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# Indian Coconut Journal



CDB  
Friends of  
Coconut Tree

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# Friends of Coconut Trees: friends of coconut farmers and coconut economy

***Dear Coconut Farmers,***

'Friends of Coconut Trees' (FoCT), a new concept mooted by the Board have now become a reality. It was initiated from the long standing demand of the coconut farmers. The issue of dearth of coconut tree climbers was in fact a challenge before the Board. The Kerala Agriculture University, the Krishi Vigyan Kendras (KVKs) in the state and few NGO's came forward to take up this challenge and to help the Board. After detailed discussions and planning the training for the 'FoCT' is now in the track. Already five batches of training is completed and 770 FoCTs are in the field.

The first challenge was the training itself. The Board took into consideration the opinion of all the well wishers in framing the curriculum of training. Initially there were apprehensions as to whether jogging, breathing exercise or other physical exercises be made part of the training curriculum for the coconut climbers. But once the objectives were made clear, it was realised that this is an initiative of the Board to address a grave issue beset with the coconut sector.

***At the outset, Board is targeting to give training to at least 5000 FoCTs during 2011-12. Trainings have been initiated in eleven districts in Kerala and we are planning to train 25 batches of 20 persons each.***

The farmers and farm labourers are the two sides of the same coin. We all know very well that coordination and cooperation of both are essential in materializing good results in agriculture. FoCT project is an attempt of the Board to bring back the lost glory of coconut sector. FoCT training is an opportunity for an unemployed youth to realise a better income and livelihood at his own place. If he is willing and ready to work hard, he can definitely earn like a government or a private employee.

They are expected to move on their own two wheels with a mobile phone in an attractive uniform/jersey. FoCTs are the friends of coconut farmers and

***Far beyond being just a coconut climber, he can be a part of the professional team who can perform all the plant protection operations, crown cleaning, pest and disease control measures as well as harvesting of coconut.***

friends of coconut economy. I hope they can excel in technical know how, can attain better economic and social status, social security and also earn a bright future for themselves. If this attempt succeeds in coconut sector, similar experimentation may spread to other agricultural crops too.

The initial apprehension was that since Kerala is facing an acute shortage of labourers, the scheme may not get enough persons for training. But now after conducting five batches of training, we are confident that there won't be shortage of trainees from within the state. It is our earnest appeal to all the coconut farmers to identify suitable trainees from their own locality who are interested in attending the training and to register their names with the Board. I am hopeful that the already formed CPS and coconut clusters would make attempts to identify persons for the same. If the existing primary cooperative societies, Grama/Block Panchayaths, Municipalities, Corporations, voluntary organisations, youth clubs of the Nehru Yuva Kendras etc. are coming forward to identify and register persons, the target of 5000 persons can be achieved in time.

All the trainees of the first five batches are found very much excited. The trainers, the training institutes like the KVKs, Mythri, LEDS, YMCA Kollam and the Marshal Industries have also played a significant role in making the training interesting and useful. My request to you all is that this project should not be considered as a project of the Coconut Development Board alone, but of all those who love coconut farming and the coconut economy and also those who believe that the coconut sector can positively influence the economy of our country.

These training could so far impart only primary lessons for doing coconut farming along with the training for climbing the trees with the machine for harvesting.

***Once they are in the field they can bring in their own practical knowledge and thereafter the curriculum can be restructured by incorporating topics like the crown cleaning and management of the coconut tree, fertilizer application, collection of seednuts and tender coconut and producing hybrid seedlings through artificial pollination.***

Board can extend training for those who are interested in tender coconut harvesting, processing and marketing. Training can be also given for producing good quality milling copra, ball copra and coconut oil.

Board plans to review and monitor the functioning of FoCT at the training centres on a fixed date in every month for the next 3 years. This would be a good platform for the FoCT along with the farmers for sharing their experiences from the field.

This may enable the Board to make available a database on the status of coconut farming, prevalent pests and diseases of coconut existing in any specific area, variety of experiences of farmers, the gardens having the best productivity, the best and innovative farmers etc.

We can explore the possibility of associating the trained FoCT with the CPS, Local Self Government Institutions and primary co operative societies of the coconut producing areas. The phenomena of ignoring coconut farming due to the dearth of employees should be reversed now. The 5000 FoCTs is only a first step. Board is also ready to offer training and providing the climbing devices to those traditional coconut climbers who are already in the field to convert them as the FoCT. We are already in receipt of such requests from Lakshadweep, Tamil Nadu and Karnataka.

Board is visualising a bright future for those who have completed the training successfully and especially for those who consider this as a serious profession. A charge of Rs.10 for a normal tree (40 feet height) Rs.15 for taller as well as those trees in

the city limits (where harvesting is a bit difficult) may be fixed. A FoCT who will work hard can earn upto an annual income of Rs. 3 lakhs. Insurance coverage is also given from the first day of the training itself.

Those who make an annual income of Rs. 3 lakhs may be designated as 'Junior Coconut Consultants'. They will be promoted as 'Coconut Consultants' when they will make all the farmers (having 50 or more coconut trees) of his catchment area, subscribers of the Indian Coconut Journal. When he earns an income of Rs.10 lakhs in three years time, he may be honoured as 'Senior Coconut Consultants'. This would offer an opportunity for their financial and social upliftment. If they can have Public Provident Fund and a recurring deposit they will definitely have a good savings at the end of 20 years of working. If they can work in association with the CPS of their respective areas, why don't we think of a provident fund with a share of the CPS too? We can even think of extending pension for them on attaining the age of 60 years or after completing 20 years of service in the field.

Board is giving the training, machine and two set of uniforms free of cost to the trainees. If they are having a two wheeler also their mobility can be enhanced. Board has presented this concept in the State Level Bankers' Committee (SLBC) and has got it approved. It would have been a great encouragement if the state government could extend 25% subsidy for the loans of two wheelers. To encourage the women participants in this field, the subsidy proposed for them is 50%. Board is also attempting to create and make available a directory of the FoCT in the Local Self Government Institutions, primary cooperative societies, CPS and other related organisations.

I hope that the FoCT would be a boon for the coconut farmers and the industry. If the CPS, FoCT and the Panchayathiraj institutions can work in unison for the betterment of coconut cultivation, no doubt, the country can achieve the highest position in the global coconut production and productivity.

With best wishes,

  
T K Jose IAS  
Chairman



# Friends of coconut are here to stay

Deepthi Nair\*

There appeared an interesting, eye catch advertisement in a leading daily in Kerala. The offer was attractive

“A monthly consolidated pay of Rs. 13500-15000/- plus free accommodation”. Wait, don’t be in a haste to send your biodata, there’s something more to add. “You have to be skilled to climb a coconut tree”.

This may appear an exaggerated tale to many, but this is the grave truth. A fresh technical graduate is sure to get even less, but a coconut climber is a much wanted person. Coconut climbing was restricted to certain strata of the society in earlier days. As the country grew, economic development created newer job prospects which had higher job value and grade in the society that the youth are no longer willing to take up work like coconut climbing. The enormity for scarcity of trained manpower for cultivation and harvesting operations exists not only in coconut, but in agriculture sector as a whole. The talk always is of retarded development in the agricultural sector and ways and means to improve the same, but one of the

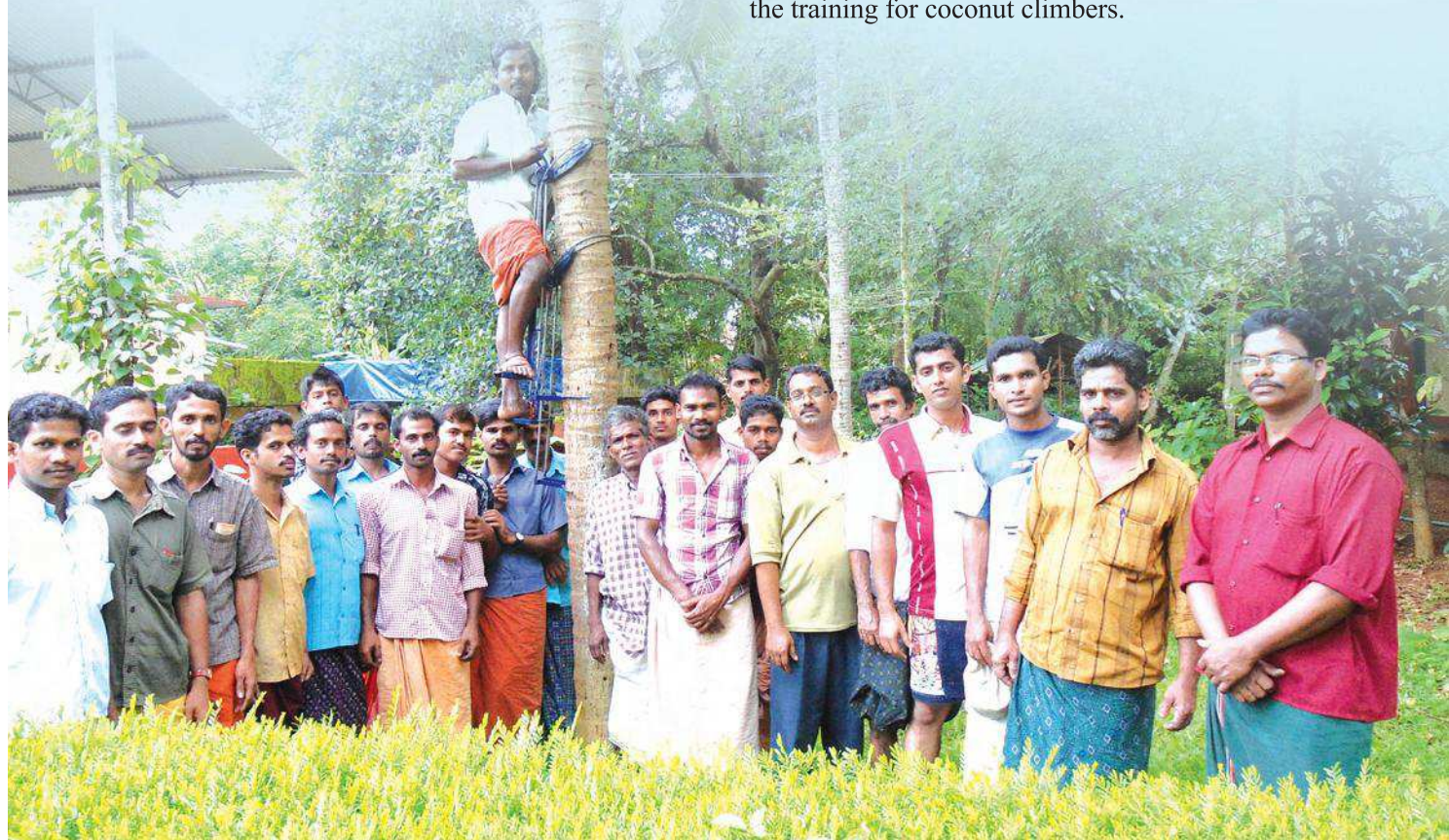
hidden factors contributing to this is the scarcity of labour. When skilled manpower is not available for the cultivation operations including harvest, the gardens will be neglected thus lowering production

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***When skilled manpower is not available for the cultivation operations including harvest, the gardens will be neglected thus lowering production and productivity.***

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and productivity. Harvesting not undertaken in time results in falling of nuts which will lead to pilferage. Another interesting feature is that in some areas like the north east, nuts are seldom harvested. Shortage of labour is all the more severe in coconut which requires skilled labour for crown cleaning, plant protection applications and harvesting. It was in this context that Coconut Development Board introduced the training for coconut climbers.





Increase in production and productivity of coconut can be achieved only by scientific management of the gardens. This includes timely application of fertilizers and other intercultural operations, timely cleaning of the crown, timely plant protection application and timely harvesting. Ensuring technology dissemination among the growers is not adequate to facilitate adoption of technology in the case of coconut. The labourer who undertakes the operations is to be trained and educated. Only then will the crop and the sector prosper. The Board thus started its efforts to produce trained skilled workers for coconut through its programme Friends of coconut tree.

### Friends of Coconut Tree

For any novel initiative to lead to fruitful results, invariably there should be a sustainability factor. A planned time bound approach to provide a series of trainings on coconut climbing may result in groups of skilled labour force, but how many will stick on to the job of coconut climbing will depend on the status of the job and the returns he gets on a sustained basis. The Board envisaged the development of a task force equipped to carry out all activities related to coconut cultivation in a technically perfect manner along with provision of an assured job status.

### Empowerment programme :

The Board started with empowerment programme for the trainees. The Friends of coconut tree are provided systematic residential trainings extending over a period of 6 days. The trainings comprise of 3 major sessions :

1. Technical sessions on the cultivation aspects of coconut starting from introduction of a coconut tree through varieties of coconut, cultural practices, plant protection operations to harvesting procedures and post harvest operations in coconut.
2. Managerial sessions on communication and leadership development, positive thinking, thrift/savings management, first aid and safety measures, banking, insurance etc

3. Practical sessions on tree climbing on a step by step basis so that by the end of the day the trainee is confident of scaling up the heights.

### The vision:

Each and every activity that becomes part of the



training schedule is planned with a specific purpose to achieve. The trainings start at 6.00 a.m with a brief warming up through a half hour brisk walk or jogging. This will be followed by an exercise session wherein the trainees will do breathing exercise. Breathing exercise help when they scale heights. Also the exercise will freshen the participants and this will also provide the base for creating a routine for the trainees which they can follow later leading to healthy living. Only a healthy body can undertake the physical activity of coconut climbing in an efficient manner.

The technical sessions on all days start with a brief session termed MILLY ie., Most Important Lessons Learnt Yesterday. This will aid as a brushing up of the previous day's classes. Two trainees selected at random will present the information gained through the previous days classes. This will aid in equipping them to summarise what they have learnt, reproduce it with accuracy and clarity and also presenting before a group will improve their presentation skills and chase away their inhibitions.

All technical sessions are fine tuned to suit the requirement for coconut climbers. The trainee is

educated on basic aspects of coconut cultivation so that he can not only undertake the practices in the gardens where he is engaged for work, but also act as a disseminator of technical information. The trainees gain a thorough knowledge on coconut cultivation. The sessions deal with the technical information in a layman's language. It is therefore easy to absorb and retain and also to reproduce.

Managerial sessions deal with personality development, communication skill development, leadership, savings approach, positive thinking etc.



The trainees are educated as to how they should present themselves before the coconut grower. They are taught to be bold and confident and undertake the work as a serious profession. They are taught to document their daily activities so that they can maintain a register of the coconut growers whom they cater to. Coconut should be ideally harvested 8 times a year within an interval of 45 days. The trainees are trained to emerge as true professionals, maintaining a database of their clients and approaching them on their own when harvest time is due. They are taught to see life in a positive manner.

The evening sessions are totally devoted for performances of the trainees. The trainees can perform their cultural and artistic caliber which not only provide recreation to the group, but also increases the confidence of the trainee. Sitting together, eating together, sleeping together, studying together will result in better cohesivity of the group and create a we feeling.

Practising climbing for 6 days alone will not instill confidence in the climber. A real situation experience is also extended to the trainees. The trainees are taken

on a field visit as part of the training programme to the nearby coconut gardens wherein they actually perform the role of a coconut climber and harvest coconut. This exercise is found to increase the confidence of the climber to take up climbing as a respectable profession. This practice session becomes a role play for the trainee to perform the duty assigned to him.

### **Compete to excel**

All trainings have an end note with a test to assess the effectiveness of the training. This training ends with a Coconut Olympics. A competition is held among the trainees and the fastest climber is awarded. It is not the competition that matters, but the spirit with which the trainees participate in the event. The applauses and the encouraging words from the group as each trainee performs his fastest climb creates a festive occasion on the last day of the training programme which lingers fresh in the mind even after the trainees disperse and depart.

### **The afterthought**

The Board doesn't leave the trainees on their own. They are given common formats for making a database of their work for a self appraisal and a copy of the same is to be sent to CDB for evaluating the performance of the trainee. Through this activity, the Board ensures that the trained personnel perform their roles in an effective manner to the benefit of the coconut farmers and to the pride of the Board. The Board also plans to have periodic meetings of the trainees for interactions.

### **We care for their lives too**

Insuring the trainees is the first step that the Board undertakes so that the risk involved in climbing is covered. The Board has tie up with United India Insurance Company Limited. The trainees are covered from the first day of training for a period of one year.

### **Infrastructure support**

A well conceived training with all above inputs will prove futile if the trainees are not having an occasion to perform their duty due to lack of machine. The Board provides all trainees with climbing machine, free of cost. Along with this, the Board also provides two sets of uniform for the trainees which will provide



them a common identity. A common uniform gives them a recognition and they too feel that they are part of a big establishment which in turn increases their self confidence.

