

# DOPR News

**DIRECTORATE OF OIL PALM RESEARCH**  
(Indian Council of Agricultural Research)

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## From the Director's Desk

Dear Readers,

It is highly encouraging to note that, frequently, oil palm growers, development personnel, processors and policy makers from different States express their desire to receive information on oil palm technologies and related aspects directly from the scientists of Directorate of Oil Palm Research. In view of limited scientific manpower time availability, it was felt that, through the effective use of mass media, we would be able to cover more clients from different regions. In the recent years, mobile phone connectivity system is used by various types of organizations to spread messages across the country. DOPR decided to use this innovative technology in its Transfer of Technology programmes. Based on the DOPR proposal, a special Project for the establishment of "Oil Palm Kisan Mobile Message Services" was sanctioned by Department of Agriculture & Cooperation, Govt. of India with a budget support of Rs. 17.00 lakhs. With the additional financial

support from ICAR, the DOPR could launch the Kisan Mobile Message Services on February 15, 2012 during the Kisan Mela Programme.

Mobile phone number of farmers, development personnel, processors and scientists of DOPR are connected through hub/service provider so that farmers, development personnel, processors and scientists of DOPR can inter-connect with each other. Farmers could send their queries to the hub/service provider at DOPR and the DOPR could download the message. DOPR answer the queries directly to the client. The major advantage with the system is that DOPR scientists are always be connected to farmers, processors, department officials or other Scientists. The facility was launched in English language and facilities for interactions in regional languages of oil palm growing states in India would be created in due course.

**S. ARULRAJ**  
DIRECTOR

## SECTORAL NEWS

### HIGHEST OIL PALM YIELD RECORDED BY WOMAN FARMER

Oil palm is the highest oil yielding cultivated crop in the world, yielding around five tonnes of oil per hectare. Realising the importance of oil palm in meeting the vegetable oil requirement of the country, Government of India is implementing the Oil Palm Development Programme(OPDP) in the potential states. Taking up the challenge of cultivation of a new crop in Mysore District, Karnataka, Smt. Suma Kumar could harvest a record yield of 53.20 tonnes FFB/ha. Directorate of Oil Palm Research honoured her with the "Best Farmer Award" during the Kisan Mela Celebrations.

Smt. Suma Kumar, w/o Late Sri. M.S.Kumar, Marse Village, Mandakahalli (P.O.), Varuna (Hobli), Mysore District, Karnataka State could harvest a record yield of 53.20 tonnes FFB/ha (mean of 3 years). This is the highest oil palm FFB yield ever recorded in India. Oil palm was planted in an area of 0.56 hectare during June, 1996 and the plantation is 15 years old now. During the juvenile period, banana was taken up as intercrop.

She adopted controlled irrigation at weekly intervals and followed innovative practices for drainage as well as soil moisture conservation. Trenches were made across the slope of the garden for draining excess water during monsoon season and conservation of available moisture during the long dry period experi-



enced in the region and when irrigation canals are closed for maintenance. Mulching of palm basins was done utilizing the cut fronds obtained during oil palm harvesting.

Fertilizers were applied in six split doses, thus, maximizing the fertilizer use efficiency. In addition, she applied poultry manure mixed with neem cake available locally at low cost. It is to be noted that the poultry manure is kept for 2-3 months for decomposition in the trenches available throughout the field along with trash and cut leaves and well decomposed material was applied in palm basins. Care was taken to apply the manures and fertilizers within the area

of 3 metres radius in basin. In addition, tank slit was applied, once in five years, to improve the soil physical conditions of the garden. Harvesting of fresh fruit bunches was done with sickle attached to aluminium pole at weekly intervals. Average height of the palm is around 8.00 metres. The palms give an excellent look with all spindles opened and no deficiency or disorder is observed in the field.

The farmer could harvest an oil palm FFB yield of 58.24 tonnes in 2009-10, followed by 46.71 tonnes in 2010-11 and 54.68 tonnes per hectare during 2011-12. Thus, during the last three years, she could achieve an average yield of 53.20 tonnes per hectare.

Directorate of Oil Palm Research invited the progressive farmer for the Kisan Mela Celebrations held at the Institute on 15.02.2012 and honoured her with "Best Farmer Award".



We wish that more success stories emerge in oil palm sector to serve as a motivating factor for other oil palm growers in the country. Innovative practices adopted by the farmer could be adopted by other oil palm growers in different regions for maximizing productivity in oil palm.

