hiriya was the Chief Guest and inaugurated the interface programme. During his inaugural address, he stressed the importance of soil and water management practices for increasing the productivity of coconut and arecanut. He also urged the farmers to adopt improved technologies developed by CPCRI. Dr. K. R. Devaraju, Deputy Director, Dept. of Horticulture addressed the gathering and requested the farmers to utilize the facilities provided by the department. Shri. M. Shankarappa, District President, Raitha Sangha presided over the function. In his presidential address, he emphasized the importance of water saving technologies and mixed cropping system to sustain the production of coconut and arecanut. Dr. D. Chandrappa, Programme Coordinator, KVK, Hiriya thanked the dignitaries and farmers for participating in the training programme. Dr. K. S. Ananda, Dr. Ravi Bhat, Dr. Vianayaka Hegde and Dr. Rajkumar from CPCRI and Scientists from Krishi Vigyan Kendra, Hiriya interacted with farmers regarding production, protection & processing technologies and developmental programmes on coconut and arecanut. More than 130 farmers had participated and had interaction with scientists regarding coconut and arecanut technologies. An exhibition depicting the technologies on coconut and arecanut were arranged which attracted large number of farmers.





Inauguration by Shri. M. Shankarappa  
District President, Raitha Sangha



Inaugural address by Shri. M. Shankarappa  
District President, Raitha Sangha



Registration of participants



Farmers visiting exhibition stall



Farmers during interface



Interaction between Farmers-Scientists

## **10. Interface programme on coconut and arecanut at KVK, Davanagere**

Interface programme was organized on 25.09.2013 at Krishi Vigyan Kendra, Davanagere. Dr. Ravi Bhat, Head, Crop Production, CPCRI, Kasaragod welcomed the guests and farmers. Dr. K. S. Ananda, Head, CPCRI, Regional Station, Vittal addressed the gathering about the production, protection and processing technologies of coconut and arecanut developed by CPCRI. In his address, he emphasized the importance of entrepreneurial skills among farmers for taking up farming as a business for which CPCRI has initiated Business Planning and Development Unit for the benefit of entrepreneurs. Dr. Nagaraju, Assistant Commissioner, Davanagere was the Chief Guest and inaugurated the interface programme. During his inaugural address, he stressed the importance of mixed cropping system to increase the profitability in coconut and arecanut. He also urged the farmers to adopt improved technologies developed by CPCRI. While addressing the gathering Dr. Umesh Shankar Mirji, Deputy Director, Department of Horticulture assured that Department will coordinate to adopt the technologies of CPCRI for enhancing the profitability of farmers. Mr. M. K. Renukarya presided over the function. In his presidential address, he emphasized the importance of mixed cropping system to sustain the production of coconut and arecanut. Dr. T. N. Devaraja, Programme Coordinator, KVK, Davanagere thanked the dignitaries and farmers for participating in the interface programme and highlighted the activities of Taralabalu Krish Vigyan Kendra. Scientists from CPCRI and Krishi Vigyan Kendra, Davanagere interacted with farmers regarding production, protection & processing technologies and developmental programmes on coconut and arecanut. More than 200 farmers had participated and had interaction with scientists regarding coconut and arecanut technologies. An exhibition depicting the technologies on coconut and arecanut were arranged which attracted large number of farmers.



## Research-Farmer-Extension interface on coconut and arecanut



Inauguration by Dr. Nagaraju  
Assistant Commissioner, Davanagere



Inaugural address by Dr. Nagaraju  
Assistant Commissioner, Davanagere



Registration of participants



Farmers visiting exhibition stall



Participants during interface



Interaction between scientists-farmers

## **11. Interface programme on arecanut at Sringeri**

Interface Programme was organized on 07.10.13 at Sri. Chapparada Anjaneya temple, Sringeri. Dr. Nagaraja, N. R., Scientist, CPCRI, Vittal welcomed the guests and farmers. Dr. Ravi Bhat, Head, Crop Production, CPCRI, Kasaragod addressed the gathering about the purpose of the interface programme. Dr. B. S. Sathyanarayana Reddy, Director of Research, UAHS, Shimoga was the Chief Guest and inaugurated the interface programme. During his inaugural address, he narrated the problems faced by arecanut growers *viz.*, yellow leaf disease, root grub, fruit rot disease etc., which are to be tackled for safeguarding the livelihood security of the farmers. Shri. Lion Sathish, President of Lions Club, Sringeri presided over the function. In his presidential address, he emphasized the importance of strong linkage between scientists and farmers for doing scientific agriculture. Scientists from CPCRI, Kasaragod and Vittal and Scientist from Agriculture & Horticulture Research Station, Sringeri and Officers from Department of Horticulture had interacted with farmers regarding production, protection & processing technologies and developmental programmes on arecanut. Dr. B. S. Shivakumar, Head, Agriculture & Horticulture Research Station, Sringeri addressed the gathering and delivered vote of thanks. Exhibits related to varieties, agronomic practices, nursery management, pest and disease management and harvesting of arecanut were displayed for giving first hand information to the farmers. More than 200 farmers had participated and had interaction with scientists regarding arecanut technologies. Detailed discussion regarding the yellow leaf disease was held between scientists and farmers. Farmers strongly demanded remedial measures/ management practices for yellow leaf disease.





Inauguration by Dr. B. S. Sathyanarayana Reddy  
Director of Research, UAHS, Shimoga



Inaugural address by Dr. B. S. Sathyanarayana Reddy, Director of Research, UAHS, Shimoga



Registration of Participants



Participants during interface



Farmer-scientists interface



Interaction of scientists and farmers

## **12. Interface programme on coconut and arecanut at Sirsi**

Interface Programme was organized on 09.10.13 at College of Forestry, Sirsi in collaboration with Krishi Vigyan Kendra, Sirsi and College of Forestry, Sirsi (University of Agricultural Sciences, Dharwad). Dr. Ravi Bhat, Head, Crop Production, CPCRI, Kasaragod welcomed the guests and farmers. Dr. George V. Thomas, Director, CPCRI, Kasaragod addressed the gathering about the purpose of the interface programme. In his introductory remarks, he emphasized the problems especially Mahali and crown rot diseases in arecanut due to continuous and heavy rainfall during the year. He also stressed on the importance of growing intercrops *viz.*, cocoa, banana and black pepper in arecanut garden to increase the profit from farming. Dr. L. Krishna Naik, Director of Extension, UAS, Dharwad was the Chief Guest and inaugurated the interface programme. During his inaugural address, he stressed on the importance of adoption of improved technologies to manage crop nutrients, pests and diseases for enhancing the yield. Dr. S. L. Madiwalar, Dean, College of Forestry, Sirsi presided over the function. In his presidential address, he stressed on the effect of climate change on plantation crops which need to be tackled through scientific interventions. Dr. S. T. Naik, Associate Director of Extension, UAS, Dharwad, Dr. H. R. Naik, Dy. Director of Horticulture, Uttara Kannada, Shri. M. V. Hegde, President, Arecanut and Spice Crop growers Association, Uttara Kannada offered felicitations. Scientists from CPCRI, Kasaragod and Vittal and Scientists from KVK, Sirsi, and Officers from Department of Horticulture had interacted with farmers regarding production, protection & processing technologies and developmental programmes on coconut, arecanut and cocoa. Dr. Roopa S. Patil, Programme Coordinator, KVK, Sirsi addressed the gathering and delivered vote of thanks. Exhibits related to varieties, agronomic practices, nursery management, pest and disease management and harvesting of coconut, arecanut and cocoa were displayed for giving first hand information to the farmers. More than 120 farmers had participated and had interaction with scientists regarding coconut, arecanut and cocoa technologies. More than 250 students from College of Forestry, Sirsi had visited CPCRI exhibition stall and got familiarized with technologies on coconut, arecanut and cocoa.





