

## **TRANSFER OF TECHNOLOGY**

Cashew grafts to the tune of 23, 81,245 nos. have been produced by different centres and distributed during the last 5 years. Various training programs on production technology, pruning, cashew apple utilization of cashew for both men and women self help groups have been conducted by various AICRP centres. Under Tribal Sub Plan, awareness and training programs related to empowering of tribal farmers about cashew production have been conducted. Besides these, scientists of Bapatla, Bhubaneswar, Jagdalpur, Jhargram, Madakkathara, Pilicode, Vengurle have participated in various programs as resource persons.

### **2016-17**

#### **BAPATLA**

The scientists have organized training programme on “Production technology and pest and disease management in cashew 31-03-2016 to 02-04-2016 to 02-04-2016 at Ranastalam, Srikakulam district were a total of 150 farmers participated and also training on “Production technology and pest and diseases management in cashew 15.09.2016 at Koyyuru, Vishakhapatnam. Training was organised on 02.06.2016 and 17.06.2016 for a batch of 25 women Self Help Group’s on Cashew Apple Utilization and Value addition at College of Food Science and Technology, Bapatla.

The Centre organized three days farmers training programme on “Advanced Cashew Production Technology” from 17.02.2017 to 19.02.2017, sponsored by Directorate of Cashew and Cocoa Development, Kochi, at Janga function hall, Jangareddygudem, West Godavari and one day training programme on Cashew at Rastakuntubai, Viziayanagaram District.

Under Tribal Sub Plan, the scientists of the Centre had organized the District level seminar on Cashew at Addateegala, East Godavari district. On 15.12.2016 on Advanced Production Technology covering value addition and rejuvenation technique. The scientists also organized one day training programme on Cashew at Mandasa, Srikakulam Dist. Under Tribal Sub Plan, sponsored by ICAR-DCR, Puttur.

### **BHUBANESWAR**

The Scientists of the Centre participated and acted as resource person in three days National Level Training Programme on Cashew on 27-28<sup>th</sup> February to 1<sup>st</sup> March 2017 of DCCD sponsored MIDH Scheme. The scientists have also acted as resource person for the Training –cum-exposure visit on” Advance in Production and processing of cashewnut” organized by Odisha State Cashew Development Corporation, Bhubaneswar.

### **DARISAI**

Scientific Pruning technique has been imparted to the farmers in a workshop to ensure maximum productivity. Farmers were also trained on the harvesting technique of the Cashew type V-4 which had recorded significantly highest annual nut yield of 1.8 kg/tree.

### **JAGDALPUR**

The scientist of the centre had taken up one day training programme for about 103 participants on 13.01.2017 and on 31.1.2017 for 74 participants on ‘Production technologies, Plant Protection and Processing of cashew nut’. The Centre has also organized three days training programme for batches of 50 participants on 4-6<sup>th</sup> Feb. 2017, 17-19<sup>th</sup> Feb. 2017, 20-22<sup>nd</sup> Feb. 2017 and 7-9<sup>th</sup> March 2017. One day training programme on ‘Production technologies, Plant Protection and Processing of cashew

nut' was also organized for about 110 farmers. A training programme was organized for unemployed women on cashew apple utilization on 29<sup>th</sup> March 2017 in which 100 women members had participated.

Under TSP programme, seven days training on cashew processing under the project 'Enhancement of tribals income through small scale cashew nut & cashew apple processing in Bastar region of Chhattisgarh" was organized from 24-30<sup>th</sup> March 2017.

### **JHARGRAM**

The scientist of the centre functioned as resource person in the farmers training programme on cashew cultivation technology were about a total of 189 farmers participated which was organized during 1.9.2016 at Dudhkundi Village, 8.11.2016 and 19.2.2017 at BCKV, Jhargram and 16.3.2017 at Aranya Sundari Mahila Mahasangha, Jhargram, West Bengal.