#### Milestones :

The Board embarked on this training programme in the state of Kerala on 17<sup>th</sup> August 2011 covering 11 districts in the first phase. A total of 39 trainings have been completed and 770 people have been trained so far. The feedback that the Board received from the trainees and the general public has also increased the confidence of the Board to undertake the activity with enhanced vigour and replicate in a phased manner in other states also.

The FoCT not only provide labour support, but also act as the ambassadors of the Board, taking the basic technical know how to the door step of the coconut grower. The Board elevated the position of the

coconut climber from the level of a common labourer to a technical consultant of coconut, being with the



coconut grower at the time of need, at the wake of a call. And these friends are here to stay. They will multiply in numbers as time progresses, extending their reach to every household.

*\*Marketing Officer, CDB, Kochi-11*

### Training Centres and Charge Officers

District	Centre	Officer In Charge	Coordinator
Thiruvananthapuram	KVK, Mithranikethan, Vellnad	Nisha. G Technical Officer 9496145812	Mini Mathew, Publicity Officer 9447665105
Kollam	KVK, Kottakkara YMCA, Kottiyam, Kollam	Jayanath. R Technical Officer 944602889	
Kottayam	KVK, Kottayam	Deepthi Nair. S, Marketing Officer 9495675679	
Alappuzha	KVK, Kayamkulam M/s. Marshal Industries, Mararikulam	Resmi D.S., Technical Officer 9446464014	
Ernakulam	Aromatic And Medicinal Plants Research Institute, Odakkali LEDS, Karukutty, Angamali	Leena Mol M.A., Technical Officer 9447818993	Sreekumar Poduval, Processing Engineer 9895816291
Thrissur	KVK, Mannuthy Harithasena, Vadakkenchery	Sasikumar. C Technical Officer 9995521054	
Palakkad	KVK, Pattambi Mythri, Govindapuram	George Peter Field Officer 9946255915	
Malappuram	KVK, Malappuram Harithasena, Vadakkanchery	K.S. Sebastian Asst. Marketing Officer 9446211460	
Kozhikode	KVK, Peruvannamuzhi Marshal Industries, Kozhikode Krishi Bhavan, Kattippara	Mridula. K Technical Officer 9946947725	
Kannur	RARS, Peelikode Mythri, Manakadavu	Vijayan. K.M Field Officer 9447100149	
Kasaragod	KVK, Kasaragod	V.G. Chandrasekharan Statistical Officer 9846635765	



## Training Schedule and Course Coverage

<b>Previous Day</b>			
1800 hrs	Reporting at Training Centre	1400-1530 hrs	Session on Organic farming
2000 hrs	Dinner to be served at Training Centre	1530-1545 hrs	Tea Break
<b>Day - 1</b>		1545-1700 hrs	Practice session contd...
0600-0630 hrs	Jogging	1700-1800 hrs	Leisure Break
0630-0700 hrs	Breathing Exercise	1800-1900 hrs	Leadership Qualities
0700-0800 hrs	Rest Break	1900-2000 hrs	Social security – Insurance, pension and provident fund
0800-0830 hrs	Break fast	2000-2030 hrs	Light entertainment
0830-0930 hrs	Session on climbing machine-main parts, working mechanism and trial	2030-2100 hrs	Dinner
0930-1130 hrs	Practice Session on palm climbing upto 15 ft	<b>Day - 4</b>	
1130-1145 hrs	Tea	0600-0630 hrs	Jogging
1145-1300 hrs	Introduction to Coconut palm, cultivation, climate soil requirements, Varieties	0630-0700 hrs	Breathing Exercise
1300-1400 hrs	Lunch	0700-0800 hrs	Rest Break
1400-1430 hrs	Ice breaking session - Self introduction and Interaction by participants	0800-0830 hrs	Break fast
1430-1530 hrs	Nutrient management, Recycling of palm waste, intercropping and mixed cropping, Drip Irrigation etc	0830-0900 hrs	Most Important Lessons learnt yesterday
1530-1545 hrs	Tea Break		MILLY- Presentation by 2 participants selected randomly
1545-1730 hrs	Practice session on climbing contd.	0900-1100 hrs	Practice session on climbing upto 40 feet
1730-1830 hrs	Leisure time	1100-1130 hrs	Tea
1830-1930 hrs	Communication skills and time management, decision making etc	1130-1300 hrs	Session on Eriophyid mite, symptoms of damage, factors affecting mite dispersal
1930-2030 hrs	Light Entertainment	1300-1400 hrs	Lunch
2030-2100 hrs	Dinner	1400-1530 hrs	Session on Fertilizer application, Bordeaux mixture, NPK, plant growth -role of fertilizer etc
<b>Day - 2</b>		1530-1545 hrs	Tea Break
0600-0630 hrs	Jogging	1545-1700 hrs	Practice session contd...
0630-0700 hrs	Breathing Exercise	1700-1800 hrs	Leisure Break
0700-0800 hrs	Rest Break	1800-1900 hrs	Positive thinking and healthy way of living
0800-0830 hrs	Break fast	1900-2000 hrs	Light entertainment
0830-0900 hrs	Most Important Lessons learnt yesterday (MILLY) - Presentation by 2 participants selected randomly	2030-2100 hrs	Dinner
0900-1100 hrs	Practice session on climbing upto 25 feet	<b>Day - 5</b>	
1100-1130 hrs	Tea	0600-0630 hrs	Jogging
1130-1300 hrs	Session on harvesting, tender and mature nut identification, types of pests and disease of coconut etc.	0630-0700 hrs	Breathing Exercise
1300-1400 hrs	Lunch	0700-0800 hrs	Rest Break
1400-1430 hrs	Rest	0800-0830 hrs	Break fast
1430-1530 hrs	Control measures	0830-0900 hrs	Most Important Lessons learnt yesterday
1530-1545 hrs	Tea Break		MILLY- Presentation by 2 participants selected randomly
1545-1700 hrs	Practice session - contd...	0900-1100 hrs	Practice session on climbing upto 40 feet
1700-1800 hrs	Leisure Break	1100-1130 hrs	Tea Break
1800-1900 hrs	Thrift/Savings Management	1130-1300 hrs	Session on seednut procurement, safe handling of seednuts and tender nuts
1900-2000 hrs	First aid and other safety measures	1300-1400 hrs	Lunch
2000-2030 hrs	Light entertainment	1400-1730 hrs	Field visit
2030-2100 hrs	Dinner	1730-1800 hrs	Rest
<b>Day - 3</b>		1830-1930 hrs	Interaction of group and sharing of thoughts on field visit, preparation of an action plan by the group
0600-0630 hrs	Jogging	1930-2030 hrs	Light entertainment
0630-0700 hrs	Breathing Exercise	2030-2100 hrs	Dinner
0700-0800 hrs	Rest Break	<b>Final Day</b>	
0800-0830 hrs	Break fast	0600-0630 hrs	Jogging
0830-0900 hrs	Most Important Lessons learnt yesterday	0630-0700 hrs	Breathing Exercise
	MILLY- Presentation by 2 participants selected randomly	0700-0800 hrs	Rest
0900-1100 hrs	Practice session on climbing upto 35 feet	0800-0830 hrs	Break fast
1100-1130 hrs	Tea	0830-1130 hrs	Coconut Olympics
1130-1300 hrs	Session on crown cleaning aspects - biological and chemical methods	1130-1200 pm	Break
1300-1400 hrs	Lunch	1200-1300 hrs	Theory Test
		1300-1400 hrs	Lunch
		1400-1500 hrs	Valedictory Function

## The Friends are at your doorstep

'Friends of Coconut Tree', a group of men dressed up in uniform T-shirts and short trousers, will be at your service to pluck the nuts, clean the crown of the tree and detect diseases. In short Board has transformed the pluckers to professional plant protectors. The elevation of status is the only solution to sustain this profession where farmers are in dire need of coconut pluckers. Keeping this in mind, the Board is giving training to 5,000 people this year and creates a pool of trained personnel among the coconut-growing districts of Kerala. The youngsters will be trained in tree climbing, coconut harvesting, crown cleaning and pest control operations. They will also learn about pollination and hybridization techniques, plant protection measures and identification of tender, mature and seed coconuts. The training is a residential programme which includes technical, managerial and practical sessions. The programme is expected to generate appropriate technologies to support the sustainable growth of the coconut sector and provide employment opportunities for the youth.

The Krishi Vigyan Kendras across the State; Mythri; Marshal Industries, Calicut; Green Army, Vadakkanchery and LEDS, Ernakulam were the few organizations who came forward to associate with the Board in conducting the training programmes.

### *Coordinators of the programme shares their experiences.*

"I am hopeful that 70-80% of the trainees will continue in this profession. Both the farmers and labourers are welcoming this concept of the Board. Farmers seem relieved that they will have enough skilled and trained labourers for both attending to the management practices as well for harvesting. I am getting regular feed back from the trainees. Some of



them are climbing around 20-70 trees per day. CPCRI is disseminating the information on this training programme to other project areas of the KVK's and especially in the Kuttanad Package areas. All the coordinators must

provide the details of the trained persons to Agriculture Officers and Panchayath. Each Friend of Coconut Tree would be a friend of the coconut farmer"- **Dr. P Muralidharan, Coordinator, Alapuzha.**

"All the friends of the coconut trees are coming out excited. The project of Shri. T. K. Jose IAS is in fact a revamping of coconut climbing profession. Along with the traditional coconut climbers, toddy tappers, electricians, drivers, diploma engineers and peoples representatives are attending the training. The trained team from Thrissur have done the harvesting at the Kerala Agriculture University campus and made an income of Rs.16000"- **Dr. Jagadeesh, Coordinator, KVK, Thrissur**

"The new social status conferred upon the trainees instill inspiration as well as confidence. Most of the trainees are making Rs.300-900 per day. Along with harvesting, the trainees are into producing hybrid coconut seedlings. They are also planning to have snow ball units, tender coconut parlour etc"- **Dr.S.Leena, Coordinator, CPCRI, Kasaragod.**



*The training session in progress*

"Some of the trainees are making an income of Rs.1000 per day. The curriculum of the scheme is transforming the trainees to experts in coconut



farming. The self confidence of the trainees has gone up and many have even started saving the earned money” Vinod Kumar, Mythri.

“Harvesting of nuts is one of the most essential requirements in coconut farming. The dearth of climbers was a crucial problem faced by the farmers when coconut is fetching a high price. The training has come at the apt time. Those who have already undergone training is getting good response. This project of CDB is indeed a blessing for the Kattipara Panchayath. Already 120 person have registered for the training. Out of this 15 are ladies. The training schedule is also very good”- **Nazeer, Agriculture Officer, Kattipara, Kozhikode.**

“Those who are working hard are climbing upto 120 trees every day. Even small farmers have attended the training. The six day training has elevated their status and they have truly become the friends of coconut tree. Even high school students can take part in the training. Concentration skills can be improved while climbing up and down. The students can utilize the income for their higher studies”- **Joy, Marshal Industries.**

Board has selected only those persons who were climbing the trees with machines and is making an average income of Rs.1000 per day as the master trainers. Board also conducted a work shop for the master trainers.

#### ***Master Trainers and Trainees of the programme shares their experiences.***

Santhosh, a master trainer was into coconut climbing since the last 7-8 years. He was climbing upto 70 trees per day. Harvesting was the only job he was doing until now. But now Santhosh has become an expert in giving training not only in climbing and harvesting, but in the scientific management practices of coconut tree. Usually three types of people are attending the training; traditional climbers, students and small farmers who are having 50-60 coconut trees. Santhosh is happy now in giving training to the FoCTs.

Jenson, a master trainer at KVK, Kasargod opines that the training have given them a better social status now. Already 220 persons have registered in the KVK Kasargod for the training. All the classes are informative to the trainees. Even practical classes

are given on the various pests and disease control measures in the CPCRI premises.

Manu is a master trainer at KVK Alappuzha. He says that in Alappuzha there are less coconut trees and the wage is high. They get Rs.15 for harvesting and Rs.30 for crown cleaning and fertilizer application. There is full time as well as part time workers in his team and he is of the opinion that his team is very smart. After the training he is undertaking the harvest and other operations on a team basis. Three of them could get Rs.15000 in five days time. They have invested the money in various saving schemes.

Anil Kumar is a technician in a private hospital. Along with this work, he climbs 15 trees daily. Anwar who has attended training at the Mithranikethan is climbing 40 trees daily. He is doing this along with his plumbing job. Jayaram, another trainee opines that earlier he used to climb 50 trees. But now he can climb up to 100 trees.

Aswathy is a diploma holder in plant protection who attended the training from Thiruvananthapuram District. She is undertaking the harvesting and plant protection measures now with utmost interest. She is also interested in producing hybrid seedlings.

#### **Charge Officers of Board on FoCT**

**Sreekumar Poduval**, Processing Engineer & Coordinator FoCT

M/s. KAICO and M/s. RAIDCO is distributing the palm climbing machine at the training centers. Both the companies are doing excellent service through the timely delivery of the machines in all the training centers in 11 districts. The machine is safe and user friendly and by using this machine, a trainee can climb the tree in 3 minutes time. The trainees are comfortable with the device too. Most of the trainees who have completed the training have started earning Rs.750-1000 daily.



**Mini Mathew**, Publicity Officer & Coordinator FoCT

The project, ‘Friends of Coconut Tree,’ envisaged by the Coconut Development Board, to find an answer for the severe shortage of



trained hands for harvesting coconuts across the state is receiving an overwhelming response from youth. More than 770 youth including women have already completed the training from different districts and have entered the field in a month's time. Standard VII has been fixed as a basic qualification for obtaining the training. But most of our applicants are qualified well above the mark with some having bachelor's and even masters degree.

**Nisha A,** Technical Officer

The participants of the Friends of Coconut Trees at Trivandrum who were even hesitant to introduce themselves on the first day of the training, were actively participating in sharing their training experiences on the last day. This itself was enough to show the confidence and energy the training could instill among the trainees. It is an encouragement for the Board that the trainees are taking up this as a serious profession. The training was instrumental in developing their personality also. Even though most of the trainees were climbing the coconut tree for the first time, almost all of them have participated in the coconut olympics held on the final day. It is also a welcome trend that most of the trainees are ready to impart the training to other unemployed youth in their areas.

**Deepthi Nair,** Marketing Officer



By giving training to the unemployed youths, we can have enough coconut climbers. We can also solve the dearth of labourers to undertake coconut cultivation. Initially the trainees were reluctant to attend the residential training. But once they have undergone the training, each trainee was describing the advantages of the residential training. Each day the training started with the exercise and all the trainees actively participated in all the activities. Through this training Board could frame not only coconut climbers, but also a group of experts in scientific coconut cultivation.

**Resmi D.S,** Technical Officer

It is hoped that the 6 days training programme conducted in Alleppy district will not only equip the



trainees to climb the coconut trees with the machine, but also will transform them to be good friends of the farmer in undertaking the scientific management practices. Traditional climbers have also attended the training. Climbing the trees with the machine has boosted their income level. They are happy that they can climb trees with the machine even during rainy season. Most of the trainees have reported that they are climbing 25-60 trees daily with the machine.

**Leenamol,** Technical Officer



The training conducted in Ernakulam district have instilled excitement among the trainers, trainees and even local farmers. The coconut olympics too was well received. Even those trainees who came to have just an introduction of the machine are saying now that they will go ahead with this profession. They are addressing the dearth of the climbers of this area, have increasing their income level and also could inspire more persons to attend the training. Let us hope that this project of the Board will solve to a certain extent the dearth of the climbers existing in this sector.

**Sasikumar C,** Technical Officer

18 trainees who have undergone training at Thrissur district has formed a group under the leadership of Shri. Binoy Varghese. The group is undertaking harvesting and other plant protection operations. The group has committed to harvest 1200 trees of the KAU campus for the next one year and also has taken contract for doing the harvesting and plant protection operations of 2000 trees. Most of the trainees who were hesitant to attend the residential training initially, opined later that they could quit their bad habits due to the residential nature of the training. Among the trainees Shri. Akhil Singh and Shri. Sanesh are selected as master trainers and they are giving the training to the fourth batch in Thrissur district. 19 persons from the Amini Island from Lakshwadeep have attend the 4<sup>th</sup> batch training. They were excited to see the climbing machine.





**George Peter, Field Officer**

The trainees of Palakkad district are making use of this project very well. Both the centres are strictly following the curriculum of the Board. The trainees are enjoying the classes in yoga, other exercises, insurance, banking, personality development etc.

Most of them are of the view that this is a new experience for them.

**V.G. Chandrasekharan, Statistical Officer**

The trainees who have come out after the six day's residential training are already into coconut climbing. Most of them are climbing 20-80 trees per day. They are of the opinion that mechanical climbing is easier than the traditional climbing. It is with the active support and cooperation of the coordinators, Dr. T.S Manojkumar and Dr. S. Leena the training at KVK, Kasaragod has become a great success.