Inauguration by Dr. L. Krishna Naik  
Director of Extension, UAS, Dharwad



Inaugural address by Dr. L. Krishna Naik  
Director of Extension, UAS, Dharwad



Dignitaries visiting exhibition stall



Participants at exhibition stall



Participants during interface



Interaction between Scientist and farmers

### **13. Interface programme on awareness cum demonstration on management of black headed caterpillar in coconut at Arasikere**

Awareness cum demonstration on management of black headed caterpillar in coconut was organized on 10.10.13 at First grade College, Arasikere in collaboration with Horticultural research station, Arasikere (University of Horticultural Sciences, Bagalkot). Dr. Vinayaka Hegde, Head, Crop Protection, CPCRI, Kasaragod welcomed the guests and farmers. Dr. Chandrika Mohan, Principal Scientist, CPCRI, Kayamkulam narrated the management practices for black headed caterpillar. Dr. George V. Thomas, Director, CPCRI, Kasaragod was the Chief Guest and inaugurated the interface programme. In his inaugural address, he pointed out the severity of this pest causing yield loss in coconut especially in Tumkur and Hassan districts of Karnataka. He also stressed on the importance of integrated management of black headed caterpillar as single approach may not give desirable results. Successful management of black headed caterpillar in coconut demands the wholehearted cooperation from farmers, Department of Horticulture, KVK and other line departments. Prof. Syed Basha, Principal, Government First Grade College, Arasikere presided over the function. In his presidential address, he stressed on the importance of group approach in managing the leaf eating caterpillar in coconut. Dr. Ravi Bhat, Head, Crop Production, CPCRI, Kasaragod offered felicitations. Scientists from CPCRI Kasaragod and Vittal and Scientists from HRS, Arasikere and Officers from Department of Horticulture had interacted with farmers regarding management of black headed caterpillar in coconut and also technologies for enhancing the profitability of coconut farming. Dr. S. Basavaraju, Head, Horticultural Research Station, Arasikere addressed the gathering and delivered vote of thanks. More than 120 farmers had participated and had interaction with scientists. More than 100 students from Govt. First grade college, Arasikere had participated and got familiarized with management of black headed caterpillar in coconut.





Inauguration by Dr. George V. Thomas  
Director, CPCRI, Kasaragod



Registration of the participants



Participants of awareness cum demonstration  
programme



Interaction between scientists-farmers



Black headed caterpillar affected coconut garden



Demonstration on release of parasitoids for the  
management of BHC

#### **14. Interface programme on coconut and arecanut at KVK, Hassan**

Interface programme was organized on 11.10.13 at Krishi Vigyan Kendra, Hassan in collaboration with Krishi Vigyan Kendra, Hassan (University of Agricultural Sciences, Bangalore). Dr. K. S. Ananda, Head, CPCRI, RS, Vittal welcomed the guests and farmers. Dr. George V. Thomas, Director, CPCRI, Kasaragod was the Chief Guest and inaugurated the interface programme. During his inaugural address, he stressed on the importance of adoption of improved technologies to manage crop nutrients, pests and diseases for enhancing the yield. He also stressed on the importance of growing intercrops *viz.*, cocoa, banana and black pepper in coconut and arecanut garden to increase the profit from farming. Dr. B. S. Basavaraj, Programme Coordinator, KVK, Hassan presided over the function. In his presidential address, he stressed on the importance of improved technologies in today's agriculture. Mr. B. Shivaraju, Joint Director of Agriculture, Hassan and Mr. Shakeel Ahamad, Dy. Director of Horticulture, Hassan offered felicitations. Scientists from CPCRI Kasaragod and Vittal and Scientists from KVK, Hassan and Officers from Department of Horticulture had interacted with farmers regarding production, protection & processing technologies and developmental programmes on coconut, arecanut and cocoa. Dr. Dr. S. Channakeshava, SMS (Soil Science), KVK, Hassan delivered vote of thanks. Exhibits related to varieties, agronomic practices, nursery management, pest and disease management and harvesting of coconut, arecanut and cocoa were displayed for giving first hand information to the farmers. More than 120 farmers had participated and had interaction with scientists regarding coconut, arecanut and cocoa technologies.





Registration of the participants



Inauguration of exhibition by  
Dr. George V.Thomas, Director, CPCRI



Dr. George V.Thomas, Director, CPCRI &  
Scientists at the exhibition stall



Participants visiting exhibition stall



Inauguration by Chief Guest  
Dr. George V.Thomas, Director, CPCRI



Interaction between scientists-farmers

Table 5. Discussion/feedback from the participants of interface programmes

S.No.	Venue	Date	No. of Participants	Discussion/feedback from the participants
1	Dharmavaram Auditorium, Udupi	24.8.13	180	<ul style="list-style-type: none"> <li>✓ Effect of bio pot, bioflight, bioshot etc., on the control of fruit rot disease of arecanut to be studied</li> <li>✓ Possibility of Pheromone traps in controlling root grubs menace in arecanut to be investigated</li> <li>✓ Feasibility of management of mahali by application of fungicides through roots/soil needs to be studied</li> <li>✓ Management of wild animals attack by concerned department</li> <li>✓ Reasons for fluctuation/ low price of coconut to be investigated</li> <li>✓ Subsidies for sprinkler irrigation to be given</li> <li>✓ Quality aspects of inputs viz., copper sulphate, lime etc. should be ensured by the Department before selling to the farmers</li> <li>✓ Crop insurance for coconut against natural calamities to be arranged</li> </ul>
2	Town Hall, Sullia, Dakshina Kannada	27.8.13	153	<ul style="list-style-type: none"> <li>✓ Yellow leaf disease management practices in arecanut to be developed</li> <li>✓ Effect of bio pot, bioflight, bioshot etc., on the control of fruit rot disease of arecanut to be studied</li> <li>✓ Soil testing facilities are to be established at taluk level</li> <li>✓ Management of wild animals attack by concerned department</li> <li>✓ Reasons for fluctuation/ low price of coconut to be investigated</li> </ul>

3	KVK, Shimoga	30.8.13	130	<ul style="list-style-type: none"> <li>✓ Quality aspects of inputs viz., copper sulphate, lime etc. should be ensured by the Department before selling to the farmers</li> <li>✓ Feasibility of growing cocoa as monocrop to be studied</li> <li>✓ Importance of nutrient management in coconut and arecanut</li> <li>✓ Organic farming in coconut and arecanut</li> <li>✓ Management of root grubs in arecanut</li> <li>✓ Alternative crops to be suggested in Yellow Leaf Disease affected areas</li> <li>✓ Feasibility of management of mahali by application of fungicides through roots/ soil needs to be studied</li> <li>✓ Method of preparation of Bordeaux mixture to be demonstrated</li> <li>✓ Training programmes on mechanical palm climbing for youth, farm women to be organized</li> </ul>
				<ul style="list-style-type: none"> <li>✓ Tondernut dehusking machine for arecanut to be developed</li> <li>✓ Arecanut harvester to be developed</li> <li>✓ Management of arecanut planted in paddy fields</li> <li>✓ Instant Bordeaux mixture for the management of fruit rot/ mahali</li> <li>✓ Selection criteria for arecanut mother palms</li> <li>✓ Precautions in managing fruit rot/ Mahali</li> <li>✓ Whether grazing by animals in arecanut garden will affect the yield</li> <li>✓ Fertilizer management in arecanut especially K</li> <li>✓ Advantage of mulching using arecanut husk</li> <li>✓ Advantages of sprinkler irrigation</li> <li>✓ Preparation of vermicompost using arecanut wastes</li> </ul>

4	KVK, Chamarajanagar	04.9.13	104	<ul style="list-style-type: none"> <li>✓ Suitable coconut and arecanut varieties for Chamarajanagar</li> <li>✓ Package of practices for coconut and arecanut cultivation</li> <li>✓ Possibility of mixed cropping in coconut</li> <li>✓ Good quality planting materials to be supplied to the farmers</li> <li>✓ Availability of nutmeg grafts in Karnataka</li> </ul>
5	KVK, Ramanagar	05.9.13	101	<ul style="list-style-type: none"> <li>✓ Management of stem breaking due to sun scorching</li> <li>✓ Management of black headed caterpillar in coconut</li> <li>✓ Effect of application of soil from outside in arecanut garden</li> <li>✓ Reasons for aerial roots in arecanut</li> <li>✓ Whether zero cultivation will increase the arecanut yield</li> <li>✓ Effect of ploughing in arecanut garden</li> <li>✓ Availability of subsidies for production of Virgin Coconut Oil</li> <li>✓ Recommended spacing for arecanut and intercrops</li> <li>✓ Possible health hazards due to arecanut consumption</li> <li>✓ Training on coconut climbing device</li> </ul>
6	KVK, Mandya	06.9.13	139	<ul style="list-style-type: none"> <li>✓ Management of Ganoderma/stem bleeding, bud rot, eriophyid mite and black headed caterpillar in coconut</li> <li>✓ Advantages of coconut value added products</li> <li>✓ Benefits of balanced fertilization in coconut</li> <li>✓ Labour saving devices for spraying/harvesting of coconut</li> <li>✓ Mixed crops/intercrops in coconut garden</li> <li>✓ Advantages of crop diversification</li> <li>✓ Management of stem breaking due to sun scorching</li> <li>✓ Training on coconut climbing device for rural youth &amp; farm women</li> </ul>