## RESEARCH ACHIEVEMENTS / NEW FINDINGS

### Breeding for dwarfness in oil palm

In an effort to develop dwarf and compact oil palm, the Dwarf Tenera -1 from Palode was selfed and the progeny evaluated at Pedavegi. The mean height of progenies was 165.94 cm during 7th year. Out of 58 palms evaluated, 23 recorded a height increment of less than 40 cm, of which 4 palms recorded



height increment of less than 30 cm per annum. One palm which recorded less than 25 cm height increment had a Bunch Index of 0.43 against the standard value of 0.3 for normal DxP material. When the height increment of dwarf palms is taken as 30 cm per annum, the plantation height could be around 9.0 meters upon reaching 30 years age.

The canopy spread of the progenies was measured to find out the number of palms that could be accommodated per unit area. The mean canopy spread was 61.33 cm, which allows 23.76 % extra land area availability as compared to currently followed spacing of 9m x 9m. Hence, a modified spacing with 161 palms/ha would be possible which can accommodate 12.6 % higher population than normal. Yield potential of the selected progeny is 33.01 tonnes/ha which in turn is equivalent to 6.6 tonnes oil per ha. Moreover, the duras identified in the population would be useful in enhancing the dwarfing gene pool and introgress dwarfness into advanced breeding population for high yield.

### Optimization of pollen viability and storage techniques in oil palm

Pollen count in oil palm was standardized, about 20,000 pollen grains are present in one milligram of pollen sample. In vitro pollen germination procedure was also standardized by culturing the pollen in vitro on eight different types of media ranging from simple sucrose / boric acid media to highly complex media.

Pollen viability assessment through MTT method (new dye for oil palm) was standardized. For viability test, two salts of tetrazolium viz. TTC (2,3,5-triphenyl tetrazolium chloride) and MTT (2,5 diphenyl tetrazolium bromide) were used. Viable pollen was indicated by the presence of red color in case of TTC and deep pink to violet in case of MTT. Of the two tests, MTT performed better with high correlation between viability and in vitro germination. It did not stain dead or aborted pollen. However, TTC did not perform well for oil palm pollen, though it is considered as vital stain for both seeds and pollen for many species.

## CAMPUS NEWS

### Farm Innovators' Day

Farm Innovators' Day was celebrated at DOPR on January 6, 2012 with the theme "Tools and machineries for harvesting oil palm bunches". Presentations were made on the innovative tools and machineries developed (or in the process of development) for FFB harvest. Farmers making innovative tools / machineries were honoured with "Oil Palm Farm Innovator Award". On this occasion, tools developed recently at DOPR were displayed. Oil palm growers, processors, officers of Andhra Pradesh State Department of Horticulture and Scientists of DOPR participated in the meeting. The meeting was convened by Dr. S. Arulraj, Director, DOPR and Dr. K. V. Ramana, Former Asst. Director General(Horticulture), ICAR was the Chairman.



During the technical session, Sri P. Ramaraju, oil palm grower from Allipalli Village, Chintalapudi Mandal of West Godavari District, Andhra Pradesh presented his innovation. He designed and manufactured a platform with a vertical hydraulic lift (one stage) attached with a 35 hp tractor having

hydraulic facility. A person will stand on the platform and harvest the bunches with an axe or aluminum pole attached with a sickle.

Sri Simhadri Ramakrishna, oil palm grower of Korumamidi village, Nidadavolu Mandal, West Godavari District, Andhra Pradesh, developed a "Bullock cart mounted platform" for oil palm harvest. The unit is made of G.I. pipes. At present, the platform along with appropriate pole attached with a sickle is used for harvesting bunches comfortably. A conceptual harvesting device was presented by Sri. P. Chandramouli, Ghantavarigudem, Nallajerla Mandal, West Godavari Dist, Andhra Pradesh.



Dr. T. Vidhan Singh, Senior Scientist (Farm Machinery & Power), Directorate of Rice Research presented the recent efforts of DOPR to fabricate harvesting tools.

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### Kisan Mela

Kisan Mela was organised at Directorate of Oil Palm Research, Pedavegi on February 15, 2012 in commemoration with Institution Foundation Day. Oil palm farmers, processors, officials of State Department of Horticulture Karnataka and Andhra Pradesh, scientists of DOPR and APHU participated in the Kisan Mela. The meeting was convened by Dr. S. Arulraj, Director, DOPR under the Chairmanship of Dr. P. V. Rao, Former Dean, College of Horticulture, Pasighat, Arunachal Pradesh.