**Jayanath R, Technical officer**

20 trainees who have completed the training in Quilon district are planning to register a club of the FoCTs. Majority of the trainees were traditional climbers and they are happy now that with the machine they could do the harvesting operation even

during rainy season. They are confident that they can do the plant protection measures, collection of seednuts, pest and disease control measures and even nursery raising. They are determined to continue in this profession.

**Mridula. K., Technical Officer**

The training for Friends of Coconut Tree is running successfully in Kozhikode. The response of the training is very positive and lots of people are coming forward and registering their names for the training. The six days residential training aims to train the participants in climbing the trees using the simple scientifically developed device, besides equipping the trainees to take care of the trees scientifically



in different package of practices. Once the training is completed the trainees are having a general idea in maintaining a coconut tree. As the training covers exercise and yoga, it keeps the trainees healthy and active. The trainees who have already completed the training have started earning Rs.750 to Rs.1000 per day. All the trainees are very happy and enthusiastic. They have started making their own groups and covering different areas for climbing trees and even motivating others to attend training. Now some of the panchayats and Krishi Bhavans are coming forward for conducting training programme in their respective areas. In general, training has given a good impact on youth who were sitting idle.

**K M Vijayan, Field Officer**

The response we receive from the public on the FoCT is overwhelming. The training could instill enthusiasm and self confidence among the trainees. Many opine that they have not undergone such a training earlier. They have formed groups and are undertaking harvesting on group basis. 103 trainees including 3 ladies have completed the training in Kannur district. Some of them are climbing on an average 60 trees per day. The training has improved their confidence and personality too. They are not mere climbers but are the true friends of farmers.

**K S Sebastian, Assistant Marketing Officer**

The good response we are getting from the area is enough to prove that the training is well received.



The venue of the training centre at Little Tree Training Centre, Muthalamada, Palakkad instilled a positive energy among the trainees. All the trainees are of the opinion that they are attending such a training for the first time. The six day residential training could develop their technical skills, their capacity of entrepreneurship, leadership qualities and even their communication skills. The Board is hopeful that the training will create more employment opportunities for the youth.

*A report on the training programmes conducted at various centres:*

### Thiruvananthapuram

The training programme in coconut climbing and plant protection started on 17<sup>th</sup> August 2011 at Mitraniketan KVK. A group of 19 trainees attended the 1<sup>st</sup> training. The concept of making youth as coconut consultants has changed the attitude of training. The trainees developed better communication skills. The cash prizes and mementos made a competitive spirit among the trainees. Evening sessions on first aid, management and banking entirely refreshed the trainees. Field trip to College of Agriculture, Vellayani and interacting with traditional coconut climbers was very much interesting.

2<sup>nd</sup> batch of training was held from 29<sup>th</sup> August to 3<sup>rd</sup> September and was attended by 21 participants. Trainees had a field trip to coconut research station, Balaramapuram. The need of the trained persons for artificial pollination in research stations has encouraged some of the youth who are interested in getting employment. The 3<sup>rd</sup> batch of the training was held from 12<sup>th</sup> to 19<sup>th</sup> September, 2011. This batch included 14 females and 11 males. The female trainees were on par with males in acquiring the skill of coconut climbing. A coconut Olympics was conducted at Mitraniketan campus and around 300 school students witnessed the programme.

### Kollam

Three training programmes were conducted in Kollam district. The first training was held from 17<sup>th</sup> to 22<sup>nd</sup> August 2011 at the KVK. 20 members of the Karipra farmers' society were given training in the first batch. Training was given in scientific management practices of coconut, major pests and diseases and their control measures, harvesting, collection of seednuts and management of coconut nursery, irrigation, fertilizer application etc. Classes were also held on human resource development and banking. The second and third batch of training was held from 26<sup>th</sup> September to 1<sup>st</sup> October at KVK Kollam and YMCA Kollam.

### Alappuzha

In Alappuzha districts three training programmes were conducted and 55 trainees attended the training. The first training was held at KVK, CPCRI, Kayamkulam from 17<sup>th</sup> to 22<sup>nd</sup> August 2011 and the second training was conducted at SNDP Hall,

Mararikulam. In the first session, Dr. Muralidharan, Project co ordinator, KVK addressed the trainees and briefed about the programme. The second training programme was conducted by M/s. Marshal Industries and the third batch of training was held from 19<sup>th</sup> to 24<sup>th</sup> September 2011 at KVK, CPCRI, Alappuzha.

### Kottayam

'Just 86 seconds to harvest coconut', this was the caption of the news item that appeared in the leading newspaper, Malayala Manorama on the first training programme on palm climbing conducted by the Coconut Development Board in association with Krishi Vigyan Kendra, Kumarakom, Kottayam. This shows the interest among the general public and the media in getting trained people for coconut harvesting. A total of 21 trainees attended the first programme held from 17<sup>th</sup> to 22<sup>nd</sup> August 2011. The second batch of training was held from 26<sup>th</sup> September to 1<sup>st</sup> October at KVK, Kottayam.

### Ernakulam

The Coconut Development Board in association with the Aromatic and Medicinal Plants Research Station, KAU, Odakkly conducted two training programmes in palm climbing from 17<sup>th</sup> to 22<sup>nd</sup> August 2011 and 29<sup>th</sup> August to 3<sup>rd</sup> September 2011. 40 trainees attended the programme. Both theory and practical training was given to the trainees. Coconut Olympics and written tests were also conducted as part of the training programme. Cash award, certificates and palm climbing machine was given to the trainees. The third batch of training was conducted at Karukutty and 21 trainees took part in the programme.

### Thrissur

Four batches of training "Friends of Coconut" was conducted at KVK, Thrissur and 79 persons under the age group of 21-48 working in various fields like coconut climbing, agricultural labourers, toddy tappers, electricians, wood cutters, machine operators, drivers and salesmen attended the training. Six of the trainees from the first batch under the leadership of Shri. Binoy Varghese, formed a group and took contract for harvesting the nuts in the KAU farm.

### Palakkad

79 persons attended the 4 palm climbing training



programmes conducted in KVK Pattambi and Mythri Govindapuram in Palakkad district. Coconut Olympics and theory tests were also held as part of the training. Cash award and the climbing device were distributed to the trainees in the valedictory sessions.

### **Kannur**

61 persons were trained in the three palm climbing training programmes conducted by the Board in various centers in Kannur District. The first training programme held at the regional Research Centre of the KAU at Peellicodu was inaugurated by Shri. K A Kunjiraman, MLA, Thrikaripoor. The training included, practical training, theory classes, field visits as well as the entertainment programmes of the trainees. During the valedictory sessions the trainees shared their experiences. Coconut Olympics and theory tests were also held as part of the training.

### **Kozhikode**

The Palm climbing training programme was started at Kozhikode district from 17<sup>th</sup> Aug 2011. 16 trainees attended the first training held at KVK Peruvannamuzhi. The second training programme held at Marsleeva Church Parish hall, Kuliramutty Koodaranji from 29<sup>th</sup> Aug to 3<sup>rd</sup> Sept 2011 was attended by 20 trainees. 26 trainees attended the third programme held at KVK Peruvannamuzhi from 12<sup>th</sup> to 17<sup>th</sup> Sept 2011 and the fourth programme conducted at Krishibhavan Kattipara from 14<sup>th</sup> to 19<sup>th</sup> September 2011 was attended by 20 persons. In all the venues the programme the training started at 6.00 hrs with the brisk walking/jogging followed by breathing exercise. The climbing sessions started by 8.30 A.M and the two master trainers briefed the trainees about the machine and its functioning. The theory session covered different topics viz. introduction to the coconut palm, climate, soil, varieties etc. Coconut Olympics was conducted for the participants on the last day of the training and prizes were distributed to the first three winners. Palm climbing machines were distributed to all the trainees during the valedictory session.

### **Malappuram**

The first training for the Friends of Coconut Tree started at Muthalamada on 19<sup>th</sup> September 2011. Eleven trainees from Malappuram district and nine trainees from Palakkad district attended the training.

The second batch of training was conducted at KVK, Malappuram from 26<sup>th</sup> September 2011. 20 persons attended the training.

### **Kasargod**

Two training programmes were conducted during August, 2011 for 40 participants on Mechanical Palm Climbing and Plant protection at KVK, Kasaragod in August 2011. Shri. N.A. Nellikkunnu MLA inaugurated the function and Dr. George V. Thomas, Director, CPCRI, presided over the function. The third batch of the training was held from 19<sup>th</sup> to 24<sup>th</sup> September 2011. The training was attended by 20 persons.

**The fourth batch of training held at KVK, Thrissur from 26<sup>th</sup> September to 1<sup>st</sup> October 2011 was attended by 19 trainees from Lakshadweep.**

*Address of the trainees are furnished below:*

#### **Abdul Hassan**

Mariyommecheta, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9446573784

#### **Badarudeen**

Mannapura, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9446935213

#### **Abdul Khader**

Koormel, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9446218431

#### **Younis**

Beliyommecheta, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9497201232

#### **Syed Mohammed**

Karmapura, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9495218231

#### **Nazer**

Assumada, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9447831031

**Akbar**

Kanjarabely, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9496620168

**Basheer**

Chekkecheta, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9400295103

**Siraj**

Pallam, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9446289629

**Rafeeqe**

Sarecheta, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9496121895

**Ibnu Masood**

Kanjarakakada, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9400175260

**Jamal. K.C**

Kappattecheta, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9495674637

**Saleem**

Cheriyabaithamkakada, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
8547662497

**Sakeer Hussain**

Kandilam, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
8547374598

**Khalid**

Mullecheta, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9400260314

**Rasheed**

Mannapura, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9495598454

**Ander**

Koormel, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9495193785

**Nazer**

Alimecheta, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9446216029

**Mohammed Ali**

Koormel, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9496939952

**23 persos from Lakshadweep have registered for the fifth batch of training to be conducted at KVK Thrissur from 10<sup>th</sup> October 2011 onwards.**

*Their name and addresses are furnished below:*

**Jalai**

Puthiya Pannikam, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9495315450

**Koyamma**

Bahar Manzi, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552

**Shafi**

Puthiya Thoopirabal, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9496449067

**Cheriyakoya**

Avvekal, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552

**Mohammed**

Puthiya Illam, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
8547670797

**Mohammed Ali**

Pallam, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552

**Haris**

Beliyommechetta, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9496773786

**Irshad**

Kunjachabiyoda, Amini Island, Amini Village Dweep Panchyat, U.T. of Lakshadweep 682 552  
9496150977

**Khalid**

Puthiya Surambi, Amini Island, Amini Village Dweep



Panchyat, U.T. of Lakshadweep 682 552  
9497019853

**Umer**

BahhijaManzil, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552  
Badar  
Mannapura, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552

**Pookunhi**

Unnam, Amini Island, Amini Village Dweep Panchyat,  
U.T. of Lakshadweep 682 552

**Jaleel**

Melulapura, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552

**Shihabudheen**

Kadapurath Illam, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552

**Syed**

Kakkiniyura, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552

**Nazeer**

Alimechetta, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552  
9446216029

**Kunhimoon**

Unnam, Amini Island, Amini Village Dweep Panchyat,  
U.T. of Lakshadweep 682 552  
9495335312

**Abdulla**

Pathummammechetta, Amini Island, Amini Village  
Dweep Panchyat, U.T. of Lakshadweep 682 552

**Raheem**

Thattanachetta, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552

**Khalid**

Pakkidiyam, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552

**Shabam**

Pakkidiya, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552

**Mustafa**

Avvekal, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552  
9496118239

**Khalid**

Chemayam, Amini Island, Amini Village Dweep  
Panchyat, U.T. of Lakshadweep 682 552





# Kera Suraksha Insurance Scheme for Coconut Tree Climbers

*V G Chandrasekharan\**

Coconut palm climbers are a rarity in the country with very few taking on the traditional profession. Coconut climbers are a very vital link in the production chain. The consistent supply of raw nuts for the market as well as for the processing sector can be ensured only by strict adherence to the regular harvesting schedule. Increasing popularity of tender coconut has also considerably increased the demand for climbers.

Generally there is a reluctance among people to enter into this field because of the occupational risk. In order to minimize the operational risk and attract more people to this field, Board in association with the United India Insurance Company Limited has launched a pilot scheme for providing accident insurance cover for coconut tree climbers and thereby improving the availability of manpower for coconut harvesting. The scheme known as the Kera Suraksha Insurance scheme is implemented by the Board in association with M/s. United India Insurance Company Limited in Kerala, Tamil Nadu, Andhra Pradesh and Puducherry. While Board bears 75% of the premium and climber will have to bear the balance 25%.

Board is extending Kera Suraksha Insurance Scheme free of cost to all trainers and trainees of FoCT programme. They are given insurance coverage from the very first day of the training. 100 percent of premium will be borne by the Board itself.

Under this scheme, the insured coconut tree climber is entitled to get maximum financial benefit of Rs.1,16,750/- against accident related death, permanent total disablement, permanent partial disablement, hospital expenses reimbursement, ambulance charges, weekly compensation, bystander expenses in case of hospitalization and funeral expenses in case of death.

## Premium payable under the policy

The Premium payable per person is Rs.146/- (inclusive of service tax). Except in case of trainees under FoCT, the insured will have to pay 25% of the premium and the balance 75 % will be borne by Board.

## Implementation of the scheme

Those climbers who want to be a beneficiary may get certified by the local Krishi Bhavan of the Department of Agriculture or by the President of the Grama Panchayat. The duly filled in proposal forms along with their 25% premium contribution should be forwarded to the Coconut Development Board, Kera Bhavan, SRVHS Road, Kochi 682011. The Board will forward the proposal along with Board's contribution of 75% to the office of the United India Insurance Company Ltd for issue of individual and mother policy certificates. The policy holders shall contact the policy issuing office of the insurance company for all claim related documents.

Benefits available due to accidents only	Sum Insured in Rs
Death / Permanent total disablement	100000 (Capital sum assured)
Permanent Partial disablement	50,000
Hospital expenses reimbursement	10000
Ambulance charges	500
Weekly compensation in cases of TTD. Maximum for 6 weeks @Rs.500/- per week	3000
Bystander expenses in cases of hospitalisation maximum for 15 days @Rs.50/- per day	750
Funeral expenses in case of accidental death	2500

Policy issuing office: United India Insurance Company Limited, Vettukattil Bldg, Jos Junction, M.G. Road, Ernakulam, Kerala – 682016. Tel: 0484-2375204/2375987, Fax: 2376773, Officer in charge : Divisional Manager.

Controlling Regional Office: Kerala Regional Office, "SHARANYA", Hospital Road, Ernakulam, Kerala 682011. Tel: 0484-2366853 / 2366893 / 2366934. Controlling Officer: Regional Manager (Technical).

*\*Statistical Officer, CDB, Kochi-11*



# CDB registers elite tall & dwarf mother palms for seedling production

*M. Thomas Mathew\**



*Malayan Orange Dwarf*

The Coconut Development Board is in the process of preserving native tall and true genotypic dwarf palms to utilize the pure line plant resources to large scale multiplication. This is a farmer participatory massive programme of the Board to identify mother palms. The Board will keep a data bank of the registered mother palms of both the tall and dwarf varieties. Those farmers who are having high yielding good mother palms in their field can associate with the Board in this endeavour.

The perennial nature of coconut, its tall stature, the heterozygous nature and long gestation period make the crop un-amenable to genetic improvement. In the absence of a standard technique

for multiplication of quality coconut seedlings which are true to the parentage, it is necessary to continue the practice of production of seedlings through scientific selection.

Among important criteria for the production of quality seedlings, the selection of consistent and high yielding mother palms is considered to be the prime factor. Board's efforts are to decentralize the commercial production of quality coconut seedlings by strengthening the private sector nurseries. Coconut, being a cross pollinated crop, exhibits considerable variability in the tree size, nut character and other traits like; drought resistance, pests and diseases tolerance etc. The standard practice for the multiplication of such highly cross

pollinated crops are based on the series of standardized selection criteria to be associated with the yield of the palm. The selection methods practiced in different stages are;

- 1) Selection of mother palms having consistent bearing and high yielding nature with other phenotypic characteristics.
- 2) Selection of well developed and matured seed nuts from the selected mother palms.
- 3) Selection of healthy and disease free seedlings raised from the selected nuts, on the basis of their vigorous growth characters.

The important phenotypic characteristics of a mother palm are;

- The mother palm should be regular bearer and should be giving an annual yield of not less than 80 nuts and the copra content of a nut should not be less than 150 gm.

**Coconut, being a cross pollinated crop, exhibits considerable variability in the tree size, nut character and other traits like; drought resistance pests and diseases tolerance etc.**

- When mother palms are to be selected from a large plantation of unknown parentage it is necessary to select palms which are of 15 years of age or above and have reached the full bearing stage. They must be giving regular high yield for at least four years.
- Isolated palms or blocks of palms growing even under favorable conditions can also be selected, provided the productivity of such palms should be above 100 nuts per annum.