7	KVK, Tiptur, Tumkur	12.9.13	208	<ul style="list-style-type: none"> <li>✓ Management of black headed caterpillar in coconut</li> <li>✓ Reasons for stem breaking in arecanut</li> <li>✓ Benefits of balanced fertilization</li> <li>✓ Labour saving devices for spraying/harvesting of coconut</li> <li>✓ Mixed crops/intercrops in coconut garden</li> <li>✓ Advantages of crop diversification</li> <li>✓ Effect of application of soil from outside in coconut/arecanut garden</li> <li>✓ Reasons for aerial roots in arecanut</li> <li>✓ Training on coconut climbing device for rural youth, farm women</li> <li>✓ Effect of drip irrigation on the yield of coconut</li> </ul>
8	KVK, Suttur, Mysore	13.9.13	110	<ul style="list-style-type: none"> <li>✓ Management of eriophyid mite and black headed caterpillar in coconut</li> <li>✓ Method of application of fertilizer in coconut</li> <li>✓ Labour saving devices for spraying/harvesting of coconut</li> <li>✓ Mixed crops/intercrops in coconut garden</li> <li>✓ Value added products in coconut for maximising profit</li> <li>✓ Training on coconut climbing device</li> <li>✓ Effect of drip irrigation on growth and yield of coconut</li> <li>✓ Management of stem bleeding and button shedding in coconut</li> </ul>
9	KVK, Chitradurga	24.9.13	123	<ul style="list-style-type: none"> <li>✓ Suitable arecanut and coconut varieties for plain areas of Karnataka should be identified</li> <li>✓ More number of training programmes may be organized for improving the knowledge and skill of the farmers</li> </ul>

				<ul style="list-style-type: none"> <li>✓ Lack of availability of good quality planting materials especially hybrids of coconut and arecanut</li> <li>✓ Suitable management practices for wild animals and rodents may be given</li> <li>✓ Management practices for Stem bleeding and Ganoderma diseases in coconut</li> <li>✓ Establishment of bio control lab for managing coconut leaf eating caterpillar</li> <li>✓ Suitable intercrops/ mixed crops in coconut and arecanut gardens of plain areas</li> </ul>
10	KVK, Davanagere	25.9.13	151	<ul style="list-style-type: none"> <li>✓ The arecanut and coconut varieties suitable to plain areas of Karnataka should be identified</li> <li>✓ Transfer of technology programmes for farmers should be strengthened</li> <li>✓ Good quality planting materials to be supplied to the farmers</li> <li>✓ Giant African snails, squirrels and monkeys are major non insect pest causing higher yield loss than insect pests hence suitable recommendations may be suggested</li> <li>✓ Management practices for Stem bleeding and ganoderma diseases in coconut to be recommended</li> <li>✓ Establishment of bio control lab for the management of coconut leaf eating caterpillar</li> <li>✓ Intercrops/mixed crops suitable for coconut and arecanut gardens</li> </ul>



11	Sri Chapparada Anjaneya Temple, Sringeri, Chickmagalore	07.10.13	190	<ul style="list-style-type: none"> <li>✓ Research on tendernut varieties and processing in arecanut to be done</li> <li>✓ Effect of biofight, bio pot etc on the management of Mahali/ Fruit rot in arecanut</li> <li>✓ Alternative fungicide to Bordeaux mixture to be identified</li> <li>✓ Management of yellow leaf disease in arecanut</li> <li>✓ Management practices for quick wilt in black pepper</li> <li>✓ Research findings on Yellow Leaf Disease in arecanut to be communicated</li> <li>✓ Alternative crops in YLD affected arecanut gardens</li> <li>✓ Method of preparation of Bordeaux mixture</li> <li>✓ Effect of micronutrients on growth and yield of arecanut</li> <li>✓ Chemicals for managing root grubs in arecanut</li> <li>✓ Method of application of fertilizers to be demonstrated</li> <li>✓ Demonstration plots to be established for managing YLD in arecanut</li> <li>✓ Management practices for bud rot and crown rot</li> <li>✓ Suitable varieties for malnad regions of Karnataka</li> <li>✓ Detection techniques for yellow leaf disease in arecanut</li> </ul>
12	College of Forestry, Sirsi, Uttara Kannada	09.10.13	122	<ul style="list-style-type: none"> <li>✓ Effect of bio pot, bio fight etc. on the control of <i>Phytophthora</i> diseases of arecanut</li> <li>✓ Management of eriophyid mite in coconut</li> <li>✓ Advantages of value added products in coconut</li> <li>✓ Benefits of balanced fertilization</li> </ul>

				<ul style="list-style-type: none"> <li>✓ Labour saving devices for spraying/harvesting of arecanut</li> <li>✓ Mixed crops/intercrops in arecanut garden</li> <li>✓ Advantages of crop diversification</li> <li>✓ Arecanut dehiscing machines for doing small scale processing</li> <li>✓ Management of root grubs in arecanut</li> </ul>
13	Govt First Grade College, Arasikere, Hassan	10.10.13	107	<ul style="list-style-type: none"> <li>✓ Reasons for poor quality inputs in the market</li> <li>✓ What is the organic source of K</li> <li>✓ Advantages of compost in improving the soil fertility</li> <li>✓ Advantages of mulching in coconut garden</li> <li>✓ Method of preparing compost</li> <li>✓ Chemical control of black headed caterpillar in coconut</li> <li>✓ Management for red palm weevil and rhinoceros beetle in coconut</li> </ul>
14	KVK, Hassan	11.10.13	112	<ul style="list-style-type: none"> <li>✓ Suitable coconut and arecanut varieties for Hassan district</li> <li>✓ Reasons for poor quality inputs in the market</li> <li>✓ Method of application of fertilizer in coconut garden</li> <li>✓ Advantages of compost in improving the soil fertility</li> <li>✓ Advantages of mulching in coconut garden</li> <li>✓ Chemical control of black headed caterpillar in coconut</li> <li>✓ Management practices for red palm weevil and rhinoceros beetle</li> <li>✓ Suitable intercrops in coconut garden</li> <li>✓ Value added products in coconut for maximising profit</li> <li>✓ Soil sampling for soil testing to be demonstrated</li> <li>✓ Good quality planting materials to be supplied to farmers</li> <li>✓ Spraying/harvesting devices for coconut and arecanut</li> </ul>

## **6. SUMMARY OF FEEDBACK FROM COCONUT AND ARECANUT GROWERS**

- Quality of agricultural inputs should be ensured thoroughly by the concerned department before distribution to the farmers
- Labour saving devices especially for spraying and harvesting operations should be developed
- Fixation of minimum support price for coconut and arecanut
- Remedial measures/management practices for yellow leaf disease of arecanut are to be developed
- Suitable alternate crops for arecanut YLD affected areas are to be identified
- Technologies for application of fungicides through roots for the management of fruit rot, bud rot and crown rot in arecanut are to be developed
- Training programmes on improved technologies on coconut and arecanut especially post harvest technologies and labour saving machineries are to be organized
- Soil testing facilities are to be established at Taluk level for benefit of farming community
- Arrangements are to be made for supply of good quality planting materials especially high yielding varieties and hybrids of coconut and arecanut
- Training programmes on organic farming technologies in coconut are to be organized
- Management of black headed caterpillar in coconut by establishing bio control lab/ parasite breeding station at village/taluk level
- Frontline demonstration plots on 'Integrated management of black headed caterpillar in coconut' are to be conducted
- Video films on production technologies of coconut and arecanut in local language are to be produced

### ***Research-Farmer-Extension interface on coconut and arecanut***

- Exposure visits for the farmers to ICAR institutes, SAUs, SHUs, KVKs etc. for updating the latest technologies on coconut and arecanut are to be organized
- Suitable arecanut varieties for malnad and plain areas for tendernut processing should be developed
- Alternative fungicides to Bordeaux mixture in managing the *Phytophthora* diseases of arecanut are to be identified
- Demonstration plots for the management of yellow leaf disease of arecanut are to be established
- Frontline demonstration plots on 'Integrated management of root grubs in arecanut' are to be conducted
- Linkage between CPCRI, SAUs, KVKs and Department of Horticulture should be strengthened for effective dissemination of technologies to the farmers.

## **7. STRATEGY FOR STRENGTHENING INTERFACE PROGRAMMES**

Based on the experiences gained during the district level interface programmes it is understood that research-farmer-extension interface is the need of the hour to enhance the adoption of improved technologies in coconut and arecanut. Hence, this type of efforts should be continued for strengthening transfer of technology programmes for improving coconut and arecanut sector in Karnataka state. The following points are put forward which are to be implemented in collaboration with all stakeholders.