### **MADAKKATHARA**

The scientists of the Centre conducted three training programmes of 3 days on Cashew Production Technology to farmers in which about 133 farmers had participated. The scientists have conducted training on cashew apple utilization for unemployed women funded by DCCD. Two district level seminar on cashew was conducted on October and November 2016. A radio talk on "Pest control in cashew" was conducted by the scientist which was telecasted on 24.1.2017.

The tribal sub plan 2016-17 was implemented in three tribal colonies Olakara, Nellyampathy an Attappady. Nursery expansion programme was implemented in Olakara colony in which two hectare area was planted with cashew grafts.

Various activities organised under Tribal Sub Plan are given below:

- Planting of cashew grafts as a part of area expansion programme
- Training on nursery management and top working
- Training cum awareness programme on cashew in tribal areas
- Demonstration of plant protection measures in cashew
- Awareness and demonstration on cashew apple utilization

### **PARIA**

The scientists of the Centre in collaboration with ATMA Project-Valsad had organized a Khedut shibir at village Mandva Ta. Kaparada on 21/03/17 and provided information about scientific cashew cultivation. They have also distributed Novel organic fertilizer (a product of Navsari Agricultural University) to the 300 participants as a part of kit as well as pesticides to the farmers who were earlier provided planting material.

### **PILICODE**

The scientist of the centre were involved in conducting 5 trainings in which around 125 women farmers were given practical training in cashew apple processing and training was also conducted on value addition of cashew apple and nut processing in which about 50 farmers had attended. Farmers district level training was conducted in Irritty on cashew varieties in which about 150 farmers had participated.

Under TSP field training to farmers was organized on scientific management and value addition in cashew on 21.3.2017 and 25.3.2017 in which about 125 farmers had participated.

## **VENGURLA**

The Centre had conducted three days training programme and training programme on “Cashew Apple Utilization” for 10 days (14.3.2017 to 23.03.2017) at RFRS sponsored by DCCD in which about 300 farmers had attended. A District level seminar was also organized at KVK, Lanja, Dist. Ratnagiri in which about 150 participants were present. The scientists also organized 2 demonstrations for about 50 farmers on cashew stem and root borer management at RFRS, Vengurle.

Under TSP, 2 days training programme was organized by the scientists in which about 100 participants were present.

## **VRIDHACHALAM**

The scientists of the Centre had organized four days training programme on “cashew apple utilization” for about 100 farmers. Under TSP Plan, the scientists of the Centre have taken up programme for creating awareness about cashew cultivation and expanding cashew area in tribal region.

## 2015-16

### Graft production

A total of 362894 grafts were produced during 2015-16 and distributed to several government and non-government organizations as well as to cashew farmers. The centre wise production of cashew grafts is given below:

Centre	No. of grafts produced
Bapatla	20000
Bhubaneswar	20000
Jagdalpur	110000
Jhargram	3500
Madakkathara	45344
Pilicode	2500
Vengurle	125550
Vridhachalam	36000
<b>TOTAL</b>	<b>362894</b>

### BAPATLA

The scientists have participated in training programme on production technology, crop management, plant protection measures, value addition and Post harvest management held at Eluru, Jangareddy, Tadepalligudem and Nellore District. They have also participated in the training programme on Cashew Production Technology organized by KVK-Pandirimamidi.

The scientists organized training programme on "Production technology on Cashew and pest and disease management in cashew to the tribal farmers under Tribal Sub plan at BREDS (NGO organization), Pathapatnam, Srikakulam District in which 150 farmers had participated. A district level Seminar program on same aspect was organized at Palasa, Srikakulam district and about 120 farmers had participated.

The centre organized a district level training programme on "Production technology on Cashew and pest and disease management in cashew to the tribal farmers at Narsipatnam Market yard, Visakhapatnam district with the financial assistance from the Directorate of Cashew and Cocoa Development-Kochi and at Gadhabapalem village of Visakhapatnam district with the financial assistance from ICAR - Directorate of Cashew Research, Puttur.

Forest department, Kavali and farmers from different mandals of Srikakulam were given training on "cashew production technology and value addition" and information on "pest and disease management in cashew".

