



DOPR NEWS

DIRECTORATE OF OIL PALM RESEARCH

(Indian Council of Agricultural Research)

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From the Director's Desk

Dear Readers,

Pollination in oil palm is carried out by various means including wind and several species of insects, of which the weevil *Elaeidobius kamerunicus* Faust. is the predominant species. In the absence of native pollinating weevils in countries where oil palm was an introduced crop, *Elaeidobius kamerunicus* was introduced from Cameroon to Malaysia and subsequently, to other oil palm growing tracts of South East Asia and South Pacific Islands, resulting in significant increase in fruit set and other bunch characters. However, there have been concerns regarding periodic occurrence of poor pollination, bunch failure and yield loss in certain locations due to insufficient weevil or no weevil population and less abundant male inflorescences. It is also observed that population density of weevil and thus the fruit set are varying from place to place and season to season due to climatic conditions and various other factors.

Due to increased humidity in oil palm gardens by way of irrigation at regular intervals, many insect species are emerging out to attain pest status, which provokes the farmers to take up chemical management against the pests. This ultimately has ill effects on growth and development of weevil resulting in the need for the development of pesticide tolerant population. Recently, it was reported that there was an apparent reduction in weevil population accompanied by a decline in fruit set and yield in some regions of Malaysia where nematodes (*Elaeolenchus parthenonema*) parasitism was associated with weaning of weevil population.

Although satisfactory levels of fruit set is being achieved in Andhra Pradesh, Tamil Nadu and Kerala, poor fruit set and insufficient pollination is reported in Western and North Eastern parts of India. Hence there is a need to initiate a study on whether abiotic

stress (viz., temperature, humidity etc), biotic stress (nematode parasitism, micro organisms etc), indiscriminate use of pesticides etc pose problem for their pollinating efficiency in India.

Considering the importance of the research need, Directorate of Oil Palm Research is initiating a research project on "Effect of genetic diversity and abiotic and biotic stresses on the pollinating efficiency of Pollinating weevil, *Elaeidobius kamerunicus* Faust. in oil palm" with the funding from Ministry of Agriculture, Govt. of India. The objectives of the study: To assess the genetic diversity of pollinating weevil by morphological and molecular methods; To study the effect of climatic conditions on pollination efficiency of pollinating weevil; To screen the existing pollinating weevil populations for the evidence of infection by parasitic nematodes and other biotic factors; To develop high and low temperature tolerant weevil population to suit extreme agroclimatic conditions and To screen effective pesticides for their selectivity against pollinating weevil and their pollination efficiency.

This investigation would also bring forth high and low temperature tolerant weevil population to suit extreme climatic conditions of different agro-climatic zones. The genetic diversity studies would bring out the diversity in the weevil population in different agro-climatic regions of India and assess their potential in withstanding the adverse abiotic factors and pesticides. Genetic analysis of traits governing stress tolerance through conventional and molecular techniques would be useful in development of efficient weevil population adapted to environmental conditions in different geographical regions across the country.

S. Arulraj
Director

Highest oil palm yield recorded in juvenile oil palm plantation

Sri. Purushotham Nadgouda, 53 year old oil palm grower of Kundargi Village, Gokak Taluka, Belgaum District, Karnataka has harvested 28 tonnes FFB/ha from his four year old oil palm plantation.

Sri. Purushotham Nadgouda has planted 63 oil palm seedlings (18 months old) in his field on 27.7.2007 in an area of 0.44 ha. Immediately after planting, palm basins of one metre radius were made and basin method of irrigation was adopted at seven days interval. Palm basins of two metre radius were made in 2nd year and three metre radius from 3rd year onwards. Mulching was done regularly with sugarcane trash / soya / ground nut husk.

During juvenile period, he attained additional income by taking up intercrops i.e. soya, ground nut, maize, sunflower. During first year (2007-08), soyabean and ground nut were raised as intercrops. Expenditure incurred was Rs. 14,325/ha and Rs. 13,875/ha- and net profit was Rs.11,675/ha and Rs. 22,125/ha for soyabean and ground nut respectively. During second year (2008-09), he has taken up maize and sunflower. Expenditure incurred was Rs. 12,500/ha and net profit was Rs. 13,000/ha and Rs. 27,500/ha for maize and sunflower respectively. During the third year (2009-10), he has taken up only soya bean as intercrop. Expenditure incurred was Rs. Rs.11,250/ha and net profit was Rs. 13,750/ha.