**Advisory Committee:** Committee may be constituted for taking appropriate policy decisions for conducting interface programmes. The members may be identified as follows,

Agriculture Minister, Government of Karnataka

Vice-Chancellors of SAUs/SHUs

Director, CPCRI, Kasaragod

Head, CPCRI, Regional Station, Vittal

Chairman, Coconut Development Board, Cochin

Director, Directorate of Arecanut and Spices Development, Calicut

Secretary, Department of Horticulture

President, CAMPCO, Mangalore

Representatives from farmer's organizations/NGOs

**District level interface programmes:** In Karnataka, coconut and arecanut are the important plantation crops in thirteen districts where, research-farmer-extension interface programmes are to be conducted once in a year. Proper planning and execution of interface programmes are to be done by state level committee involving all stakeholders.

### ***Participants***

**Farmers:** Interested coconut and arecanut growers in the district representing different areas with different holding size are to be informed for attending interface programmes.

**Extension Personnel:** District level officers of different development departments and all the Horticultural officers of the Department of Horticulture shall attend the interface programme.

**Scientists:** Multidisciplinary team of Scientists from CPCRI and SAUs/SHUs shall present their technologies in the interface programmes.

### ***Organization***

Programme Coordinator of the Krishi Vigyan Kendra (KVK) or Deputy Director of Horticulture in the district will be the coordinator of Research-Farmer-Extension interface programmes at the district level.

### ***Subject matter areas to be covered***

Technologies on crop improvement, crop production, crop protection and processing can be included for the discussion in the interface. Specific topics for discussion in the district level interface programme are to be decided taking into account the problems and opportunities for coconut and arecanut farming in the district.

### ***Methodology***

The following steps are to be followed for organizing interface programmes.

Identifying the gaps in knowledge and adoption of improved technologies among farmers, problems encountered by farmers, pooling of resources for organizing interface programmes, fund mobilization, selecting resource persons from different institutions and panel discussion for interaction among the participants.

### ***Funds***

The funds required for organizing interface programmes on coconut and arecanut shall be arranged from the following agencies

Government of Karnataka

Coconut Development Board, Kochi

Directorate of Arecanut and Spices Development, Calicut

CPCRI, Kasaragod

CPCRI, Regional Station, Vittal, Karnataka

Krishi Vigyan Kendra

CAMPCO

Farmers' organizations



## **Transfer of technology programmes for coconut and arecanut development as a follow up to interface programme**

The term technology transfer is defined as the process of movement of technology from one entity to another. Technology is defined as application of scientific knowledge for solving problems in particular field. The technology should have practical purpose and easy to use. Central Plantation Crops Research Institute (CPCRI) and State Agricultural Universities (SAUs)/ SHUs of Karnataka are mainly involved in research and extension activities for coconut and arecanut development.

**On campus / off campus Training programmes:** The term training refers to the acquisition of knowledge, skills, and competencies as a result of the teaching of vocational or practical skills related to farming. Training can be conducted either at the institute or at the farmer's field. Training programmes for the extension personnel/farmers may be conducted with the financial assistance from Coconut Development Board, Kochi, Directorate of Arecanut and Spices Development, Calicut. Trainings may be organized for agricultural/ horticultural officers, farmers, Self Help Groups etc. based on the need and request. The topics, venue, participants and resource persons may be decided during the interface programmes. Facilities available at Krishi Vigyan Kendras, research stations of CPCRI, research stations of SAUs/SHUs may effectively be used for organizing on campus training programmes. Off campus training programmes may be conducted at the coconut/arecanut gardens.

**Front Line Demonstration:** "first-line demonstrations," conducted by researchers on the farmers' fields to show how production can be increased per unit of area and per unit of time. Based on the discussion in the interface programme, FLDs shall be established in the farmers' gardens to convince the farmers about the technical feasibility and economic viability of the proven technologies. Particulars of technologies, number of FLDs, venue, scientists and extension personnel to be involved, collaborating institutions etc., to be finalized during the interface programme. Subject matter specialists of KVKs will be coordinating the activities for arranging FLDs with the technical support of scientists from CPCRI and SAUs/SHUs. The results of FLD are to be popularized among farmers by organizing field day and writing success story.

**Farm advisory visit:** A multi-disciplinary team of scientists visit farmers' fields and give expert or professional advice for solving problems related to coconut and arecanut farming.

Based on the discussions in the interface programmes, farm advisory visits to selected coconut and arecanut gardens by a team of multidisciplinary scientists and extension personnel are to be planned to diagnose the field problems and suggest suitable solutions. Based on the recommendations of the farm advisory visit, extension activities utilizing mass media and other means to create awareness among coconut and arecanut farmers experiencing similar field problems are to be done by Department of Horticulture.

***Method demonstration:*** Organized to show the technique of doing things or carrying out new practices, e.g. Bordeaux mixture preparation, Virgin Coconut Oil production, mechanical palm climbing etc. Demonstrations are to be organized based on the need and request from farmers. Technologies to be demonstrated, venue, participants, resource persons etc are to be decided during the interface programme.

***Community Based Organizations (CBOs):*** Livelihood of a substantial number of families in rural poor communities in Karnataka depends on coconut and arecanut farming. Many a times, the income generated from coconut and arecanut farming in small and marginal holdings does not provide enough for meeting the requirements of such families. Technology options for enhancing income from coconut and arecanut farming in such poor rural communities do exist, but not fully realized in field situation. The fragmented holdings don't render themselves viable for the optimum utilization of resources and the adoption of improved technologies by the cultivators. To augment the production and productivity of such small and marginal holdings it is suggested to have group management of resources which helps to overcome the inherent weaknesses of the fragmented holdings. The concept of organizing farmers into Community Based Organizations (CBO) for sustainable income enhancement with the objective of efficient management of farmers' resources to reduce cost of cultivation and to increase productivity through integration of technologies even in very small farm holdings have been demonstrated by CPCRI in selected localities.

The approach for forming CBOs may include i) growing suitable inter/mixed crops in coconut gardens and integrating animal husbandry and other subsidiary enterprises with coconut farming ii) cultivating high yielding cultivars of coconut to enhance the yield and income and iii) promote the diversification of coconut products. The implementation of the strategies envisaged in the project was routed through Community Based Organisation of coconut growers in the selected communities. Micro-credit for introducing the interventions envisaged under the project was routed through the CBO. Joint, participatory

analysis of the coconut farming scenario in the community was undertaken by the team of scientists and farmers under the CBO to design the technological interventions to be implemented. A close linkage was developed between the CBO and scientists from CPCRI for the effective implementation of interventions. Arrangements for procuring planting materials, inputs and organising training programmes on CBO management and relevant technologies were done through the CBO with close collaboration with CPCRI and other agencies. This innovative extension methodology can be adopted for the implementation.

***Promoting women's self help groups:*** It is generally assessed that there is immense scope for introducing interventions related to the promotion of women's self help groups for processing of diversified coconut products at the farm household and community level. Topics such as concept and practices of Entrepreneurship Development, group approach for micro level interventions on product diversification in coconut, production of quality copra using copra dryers, coconut kernel based food products, preparation of coconut candies, production of Snow Ball Tender Nut, production of coconut chips, Oyster mushroom cultivation on coconut wastes and production of vermicompost using coconut leaves etc can be included in the Entrepreneurship Development Programme.

***Publication of extension literature on coconut and arecanut:*** Technical bulletins, folders, pamphlets, CD ROMs and Video Cassettes on production, protection and processing technologies are to be prepared for effective dissemination and popularization of the technologies among the farmers and extension personnel. The publications may be brought out from CPCRI, CDB, DASD, SAUs/SHUs, KVKs, CAMPCO etc. for distribution to the farmers and other stakeholders.

## **Conclusion**

Coconut and arecanut are the important plantation crops in Karnataka which support millions of farmers. Farmers are facing lot of field problems which are to be addressed by research and developmental agencies. Improved technologies by CPCRI and SAUS/SHUs have not reached the beneficiaries to the desired level. In this context, the research-farmer-extension interface programmes initiated by CPCRI in collaboration with other agencies is an effort in strengthening the transfer of technologies to the farmers. The strategy proposed for conducting interface programmes will definitely bring out desired results in coconut and arecanut sector in the state. Similar approach may be followed in other states to improve the productivity and profitability of coconut and arecanut farming.