### **BHUBANESWAR**

Scientists of the centre imparted two days training programme on "Cashew apple Utilization" organized by OSCDC, Govt of Odisha, Bhubaneswar. They have also attended the "Comprehensive Cashew Development Plan in Odisha", organized by Odisha State Cashew Development Corporation. Training was also imparted to the cashew growers of Ganjam district of Odisha on "Cashew Cultivation" organized by Paradeep Phosphate Limited, Odisha.

### **HOGALAGERE**

As resource persons, the scientists of the centre delivered 11 lectures in the cashew programmes organized by State Department of Agriculture and Horticulture, Chikkaballapur and Kolar districts, College of Horticulture, Kolar and SKDRDP, Srinivasapura.

## **JAGDALPUR**

The scientist of the centre has taken up one day training programme to about 120 participants on 'Production technologies, Plant Protection and Processing of cashew.

## **JHARGRAM**

The scientist of the centre functioned as resource person in the farmers training programme on cashew cultivation technology organized by Gramin Vikas Trust, KRIBHCO at Kuilapal, Purulia Dist., West Bengal.

## **MADAKKATHARA**

The scientists of the centre had organized twelve training programmes of one day duration on high yielding varieties of cashew, pest management in cashew, cashew apple processing and important cashew apple products for the farmers of Karnataka and Tamil Nadu. Two training programmes of 3 days were also conducted for women group on cashew apple processing. The scientists had attended "National Seminar on Cashew" and "National level training on cashew" held at RFRS, Vengurle. The scientists have conducted training on cashew apple utilization for unemployed women funded by DCCD. A state level seminar on cashew funded by DCCD was organized during May 2015. The exposure visit of farmers was conducted from 6<sup>th</sup> to 12<sup>th</sup> April 2015 regarding cashew cultivation and processing in Vengurla and Goa. One state level seminar on cashew highlighting scientific cultivation of cashew was conducted on May 16<sup>th</sup> and 17<sup>th</sup> 2015.

During the year, 5 exhibitions were arranged to depict the research achievements of the station as well as for the sale and display of cashew apple products and cashew grafts. Field visits were made to progressive cashew farmers plot at Marakkal,



Thrissur with the farmer's team from Tamil Nadu and conducted diagnostic field visit at Mankada, Kootilangadi and Manjeri, Wandoor.

Under tribal sub plan, the centre has taken up activities on training on nursery management and top working, training cum awareness programme on cashew in tribal areas, Small scale nursery on tribal farmers field and demonstration of plant protection measures in cashew. The production forecast of cashew for Kannur and Kasaragod districts is being done by the centre for the benefit of farmers, traders and entrepreneurs of cashew.

### **PARIA**

The scientists of this centre organized two farmers trainings on scientific cashew cultivation at cluster level and about 300 farmers had participated. Farmer Scientist meet was organized at taluk level at Kaparada to know the problems faced by the cashew growers of the area and there were about more than 60 farmers had participated.

### **PILICODE**

The scientist of the centre were involved in conducting 5 trainings in which around 150 women farmers were given practical training in cashew apple processing and training was also conducted on value addition of cashew apple and nut processing in which about 25 farmers had attended. The scientist of the centre participated in the National Seminar on Strategies for developing cashew held at RFRS, Vengurle.

### **VENGURLA**

The Centre had conducted "National training on cashew" sponsored by DCCD in which about 48 participants had attended. A Horticulture fair cum field day on

cashew was organized in which 150 farmers attended the programme. National Seminar on “Strategies for development of Cashew” was organized in which 91 participants were present. The scientists also organized 2 demonstrations for about 100 farmers on cashew stem and root borer management at Asni, Dodamarg Taluk, Zarebambar Dodamarg Taluk.