- In case of selection of seed nuts from the root (wilt) affected area the mother palms selected should be apparently healthy and free from disease. The age of the palm should be above 25 years.

- A mother palm should have at least 30 fully opened leaves on the crown. The leaves should have short strong petioles with wide leaf base firmly attached to the stem. The disposition of leaves on the crown should be such that the leaf petioles of the lower whorl will provide adequate support to the developing bunches thus reducing the possibility of buckling of the bunch stalk and shedding of nuts in the immature stages.

- At any time, the tree should carry a minimum of 12 bunches with nuts at different stages of development.

- Palms having medium sized nuts (about 1,200 gm when the husk is fully dry with round and



DxT

**Chowaghat Green Dwarf, Chowaghat Orange Dwarf, Malayan Green Dwarf, Malayan yellow and Malayan orange are largely self-pollinated and are being utilized for breeding purpose**

oblong shape are better than others. The husked nuts should be large (about 570 gm) with thick kernels.

- The trees exhibiting deformities and producing barren nuts should be avoided.

#### **Selection criteria for dwarf mother palms**

The dwarf palms like Chowaghat Green Dwarf, Chowaghat Orange Dwarf, Malayan Green Dwarf, Malayan

Yellow and Orange etc. are largely self-pollinated and are being utilized for breeding purpose and for the production of tender coconut. The important criteria for the selection of dwarf mother palms are;

- The palm should be atleast 10 year old.
- The mother palms should be giving an annual yield of not less than 100 nuts
- Should have at least 30 fully opened leaves on the crown. Leaf scars on the stem will be very closely arranged and the leaves will be shorter, petiole length less and leaflets closely arranged on the leaf.
- Should have atleast 8 inflorescence
- Dry coconut with husk should weigh 1 kg and dehusked nut

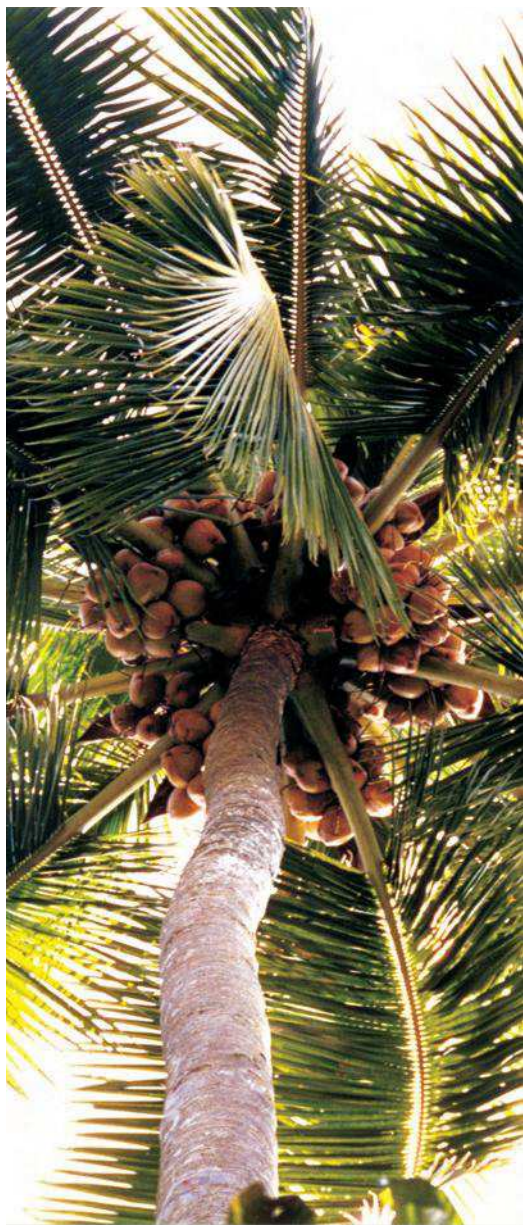
should weigh 450- 500 gms.

- Select only medium sized nuts.
- The tender coconut water content should be: 200 ml for Chavakkad Green Dwarf, 350 ml for Chavakkad Orange Dwarf and 300 ml for Malayan Orange Dwarf.

#### **Hybrid production:**

In the DxT production programme, the dwarf palms should be emasculated at least by the end of first week of the inflorescence opening. This is done by cutting and removal of spikes 3 to 5 cm away from the last female flower as well as the removal of the remaining male flowers by hand. Bagging is done when the dwarfs are scattered. In compact blocks this can be avoided. In the case of the CGD crossing it is





WCT

always advantageous to select coloured Tall as male parent. In seed garden the ratio of 8 dwarfs and one tall can be adopted in the planting. Emasculation of dwarfs with assisted pollination will increase the recovery of hybrids. The COD x WCT (DxT) hybrids seedlings are selected based on the petiole color. In the case of CGD x WCT (DxT) the hybrid seedlings can be identified based on the petiole color as well as late splitting of leaflets and vigor of the seedling.

#### Season for collection of seed nuts:

The proper time for the harvest of seed nuts depends to a large extent on the seasonal conditions of the locality. December to May is considered to be optimum on the West Coast because the nuts harvested during this season are generally bigger in size with higher copra content than during other months and ensure maximum germination. Apart from this nuts harvested during these months can be sown in the nursery during April to May- June. The summer rains in April and the onset of South

**The interested farmers can now apply to the Board for registration of their high yielding mother palm along with the details of the palm.**

West Monsoon rains in May-June are the added advantage for the better germination and the growth of the seedlings. The season of harvest may have to be adjusted to suit local conditions so that the seed nuts can be sown in the nursery after about two months' storage.

#### Maturity of nuts:

The seed nuts should be fully mature, i.e. about twelve months old. Mature nuts can be identified on the basis of the following characteristics.

1. Mature nuts will produce, on tapping with a finger, a resonant and ringing sound which can be identified by experience. Immature nuts will produce a dull sound.
2. Fully matured nuts will have dry husks with a distinct browning of the inner fibres.
3. Free movement of water

within can be felt on shaking the nuts.

Because of the heterogeneous characteristics coconut does not breed true to type. The tall cultivars are more amenable to this genetically phenomenon its multiplication is subjected to rigorous procedures of selection. The selection procedure and nursery techniques recommended by Central Plantation Crops Research Institute (CPCRI), Kasaragodu and the State Agricultural Universities are recommended as the good management practices for nursery production program.

The interested farmers can now apply to the Board for registration of their high yielding mother palms by providing the details of the palms along with a recent photograph of each selected palms, survey no etc. Seed nuts from such selected mother palms will be given premium price of 30 per cent more than the market rate of good quality nuts.

Through databank of the mother palms, the Board is ensuring the availability of good quality mother palms and hybrid seedling with farmers' participation. The Board will also procure seednuts from these mother palms.

#### For more information contact:

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# Coconut Development Mission Approach Generates Positive Impact

Dr. K. Muralidharan \* & Jayashree. A \*\*

Coconut Development Board is implementing a nationwide project on Integrated Development of Coconut which includes a wide range of programmes for increasing production, productivity, product diversification and market promotion of coconut for the upliftment of coconut farming community. Among these programmes, Technology Mission on Coconut plays a major role. The Mission was initiated to address the problems faced by the coconut growers like severe incidence of pest and diseases, fluctuations in price of coconut, to provide maximum output in relation to the investment and to ensure sustainability to millions of people who depend on coconut cultivation and allied activities.

The project on Integrated Development of Coconut Industry in India largely addresses the problems relating to quality planting materials, management of root wilt disease, dissemination of technologies through demonstrations, mass media exhibitions and collation and dissemination of data on market information. Attempt is also made in a strategic manner for market promotion and coconut value addition. The price of coconut largely depended on the price of copra and coconut oil. Thus the Government of India is treating coconut as an oil seed of tree origin and has been fixing minimum support price for milling and ball copra since 1986. In the emerging scenario of competition it was felt that strategic approach is needed in a mission mode for the

development, demonstration and adoption of technologies, not only for productivity improvement but also for processing, product diversification, value addition and promotion of coconut and coconut based products. It is in this context that the Government of India launched the Technology Mission on Coconut for making the coconut cultivation and industry globally competitive and to ensure reasonable returns to the stakeholders in a sustainable manner. The scheme is implemented since 2001-02.

The Technology Mission on Coconut aims to establish a convergence and synergy among ongoing programmes to bring about vertical and horizontal integration so as to ensure adequate, appropriate, timely and concurrent attention to all the links in production,



*Tender coconut parlour assisted under TMOC*



processing, product diversification and marketing in the consumption chain. The mission also tries to maximize economic, ecological and social benefit from the existing investment and infrastructure and disseminating technologies using participatory approach through demonstration and promotion, thereby trying to address the gaps in a mission mode.

The Technology Mission broadly focuses on the areas like research & development, infrastructure development, integrated management, capacity building, participatory planning and implementation, quality, quantity and productivity improvement, ecologically sustainable schemes, sustained natural resource management, post harvest processing, product diversification, value addition and promotion of agri-business in coconut.

The Technology Mission has a structure of four mission components namely, management of insect pests and disease affected coconut gardens, processing and product diversification, market research and promotion and technical support, external evaluation and emergent requirements.

For the projects involving development of technologies and demonstration of proven technologies, institutions such as ICAR, CSIR, ICMR, SAU's, other Universities, NGO's or any other organizations having the capacity to do research can avail the assistance under the Mission. For availing assistance for adoption of technologies, farmers, cooperatives, group of farmers, entrepreneurs etc. are eligible. For assistance under market research and promotions, Government agencies, NGO's Cooperative Societies, individuals, entrepreneurs or any capable institutions or organizations can apply.

Under market research studies major thrust areas are reviewing the present situation of coconut development in particular areas or states for the development of primary / secondary data of various aspects on coconut, identifying the constraints and suggesting their remedial measures, developing short term and long term strategies for systematic



*A dessicated coconut unit assisted under TMOC*

development of coconut, assessment of consumer preference, assessment of value added products and price trend analysis etc. and awareness campaigns on health aspects of coconut.

Under market promotion, assistance is extended for brand publicity through electronic media including website, print media, establishing parlours, kiosks, ware houses, undertaking activities like buyer-seller meet, exchange of delegations, participation in exhibitions, fairs, melas, printing of leaflets, pamphlets, brochures, posters, etc.

Under technical support- external evaluation and emergent requirement, Government Agencies, NGO's, Societies, Individuals or any institutions or organizations can avail assistance for specifically identified aspects including projects not covered under any of the above components as decided by the Project Approval Committee(PAC) or Chairman of the committee.

### **Pattern of Assistance**

#### **I. Management of insect pest and disease affected coconut gardens**

For projects under this category, financial assistance is extended @ 100% of the project cost upto a maximum of Rs.50 lakhs for Government, Public Institutions and 50% of the project cost not exceeding 25 lakhs for NGO's and other Private Organizations. Similarly for

technology demonstration through public or Government institutions, assistance is extended @ of 100% of the cost not exceeding 25 lakhs and 50% of the cost not exceeding 10 lakhs to NGO's and individuals. In the case of adoption of technology, the assistance extended is 25% of the project cost.

## II. Processing and product diversification.

The pattern of assistance provided under this component for research projects is 100% of the cost limited to Rs.75 lakhs for Govt./ Public Institutes and 50% of the project cost limited to Rs.35 lakhs for other institutions and organizations. The assistance extended for adoption of technology by the industry is by the way of credit linked back-ended capital subsidy limited to 25% of the cost not exceeding Rs.50 lakhs. The promoter should avail a minimum 40% of the project cost as term loan for availing the assistance. Support is also provided for technology acquisition, demonstration and training limited to 50% of the cost for private entrepreneurs/ organizations and 100% to public institutions.

## III. Market Research and Promotion

The pattern of assistance extended for market research projects of government or public sector institutions is 100% of the cost limited to Rs.25 lakhs and for similar projects from Co-operatives and other

institutions, the assistance is 50% of the cost limited to Rs.12.5 lakhs. For market promotion, the assistance extended is 100% of the cost limited to Rs 25 lakhs to public organizations and 50% of the cost limited to Rs.10 lakhs to NGO's and Private institutions.



*Coconut dehusking machine*

## IV. Technical support, external evaluation and emergent requirements

Technical support for scrutinizing the project proposals, hiring experts from various fields as per the requirements, concurrent external evaluation and mid term corrections where ever necessary are being carried out by engaging experts/committees under this component programme. Besides, provision is made for secretarial assistance and personnel to monitor the implementation of the programme. The extent of assistance will be as decided by the PAC and Chairman PAC based on the needs, priorities and provisions.

### Impact

Technology Mission on coconut was sanctioned in 2001-02. So far, 398 projects are sanctioned with a total financial assistance of Rs.88.04 crores to various State Governments, Research Institutions, Co-operative Societies and entrepreneurs to address the issues of productivity improvement through management of pests and diseases, product diversification & by-product utilization and market research & market promotion.

Technologies are developed for virgin coconut oil, defatted coconut powder, spray dried milk powder and packing of tender coconut water through institutions like CFTRI & DFRL, Mysore and are transferred to the entrepreneurs. Coconut water and milk based beverages like lassi, pinacolada and vinegar, chips, jelly, coconut bites, automobile lubricant from coconut oil, blended oil, coconut wood based particle boards, joineries, hardboard and compost from tender coconut husk, tender coconut punch cum cutting device, dehusking machine, tractor mounted climbing device etc. have also been developed through various agencies. Studies have been undertaken for use of coconut oil as two stroke automobile engine oil and refinement of packaging for various coconut products.

Sex pheromone lures and trapping system for management of the coconut black headed caterpillar, large scale production of bio agents against leaf eating caterpillar, package for integrated management of budrot etc. have



been developed in collaboration with Agricultural Universities, Project Directorate of Biological Control and CPCRI.

Under adoption of technologies for product diversification and value addition 164 coconut processing units with infrastructure facilities worth Rs.152 crores for processing about 1215 million nuts per year have been established by providing financial assistance of Rs.27 crores. Nine tender coconut preserving and packing units having a capacity to process 36 million nuts per year, 12 shell powder units having a capacity to produce 150 metric tones per day, 13 activated carbon units with a capacity to produce 98 tones per day and earning foreign exchange of about Rs.200 crores and 26 virgin coconut oil production units with a capacity to process about 1,30,000 nuts per day have been established. Improved copra dryers (1758 nos.), with a capacity to process 50 million nuts per year are also popularized for primary processing. All these have helped in enhancing market potential for coconut products both in domestic and international markets.

Technology demonstration cum training center is also established by the Government of Karnataka with the Board's assistance at Mandya. The main objectives are to demonstrate and organize training programmes on various coconut based products and convenience foods and educate the entrepreneurs, individuals and Self Help Groups on quality management practices.

Board has established a full fledged Quality Testing Laboratory (QTL) at Technology Demonstration cum training center, Aluva, Kerala for chemical and microbial analysis of coconut based products. The laboratory is equipped with advanced analytical instruments and modern facilities as per NABL requirements to carry out chemical and microbiological tests of coconut based products. The QTL has obtained NABL (National Board for accreditation of testing and calibration laboratories) accreditation. QTL is equipped to undertake analysis of food products, oils, beverages, squashes, jam,



*Tender coconut mobile push cart*

pickles, organic manure, water etc. for chemical and microbiological parameters including heavy metals, pesticide residues, minerals etc. The lab is under the process of being recognized as a notified lab by the Bureau of Indian Standards.

The implementation of TMOC programs has helped to solve production constraints to a great extent besides developing many technologies for product diversification and by-product utilization and their commercial adoption. Efforts made with focused attention on awareness creation and market promotion has increased the demand and consumption of coconut and value added coconut products especially virgin coconut oil, desiccated coconut, coconut spray dried milk powder, coconut water based vinegar, coconut chips, packed tender coconut water etc. Thus the future holds for more rapid progress for the coconut industry with the tremendous opportunities and assistances provided under TMOC.

[For further information, application forms and project profiles visit the website of the Board: [www.coconutboard.gov.in](http://www.coconutboard.gov.in) or contact, Ph: 0484 2375237, 2377266 (Ext. 135)].

*\* Director \*\* Senior Technical Officer  
Coconut Development Board, Kochi*

# Hybrids and hybridization techniques in coconut

*Regi J. Thomas, M. Shareefa and P. M. Jacob \**

**Non-availability of Dwarf mother palms in large numbers and alternate bearing tendency are the major constraints in large scale production of D X T hybrids.**

Coconut is one of the most useful crops of the tropics, providing food, livelihood and shelter to several millions of people in developing countries. The most extensively cultivated coconut varieties in India are tall types. Hybrids of coconut are grown throughout the world mainly for their earliness in flowering (3-4 years after planting), high nut yield, good quantity and quality of copra and oil (65-68 %).