## MEDIA COVERAGE: PRESS AND TELEVISION

UDAYAVANI, 25.08.2013

## 'ಪ್ರಯೋಗಾಲಯ ಜ್ಞಾನ ರೈತನಿಗೆ ತಲುಪಿದಾಗ ಕೃಷಿ ಉಳಿಕೆ'



ಬ್ರಹ್ಮಾವರ, ಆ.24: ವಿಜ್ಞಾನಿಗಳು ಪ್ರಯೋಗಾಲಯದಲ್ಲಿ ಕಂಡುಬಂದ ಯಶಸ್ವಿ ಜ್ಞಾನ ರೈತನಿಗೆ ತಲುಪಿದಾಗ ಮಾತ್ರ ಸರಕಾರದ ಕೊಡುಗೆಯ ರೂಪದಲ್ಲಿ ವಿಜ್ಞಾನಿಗಳಿಂದ ರೈತರ ಸಂವಾದ ಕಾರ್ಯಕ್ರಮವನ್ನು ಉದ್ಘಾಟಿಸಿ ಮಾತನಾಡಿದರು.

ರೈತರು ಸಮಗ್ರ ಬೆಳೆಯಲು ಅಳವಡಿಸುವುದರ ಜೊತೆಗೆ ಉತ್ಪನ್ನಗಳ ಮಾರ್ಕೆಟ್ ಮಾಡಿದ ಜೊತೆ ಕೃಷಿಯಲ್ಲಿ ಸಂಶೋಧನೆಗೆ ಕಾರಣರಾದ,

ಯಶಸ್ವಿ ರೈತನಿಗೆ ತಲುಪಿದಾಗ ಸಾಧಿಸುವಂತಾಗಬೇಕೆಂದು ಶಾಸಕರು ಹೇಳಿದರು.

**ತೋಟ ಬದುಕುವುದಾಗಿದೆ!**

ಅಡಿಕೆ, ಕೆಂಪು ತೋಟಗಳು ಇಂದು ಬಿಸಿ ತುಂಬಾ ಪರಾಗಮುಖವಾಗಿವೆ. ಅವುಗಳನ್ನು ನಿರ್ವಹಿಸುವಂತೂ ಇಲ್ಲಿ ಕೊಡುವಂತೆಯೂ ಇಲ್ಲ 25 ವರ್ಷಗಳ ಹಿಂದೆ ಇದ್ದ ಕೆಂಪು 5 ರೂ. ಧಾರಣೆ ಇಂದು ಅದೇ ಮಟ್ಟದ್ದಿದೆ. ಆದರೆ ಕೊರೆ, ನಿರ್ವಹಣಾ ಮಟ್ಟ ಸಮಸ್ಯೆಗಳು 10 ಬಟ್ಟು ಹುಟ್ಟಿದೆ ಎಂದು ಶಾಸಕರು

ಪ್ರಯೋಗ ಮಧ್ಯದಾ ಸ್ಥಳ ಅನುಭವ ಹಂಚಿಕೊಂಡರು.

ಧಾರಣೆಯ ವಿಜ್ಞಾನ ಬ್ರಹ್ಮಾವರ ಮನೇಬೆಂಗಳೆ ಬ್ರಹ್ಮಾವರ ಕೆ.ಎಂ. ಉದಯ ಅಧಿಕಾರಿಗಳಿಗೆ ಸಿ.ಪಿ.ಆರ್.ಎಂ. ಯೋಜನಾ ಸಂಯೋಜಕ ಡಾ|| ಎಚ್.ಪಿ. ಮಹೇಶ್ವರ ಡಾ|| ಸಿ.ತಂಜಾನಾ, ಬ್ರಹ್ಮಾವರ ಪಿಲಯ ಕೃಷಿ ಮತ್ತು ತೋಟಗಾರಿಕಾ ಸಂಶೋಧನಾ ಕೇಂದ್ರದ ಸಹನಿರ್ದೇಶಕ ಡಾ|| ಎಂ.ಹನುಮಂತಪ್ಪ ಮತ್ತಿತರರು ಉಪಸ್ಥಿತರಿದ್ದರು.

ಕೇಂದ್ರದ ತೋಟದ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆಯನ್ನು ಮುಖ್ಯಸ್ಥರಾದ ಕೆ.ಎಂ. ಅನಂದ ಪುಟ್ಟಣ್ಣ, ಕೇಂದ್ರದ ತೋಟದ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ ಕಾರ್ಯದರ್ಶಿ ನಿರ್ದೇಶಕ ಡಾ|| ಪಾರ್ವತಿ ಎಸ್. ಭೀಮಪ್ಪ ಪ್ರಸ್ತಾಪಿಸಿದರು. ಬ್ರಹ್ಮಾವರ ಕೆ.ಪಿ. ಕಾರ್ಯಕ್ರಮ ಸಂಯೋಜಕ ಡಾ|| ಬಯಲಾಳ್ಕೆ ಎಸ್. ಹೇಡೆ ಮಂಡಿಸಿದರು.

## 1. Interface in Udupi on 24.08.2013

DECCAN HERALD, 25.08.2013

## 'Utilise CPCRI technology to boost crop production'

**BRAHMAVAR:** Effective utilization of technologies is essential for making coconut and arecanut farming remunerative, said M.L.A. Pramod Madwaraj. He was speaking after inaugurating the State-level Scientists - Farmers Interface programme in Brahmar on Saturday.

The interface programme was organised by Central Plan-

tation Crops Research Institute (CPCRI) in collaboration with Krishi Vigyan Kendra (KVK) Udupi and Zonal Agricultural and Horticultural Research Station Brahmar, Udupi.

Pramod Madwaraj told that substantial number of technologies have been developed by CPCRI for enhancing productivity and for value addition through product diversification

in coconut and arecanut. Urgent steps should be taken to facilitate the utilization of these technologies in farmers' fields.

Addressing the gathering, CPCRI (Kasaragod) Director Dr George V Thomas emphasised the utility of CPCRI technologies on crop production and value addition for enhancing the productivity and profitability in coconut and areca farming.

ing, Bharatiya Vikas Trust (Bharatiya Vikas Trust) Managing Trustee Dr K. M. Udupa presided over.

As a part of the programme, technologies developed by CPCRI on coconut and arecanut were displayed for the benefit of farmers.

Project Coordinator (Palms) Dr H.P. Maheshwara, ADR, ZAHRS, Brahmar, Dr M. Hanumanthappa, and Dr C.

Thamban (CPCRI Kasargod) were given demonstrations.

CPCRI (Vittal) Head Dr K.S. Ananda, Programme coordinator (KVK, Brahmar) Dr Jagalashini N Hegde spoke. Scientists from CPCRI made presentations.

Around 200 farmers participated in the interface programme.

**DH News Service**

UDAYAVANI, 29.08.2013

## ಅಡಿಕೆ ಮಂಡಳಿ ರಚನೆಗೆ ಚಿಂತನೆ: ಸಚಿವ ರೈ



ಸುಳ್ಯ: ಸಚಿವ ರೈ ಮಾತನಾಡಿದರು.

ಸುಳ್ಯ, ಆ.28: ಕೃಷಿಕರಿಗೆ ಕಾಲಕಾಲಕ್ಕೆ ಹಲವು ಸಮಸ್ಯೆಗಳು ಎದುರಾಗುತ್ತಿವೆ. ಇದಕ್ಕೆಲ್ಲ ವೈಜ್ಞಾನಿಕವಾಗಿ ಪರಿಹಾರ ಕಂಡುಬರಬೇಕಾಗಿದೆ. ಕೃಷಿ ಅಂದೋಗ ರಚನೆ, ಅಡಿಕೆ ಕೃಷಿ ಅಭಿವೃದ್ಧಿ ಹಾಗೂ ಸಮಸ್ಯೆ ನಿವಾರಿಸಲು ಕಾಫಿ ಬೋರ್ಡ್‌ನಂತೆ ಅಡಿಕೆ ಮಂಡಳಿ ರಚಿಸುವ ಕುರಿತು ಚಿಂತನೆ ನಡೆಸಲಾಗುವುದು ಎಂದು ದ.ಕ. ಜಿಲ್ಲಾ ಉಸ್ತುವಾರಿ ಹಾಗೂ ಅರಣ್ಯ ಸಚಿವ ಬಿ. ರಮಾನಾಥ ರೈ ಹೇಳಿದರು.