## **VRIDHACHALAM**

The Centre had laid out 13 demonstration on Demonstration plots on High Density Cashew planting of VRI (Cw) H1 variety at Solan Kurichy village, Udayarpalayam Taluk, Ariyalur District. Awareness trainings on cashew cultivation and demonstrations were taken up for 75 tribal farmers of Keeraikadu, velikadu villages, Kolli hills, Namakkal district of Tamilnadu. A district level seminar on Cashew funded by DCCD, Cochin was organised at KVK, Ariyalur and 150 farmers of Ariyalur district were imparted training on Cashew production technology and high yielding varieties in cashew. The AICRP scientists have taken up field visit to Kallamedu, Panruti block TAF CORN cashew plantations and explained about drought management and protection of cashew plantation.

Pruning and foliar spray demonstrations in High density cashew plantations were organized at Vegakollai village, Panruti Taluk by the scientists along with ADH, Panruti funded by DCCD, Cochin. The three days Farmers Training Programme on Cashew production technologies, district level seminar on cashew cultivation technologies for farmers of Pudukottai and Sivagangai were also organized by AICRP scientists which was funded by DCCD, Cochin. Four practical trainings were also taken up by the scientists on cashew nursery and production technology.

## 2014-15

### Graft Production

A total of 294300 grafts were produced during 2014-15 and distributed to several government and non-government organizations as well as to cashew cultivators. The centre wise production of cashew grafts is given below:

Centre	No. of grafts produced
Bapatla	20000
Bhubaneswar	17000
Darisai	00
Goa	2000
Hogalagere	50000
Jagdalpur	80000
Jhargram	2500
Kanabargi	00
Madakkathara	19000
Paria	00
Pilicode	2700
Tura	00
Vengurla	65000
Vridhachalam	36100
<b>TOTAL</b>	<b>294300</b>

### BAPATLA

The scientists of this centre organized the front line technology demonstration on cashew at farmers fields in Prakasam, Krishna, West Godavari and East Godavari Districts with the financial assistance from the Directorate of Cashew and Cocoa Development, Kochi.

Dooradarshan programmes on cashew Pest and Disease management, irrigation and flower and fruit set management were recorded and broadcast by DD-Saptagiri Channel.

The scientists of this centre organized district level seminar at Alluri Seetharamaraju museum, Koyyur, Visakapatnam on Production technology on Cashew for the benefit of tribal farmers.

Dr. K. M. Yuvaraj, Senior scientist (Hort.) & Head, and K. Uma Maheswararao Scientist (Hort.) both of them organised a three days farmers training programme on “Advanced Cashew Production Technology” at PCMA hall, Palasa, Srikakulam dist.

Scientists of this centre published book on “Jeedimamidi sagulo melyna yajamanya paddatalu” elaborating the production technology, rejuvenation of old orchards, soil and water conservation techniques, plant protection measures in cashew and processing, value addition of cashew apple in telugu.

## **BHUBANESWAR**

Scientists of this centre participated in District level seminars at Dhenkanal and at Jajapur organized by OSCDC, Govt. of Odisha. Doordarshan Programme on the topic “Insect pest management in cashew” in Odiya language was recorded and broadcasted on DD-Odiya Channel.

Consultancy on cashew cultivation to the cashew grower and private entrepreneur on cultivation of cashew and nursery verification was taken up by scientists of this Centre.

## **DARISAI**

Scientist of this centre conducted a training programme at Birsa Agricultural University, Ranchi on various aspects of cashew cultivation. Cashew growers of East singhbhum participated in the event.

## **HOGALAGERE**

Scientists of this centre attended Krishi mela at GKVK, Bangalore and National level training on Cashew Production Technologies at ICAR Research Complex for Goa, Goa.

A district level cashew seminar was organized for the benefit of cashew farmers at College of Horticulture. They also participated in crop seminars, diagnostic field visit and training programmes organized by various Institutions.

## **JAGDALPUR**

The scientists of this centre conducted 2 trainings of 7 days duration on cashew processing under the project 'Enhancement of tribals income through small scale cashew nut & cashew apple processing in Bastar region of Chhattisgarh'.

A training programme on 'Cashew Production, Plant Protection and Processing technologies' was conducted for benefit of new cashew farmers in Bastar region and cashew field workshop was also organized to create awareness about cashew production. They also participated in trainings on cashew apple processing and field workshop as subject matter experts.