The yield levels of the released coconut hybrids ranges from 2.3 to 4.5 tonnes of copra/ha/year under optimum management conditions.

Though hybrid vigour in coconut was first reported from India by J. H. Patel in 1932, large scale production and adoption of hybrids in India became popular only during 1970's. Two coconut hybrids (Chandra Sankara and Chandra Laksha) developed from CPCRI were officially released for cultivation in India during 1985. Even after 25 years, the area covered by hybrids is less than 2-3% of the area under coconut. The major constraint in extending the area is the lack of availability of quality planting material of released hybrids. This article lists the coconut hybrids released for cultivation for various states in India and the technique adopted in production of hybrid seed nuts and the procedure followed to select hybrid seedlings of coconut at nursery stage.

## Difference between D X T and T X D hybrids

In general, coconut hybrids are of two types (either D X T or T X D) depending on the type of female and male parents. D X T hybrid is produced when a dwarf variety is used as female parent and a tall variety is used as the male/pollen parent (eg: Chandra Sankara, Kalpa Sankara). T X D is produced when tall is used as the female parent and dwarf is used as the male parent (eg: Kera Sankara, Chandra Laksha). In India, during the period 1970-1995





most of the hybrids released were T X D's and of late the focus is on developing D X T hybrids. It is very cumbersome to produce T X D hybrids as a climber has to climb a tall female parental palm (which grows to a height of 30-40 feet) at least 7-10 times (for activities like emasculation, bagging, pollen application for 4-5 days and bag removal) to carry out artificial pollination in one inflorescence. It is comparatively easy to produce D X T hybrids due to the shorter stature of dwarf mother palms. However, non-availability of dwarf mother palms in large numbers and alternate bearing tendency noticed in dwarf palms are the major constraints in large scale production of D X T hybrids.

### Technique for production of hybrids in coconut

For production of hybrids, it is essential to know the inflorescence structure and the floral biology of the crop. The coconut inflorescence called 'spadix', is 1-2 m long, and consists of a central axis or rachis, with lateral branches called rachillae, each bearing 200-300 male flowers from the top down and some rachillae have one or more female flowers at their base. The female flowers also known as buttons develop into nuts, whereas male flowers are shed after dehiscence of anthers.

The male flowers are the first to open in an inflorescence, beginning at the top of each spikelet and proceeding towards the base. In tall palms, the male phase extends for 16-22 days and the female phase usually begins 22 days after the spathe has opened and lasts for 4-6 days. In tall varieties, there is a gap of 2-3 days between male and female phases. However, in dwarf varieties, the male and female phases overlap, resulting in self-pollination. Coconut is essentially entomophilous and agents like honeybees facilitate natural pollination, apart from pollination by wind. Artificial pollination means that the natural process of pollination is replaced by artificial methods.

### Selection of parental palms

The selection of the parental palms has great

bearing on the quality of planting materials finally produced. Hence care should be taken while selecting the parental palms (both male and female) for artificial pollination. The parental palms selected should be high yielding (80-100 nuts per palm per year) and should be free from all pests and diseases.

### Equipments required

**1. Pollination Bag:** It is essential to protect the receptive female flowers from pollinating agents. Cotton cloth bags, measuring approximately 75 cm x 50 cm, having a transparent plastic window (to view the receptive stage of female flowers) are used as pollination bag.

**2. Applicator for spraying pollen grains:** Pollen applicator consists of a plastic squeeze bottle with a rubber tube at its mouth. Another rubber tube with a rubber bulb at one end is connected to the plastic bottle just below the neck. When the rubber bulb is pressed, it pumps air into the squeeze bottle and the pollen-chalk mixture inside the bottle is released as a cloud, into the pollination bag.

**3. Dessicator:** Pollen is usually stored in a dessicator with fused calcium chloride as desiccant. The pollen collected in small vials, is plugged with non absorbent cotton and kept in dessicator. They can be stored for 10-12 days without appreciable loss of viability.

**Care should be taken while selecting the parental palms for artificial pollination. The parental palms selected should be high yielding.**

### Collection of male flowers and Processing of pollen

The male flowers collected from the male parental palms are processed for pollen collection. The male flowers on the middle portion of the spikelets produce more fertile pollen compared to those on the upper and lower portion of the spikelet. Male flowers should be collected from the male parental palms before opening of individual male flowers (usually done 2-4 days after the opening of inflorescence). Maturity of the male flower is



Male flowers



Receptive flowers



Pollination equipments

indicated by the bluish green tinge at the tip. These mature male flowers are placed in between two sheets of newspaper and slightly crushed using a wooden rolling pin to separate the perianth parts. The crushed male flowers are dried in an incubator maintained at 40°C for a period of 24 hours. In case if incubator is not available, it can also be shade dried for 1-2 days. On completion of drying, the pollen is collected by sieving the dried male flowers using a sieve with mesh size of 0.2 mm. Pollen is preserved in dessicator to maintain its viability.

### Emasculation & Bagging

The process of removal of male flowers from the female parental palm is called emasculation. Emasculation is usually done by cutting the spikelets 5 cm above the female flowers using a secature / knife. Sometimes a few male flowers are seen in between/near to female flowers and they should be removed by hand. Dwarf parental palms have to be emasculated within 3-5 days of opening of the inflorescence.

Bagging is done to prevent pollination in emasculated

inflorescence by natural means and is done a few days before the female flowers become receptive. Bagging is done 3-4 days before the initiation of female phase in an inflorescence.

### Method of artificial pollination

The pollen grains is usually mixed with a suitable diluent like purified talc in 1:9 ratio and filled in the applicator, just before pollen application on to receptive female flowers. Twenty gram of pollen will be sufficient to pollinate 45 to 50 bunches. Pistillate flowers become receptive during early morning

**Table 1. Coconut hybrids released in India**

S N	Hybrid	Parentage	Nut yield (palm/year)	Copra (g/nut)	Agency	Area for which recommended
<b>D X T</b>						
1	Chandra Sankara	COD X WCT	110	208	CPCRI	Kerala, Karnataka, TN
2	Kalpa Samrudhi	MYDX WCT	117	219	CPCRI	Kerala & Assam
3	Kalpa Sankara	CGD X WCT	84	170	CPCRI	Root (wilt) disease prevalent tract
4	Konkan Bhatye Coconut Hybrid-1	GBGD X ECT	122	180	DBSKKV	Konkan Region
<b>T X D</b>						
1.	Kera Sankara	WCT X COD	106	198	CPCRI	Kerala, Karnataka, Maharashtra, AP
2.	Chandra Laksha	LCT X COD	109	195	CPCRI	Kerala, Karnataka
3.	Laksha Ganga	LCT X GBGD	108	195	KAU	Kerala, Tamil Nadu
4.	Kera Ganga	WCT X GBGD	100	201	KAU	Kerala
5.	Kera Sree	WCT X MYD	112	216	KAU	Kerala
6.	Kera Sowbhagya	WCT X SSAT	130	195	KAU	Kerala
7.	Ananda Ganga	ADOT X GBGD	95	216	KAU	Kerala
8.	Godavari Ganga	ECT X GBGD	140	150	ANGRAU	Andhra Pradesh
9.	VHC-1	ECT X MGD	98	135	TNAU	Tamil Nadu
10.	VHC-2	ECT X MYD	107	152	TNAU	Tamil Nadu
11.	VHC-3	ECT X MOD	156	161	TNAU	Tamil Nadu

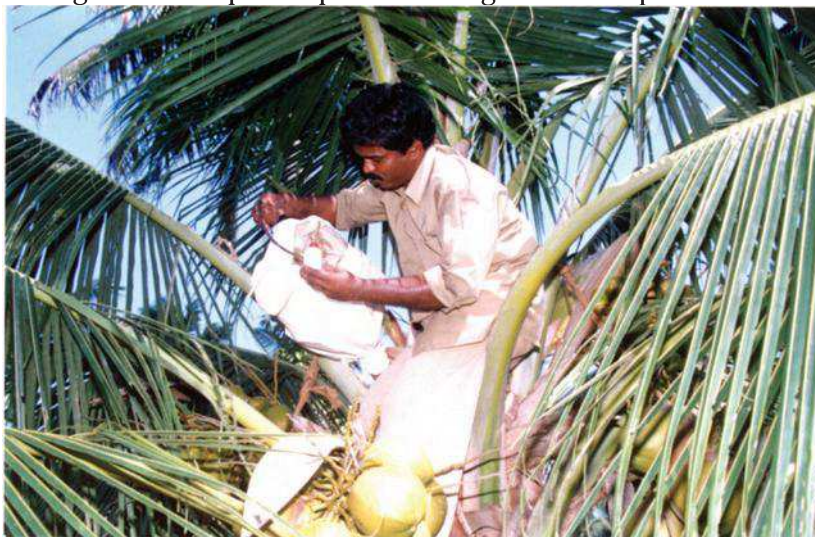


**Table 2. Colour of petiole in hybrid seedlings**

Dwarfs (Female parent)	Talls (Male Parent)	
	Green nut type	Orange/ Red nut type
Orange Dwarf	Green / Bronze	Bronze
Green Dwarf	Green	Bronze
Yellow Dwarf	Greenish Yellow	Orange Yellow

hours as indicated by a reflexed and moist stigmatic surface. In addition to the stigmatic appearance, nectar is secreted at the base of the stigma and at the three pores on the pericarp. Besides, during receptive period, the stigma is expanded as three erect teeth and is ivory coloured. The receptivity of the female flowers can be observed through the transparent plastic

that the pollen-chalk mixture cloud covers the receptive female flowers. All the female flowers do not attain receptivity on the same day, so the above process should be repeated till all the female flowers in an inflorescence become receptive. Care should be taken to close the hole after spraying the pollen-chalk mixture, using adhesive tape. It should be

*Artificial Pollination*

window of the pollination bag. At this stage, a small hole should be made on the plastic sheet and the tube of the pollen applicator should be inserted through this hole. The rubber bulb attached with the applicator should be pressed afterwards to spray the pollen-chalk mixture inside the pollination bag. This pollen application process should be carefully done to ensure

kept in mind that the pollen from the same parent should be used for individual inflorescence. Since stigmatic exudation occurs progressively during the morning hours, 7 am to 11 am is the most ideal time for carrying out artificial pollination.

On completion of the fertilization process the stigma turns brown and the secretion of

nectar stops. After 3-5 days, when all the buttons in an inflorescence attain this stage, the pollination bag should be removed and the bunch should be labeled properly. Mature nuts can be harvested 11 months after pollination in dwarf palms and 12 months after pollination from tall parental palms. The mature seed nuts should also be labeled and sown in nursery.

### **Selection of hybrid seedlings**

Hybrid coconut seedlings are identified in the nursery stage based on characters like early germination, petiole colour and seedling vigour. However, petiole colour is the most widely used marker to select hybrid seedlings in the nursery stage. D X T hybrid seedlings can be selected based on the exclusive characteristics of the male parent viz., colour of petiole, length and breadth of leaves and leaflets. One year old seedlings usually show hybrid vigour for collar girth, number of leaves, length and breadth of leaves and leaflets. Colour of petiole is one of the most commonly used distinguishing characteristics and hybrids are usually selected based on the colour of petiole and collar girth (Table 2).

Cultivation of hybrids will significantly increase the coconut productivity in India and will also enhance the income of coconut farmers. Hence, large scale production of released hybrids of coconut should be given top priority by various developmental agencies, agricultural universities and research institutes.

*\*Central Plantation Crops Research Institute, Regional Station, Kayamkulam Alappuzha - 690 533, Kerala*

# Coconut Development Board awarded Indira Gandhi Rajbhasha Puraskar



*Shri. T K Jose IAS, Chairman, Coconut Development Board receiving the Indira Gandhi Rajabhasha Puraskar from Smt. Prathiba Patil, President of India. Shri. P Chidambaram, Minister for Home Affairs, Shri. Mullapally Ramachandran and Shri. Jithendra Singh, Ministers of State for Home Affairs are seen.*

Coconut Development Board received the Indira Gandhi Rajbhasha Puraskar 2009-10 for the excellent implementation of Official Language Policy (I position) amongst the offices situated in the Non-Hindi speaking areas.

Shri. T.K. Jose IAS, Chairman, Coconut Development Board received the award from Her Excellency Smt. Pratibha Patil, President of India in the presence of Shri P. Chidambaram, Hon'ble Union Minister of Home Affairs, Shri Mullappally

Ramachandran and Shri Jitendra Singh, Hon'ble Union Ministers of State for Home Affairs, Shri R.K. Singh IAS, Secretary, Ministry of Home Affairs, Smt. Veena Upadhyay IAS, Secretary Official Language Department and other dignitaries at a function held on the occasion of Hindi Diwas at Vigyan Bhavan, New Delhi on 14<sup>th</sup> September 2011.

The Board is receiving the Indira Gandhi Rajbhasha Puraskar for the fourth time. Board got the first position in 2008-09 also.





*Shri. Tarun Gogoi, Chief Minister Assam inaugurating the World Coconut Day celebration of the Board. Shri. T K Jose IAS and Shri. Akon Bora, Minister of Jail and Social Welfare, Government of Assam are seen*

# World Coconut Day Celebrated

Coconut Development Board celebrated the World Coconut Day on 2<sup>nd</sup> September 2011 at NDFI Convention Centre, Guwahati. Shri. Tarun Gogoi, Chief Minister, Assam inaugurated the programme. The national awards 2010 was also distributed on the occasion. Shri. Tarun Gogoi, Chief Minister, Assam, Shri. Akon Bora, Minister for Jail and Social Welfare and Shri. Nilomoni Sen Deka, Minister for Agriculture, Horticulture and Parliamentary Affairs gave away the national awards to persons and institutions recognized for their excellence in coconut farming, industry and other coconut related activities.

“There is lot of scope for increasing productivity of coconut with better management in the State and thus improving the rural economy.” said Shri. Tarun Gogoi while delivering the inaugural address. He said

that coconut is truly a wonderful plant which provides health, wealth, food and also livelihood to millions of people all over the world. Coconut and rubber plantations in Assam could go a long way in boosting the rural economy. Underscoring the need for promoting coconut water as a healthy drink, Shri. Gogoi affirmed that it is the healthiest drink. He emphasized the need for adopting latest technology and know-how to increase productivity. He advised that farmers must go in for value addition instead of selling their produce in the raw form. He concluded that successful coconut cultivation can improve the state’s rural prosperity.

Guest of Honour, Shri. Akon Bora, Minister for Jail and Social Welfare who further spoke on the occasion congratulated the award winners. In his



*Shri. Tarun Gogoi delivering the inaugural address*



*Shri. Nilomoni Sen Deka delivering the presidential address*

presidential address, Shri. Nilomoni Sen Deka, Minister for Agriculture, Horticulture and Parliamentary Affairs said that this meeting will be an encouragement for the farmers of the North Eastern area. The state is taking measures to enhance the coconut production and he hoped that within a period of three years the state can surpass Kerala in the production of coconut. He requested the Board to work in association with the state horticulture department in order to make the coconut farming more organised.

Shri. T K Jose IAS, Chairman, Coconut Development Board in his welcome address informed that the Board is breaking its tradition and is coming to the north eastern states instead of conducting its functions in Delhi and in the Southern states. It is for the first time that the Board is organizing such a function in the north east, especially in Assam which leads in productivity. The productivity of Assam is higher than Kerala's average. 16 districts in Assam

are having higher productivity than the national average. The traditional coconut states are lagging much behind Assam in productivity. The Chairman congratulated the farmers of the area for achieving this. In the 12<sup>th</sup> Five Year Plan, the Board is planning a four fold increase in the area of coconut cultivation in Assam and a five fold level increase in productivity. He requested the cooperation of the government of Assam and all related departments in enhancing the production of coconut in the state. He said that the Board would provide technical support, quality seedlings and adequate funds to boost productivity in the State. He further informed that increasing productivity, making value added products at farmers level and a four fold increase on the export front are the themes of this year's world coconut day. He solicited the whole hearted cooperation from all departments in the State to work together and bring Assam in the forefront of coconut production and productivity. Shri. Sugata Ghose, Director, Coconut



*Address by Guest of Honour,  
Shri. Akon Bora*



*Welcome address by  
Shri. T K Jose IAS*



*Vote of thanks by Shri. Sugata Gosh*





*Shri. Nilomoni Sen Deka releasing the special issue of the Bharathiya Nariyal Pathrika. Shri. Pankaj Das receiving the first copy.*



*Shri. T K Jose IAS addressing the technical session. Shri. N Geffry IAS, Project Director, DRDI is seen*

Development Board proposed a vote of thanks.