ಅವರು ಸುಳ್ಯದಲ್ಲಿ ಕಾಸರಗೋಡು ಕೇಂದ್ರೀಯ ತೋಟಗಾರಿಕೆ ಬೆಳೆಗಳ

ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ ಮತ್ತು ತೋಟಗಾರಿಕಾ ಇಲಾಖಾ ಸಹಭಾಗಿತ್ವದಲ್ಲಿ ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆಗಳ ಬಗ್ಗೆ ವಿಜ್ಞಾನಿಗಳೊಂದಿಗೆ ರೈತರ ಸಂವಾದ ಕಾರ್ಯಕ್ರಮ ಉದ್ಘಾಟಿಸಿ ಮಾತನಾಡಿದರು.

ಅಡಿಕೆ ಕೊಳೆರೋಗ ವ್ಯಾಪಕ ವಾಗಿದ್ದು ಗಮನಕ್ಕೆ ಬಂದಿದೆ. ಇದನ್ನು ಮುಖ್ಯಮಂತ್ರಿ ಅವರ ಗಮನಕ್ಕೆ ತಂದು ಪರಿಹಾರ ಕೊಡಿಸುವ ನಿಟ್ಟಿನಲ್ಲಿ ಪ್ರಯತ್ನಿಸುತ್ತೇನೆ. ಕೊಳೆ ರೋಗಕ್ಕೆ ಕಾಡುತ್ತ ಪರಿಹಾರ ಕಂಡುಕೊಳ್ಳುವ ನಿಟ್ಟಿನಲ್ಲಿ ವೈಜ್ಞಾನಿಕ ಸಂಶೋಧನೆಯೂ

ಅಗಬೇಕಾಗಿದೆ ಎಂದರು.

ಸಭಾಧ್ಯಕ್ಷತೆಯನ್ನು ಶಾಸಕ ಎಸ್. ಅಂಗಾರ ವಹಿಸಿದ್ದರು. ತಾ.ಪಂ. ಅಧ್ಯಕ್ಷಿಗುಣವತಿ ಕೊಲ್ಲೂರಡ್ಡ ಕೇಂದ್ರ ನಾರು ಮಂಡಳಿ ಸದಸ್ಯೆ ಟಿ.ಎಂ. ಶೋಬಾ ಮುಖ್ಯ ಅತಿಥಿಗಳಾಗಿ ಪಾಲ್ಗೊಂಡು ಮಾತನಾಡಿದರು.

ವಿಜ್ಞಾನ ಸಿಪಿಸಿಆರ್‌ಪನ ಮುಖ್ಯಸ್ಥ ಡಾ|| ಕೆ.ಎಸ್. ಅನಂದ ಸ್ವಾಗತಿಸಿ, ನಿರ್ದೇಶಕ ಡಾ|| ಪಾರ್ವತಿ ಎಸ್. ಭೀಮಪ್ಪ ಪ್ರಸ್ತಾಪಿಸಿ ಮಾತುಗಳನ್ನಾಡಿದರು. ತೋಟಗಾರಿಕಾ ಇಲಾಖಾ ಪ್ರಧಾನ ಅಧಿಕಾರಿ ಸುಜಾನಾ ವಂದಿಸಿದರು.

## 2. Interface in Dakshina Kannada on 27.08.2013









SAMYUKTHA KARNATAKA, 13.09.2013

## ತೆಂಗು ಬೆಳೆ ಮೌಲ್ಯವರ್ಧನೆಗೆ ಪ್ರಾಮುಖ್ಯತೆ



ಲಭ್ಯರಾದ ವಿಭಾಗ, ಮತ್ತು ಡಾ. ವಿಜಯೇಂದ್ರ ಹೆಚ್. ಹಾಗೂ ಡಾ. ಹೆಚ್.ಎಲ್. ಮುಖ್ಯಸ್ಥರು, ಇವರು ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಸಂವಾದನಾ ಮೈದಾನದಲ್ಲಿ ವಿಭಾಗ, ಕೇಂದ್ರದ ಕೆಲಸದ ಬಗ್ಗೆ ಮಾಹಿತಿ ನೀಡಿದರು.

VIJAYAVANI, 14.09.2013

## ತೆಂಗಿನ ಮೌಲ್ಯವರ್ಧನೆ ಅಗತ್ಯ

**ತೆಂಗಿನ ಮೌಲ್ಯವರ್ಧನೆ:** ತೆಂಗು ಬೆಳೆಯುವ ಬೆಳೆಗಾರರು ಲಾಭಗಳಿಸಿ ಅರ್ಥಿಕವಾಗಿ ಸದೃಢಗೊಳ್ಳುವ ನಿಟ್ಟಿನಲ್ಲಿ ತೆಂಗಿನ ಮೌಲ್ಯವರ್ಧನೆಗೆ ಪ್ರಾಮುಖ್ಯತೆ ನೀಡುವ ಅಗತ್ಯವಿದೆ ಎಂದು ಕಾಸರಗೋಡು ಕೇಂದ್ರೀಯ ತೋಟಗಾರಿಕಾ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ ನಿರ್ದೇಶಕ ಡಾ. ಜಾರ್ಜ್ ಎ. ಥೋಮಸ್ ಹೇಳಿದರು.

ತಾಲೂಕಿನ ಬದರಗುಡಿ ಕಾಲಿನ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದಲ್ಲಿ ಕಾಸರಗೋಡು ಕೇಂದ್ರೀಯ ತೋಟಗಾರಿಕಾ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ, ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರ ಹಾಗೂ ತೋಟಗಾರಿಕಾ ಇಲಾಖೆ ಆಶ್ರಯದಲ್ಲಿ ಹಮ್ಮಿಕೊಂಡಿದ್ದ 'ತೆಂಗು ಬೆಳೆ ಬಗ್ಗೆ ರೈತರೊಂದಿಗೆ ಸಂವಾದ' ಕಾರ್ಯಕ್ರಮ ಉದ್ಘಾಟಿಸಿ ಮಾತನಾಡಿದರು.

ತೆಂಗು ಬೆಳೆಯ ತಾಂತ್ರಿಕ ಮತ್ತು ಅಭಿವೃದ್ಧಿ ಬಗ್ಗೆ ರೈತರಿಗೆ ಮಾಹಿತಿ ನೀಡಿದರು.

ತೋಟಗಾರಿಕಾ ಬೆಳೆಗಳಿಂದ ಆದಾಯ ಹೆಚ್ಚಿಸಿಕೊಳ್ಳಲು ಸಾಧ್ಯ. ಈ ನಿಟ್ಟಿನಲ್ಲಿ ಮಿಶ್ರ ಕೃಷಿ ಪದ್ಧತಿ ಮತ್ತು ಪೋಷಕಾಂಶಗಳ ನಿರ್ವಹಣೆ ಬಗ್ಗೆ ರೈತರು ಹೆಚ್ಚು ಗಮನ ಹರಿಸಬೇಕು. ಆ ಮೂಲಕ ಹಣ ಗಳಿಸಬಹುದು ಎಂದು ಕಾರ್ಯಕ್ರಮ ಸಂಯೋಜಕ ಡಾ.ಜಿ.ಎಂ.ಸುಜಾ ತಿಳಿಸಿದರು.

ತೆಂಗು ಬೆಳೆಯ ತಳಿಗಳು, ಕೃಷಿ ಪದ್ಧತಿ, ಉತ್ಪಾದನೆ, ನರ್ಸರಿ ನಿರ್ವಹಣೆ, ಕೀಟ ಮತ್ತು ರೋಗ ನಿರ್ವಹಣೆ ಬಗ್ಗೆ ರೈತರಿಗೆ ಮಾಹಿತಿ ನೀಡಲಾಯಿತು. ಕೇಂದ್ರದ ಹಿರಿಯ ಸಹ ನಿರ್ದೇಶಕಿ ಪುಷ್ಪಲತಾ, ತಜ್ಞರಾದ ಡಾ. ರವಿಭಟ್, ಡಾ. ವಿನಾಯಕ ಹೆಗ್ಡೆ, ಡಾ.ಹೆಚ್.ಎಲ್. ಇದ್ದರು.

7. Interface in Tumkur on 12.09.2013

SAMYUKTHA KARNATAKA, 14.09.2013



ಕೆ.ಎಂ.ಎಸ್. ಸಂವಾದ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಉಪಸ್ಥಿತರಿದ್ದ ಡಾ. ಜಾರ್ಜ್ ಎ. ಥೋಮಸ್, ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರ ಹಾಗೂ ತೋಟಗಾರಿಕಾ ಇಲಾಖೆ ಅಧಿಕಾರಿಗಳು.