## **JHARGRAM**

The scientist of the Centre functioned as resource person in the farmers training programme on cashew cultivation technology organized by BCKV, Jhargram under TSP and ATMA schemes. Scientist of this centre participated in SLCARP International Symposium, Colombo, Sri Lanka and presented a research article.

## **MADAKKATHARA**

Scientists of this centre confirmed that sand can be replaced by coir pith in potting media for graft production and pepper was a good intercrop in cashew plantations (Panniyur-5). Two cashew apple products viz., Halwa and cookies were launched on commercial scale.

Under tribal sub plan programme, softwood grafting and value addition of cashew was implemented at Thamaravallachal, Thrissur district. Tribal people from other parts of the district viz., Nadathara and Puthur also participated in the meeting.

## **PILICODE**

The scientists of this centre have maintained 2 cashew demonstration plots which are of ninth year.

Five trainings and seminars have been conducted on cashew apple processing. A radio talk on "Climate change and population crops" was broadcast from AIR, Kannur.

## **VENGURLA**

The scientists of this Centre conducted 3 state level seminars on cashew and three days training programme on cashew production and processing technology as well as on cashew apple utilization for unemployed women, demonstrations on cashew stem and root borer management and cashew apple utilization in Regional Fruit Research Station, Vengurle thereby creating awareness on these aspects for approximately 902 cashew farmers.

## **VRIDHACHALAM**

A total of 13 nos. of demonstration plot on High Density Planting was laid out in Ariyalur District under DCCD funding. Scientists of this Centre also conducted trainings (3 no.) on cashew production technology and high yielding varieties in cashew. Practical training on cashew production technology and cashew pruning demonstrations were also organized for benefit of students and farmers at Panruti taluk.

Scientists of this centre also took up field visit to monitor implementation of Shade net nursery under NHM in Cuddalore District. The personnel of this centre participated in the 6<sup>th</sup> Indian Horticulture Congress and organized an exhibition on cashew production technologies. One day training on Cashew Nursery Technology and Training on Cashew Apple Utilization was organized for benefit of enterprenuers and farm women.

## 2013-14

### Graft Production

A total of 609934 grafts were produced during 2013-14 and distributed to several government and non-government organizations as well as to cashew cultivators. The centre wise production of cashew grafts is given below:

Centre	No. of grafts produced
Bapatla	20000
Bhubaneswar	00
Darisai	00
Goa	00
Hogalagere	50000
Jagdapur	130000
Jhargram	2000
Kanabargi	00
Madakkathara	45344
Paria	00
Pilicode	27000
Tura	00
Vengurla	161980
Vridhachalam	173610
<b>TOTAL</b>	<b>609934</b>

### BAPATLA

The scientist of this centre participated in the State level training programme to cashew growers on Cashew Production Technology organized by KVK-Pandirimamidi and conducted diagnostic survey of cashew plantations in various villages of Prakasam, Visakhapatnam, East Godavari , and Guntur districts. Organized a front line technology demonstrations with the financial assistance from the Directorate of Cashew and Cocoa Development-Kochi under NHM.

Three training programmes on production technology , crop management, plant protection measures, value addition and Post harvest management were conducted



in Prakasam and Guntur districts. A district level seminar on “ Advances in cashew production technology” was held at Narsipatnam, Visakhapatnam district in which farm women and tribal farmers participated.

## **BHUBANESWAR**

The scientists of AICRP on Cashew, Bhubaneswar imparted training to 50 nos. of farmer as resource person at Rambha, Ganjam district in collaboration with OFDC on production technology, crop management, plant protection measures, value addition and post harvest management of cashew to the cashew growers.

About 50 no. of farmers each from Andhra Pradesh came on exposure visit to the Cashew Research Station, OUAT, Bhubaneswar and went round the research trials and interacted with the scientists of the project.

Scientists of Cashew research station attended as members in the joint verification programme for evaluation of replanting programme of cashew in the districts of Khurda, Nayagarh, and Dhenkanal executed by Orissa State Cashew Development Corporation and Orissa Forest Development Corporation.