Two oil palm growers, one each from the states of Karnataka and Andhra Pradesh were awarded with "Best Oil Palm Grower Award" for achieving highest FFB yield in oil palm. They have narrated the practices adopted in their oil palm plantations to get highest oil palm yield.

Oil Palm Kisan Mobile Message Service (OPKiMMS) was launched to transfer the technologies on oil palm to oil palm growers in oil palm growing states in India, by using mobile message services. This will create intra and inter institutional connectivity among and between farmers, scientists, processors and officials of State Department of Agriculture/Horticulture, KVKS etc.

Various issues relating to Oil Palm Development Programme in the country and oil palm Research were discussed by oil palm farmers, processors, officers of State Department of Horticulture and Scientists of DOPR.

During the Technical Session, scientists of DOPR presented techniques to be adopted for moisture conservation, irrigation & nutrient management, pest & disease management. Assistant Director of Horticulture, West Godavari District, Andhra Pradesh, presented the details about government support programmes and suggested good management practices to be followed to get higher yields in oil palm. Quiz programme was conducted to the farmers and prizes were given to the winners.

### Agricultural Education Day

Agricultural Education Day was organized on January 24, 2012 at DOPR, Pedavegi. About 200 students from six schools attended the programme. Quiz competition on Agriculture was organized. An impressive presentation on 'Opportunities in Agriculture and Agricultural Education' was made by Dr. P. Kalidas, Principal Scientist, DOPR to motivate the school students towards agricultural education.

### Meetings Organised

#### Research Advisory Committee meeting

The thirteenth meeting of Research Advisory Committee of Directorate of Oil Palm Research was held on 21<sup>st</sup> February, 2012. The meeting was chaired by Dr. N.N. Singh, Former Vice Chancellor, Birsa Agricultural University, Ranchi. Other members participated in the meeting are: Dr. S. Rajan, Asst. Director General (Hort.I), ICAR; Dr. Veeraragava Thatham, Former Dean, Faculty of Horticulture, TNAU; Dr. L.V. Kulwal, Former Director of Extension, Maharashtra; Dr. Purushotham, Former Director of Research, APHU; Sri S. Rama Reddy, Oil palm Farmer, East Godavari District, A.P.; Sri B. Veera Raghava Rao, Oil palm Farmer, Krishna District, A.P and Director and Scientists from DOPR.

#### Oil Palm Seed meet

National Oil Palm Seed Meet-2012 was organized on February 27, 2012 at DOPR, Pedavegi to finalise the seed production targets for all the seed gardens in the country and month-wise sprouts supply schedule during 2012-13.

#### Institute Management Committee meeting

XXXIII Institute Management Committee Meeting was conducted at DOPR, Research Centre, Palode on March 3, 2012. Dr. S. Arulraj, Director, DOPR and members Dr. P. Sunder Raj, Principal Scientist, NRC Banana, Trichi, Tamil Nadu; Dr. P. Murugesan, Principal Scientist, DOPR, RC, Palode; Dr. D. L. Maheshwar, Additional Director of Horticulture (Oil Palm), Karnataka; Shri. B. V. R. Rao, Oil Palm grower, A.P.; Shri Satti Rama Reddy, Oil Palm grower, A.P.;

and Sri B. K. Sinha, SAO, CRRI, Cuttack; Sri. K.S.N.D. Mathur, AAO, DOPR, Pedavegi, participated and reviewed research activities of DOPR and utilization of plan and non-plan funds under equipments and works.

#### Quinquennial Review Team meeting

Indian Council of Agricultural Research constituted a Quinquennial Review Team to review the work done at DOPR during the period 01-04-2006 to 31-03-2011 with Dr. P. Rethinam as the Chairman and Dr. V. Ponnuswamy, Dr. Atul Chandra, Dr. Korikantimuth and Dr. R. V. Nair as members. After a preliminary meeting with Deputy Director General(Hort.), ICAR at New Delhi on February 3, 2012, the Team visited DOPR, Pedavegi during March 13-15, 2012.