Shri.S.C.Veerabhadrappe from Chithradurga District, Karnataka received the award for the best coconut farmer in the national level. Shri.Anant Nana Raut ,Mahim Road, Palghar, Maharashtra received the award for the best coconut farmer, South West and Shri. Pankaj Das, Hajo, Kamrup District, Assam, received the award for the best coconut farmer, North East. Shri. K.Balasubramanya,Kumbala, Kasaragod, Kerala and Shri.Kondana Chandrasekhar Gatty, Mangalore, Karnataka received the special awards for the best coconut farmers. M/s. Marico Limited, Kanjikode, Palakkad received the award for the Best Coconut Processor, Conventional Products and M/s. Active Char Product Pvt Limited, Binanipuram, Ernakulam received the award for the Best Coconut Processor, Non Conventional Products. M/s. Alfa Enterprises, Malappuram, Kerala received the special award for the Best Coconut Processor, Conventional Products. Dr. T. Rajamohan, Professor and Head, Dept. of Biochemistry, University of Kerala received the award for the best research worker finding new applications and uses for coconut /coconut by-

products. Shri.Tapas Pal, Chanduli PO, Burdwan District, West Bengal received the award for the Best Craftsman. Shri. Parmanand Janardan Pilankar, Ratnagiri Taluk, Maharashtra received the special award for the best craftsman. M/s. Subicsha Coconut Producer Society Co. Ltd, Nadavannur, Kozhikode, Kerala received the award for the Best NGO / Cooperative Society. Shri. Binesh V R, Agriculture Officer, Kadakkavoor, Thiruvananthapuram received the award for the Best Development Worker and M/s. Indo German Carbons, 57/3 Old Mosque Road, Industrial Development Area, Edayar, Binanipuram, Ernakulam received the award for the Best Exporter of Coconut Products.

Shri. Nilomoni Sen Deka, Minister of Agriculture released the special issue of the Bharathiya Nariyal Patrtika. A Coconut Festival was also held as part of the World Coconut Day Celebration. Manufacturers of coconut products, industrialists and farmers took part in the exhibition.

The inaugural session was followed by a technical



*Shri. Joseph Alappat, former Board Member handing over a memento to Shri. Tarun Gogoi*



*Shri. Shantanu Gotmare IAS, Deputy Commissioner, Bongaigaon*



*Shri. V S Vijayaraghavan, Chairman, Coir Board*



1. Dr. T. Rajamohan, Head, Department of Bio Chemistry, KAU, 2. Dr. Indarani Gosh, Principal Counsellor, Food Safety and Quality Confederation of India, 3. Dr. S N Sen, Director, Horticulture, Tripura, 4. Dr. G Acharaya, Senior Scientist CPCRI, 5. Shri. Mahesh Deroi, Director, Indian Chamber of Commerce and Industry

session chaired by Shri. T.K. Jose, IAS, Chairman, Coconut Development Board. In his introductory remarks, he said that collective innovation is taking place all over the country and coconut is also a part of it. He called upon the farmers to be in the forefront of these collective efforts. Shri Sugata Ghose, Director, CDB spoke on the possibilities of coconut based farming system in North Eastern states. Shri. Shantanu P. Gotmare IAS, District Collector, Bongaigaon and Shri. N. Geoffrey IAS, Project Director, DRDA Bongaigaon spoke on the Udyan Vikas Project carried out under their auspices. Dr. Indrani Ghose, Principal Counsellor, Food Safety and Quality presented a paper on Food Safety Management System in Coconut based products. Dr. T. Rajamohan, Prof. and Head of the Department of Biochemistry, University of Kerala, Thiruvananthapuram presented a paper on Coconut – Nature's gift for mankind. Dr. S.N. Sen, Director of Horticulture, Government of Tripura spoke on coconut development in Tripura. Dr. G Acharaya,

Senior Scientist, CPCRI, Kahikuchi spoke on the coconut germplasm of North Eastern India and Shri. Mahesh Deori, Regional Director, Indian Chamber of Commerce spoke on the prospects and problems of setting up coconut processing industry in the north eastern region.

A farmer's forum chaired by Shri Sugata Ghose, Director, Coconut Development Board, and co-chaired by Shri Sundara Rama Raju, former Board Member from Andhra Pradesh and Shri Joseph Alappat, former Board Member from Kerala was held on 3rd September 2011. The award winners shared their experiences on the occasion. Members of the Board, Shri. Charles Dias MP, Shri. V S Vijayaraghavan, Shri. V V Limaye, Adv. Varkala B Ravikumar, Shri. Dharmarajan and Smt. Nethravathi took part in the deliberations. Shri. T K Jose IAS delivered the valedictory address and Dr. Remany Gopalakrishnan proposed a vote of thanks. Coconut handicraft training certificate, coconut artisan cards, certificate and cash award to the winners of the painting competition conducted in the Mount Fort



Farmer's Forum: (L-R) Shri. Dharmarajan, Shri. Vasantha Vishu Limaye, Shri. Charles Dias MP, Shri. T K Jose IAS, Adv. Varkala B Ravikumar and Smt. Nethravathi





*Winners of the painting competitions*

school were also distributed on the occasion.

In the painting competition conducted for the special children under junior group, Sardan B Timung, G Bijaya Laxmi and Bittu Eddla secured the first, second and third place and in the competition conducted for the general category under junior group, Shikha Pegu, Urmila Chakraborty and Balakshi Marsing got the first, second and third positions. Under the sub junior group special children, Sume

Gogoi got the first prize, Reshma Khijwi and Beauti Sagma got the second prize and Anuj Singh got the third place and under the general category, Uttam Roy, Brajesh Kr Kirat and Melvin Yamuna got the first, second and third prize respectively.

Coconut artisan card was given to Shri. Rathna Malakar and Coconut Handicraft certificate was given to Shri. Mrinal Talukdar, Shri. Amarendra Das, Shri. Hamen Kalita and Shri. Nitu Kalita.

## National Awardees 2010

### Best Coconut Farmer (National)

#### **Shri.S.C.Veerabhadrapa**

*Vasndurga Farm, B G Kera Village,  
Molakalmuru Taluk, Chithradurga District,  
Karnataka*

*Phone:08198 272044, 09902088318*

Shri. S.C.Veerabhadrapa, an agriculture graduate and a progressive farmer is the 'Bhagiratha' of Molakalmuru Taluk. He owns 15 acres of land with 900 tiptur tall coconut variety. The garden is well maintained by adopting scientific cultivation techniques. He is applying the technical know how



*Shri. Veerabhadrapa receiving the award for the best coconut farmer (National) from Shri. Tarun Gogoi*

of the horticulture institutions of his locality. The average yield is 220 nuts / per palm / per year. He has adopted coconut based inter cropping as well as mixed cropping system with various perennial crops and apiculture and dairy farming. The soil is sandy gravel. Water management is done by drip irrigation. Organic, chemical and bio fertilizers are used for maintaining the soil fertility. He is also having a vermin compost unit as well a cattle and goat rearing unit. For improving the productivity of his farm, he is using bio digester liquid through drip irrigation. Trenches are made between the rows of coconut. He is maintaining azolla production in his farm as well.

**Best Coconut Farmer (South West)**

**Shri. Anant Nana Raut**

*SAVALI, At and Post -Mahim*

*Palghar, Thane, Maharashtra*

*Phone: 02525 220052, 09260572122*



*Shri. Anant Nana Raut receiving the award for the best coconut farmer, South West*

“Lakhee bhag” “one lakh per acre” keeping this as the mantra, Shri. Anant Nana Raut, a progressive farmer from Mahim Village in Maharashtra, started coconut cultivation in 5 acres of his 10 acre agriculture land. The native tall, “Pratap” cultivar was his choice. Around 400 trees are planted in the garden at a spacing of 20’x20’. He is getting an average yield of 50 nuts per palm per year. Along with coconut other remunerative intercrops were also added to his cropping system. The cultivation of betel wine was a successful venture in getting continuous and prolonged income. The cultivation of kokum, spices like nutmeg, pepper etc has improved the land and labour use

efficiency. After establishing an economically viable coconut based farming system, Shri. Anant Nana Raut started nursery program for the sale of high value horticulture crops including ornamental and coconut plants wherein he could utilize the available family labour. Today, Anant’s farm is a trading center for farm produces as well as planting materials. With the productivity of 125-150 nuts per palm per year, the return from a coconut palm is reported to be more than Rs.1500/-. The success achieved in demonstrating the optimum and efficient utilization of land and water for profitable coconut based farming system is considered as the main criteria for selecting him as the best coconut farmer in South West Region of the country. He is the recipient of Kheti Mithr in 1997, Krishibhushan in 2001 and Uthkrist Masala Pik Uthpadak Award in 2003.

**Best Coconut Farmer (North East)**

**Shri. Pankaj Das**

*VIII- Hajo, PO (Pani Para)*

*Kamrup District, Assam*



*Shri. Pankaj Das receiving the award for the best coconut farmer, North East*

Shri. Pankaj Das, a progressive farmer from Hajo Village in Assam owns 8.75 acres of land of which 3 acres are planted with coconut. Around 205 trees are planted in the garden. He is getting an average yield of 98 nuts per palm per year. Perennial as well as seasonal crops are grown as intercrop in his garden. Mixed farming is adopted with dairy, mushroom farming and pisciculture. Aracanut, Amla, lichi, jack fruit, gueva and beetle leaves are grown an inetrcrop. The soil is clayey loam. Shri. Pankaj Das is also having



a coconut nursery in his farm. He is the first person to adopt basin irrigation, regular application of chemical fertilizer, application of tank silt and farmyard manure and the application of vermin compost in his locality.

**Best Coconut Farmer (Special Award)**

**Shri. K.Balasubramaniya**

Gundaidukka, Kannoor PO, Kumbala,

Kasaragod(Dist), Kerala

Phone:049982457/9895895655



*Shri. K.Balasubramaniya receiving the special award for the Best Coconut Farmer*

Shri. Balasubramaniya (43) belongs to Kumbala Village in Kasargode District of Kerala. He owns 5 acres of land planted with 350 coconut palms. The main varieties grown in his garden are West Coast Tall, Malayan Yellow Dwarf and Hybrids. Average yield recorded is 120 nuts/palm/year. The palms are irrigated by sprinkler method and he adopts zero tillage. He opens the coconut basins only once in three years as a labour saving practice and manages the basins by palm waste recycling. The interspaces between the palms are also completely utilized in the farm by growing inter and mixed crops like nutmeg, pepper, banana, pineapple etc. By adopting multistoried cropping both horizontal and vertical space utilization is done. He also practices mixed farming and maintains three milch cows. He is the recipient of the best coconut farmer award of CPCRI in 2006-07.

**Best Coconut Farmer (Special Award)**

**Shri.Kondana Chandrasekhar Gatty**

Daivanugraha, Near Kondana Temple

Kotekar PO,Mangalore, Karnataka-595022

Phone:09242138152

Shri. Kondana Chandrasekhar Gatty is an IT professional turned farmer from Mangalore in Karnataka. He owns 7.5 acres of land out of which 2.5 acres are planted with coconut. Around 350 trees are planted in the garden. He is getting an average yield of 100 nuts per palm per year. He is having 10 vermi culture units. He realized the importance of tender coconut as the emerging market and hence selected dwarf and hybrids as the best crop mix. The dwarfs are mainly Chowghat Orange and Malayan



*Shri.Kondana Chandrasekhar Gatty, receiving the special award for the Best Coconut Farmer*

Yellow and the hybrid belongs to DXT (CODxWCT). The bulk of his coconut harvest is disposed as tender coconut. Similarly he allows a few bunches of coconut in hybrid palms to mature to harvest as mature nuts during the festive seasons to realize highest rate. Shri. Gatty bagged many rewards and recognitions for his innovative farming practices. He was adjudged as the best farmer of the district by University of Agricultural Sciences, Bangalore during Krishimela programmes.

**The Best Coconut Processor**

(Conventional Products)

**M/s. Marico Limited**, NIDA, Menon Para Road

Kanjikode, Plakkad Dist, Kerala

Chief Executive: Bhaskar Balakrishnan

Phone: 0491 2566363,09443242244

M/s. Marico Limited, is a consumer centric organisation manufacturing coconut oil based at Palakkad Dist. in Kerala. The unit is engaged in the



*Shri. Sasikumar K, M/s. Marico Limited receiving the award for the Best Coconut Processor, Conventional Products*

production of 100% pure coconut oil since 1993. Marico's specification of the coconut oil is based on the IS 542-1968. The product testing laboratory of the plant is certified by NABL. Marico was the first to bring in innovative packaging concept in coconut oil segment. All the products manufactured by Marico have adopted the bar coding system. Parachute, Nihar and Uttam are the three brands of coconut oil manufactured at Marico Kanjikode plant. Marico sells 7 crore packs to around 13 crore people every month. The plant has won awards like Ramakrishna Bajaj National quality Award and Rajiv Gandhi National Quality Award.

**The Best Coconut Processor**  
(Conventional Products)

Special Award, Silver Oil Mills  
Edappatta PO, Melattur, Malappuram, Kerala  
Phone: 9447179380  
Chief Executive: Saji P Thomas

M/s. Silver Oil Mills manufacture premium quality coconut oil and virgin coconut oil under the brand name silver drops. Products are available in various packing styles ranging from small sachet to big containers. Every pack is best targeted to different kinds of customers. Extreme quality standards are applied to ensure that the product is perfectly safeguarded and its longevity and aroma is not lost. Silver Oil Mills, the manufacturers of "Silver Drop Coconut Oil" within a short span of their existence have established indelible mark. The good manufacturing



*Shri. Saji P Thomas, M/s. Silver Oil Mills receiving the special award for the Best Coconut Processor, Conventional Products*

systems adopted in various stages of processes starting from copra making, coconut oil packing, etc has generated confidence and credibility among the consumers, particularly in the era of sales of adulterated coconut oil. The average processing capacity of the unit is 30000 nuts per day and 4 metric tonne of premium grade coconut oil. M/s. Silver Oil Mills is the recipient of the best entrepreneur award in Panchayath issued by the District Industries Centre.

**The Best Coconut Processor**  
(Non - Conventional Products)

**M/s. Active Char Product Pvt Limited,**  
B. No 615, Industrial Development Area, Edayar,  
Binanipuram, Ernakulam, Kerala, India  
Chief Executive: Shri. Razin Rahman CP  
Phone 0484 2556518, 9895065666



*Smt. Sajitha Basheer, M/s. Active Char Product Pvt Limited receiving the award for the Best Coconut Processor Non Conventional Products from Shri. Nilomoni Sen Deka,*



M/s.Active Char Products Limited is one of the largest manufacturer of coconut shell charcoal based steam activated carbon in India focused in developing new products by adhering to international quality standards. The company is promoted by a group of technocrats. The plant is strategically located at Cochin, Kerala. The production facility incorporates the latest technology being used by major plants around the world. State of the art machineries and equipments are installed for producing steam activated coconut shell carbon of the highest quality. An integrated and 100% mechanized production facility, ensures a sound production system that meets all international safety and industrial operating. Active Char Products Limited is a high volume manufacturer having adequate flexibility in operation capable of producing diverse products. M/s. Active Char Products Private Limited is the recipient of certificate of merit from Capexil in 2008-09 under miscellaneous category.

#### **The Best Coconut Processor**

(Non-Conventional Products)- Special Award

##### **M/s. Alfa Enterprises**

Cheruvallloor P O, Malappuram, Kerala- 679 575

Chief Executive: Ibrahim Palakal

Phone: 0494 2655333, 098461807555

M/s. Alfa Enterprises, Malappuram, Kerala is manufacturing sambar coconut paste and roasted coconut paste. The unit was established in 2004. The product is used by more than 3 lakh people.



*Shri. Ebrahim Palakkal, M/s. Alfa Enterprises receiving the special award for the Best Coconut Processor, Non Conventional Products.*

#### **Best Research Worker**

(Finding new applications and uses for coconut / coconut by-products)

##### **Dr. T. Rajamohan**

Professor and Head, Dept. of Biochemistry,  
University of Kerala, Kariavattom – 695581

Dr. T. Rajamohan, Professor and Head, Department of Biochemistry of the University of Kerala is undertaking research on the health effects of coconut and its products. His entire research in coconut and coconut products span over a period of 20 years. His research on the effect of consumption of coconut oil and coconut kernel on serum and tissue lipid profile during 1992-95, when the world coconut oil industry had reached to turmoil due to anti-propaganda by world soybean lobby, revealed that the major protein fraction, globulins and fiber present in the coconut kernel posses properties, decreasing the risk of cardiovascular diseases and diabetes. Dr. Rajamohan's research works have proved that consumption of coconut oil along with coconut kernel in Kerala population has no deleterious effect on blood cholesterol and that consumption of coconut oil increases blood HDL cholesterol and decreases blood triglycerides. Many reputed journals have carried Dr. Rajamohan's articles on the health benefits of the coconut and its products. He has presented many papers on the health benefits of coconut and its products in several national and international seminars and meetings. His study on the health benefits of of tender coconut water attracted people to consume



*Dr. T. Rajamohan receiving the award for the Best Research Worker, Finding new applications and uses for coconut / coconut by-products*

tender coconut water as a soft drink in place of synthetic drinks. The study revealed that tender coconut water possesses cardio protective property, hepatoprotective property, antioxidant property and hypotensive property. The research contribution of Dr. Rajmohan has proved beneficial to coconut community in the world in general and Keralites in particular.