## **HOGALAGERE**

The scientists of cashew delivered several lectures in the training programmes organized by State Department of Agriculture and Horticulture in Chikkaballapur districts. More than 23 field visits / discussions were made on various aspects of cashew cultivation and suitable suggestions were provided to the farmers.

## **JAGDALPUR**

The scientists of this centre conducted 2 training of 7 days duration on cashew processing under the project 'Enhancement of tribals income through small scale cashew nut & cashew apple processing in Bastar region of Chhattisgarh'.

Another training programme on 'Cashew Production, Plant Protection and Processing technologies' was also conducted for benefit of new cashew farmers in Bastar region involving method demonstrations, power point presentation, poster and field visits

## **JHARGRAM**

The scientist of the Centre functioned as resource person in the farmers training programme on cashew cultivation technology organized by State Agricultural Department, Nari Vikas Sangha in Bankura District and Gramin Vikas Trust, KRIBHCO and Dept. of Botany, Vidyasagar University, Medinipur. The scientist of the Centre was involved in organizing the AGM-2013 at BCKV, Kalyani.

## **MADAKKATHARA**

Ten training programmes of one day duration on "cashew apple utilization" were organized which involved 250 beneficiaries with emphasis on practicals. A district level seminar on cashew was conducted at Kuttikkad, Thrissur on scientific cultivation practices of cashew, plant protection aspects, improved varieties and post harvest handling of cashew apple and nut.

Two 3-day training programmes on "Cashew Production Technology" were organized at Thrissur and at Wayanad. Various scientific aspects of cashew cultivation from planting to harvest and processing of cashew nut and apple were dealt during these programmes. There were also practical sessions on grafting and processing aspects.

The commercial production unit for value added products from cashew apple established in the research station has earned a net revenue of Rs.4,84,866/- by the sale of different value added products. Two cashew apple products were launched during December 2013, viz halva and cookies. Cashew apple products like syrup, jam pickle, candy, soda and RTS are being sold through the new sales outlet near ATIC, Mannuthy.

### **PARIA**

The scientists of this Centre have organized 5 Khedut Shibirs and 20 front line demonstrations in Dharampur and Kaprada talukas of Valsad district. District Level Seminar on Cashew was organized at Sutharpada village of Kaprada taluka in which technical guidance was provided to 345 farmers. Under TSP scheme from DCR, Puttur guidance to 165 farmers was provided on cashew cultivation at Kaparada, Valsad. On farm training to visiting farmers pertaining to cashew cultivation and soft wood grafting has also been done by the scientists of the Centre.

### **PILICODE**

The scientist of the centre has been involved in conducting 10 trainings and seminars on various aspects of cashew cultivation. The scientist of the centre has functioned as resource person in resolving the several field problems of cashew growers in more than 15 different locations. Three farmers training were held at Nileshwar, Periya and Taliparamba in which a total of 150 farmers were trained.

### **VENGURLA**

The scientists of this Centre conducted 11 demonstrations on cashew stem and root borer management and cashew apple utilization in Regional Fruit Research Station,

Vengurle thereby creating awareness on these aspects for approximately 175 cashew farmers.

### **VRIDHACHALAM**

The Centre has laid out 10 front-line technology demonstration on TMB management sponsored by DCCD to popularize the production in cashew to improve the productivity. The scientists organized State Level Seminar on Cashew, District Level seminar on Cashew and trainings on Cashew Production technology in which more than 500 farmers were benefitted. Promotion of cashew through dissemination of latest production technologies to the farming community and other target groups were also taken up by the centre.

### **BARAPANI**

The scientist of this Centre has conducted 4 trainings on propagation of cashew by grafting, nursery management of cashew and rejuvenation of cashew for about 95 farmers. Also field demonstrations on rejuvenation of old orchards have been conducted by the Centre.

Front line demonstrations were conducted in three villages viz., Gambegre, Bokmagre and Balalgere of cashewnut Growing area at Garo Hills to promote scientific cultivation techniques for cashew.