UDAYAVANI, 15.09.2013

## ರೈತರಿಗೆ ವೈಜ್ಞಾನಿಕ ಕೃಷಿ ಅನಿವಾರ್ಯ: ಆನಂದ್



ಕೆ.ಎಂ.ಎಸ್. ಸಂವಾದ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಉಪಸ್ಥಿತರಿದ್ದ ಡಾ. ಜಾರ್ಜ್ ಎ. ಥೋಮಸ್, ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರ ಹಾಗೂ ತೋಟಗಾರಿಕಾ ಇಲಾಖೆ ಅಧಿಕಾರಿಗಳು.



PRAJAVANI, 28.09.2013



ಹಿರಿಯರು ತಾಲ್ಲೂಕಿನ ಬಬ್ಬೂರು ಫಾರಂನ ಕೃಷಿ ಸಂಶೋಧನಾ ಕೇಂದ್ರದಲ್ಲಿ ಈಚೆಗೆ ಹಮ್ಮಿಕೊಂಡಿದ್ದ ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆ ಕುರಿತು ರೈತರೊಂದಿಗಿನ ಒಂದು ದಿನದ ಸಂವಾದ ಕಾರ್ಯಕ್ರಮವನ್ನು ಹಿರಿಯ ಕ್ಷೇತ್ರ ಅಧೀಕ್ಷಕ ಡಾ. ಕೆ.ಟಿ.ರಾಜೇಂದ್ರಪ್ರಸಾದ್ ಉದ್ಘಾಟಿಸಿದರು.

## ರೈತರ ಸಮಸ್ಯೆ ನಿವಾರಣೆಗೆ ಕ್ರಮ

ಪ್ರಜಾವಾಣಿ ವಾರ್ತೆ

ಹಿರಿಯರು: ರಾಜ್ಯದಲ್ಲಿ ಅಡಿಕೆ ಮತ್ತು ತೆಂಗು ಬೆಳೆಗಾರರು ಅನುಭವಿಸುತ್ತಿರುವ ತೊಂದರೆಗಳತ್ತ ತೋಟಗಾರಿಕೆ ವಿಜ್ಞಾನಿಗಳು ಗಮನ ಹರಿಸಬೇಕು ಎಂದು ಹಿರಿಯ ಕ್ಷೇತ್ರ ಅಧೀಕ್ಷಕ ಡಾ. ಕೆ.ಟಿ.ರಾಜೇಂದ್ರಪ್ರಸಾದ್ ಸಲಹೆ ನೀಡಿದರು.

ತಾಲ್ಲೂಕಿನ ಬಬ್ಬೂರು ಫಾರಂನ ಕೃಷಿ ಸಂಶೋಧನಾ ಕೇಂದ್ರದಲ್ಲಿ ಈಚೆಗೆ ಕಾಸರಗೋಡಿನ ಕೇಂದ್ರೀಯ ತೋಟದ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ ಆಶ್ರಯದಲ್ಲಿ ಹಮ್ಮಿಕೊಂಡಿದ್ದ ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆ ಕುರಿತು ರೈತರೊಂದಿಗಿನ ಒಂದು ದಿನದ ಸಂವಾದ ಕಾರ್ಯಕ್ರಮ ಉದ್ಘಾಟಿಸಿ ಅವರು ಮಾತನಾಡಿದರು.

ರೈತ ಸಂಘದ ಮುಖಂಡ ಟಿ.ನುಲೇನೂರು ಶಂಕರಪ್ಪ ಮಾತನಾಡಿ,

ವಿಟ್ಟದ ಕೇಂದ್ರೀಯ ತೋಟದ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಕೇಂದ್ರದ ಮುಖ್ಯಸ್ಥ ಡಾ. ಕೆ.ಎಸ್.ಆನಂದ್, ಕಾಸರಗೋಡಿನ ಬೆಳೆ ಉತ್ಪಾದನಾ ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥ ಡಾ. ರವಿ ಭಟ್, ತೋಟಗಾರಿಕೆ ಇಲಾಖೆ ಉಪನಿರ್ದೇಶಕ ಡಾ. ಕೆ.ಆರ್.ದೇವರಾಜು, ಕಾರ್ಯಕ್ರಮ ಸಂಯೋಜಕ ಡಾ.ಚಂದ್ರಪ್ಪ, ಬೆಳೆ ಸಂರಕ್ಷಣೆ ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥ ಡಾ. ವಿನಾಯಕ ಹೆಗಡೆ, ಕೀಟ ಶಾಸ್ತ್ರ ವಿಭಾಗದ ವಿಜ್ಞಾನಿ ಡಾ. ಎಂ.ರಾಜ್‌ಕುಮಾರ್ ಅವರು ವಿವಿಧ ವಿಷಯಗಳನ್ನು ಕುರಿತು ರೈತರಿಗೆ ಮಾಹಿತಿ ನೀಡಿದರು. ಕಾಸರಗೋಡಿನ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆಯ ನಿರ್ದೇಶಕ ಡಾ. ಜಾರ್ಜ್ ವಿ ಥಾಮಸ್ ಮಾರ್ಗದರ್ಶನದಲ್ಲಿ ನಡೆದ ತರಬೇತಿ ಶಿಬಿರದಲ್ಲಿ ತೆಂಗು, ಅಡಿಕೆ ಮತ್ತು ಕೊಕ್ಕೊ ಬೆಳೆಗಳ ತಳಿಗಳು, ಸಸ್ಯ ಸಂರಕ್ಷಣೆ, ನರ್ಸರಿ ನಿರ್ವಹಣೆ, ಕೀಟ

9. Interface in Chitradurga on 24.09.2013

VIJAYAVANI, 26.09.2013

## ಮಿಶ್ರ ಬೆಳೆಯಿಂದ ಆರ್ಥಿಕ ಅಭಿವೃದ್ಧಿ ಸಾಧ್ಯ

ದಾವಣಗೆರೆ: ರೈತರು ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಕೃಷಿಯಿಂದ ಒಟ್ಟು ಹಣವನ್ನು ಪಡೆದುಕೊಳ್ಳುವ ವಿಧಾನ ಬೆಳೆಗಾರರಿಗೆ ಹೊಂದಿಕೊಳ್ಳುವ ವಿಧಾನ ಎಂದು ಉಪ ವಿಭಾಗೀಯ ಡಾ.ಎಸ್.ಜಗದೀಶ್ ತಿಳಿಸಿದರು.

ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದ ಕಾರ್ಯದರ್ಶಿ ಕಛೇರಿಗೆ ಸೇರಿದಂತೆ ಕೇಂದ್ರೀಯ ತೋಟದ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ ಆಶ್ರಯದಲ್ಲಿ ಉದ್ಘಾಟಿಸಿದ ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆಗಾರರೊಂದಿಗೆ ಸಂವಾದ ಕಾರ್ಯಕ್ರಮ ಉದ್ಘಾಟಿಸಿ ಮಾತನಾಡಿದರು.

ಕೇಂದ್ರೀಯ ತೋಟದ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆಯಲ್ಲಿ ದೊರೆಯುವ ತಾಂತ್ರಿಕಗಳನ್ನು ಅಳವಡಿಸಿಕೊಂಡು ಪ್ರಗತಿ ಹೊಂದಿದಂತೆ ಸಲಹೆ ನೀಡಿದರು.

ತೋಟಗಾರಿಕೆ ಇಲಾಖೆ ಉಪ ನಿರ್ದೇಶಕ ಡಾ.ಉಮೇಶ್ ಕರ್ಕಿ ಎಸ್.ಎಸ್. ಮಾನವಡಿ ತೋಟಗಾರಿಕೆ ಬೆಳೆಗಳ ಆದಾಯ ಹೆಚ್ಚಿಸಲು ವಿವಿಧ ಕೃಷಿ ವಸ್ತು ಹಾಗೂ ಯಂತ್ರವು ಅಭಿವೃದ್ಧಿಪಡಿಸುವ ಬಗ್ಗೆ ಮಾಹಿತಿ ನೀಡಿದರು.

ಸಂವಾದ ಕಾರ್ಯಕ್ರಮದ ಅಧ್ಯಕ್ಷತೆ ವಹಿಸಿದ್ದ ಕೇಂದ್ರೀಯ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದ ಕಾರ್ಯದರ್ಶಿ ಡಾ.ಎಸ್.ಜಗದೀಶ್ ಮಾತನಾಡಿ, ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆಗಾರರೊಂದಿಗೆ ಸಂವಾದ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಉಪ ವಿಭಾಗೀಯ ಡಾ.ಎಸ್.ಜಗದೀಶ್ ಮಾತನಾಡಿದರು.