### Best Craftsman

#### Shri. Tapas Pal

Chanduli P O, Burdwan Dist. West Bengal-713 409



*Shri. Tapas Pal receiving the award for the Best Craftsman*

Shri. Tapas Pal (47), an artisan from the State of West Bengal of Chandoli Village, is manufacturing various handicrafts using coconut shells. He works on dark brown mature shell and creamy yellow mature coconut shells. He is creating mystic symbols and religious philosophy through his pure art. He is a Guest Lecturer on Handloom design at the "Vocational Training Centre" runs by the Directorate of Technical Education, Govt. of West Bengal. He was awarded the State Award of Govt. of West Bengal during 1994-95, 1996-97 and 1998-99. The total commitment dedication and imaginary power of Shri. Tapas Pal makes his artistic output more attractive. His creativity through coconut shells are living monuments of Indian Art.

### Best Craftsman

(Non Traditional States)

Shri. Paramanad Janardan Pilankar

House No. 137, Post Bhatye, Mahajanwadi

Taluka Ratnagiri, Maharashtra

Phone 02352 235162, 08149827585



*Shri. Paramanad Janardan receiving the special award for the Best Craftsman*

Shri. Paramanad Janardan Pilankar (48) a craftsman from Maharashtra is making various coconut based handicraft items from coconut palm parts and coconut by products. He is transforming coconut palm parts into an array of products like idols of gods and goddess, curios as well as handicraft items. He has participated in many exhibitions. He is the recipient of the Samaj Bhushan award in 2010 and Creative Shriganesha in coconut award in 2008.

### Best NGO / Cooperative Society

SUBICSHA Coconut Producer Company Limited

NP9/708A, Nochad P.O, Naduvannur, Via

Perambra, Kozhikode- 673 624, Kerala

Phone: 0496-2615186

Subicsha Coconut Producer Co. Ltd is a federation of active women groups engaged in food and allied processing units mainly based on coconut. The company is sustainable evolution of an SGSY scheme which has effectively integrated various funds of local



*Shri. Kujahammed Master of M/s. Subicha Coconut producer Society Co. Ltd receiving the award for the Best NGO / Cooperative Society from Shri. Akon Bora*



self government, Coconut Development Board, CPCRI, KILA, NABARD, CFTRI etc and made significant development in agricultural processing, social empowerment of women and got national acclaim as best venture under cooperative sector. Subicsha a federation of 7000 BPL women has made strong market presence by significantly improving quality of its products and packaging. The company has adequate infrastructure of food, oil, fiber and shell charcoal units established with assistance of various technological institution. Subicsha is having ten virgin oil production plants, food processing plant, shell charcoal unit, fiber and coir units, various house centered units manufacturing soap, cosmetic oil units, food products, coconut trade, copra making etc providing employment to hundreds of less privileged women. SUBICSHA was awarded the best NGO/Co operative Society by the Coconut Development Board in 2006, Swaraj Trophy award from Government of Kerala and Rajakeeya Puraskar Award by Pazhassiraja Foundation.

#### **Best Development Worker**

**Shri. Binesh V R**

Agricultural Officer, Punnoothara, Pada North  
Karunagapally, Kollam- 690 518, Kerala  
email: bineshvr@hotmail.com

Shri. Binesh V R (45) is an innovative agriculture officer who could bring about a steep jump in the extension methodology with his interest in agriculture extension, agricultural marketing, participatory as well as rural development. He has promoted coconut farming in Kulasekharapuram Panchayath in Kollam District in Kerala. He is creating awareness among the farmers on irrigation methods, the significance of



*Shri. Binesh V R, receiving the award for the Best Development Worker*

group activity as well as on product diversification and by product utilization in coconut farming. He was instrumental in implementing the schemes viz. the replanting and rejuvenation programme of the Board, integrated farming in coconut holdings for productivity improvement by planting banana suckers, Kerasree 2008-09, tsunami rehabilitation package in coconut palms 2008-09, peoples planning programme IInd stage 2008-09 and upland cultivation of paddy 2009-10.

#### **Best Exporter of Coconut Products**

Managing Partner,

**M/s. Indo German Carbons**

57/3 Old Mosque Road, Industrial Development  
Area, Edayar, Binanipuram, Ernakulam- 683502

Indo German Carbons Limited (IGCL) is a leading international manufacturer and supplier of all kinds of coconut shell based activated carbon products and solutions, utilizing the latest technologies to provide a comprehensive range of carbon products for all applications. Located in Cochin, the unit exploits the advantages of its abundant availability of raw material and the state-of-the-art equipments and technology to produce steam activated carbon from coconut shell. The company produces activated carbon products from selected shells of coconut to ensure the highest quality during the manufacturing process. Indo German Carbons Limited pursues uncompromising quality standards in all the stages of its process and operation activities. Process control ensures that the carbon manufactured is precisely as required and that adsorption properties are tailored to the specific requirements of each customer. The company's volume of export is 2009-10 is 4140.924 metric tonnes and the value is around Rs.29 crores.



*Shri. Abdul Basheer of M/s. Indo German Carbons receiving the award for the Best Exporter of Coconut Products*

# Spray Dried Coconut Milk Powder



Central Food Technological Research Institute, Mysore with the financial assistance of the Coconut Development Board has developed the technology for spray dried coconut milk powder which is available to entrepreneurs at a total know-how fee of Rs.5 lakhs. On an average twenty thousand coconuts would yield about one tonne of spray dried coconut milk powder. Spray dried coconut milk powder has a tremendous market potential in India and in international market.

Using coconut milk is not a cumbersome or time consuming process anymore for those who want to include coconut in their regular diet. The spray dried coconut milk powder is now available in convenient and ready to use packs with the same freshness of fresh coconut milk. It has a longer shelf life and is convenient to use. This can be used in place of fresh coconut milk for food preparations / beverages in households and food industries by dissolving it in water.

## Product specification

Moisture	2%
Fat	66 - 72%
pH	5.8 - 6.5
FFA	0.2% max
Density	0.3 - 0.45 g/cc

The first step in the process is breaking the dehusked nuts into halves. The split nuts are deshelled to separate the kernel. These two operations usually are done manually. Kernel is washed and then blanched by immersing in hot water at 80°C for 10 minutes. The next step is comminution of kernel into small gratings using a hammer mill. The gratings are subjected to pressing using, continuous screw press to extract the milk. The coconut milk thus obtained is filtered by passing through a vibrating screen. The coconut milk is then homogenized and mixed with maltodextrins and other emulsifiers in an additive mixing tank. The milk mixed with additives is then spray dried into a fine milk powder using a spray drier. The product is then packed in Aluminum foil packets in various sizes as per customer requirement.

## COCONUT RECIPE

### Rasa Kadambha

#### Ingredients

- Paneer - made from 2 litres of milk
- Sugar - 2 kg
- Unsweetened Khoya - 1 kg
- Sugar - ¼ Kg + 1tbsp sugar
- Yellow food colouring - a few drops
- Dry coconut - 250 gm finely grated
- Rose essence - a few drops
- Almonds, cashewnuts, pistachious, and cardamom - 10 gms each

**Method:** Grind together the nuts and cardamom and mix 1 tbsp sugar. Form into tiny balls and set aside. Knead the paneer to a paste and form into balls around the nut balls. Put 1 litre water in 2 kilos of sugar and prepare a syrup which should be little less than thread consistency. Put in the balls in the suryp and heat. When done remove from fire. Cover and set aside whole night. Next morning, put the Khoya and the remaining sugar over a slow fire till

thick. Remove from fire, cool and mix the colour and essence. Divide the mixture into as many portion as there are paneer balls. Cover each ball nicely with Khoya and decorate the top with grated coconut.

### Coconut Sawdesh

#### Ingredients

- Paneer - made from 1 litre milk
- Sugar - 250 gm
- Finely grated coconut - ½ cup
- Cardamom seeds - 1tsp
- Rose essence - ½ tsp
- Silver foil

**Method:** Spread coconut on a plate and dry for 1 hour; then mix with ground paneer, sugar and cardamom and look over a slow fire till the mixture turns thick and leaves the sides of the vessel. Mix the essence and remove from fire. Put the greased plate, cover with foil and cut into pieces when cold.

Indu Narayanan



# Major Coconut Producing Countries of APCC

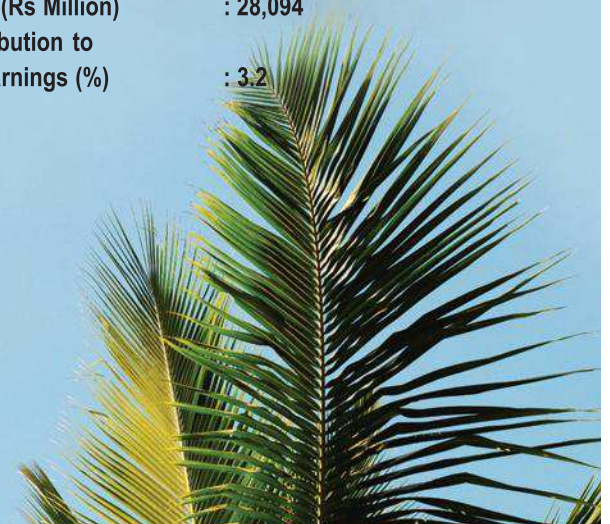
The Asian and Pacific Coconut Community (APCC) is an intergovernmental organization established in 1969 under the aegis of the United Nations of the Economic and Social Commission for Asia and the Pacific (UN-ESCAP). The APCC has 17 coconut producing member countries accounting for over 90% of world coconut production and exports of coconut products.

The APCC member countries include: Federated States of Micronesia, Fiji, India, Indonesia, Jamaica, Kiribati, Malaysia, Marshall Islands, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu, and Vietnam. Jamaica is an associate member of the APCC. An introduction on Sri Lanka is given in this issue. Sri Lanka holds the 5<sup>th</sup> position in coconut production, 6<sup>th</sup> position in productivity and 4<sup>th</sup> position in area of coconut.



## Sri Lanka

1. Capital	: Colombo
2. Total Area (Km2)	: 65,610
3. Population (Million)	: 20,20
4. Gross Domestic Product (Rs Million)	: 4,411,000
5. Currency Unit	: Sri Lanka Rupees (Rs)
6. Exchange rate to 1 US\$ (Average)	: Rs 108.33
<b>B. COCONUT INDUSTRY</b>	
1. Area Under Coconut (Million Ha)	: 0.395
2. Total Coconut Production	
2.1. - In Million Nuts Equivalent	: 2,909
2.2. - In Copra Equivalent (Million MT)	: 0.556
3. Estimated Domestic Consumption	
3.1 -In Million Nuts Equivalent	: 2,437
3.2. -In Copra Equivalent (MT)	: 0.466
4. Export Volume (MT)	
4.1 -Coconuts ('000 Nos)	: 38,224
4.2. -Copra	: 13,314
4.3. -Coconut Oil	: 1,520
4.4. -Copra Meal	: 5,046
4.5 -Desiccated Coconut	: 36,081
4.6 -Coconut Cream/Milk	: 6,533
4.7 -Coconut Milk Powder	: 3,679
4.8 -Shell Charcoal	: 2,947
4.9 -Activated Carbon	: 17,388
4.10 -Mattress Fibre	: 52,112
4.11 -Bristle Fibre	: 5,162
4.12 -Twisted Fibre	: 28,860
4.13 -Coir Yarn	: 1,761
4.14 -Coir Twine	: 3,630
5. Total Export Value (Rs Million)	: 28,094
6. Percentage Contribution to National Export Earnings (%)	: 3.2



## World Coconut Day celebrated at DSP Farm, Mandya

The Regional Office, Bangalore and DSP Farm, Mandya in association with District Industries Centre, Mandya conducted an awareness programme on coconut in connection with the World Coconut Day on 2<sup>nd</sup> September 2011 at DSP Farm, Mandya.

Shri. G. Jayaram, KAS, Chief Executive Officer, Zilla Panchayath, Mandya inaugurated the programme. He said that coconut farmers are facing many problems like incidence of pest and diseases on one side and fall in the prices of coconut on the other side. Further he told that Mandya district is fast developing in all sectors including horticulture. Govt. of Karnataka is taking steps to stabilize the price of coconut. Further he called upon the farmers to adopt all the scientific management practices to increase their production in the coconut garden and to utilize the land efficiently to get maximum income from the per unit area. Further he added that farmers have to diversify their activities and give more attention to value addition of coconut for getting better prices for their produce. Dr.V.T. Sanna-veerappanavar, Dean (Agri.), Agriculture College, UAS, V.C. Farm, Mandya presided over the function and in his address he called upon the coconut farmers to adopt proper management

measures for increasing production of coconut. He requested the farmers to take up integrated nutritional management practices for better yield.

Government of Karnataka, proposed a vote of thanks.

The programme was followed by a technical session wherein



Shri. G. Jayaram KAS inaugurating the programme

Shri. Vijayakumar Hallikeri, Deputy Director in his key note address called upon the farmers to divert their activities to value addition. He informed that different technologies are available with Board and entrepreneurs can avail the benefits and utilize the technologies to establish the processing units. Shri. Ramalingaiah, Progressive farmer and president, CADA also spoke on the occasion. Shri. M. Sugnana Murthy, Joint Director, District Industries Centre, Mandya delivered the welcome address. Shri. Narendra Babu, Deputy Director of Horticulture, Mandya,

Dr.Chandrappa, Associate Professor of Horticulture, Agriculture college, UAS, Mandya, Dr.L.Vijayakumar, Assistant Professor of Entomology, Agriculture College, UAS, V.C. Farm, Mandya, Shri. Bindumadhav Wadavi, Assistant General Manager, NABARD, Mandya and Shri.Vijayakumar Hallikeri, Deputy Director, CDB spoke on the occasion. An exhibition was also held on the occasion wherein the Coconut Development Board exhibited coconut products and by products, handicraft items and publications of the Board.



## Independence Day Horticulture Show- 2011



*A view of the Board's stall in Independence Day Horticulture Show*

The Coconut Development Board, Regional Office, Bangalore participated in the Independence Day Horticulture Show - 2011 held from 5<sup>th</sup> to 15<sup>th</sup> August 2011 at Lalbagh, Bangalore. The show was organized by the Mysore Horticultural Society, Lalbagh, Bangalore in association with the Department of Horticulture, Government of Karnataka. Dr. D.Hemachandra Sagar, MLA inaugurated the show. Smt. Sharadamma, BBMP Mayor, Shri. B.R. Nanjundappa, Opposition Leader in the BBMP council, Smt. Vandita Sharma, IAS, Principal Secretary (Horticulture) and Smt. Hemalatha, IAS, Director of Horticulture were present on the occasion.

The Coconut Development Board showcased different varieties of coconut bunches and value added products like ball copra, branded coconut oil in different packages, virgin coconut oil, packed tender coconut water in cans and pouches, different brands of desiccated coconut powder, coconut milk powder, coconut based vinegar, coconut water concentrates, shell and wood based handicrafts and publications

of the Board. M/s.Viswakarma Wood Craft, Ernakulam, Kerala had its sales cum display counter in the stall.

## Retired



Dr. K V Subramanian, Director, CDB, RO Bangalore retired from the service of the Coconut Development on 31<sup>st</sup> August 2011. He started his official career in 1978 in Kerala Agriculture University as Assistant Professor. He joined Board in 1986.

## Quiz competition conducted through video conference

A quiz competition was conducted by the Board on 29<sup>th</sup> August, 2011 through video conferencing in connection with the world Coconut Day. Anila MA



*Anila MA and Nanu PA of KAU Vellanikkara who got the first prize in quiz competition*

and Nanu PA final year B.Sc (Agri.) students of KAU Vellanikkara won the first prize. Lakshmi V and Jijisha P.K of KAU Padannakad and Jobin Sebastian and Athul V got the second and third place respectively. Dr. Murali Gopal, Sr.Scientist from CPCRI,

Kasaragod was the quiz master. T.K.Jose, IAS, Chairman, Coconut Development Board inaugurated the quiz competition. Dr.Muralidharan, Head, Social Science, CPCRI and Dr.C. Thampan, CPCRI coordinated the quiz competition from CPCRI, Kasaragod. Dr.Anithakumari, Senior Scientist; Dr.Dhanpal, Head (Div. of Crop Production); Dr.Kalavathi, Sr.Scientist and Harish, Technical Officer from CPCRI coordinated the competition from multiple centres. A team of two students each from Tamil Nadu Agriculture University, Coimbatore; Kerala Agriculture University (KAU), Padannakkad: UAS, Bangalore; KAU, Vellanikkara and KAU, Vellayani participated in the competition.