#### Research articles published

- Prasad, M. V., Sunitha, S. and Kochu Babu, M. 2009. Adoption of Oil Palm in Kari lands of Kerala under Rainfed Conditions – A Case Study. *International Journal of Oil Palm*, 6 (2): 21-23.
- Prasad, M. V. and Kochu Babu, M. 2009. Multidimensional Approaches for Human Resource Development in Oil Palm Production. *International Journal of Oil Palm*, 6 (2): 33-35.
- Priya Devi, S., Balamohan, T.N., Thangam, M., Ramachandrudu, K., and Korikanthimath. 2010. Genetic diversity in fruit characters of kokum (*Garcinia indica*) in Goa. *South Indian Horticulture*, 58: 10-14.
- Ramachandrudu, K., Suresh, K., Sekhar, G., and Suneetha, V., 2009. Effect of fertigation on growth and vigour of oil palm seedlings. *International Journal of Oil Palm*, 6(2): 25-28.
- Suneetha, V. and Ramachandrudu, K. 2010. Effect of biofertilizers on growth and vigour of oil palm seedlings. *International Journal of Oil Palm*, 7(1&2): 29-32.
- Suresh, K. and Ramachandrudu, K. 2010. Diurnal and seasonal variations in sap flow in oil palm under irrigated conditions. *International Journal of Oil Palm*, 7(1&2): 39-41.

#### Human Resource Development

- Dr. R. K. Mathur, Principal Scientist underwent training on "Marker Assisted Selection (Horticulture)" at Department of Agronomy, Crop, Soil and Environmental Sciences, Iowa State University, Ames, Iowa, USA during 17.11.2011 to 14.02.2012.
- Dr. K. Ramachandrudu, Scientist (SS) attended short course on 'Application of Nanotechnology in Agriculture' organized by CIRCOT, Mumbai, during 02.01.2012-12.01.2012.
- Smt. B. Swarna Kumari, Administrative Officer is nominated to attend the training programme for Administrative Officers and Finance & Accounts Officers at NAARM, Hyderabad and NASC Complex, New Delhi during 12.03.2012 to 01.06.2012.
- Sri. S. K. Saida, LDC, attended a training programme on Hindi Translation, at Central Translation Bureau, Bangalore during 02.01.2012 to 30.03.2012.

## TRANSFER OF TECHNOLOGY

### Officers trained

Training programmes on "Soil and Leaf Nutrient Analysis in Oil Palm" was conducted during January 18-20, 2012 to 8 officers of Andhra Pradesh and Gujarat. Officers training on "Oil Palm Cultivation" was conducted on 3rd March 2012 to 19 officers of Andhra Pradesh.

Lectures on subject matter were delivered. Demonstrations on application of fertilizers, collection of soil and leaf for analysis were organized.

### Farmers trained

One hundred and fifty eight farmers representing from Odisha and Tamil Nadu were trained on "Oil Palm cultivation" at DOPR, Pedavegi, Andhra Pradesh and DOPR, RC, Palode, Kerala.

### Extension activities

#### Participation in Growers' awareness campaign

- Dr. K. Ramachandrudu, Scientist (SS) participated in Awareness campaign on "Oil Palm" at Jaggampeta, East Godavari Dist. and Narsipatnam, Visakapatnam District on January 18, 2012 and on January 19, 2012 respectively and delivered a talk on "Oil Palm plantation management strategies".

#### Participation in Exhibition

DOPR, RC, Palode participated in 'Karshika Mela' at Palode from February 7-15, 2012.

## PERSONALIA

### Promotions

- Sri. M. Ananda Rao, Lab Technician (T-2), promoted to the post of Lab Technician (T-3) w.e.f. 01.07.2006.
- Sri. V. Sunil Duth, Technician T-2 (Boiler Man) promoted to the post of Technician T-3 (Boiler Man) w.e.f. 23.03.2007.
- Sri. A. Papa Rao, Technician T-1 (Tractor Driver) promoted to the post of Technician T-2 (Tractor Driver) w.e.f. 13.09.2007.
- Sri. P. Anil Kumar, Skilled Supporting Staff, DOPR, RC, Palode, promoted to the post of Technical Assistant (T-1) at DOPR, Pedavegi on 01.01.2012.

### Transfers

- Sri. K Soman, Technical Officer (T-5) transferred to CPCRI, RS, Kayangulam, Kerala on 10.02.2012.

### Retirements

- Smt. A. Receena, Skilled Supporting Staff, DOPR, RC, Palode, retired on superannuation on 29.02.2012.
- Smt. M. Rebecca, Skilled Supporting Staff, DOPR, RC, Palode, retired on superannuation on 31.03.2012.

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