ದಾವಣಗೆರೆ ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದ ಕಾರ್ಯದರ್ಶಿ ಡಾ.ಎಸ್.ಜಗದೀಶ್ ಮಾತನಾಡುತ್ತಿರುವುದು.

ಡಾ.ಎಮರ್ಸನ್ ಹೆಗ್ಡೆ ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆಗಳಲ್ಲಿ ಬರುವ ರೋಗಗಳ ಬಗ್ಗೆ ಸಂವಾದ ನೀಡಿದರು. ಕುಲಕರ್ಣಿ ವಿಭಾಗದ ವಿಜ್ಞಾನಿ ಡಾ.ಎಂ. ರಾಜ್‌ಕುಮಾರ್ ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆಗಳಲ್ಲಿ ಬರುವ ಕೀಟಗಳ ಬಗ್ಗೆ ಮಾಹಿತಿ ನೀಡಿದರು.

ಕೇಂದ್ರೀಯ ತೋಟದ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆಯಲ್ಲಿ ದೊರೆಯುವ ತಾಂತ್ರಿಕಗಳನ್ನು ಅಳವಡಿಸಿಕೊಂಡು ಪ್ರಗತಿ ಸಾಧಿಸಬೇಕು.

ಡಾ.ಎಸ್.ಜಗದೀಶ್

ವಿಜಯನಗರ ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆಗಳ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದ ಕಾರ್ಯದರ್ಶಿ ಡಾ.ಎಸ್.ಜಗದೀಶ್ ಮಾತನಾಡುತ್ತಿರುವುದು.

ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆಗಳ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದ ಕಾರ್ಯದರ್ಶಿ ಡಾ.ಎಸ್.ಜಗದೀಶ್ ಮಾತನಾಡುತ್ತಿರುವುದು.

ತೆಂಗು ಮತ್ತು ಅಡಿಕೆ ಬೆಳೆಗಳ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದ ಕಾರ್ಯದರ್ಶಿ ಡಾ.ಎಸ್.ಜಗದೀಶ್ ಮಾತನಾಡುತ್ತಿರುವುದು.

10. Interface in Davanagere on 25.09.2013

VIJAYA KARNATAKA 08.10.2013

11. Interface in  
Chickmagalore 07.10.2013



VIJAYA KARNATAKA 12.10.2013



12. Interface in Uttara Kannada  
09.10.2013

TV Programme : DD - Chandana  
broadcasted the interface on 15.10.13



**PRAJAVANI 12.10.13**

**‘ಬೇವಿನ ಹಿಂಡಿಯಿಂದ ರೋಗ ತಡೆ’**

ಪ್ರಜಾವಾಣಿ ವಾರ್ತೆ;



ತೋಟಗಾರಿಕೆ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯದ ಆದ್ಯಾಚಾರ್ಯ ಹಾಗೂ ಹೊರ ಭಾಗದಲ್ಲಿದ್ದ ಸರ್ಕಾರಿ ಪ್ರಕೃತ ದರ್ಜೆ ಕಾಲೇಜು ಆವರಣದಲ್ಲಿ ಅಯೋಜಿಸಿದ್ದ ತೆಂಗಿನ ಕಳ್ಳ ತಲೆ ಹುಲುವಿನ ಹೋಟೆಲ ಬಗ್ಗೆ ಪ್ರಾಕೃತಿಕ ಕಾಯ್ದೆಗಳನ್ನು ಮನ್ನಾ ಕೇರಳದ ಕಾನೂನೋದ್ದೇಶ ಕೇಂದ್ರಿಯ ಹೋಟೆಲದ ಬೆಳೆಗಳ ಸಂಶೋಧನಾ ಕೇಂದ್ರದ ನಿರ್ದೇಶಕ ಬಾಬ್ ಎ. ಭಾಮಣಿ ಉದ್ಘಾಟಿಸಿದರು

[illegible]

13. Interface at Arasikere, Hassan  
10.10.2013

UDAYAVANI 11.10.2013

ರೈತರ ಶ್ರಮ, ಸಹಕಾರದಿಂದ ಕಷ್ಟತಲೆ ಹುಳು ತಡೆ ಸಾಧ್ಯ

[illegible][illegible][illegible]

JANATHA MAADYAMA, 12.10.2013

ತೆಂಗಿನ ಮೌಲ್ಯವರ್ಧನೆಗೆ ವಿಜ್ಞಾನಿ ಡಾ.ಥಾಮಸ್ ಕರೆ

[illegible]

ಅದ್ವೈತ ಪರಮೇಶ್ವರ ಭಕ್ತಿ ಇಲ್ಲದಿದ್ದರೆ  
ವ್ಯಥೆಯಿಂದ ತೊರೆ ಬಿಡುಗಡೆ ಮಾಡಿ  
ನೀರಿನ ನಿರ್ವಹಣೆ, ಲಘು ಪೋಷಣ  
ಕಾಂಕ್ಷೆಗಳಿಂದ ಆಗುತ್ತದೆ ಎಂಬುದು  
ರೋಗಗ್ರಸ್ತರರ ಗಮನಕ್ಕೆ ಲಘು  
ಪೋಷಣಕ, ಪೃಷ್ಠೆಗೊತ್ತ, ಹೊರಲಿ  
ಗೊತ್ತ, ನೀರು ಒದಗಿಸುವಂತೆ  
ಎಂದು ಅವರು ಹೇಳಿದರು.

ಹಿಂದೆ ಒಂದು ಗಿಡ ವರ್ಷಕ್ಕೆ 170 ರಿಂದ 180 ಕಾಲುಗಳನ್ನು ಶೇಖರು ಪ್ರದರ್ಶಿಸುತ್ತಿತ್ತು. ಬರಿದಿರುವಾಗ ಸುಮಾರು 40 ಕೆ.ಎಮ್.ದಷ್ಟು. ತೆಂಗಿನ ಮರಗಳ ಬೀಜಗಳು ಭೂಮಿಯಲ್ಲಿ ಅಳವಡಾಗಿ ಹೋಗದೇ ಮೇಲ್ಭಾಗದಲ್ಲಿ ಹರಡಿ ಕೊಂಡಿರುವುದರಿಂದಾಗಿ ಕೊರತೆ ಎಂಬುದನ್ನು ಒಂದು ವೇಳೆ ಅನುಭವಿಸುತ್ತಿದ್ದೆ ಎನ್ನುವುದು ಹೇಳಿದೆ.

ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದ ಸಂಯೋಜಿತ ಶಾ.ವಿ.ಎಸ್. ಬಸವರಾಜು ಅಭ್ಯಾಸಿ ವ್ಯಕ್ತಿಗಳು. ಬಾಂಬೆ ಕೃಷಿ ವಿಜ್ಞಾನ

14. Interface in Hassan  
11.10.2013



**CONTACT DETAILS**

<b>S.No.</b>	<b>District</b>	<b>Contact details</b>
1	Udupi	Programme Coordinator KVK, Brahmavar: 9449866939 Deputy Director of Horticulture : 0820-2531950
2	Dakshina Kannada	SADH : 08257 -232020 AHO: 09449385091
3	Shimoga	Programme Coordinator, KVK, Shimoga: 9449866938 Deputy Director of Horticulture : 08182-222633
4	Chamrajanagar	Programme Coordinator, KVK: 9449866933 Deputy Director of Horticulture : 08226-225022
5	Ramanagar	Programme Coordinator, KVK: 9449866918
6	Mandya	Programme Coordinator, KVK: 9449864250 Deputy Director of Horticulture : 08232-225734
7	Tiptur - Tumkur	Programme Coordinator, KVK: 9449866936 Deputy Director of Horticulture : 0816-2275189
8	Mysore	Programme Coordinator, KVK: 9686666490 Deputy Director of Horticulture : 0821-2420066
9	Chitradurga	Programme Coordinator, KVK: 9449866935 Deputy Director of Horticulture : 08194-230141
10	Davanagere	Programme Coordinator, KVK: 9449856876 Deputy Director of Horticulture : 08192-237629
11	Chickmagalore	Head, AHRS, Sringeri: 9486838972 DDH: 08262-235334; ADH: 08265-250410
12	Uttara Kannada	Programme Coordinator, KVK: 9448495345 Deputy Director of Horticulture : 08384-226427
13	Hassan	Programme Coordinator, KVK: 9449866932 Deputy Director of Horticulture : 08172-268387 Head, HRS, Arasikere : 08174-291565, 9449440536

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Scientist

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