October

## Monthly operations in the coconut gardens

**Andaman & Nicobar Islands:** Apply organic manure like dried compost /cow dung@ 40 kg or poultry manure @ 5 kg/palm in the basin taken at a distance of 2 m away from the bole of the palm in a depth of 2-3 inch. Cover it with soil. New planting of quality seedlings can be undertaken with a density of 150 seedlings per hectare. Prevent accumulation of rain water in the pits. Plant perennial intercrops such as clove, nutmeg, cinnamon, pepper and banana. Control rhinoceros beetle by releasing baculovirus treated beetles @ 15 beetles/ha. Remove the affected bark tissues on the stem and apply 5 per cent calixin on the wound and also apply warm coal tar if stem bleeding is noticed. Monitor the prevalence of bud rot disease and cut and remove all the affected tissues of the crown and apply 10 per cent bordeaux mixture and cover with polythene to protect it from rain water till normal shoot emerges in case of bud rot disease affected palms. Remove the weeds from the plantation.

**Andhra Pradesh:** Plant one year old seedlings in the main field. Apply the second dose of fertilizers i.e. 750 g urea, 1300g single superphosphate and 1250 g muriate of potash per adult palm.

**Assam:** Apply the second dose of fertilizers if not applied during September. Start the post monsoon prophylactic spraying of the palms with one per cent bordeaux mixture in areas where bud rot disease is noticed. Incorporate the weed plant *Clerodendron infortunatum* in the breeding grounds to destroy the grubs and eggs of rhinoceros beetle. Fill the youngest three leaf axils with a mixture of 250 g powdered marotti/ neem cake with equal volume of sand or place naphthalene balls(12 g/ palm) and cover them with sand thrice a year. Keep the nursery free of weeds. Irrigate the nursery if necessary. If stem bleeding is noticed, remove the affected tissues on

the stem and apply 5 per cent calixin on the wound followed by coal tar. Tie or prop up bunches to prevent buckling.

**Bihar / Madhya Pradesh:**

Remove weeds from the garden. Apply the second dose of fertilizers after the monsoon @ 250 g Urea, 500 g Single Super Phosphate and 500 g Muriate of Potash per palm if applied in 3 splits. Apply fertilizer in basin taken around the palm at a radius of 1.8 m and cover with top soil. Fertilizer application should be followed by irrigation. Crown cleaning should be done to avoid infection during winter season. Apply Blitox @ 5 g/ litre and Dithane M 45 @ 2 g/litre on the crown and bunches alternatively to avoid secondary infections during winter and continue upto February. Sow horse gram or cow pea in coconut basins during mid October after fertilizer application as mulch crops which will help the maintenance of micro climate, moisture conservation and nitrogen fixation in the soil.

**Karnataka:** Prepare land for new planting. Discard seedlings which has not attained proper growth in the nursery. Application of second dose of fertilizer may be taken up. Clean the crowns of the palms by removing dried and old spathes. As a control measure of rhinoceros beetle, incorporate the weed plant *Clerodendron infortunatum* in the breeding grounds to destroy the grubs and eggs of the beetle. Fill the youngest three leaf axils with a mixture of 250 g powdered marotti/ neem cake with equal volume of sand or place naphthalene balls(12 g/ palm) and cover them with sand thrice a year. Treat manure pits and other possible breeding sites with carbaryl 0.1 per cent which is to be repeated every three months. As a prophylactic measure, spray bordeaux mixture in order to avoid the infestation of bud rot .



**Kerala/Lakshadweep:** Check for the incidence of stem bleeding. If found infected, remove the affected bark tissues on the stem and apply 5 percent calixin on the wound. When this is dry apply warm coaltar. Apply 5 kg neem cake per palm per year along with the second dose of fertilizer. If the attack of the mite is noticed, spray neem oil - garlic - soap emulsion 2 percent (20 ml neem oil + 20 g garlic emulsion + 5 g soap in 1 litre water) or commercial botanical pesticides containing azadirachtin 0.004 per cent @ 4ml per litre of water on bunches, especially on the perianth region of buttons and affected nuts or root feed neem formulations containing azadirachtin 5 per cent @ 7.5 ml with equal volume of water.

**Maharashtra/Goa/Gujarat:**

Plough the garden and make channels for irrigating the palm. Pile up mounds in sandy soils. Remove ungerminated and dead sprouts from the nursery.

**Orissa:** Initiate sowing of green manure crop seeds in the coconut basins. Incorporate green leaf manures in the coconut basins. Plant/sow intercrops like seasonal intercrops and vegetables. Keep the nursery free of weeds. If the attack of pests and diseases are noticed apply plant protection chemicals. Clean the crown and apply organic manures. Other maintenance operations to the coconut as well as the intercrops also may be initiated.

**Tamil Nadu / Puducherry:**

Apply the second dose of fertilizers, i.e. 500g urea, 800g single superphosphate and 800g muriate of potash per adult palm (under rain fed conditions). Incorporate it well in the soil and cover with soil immediately after the application of fertilizers. Check for the incidence of stem bleeding. If found infected remove the affected bark tissues on the stem and apply 5 percent calixin on the wound. When this is dry apply warm coal tar. Apply 5 kg. neem cake per palm per year along with the second dose of fertilizer. If the attack of the mite is noticed, spray neem oil - garlic soap emulsion 2 percent (20 ml neem oil + 20 g garlic emulsion + 5 g soap in 1 litre water) or commercial botanical pesticides containing azadirachtin 0.004 per cent @ 4ml per litre of water

on bunches, especially on the perianth region of buttons and affected nuts or root feed neem formulations containing azadirachtin 5 per cent @ 7.5 ml with equal volume of water.

**Tripura:** Clean the crown if not done in the earlier month. Application of plant protection chemicals and fertilizer should be followed if not done last month.

**West Bengal:** Incorporate the green manure crop in the soil. Apply organic manure such as dried cow dung/ dried compost @ 40 kg or vermi compost @ 20 kg/tree if not applied during the previous month in the basin at a distance between 1.5m and 2 m away from the bole of the tree in a depth of 2-3 inch. Cover it with soil. Plough the inter space and plant early varieties of winter vegetables, oil seeds or pulses. Look for crown chocking especially in north Bengal. If noticed apply borax @ 100 g per palm. Hand weed the nursery and provide partial shade to young seedlings. Support newly planted seedlings with suitable props. Tie or prop up bunches to prevent buckling. Start harvesting of matured nuts. Look for insect damage and disease symptoms. Hook out the rhinoceros beetles and fill the top three leaf axils with a mixture of 250 g powdered marotti/ neem cake with equal volume of sand or place naphthalene balls(12 g/ palm) and cover them with sand thrice a year. Check the palms for bud rot. If bud rot is found, remove the affected parts, apply bordeaux paste and cover with polythene sheet or plastic bucket. Spray the neighbouring palms/ seedlings with 1.0 per cent bordeaux mixture. If stem bleeding is noticed, remove the affected bark, apply 5 per cent calixin on the wound and the next day apply coal tar. Root feed 5 per cent calixin (5 ml in 100 ml water) once in every three months and apply 5 kg neem cake per palm per year along with second dose of fertilizers. If the attack of the mite is noticed, spray neem oil - garlic - soap emulsion 2 percent (20 ml neem oil + 20 gm garlic emulsion + 5 gm soap in 1 litre water) or commercial botanical pesticides containing azadirachtin 0.004 per cent @ 4ml per litre of water on bunches, especially on the perianth region of buttons and affected nuts or root feed neem formulations containing azadirachtin 5 per cent @ 7.5 ml

## Market Review August, 2011

### Highlights

- ◆ The price of milling copra, ball copra and coconut oil expressed a downward trend at all the major markets during the month under report.
- ◆ The international price of coconut oil expressed a downward trend during the month under report. The domestic price of coconut oil at Kochi market was about 39 percent higher than that of the international price.

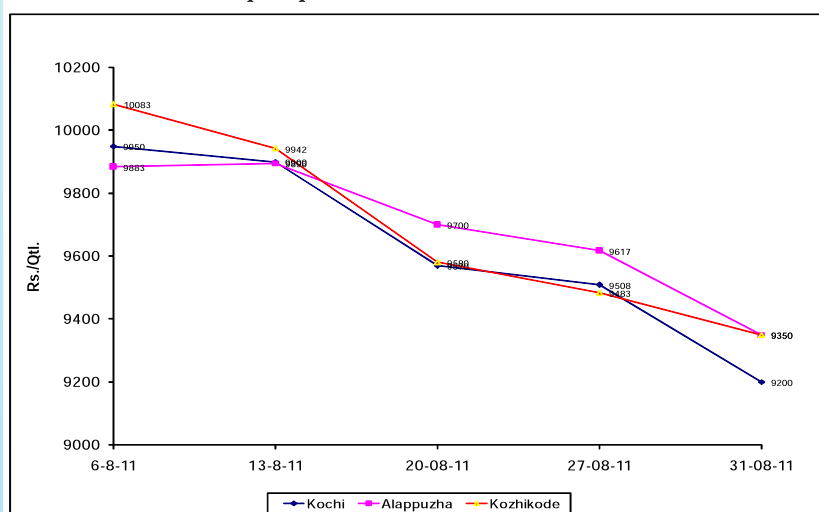
### COCONUT OIL

The price of coconut oil quoted at all the major marketing centres in the country expressed a downward trend during the month under review. The weekly average prices at Kochi market varied between Rs.9200 and Rs.9950 per quintal. The monthly average price of Rs.9626 per quintal was about 7 percent higher than the price in July 2011 and was higher by about 67 percent when compared with the price in August 2010.

The price of coconut oil at Alappuzha market also moved in tune with the price behavior of Kochi market. The weekly average prices ranged from Rs.9350 to Rs.9896 per quintal.

The weekly average prices of coconut oil at Kozhikode market, varied between Rs.9350 and Rs.10083 per quintal. The monthly average price of Rs.9689 per quintal was about 6 percent higher than the price in July 2011 and about 63 percent higher than that of the corresponding month last year.

The monthly average price of coconut oil at Kochi market projected by the First Commodities Exchange of India Ltd. for the month of August 2011, during May '11, June 2011 and July 2011 were Rs.9621, Rs.9338 and Rs.8616 respectively, while the average spot price ruled at Kochi was Rs.9626 per quintal.



Price behaviour of coconut oil during August 2011

The Futures Prices quoted for September, October and November during August by the First Commodities Exchange of India were Rs.9096, Rs.9146 and Rs.9132 respectively

### MILLING COPRA

The weekly average prices of FAQ copra at Kochi market ranged from Rs.6075 to Rs.6500 per quintal. The monthly average price of Rs.6309 per quintal was about 7 percent higher than that of the previous month and about 65 percent higher than that of the corresponding month last year. The weekly average prices of Rasi copra at Alappuzha market varied between Rs.6213 and Rs.6533 per quintal. The monthly average price of Rs.6393 for Office Pass copra at Kozhikode market was higher by about 7 percent when compared with the price in July 2011 and higher by about 63 percent when compared with the price in August 2010. The weekly average prices of milling copra at Ambajipeta market in Andhra Pradesh ranged from Rs.5200 to Rs.5700 per quintal

### EDIBLE COPRA

The weekly average prices of Rajapur copra at Kozhikode market varied between Rs.7667 and Rs.8240 per quintal. The monthly average price of Rs.8028 per quintal was about 5 percent higher than that of the previous month and about 63 percent higher than that of the corresponding month last year. The weekly average prices of ball copra at Kozhikode market varied between Rs.7250 and Rs.7540 per quintal.

The weekly prices of ball copra at APMC market Tiptur in



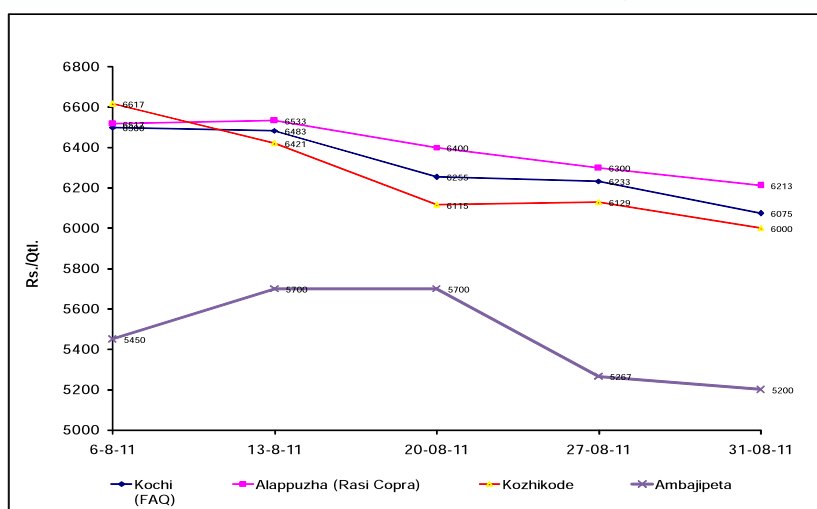
Karnataka varied between 6617 and 6877 per quintal. The monthly average price of Rs.6608 per quintal in July 2011 improved to Rs.6755 in August 2011. The weekly average prices of ball copra at Bangalore market ranged from Rs.6000 to Rs.6800 per quintal. The weekly average price of Ball copra at Arsikere APMC market, varied between Rs.6400 and 6503 per quintal.

### DRY COCONUT

The monthly average price of Rs.7824 per thousand nuts for dry coconut at Kozhikode market was about 19 percent higher than that of the previous month and about 123 percent higher than that of the corresponding month last year.

### COCONUT

The monthly average price of Rs.9000 per thousand nuts for dehusked coconut at Nedumangad market was about 5 percent higher than that of the previous month and about 64 percent higher than that of the corresponding month last year. The monthly average price of partially dehusked coconut at Arsikere APMC market in August 2011 improved to Rs.7143 per thousand nuts from Rs.7044 in July 2011.



Price behaviour of milling copra - August 2011

The weekly average prices of partially dehusked coconut at Bangalore APMC market ranged from Rs.6000 to Rs.6400 per thousand nuts. The monthly average price of partially dehusked coconut Grade-1 quality at Mangalore APMC market in July 2011 improved to Rs.9894 from Rs.9470 in July 2011. The weekly average prices ranged from Rs.9063 to Rs.10800 per thousand nuts.

### TENDER COCONUT

The weekly average prices of tender coconut at Maddur APMC market in Karnataka varied

between Rs.4500 and Rs.4533 per thousand nuts.

### INTERNATIONAL PRICE

The monthly average price of US \$1523 per MT for coconut oil in Europe (C.I.F. Rotterdam) for the month of August 2011 was lower by about 9 percent when compared with the price during the previous month and higher by about 31 percent compared to that of the corresponding month last year. The monthly average price of US\$ 860 per MT for copra was about 24 percent lower than that of the previous month and about 15 US\$2118 per MT.

## Market Price

Date	Coconut Oil			Milling Copra			Edible Copra	Ball Copra				Dry coconut	Coconut	Partially dehusked coconut			Tender coconut	
	Rs./Qtl.												Rs./1000 nuts					
	Kochi	Alappuzha	Kozhikode	Kochi (FAQ)	Alappuzha (Rasi Copra)	Kozhikode	Kakala	Kozhikode	Kozhikode	Tiptur	Bangalore	Arsikere	Kozhikode	Nedumangad	Arsikere	Bangalore	Mangalore (Grade-I)	Madhur
6-8-11	9950	9883	10083	6500	6517	6617	5450	7667	7250	6770	6000	6503	7733	9000	7850	6350	9063	4500
13-8-11	9900	9896	9942	6483	6533	6421	5700	8217	7508	6804	6000	6450	7850	9000	6650	6400	9550	4500
20-08-11	9570	9700	9580	6255	6400	6115	5700	8240	7540	6617	6800	6400	7920	9000	7250	6320	9772	4500
27-08-11	9508	9617	9483	6233	6300	6129	5267	8117	7425	6707	6800	6400	7817	9000	6967	6167	10283	4533
31-08-11	9200	9350	9350	6075	6213	6000	5200	7900	7300	6877	6800	6400	7800	9000	7000	6000	10800	4333
Average	9626	9689	9688	6309	6393	6256	5463	8028	7405	6755	6480	6431	7824	9000	7143	6247	9894	4473

**Source :** Kochi: Cochin Oil Merchants Association and Chamber of Commerce, Kochi - 2, **Kozhikode:** The *Mathrubhumi* daily  
**Alappuzha:** The *Malayala Manorama* daily, **Arsikere :** APMC, Arsikere  
 Price quoted for office pass copra at Kozhikode and Rasi copra at Alappuzha markets. NT : No transaction

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