He has applied 50 kg of well decomposed Farm Yard Manure every year during juvenile period in two splits. Since intercrops were grown and mulching was practiced, no weed growth was observed. Hence no cost was incurred for weeding. Spraying of glyphosate was taken up once for controlling the weeds in inter rows of palms.

He adopted fertilizer schedule recommended by Directorate of Oil Palm Research, Pedavegi. Department of Horticulture, Karnataka has supplied the recommended doses of fertilizers under government of India programme. Technical know how and other facilitation was done by M/s. Godrej Agrovet Ltd., Goa.

He practiced ablation regularly. Having seen the good palm growth, he stopped ablation at 32nd month and started harvesting the bunches from 38th months onwards. He obtained an yield of 28 tonnes FFB / ha/year from three year old oil palm.



Secretary DARE and Director General ICAR visit to DOPR.

Hon'ble Dr. S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) & Director General, Indian Council of Agricultural Research (ICAR), New Delhi visited DOPR, Pedavegi on 11.6.2011. He visited the experimental fields and laboratories, reviewed the progress of work in different disciplines and made necessary suggestions. He inaugurated the new laboratory facilities for "Genetic Resources Management" and "Production System Management". While addressing the scientists and staff of DOPR, he stressed that major research thrust should be given for the problems



being faced by farmers and achieving higher farm income.

Later while addressing the oil palm growers, he informed that oil palm cultivation is given prime importance during 12th Five Year Plan. He wished that the potential area of 10 lakh ha identified for oil palm cultivation in the country is achieved by 2030. He assured that the focus of oil palm research will be on prioritized problems of the farmers. He reiterated that ICAR will cater to the research needs of farming community.



Dr. H. P. Singh, Dy. Director General (Hort.)ICAR visit to DOPR.

Dr. H. P. Singh, Dy. Director General, ICAR, New Delhi visited DOPR, Pedavegi on 9.6.2011. He visited laboratories and experimental fields. Later, he reviewed the Institute research projects and suggested to take up the projects on multidisciplinary approach in programme mode. He suggested that research in oil palm could be initiated on light intensity in cropping system, climate change,



irrigation requirement, crop canopy, mineralization of nutrients, soil microflora, plant health management, seed research, management of parental palms etc. While addressing the DOPR staff, he informed that in 12th Five Year Plan proposal, institute requirements (equipments, works etc) may be projected taking into consideration of future research needs of the oil palm in the country..

Psychid Management in Oil Palm

Psychids (Bag worms) are caterpillars characterized by the possession of a case, which they (females) inhabit throughout their development. Males are free flying. Young larvae scrape the epidermis, while the mature ones make holes in the leaf. There is a progressive necrosis of leaf tissue and eventual skeletonisation. Appearance of characteristic "shot holes" on newly opened fronds is a danger sign of an outbreak.

Natural enemies such as tachinid flies and a braconid *Apanteles metisae* appear to be important in maintaining the pest population at low ebb in most situations. Root feeding with monocrotophos @10 ml in 10 ml of water and spraying with carbaryl 50% W.P.O.1% after cutting and burning the badly affected leaves are recommended.

RESEARCH ACHIEVEMENTS

Nutrient Management in Oil Palm

Fertigation trial in oil palm conducted at Directorate of Oil Palm Research, Pedavegi indicated that, application of phosphorous in the form of Di Ammonium Phosphate (DAP) is highly economical. DAP also gets dissolved in water and flows easily as compared to Single Super Phosphate (SSP). Cost of phosphorous fertilizer per palm per year in the form of DAP is Rs. 13.52/- as compared to Rs. 15/- with SSP, Rs. 36.52/- with orthophosphoric acid and Rs. 123.75/- with liquid phosphorous.

TRANSFER OF TECHNOLOGY

Farmers Trained: The following four training programmes on "Oil Palm Cultivation", of two days duration, were organised to 117 farmers from Orissa state.

Date of training	District / Factory Zone	Number of farmers
April 28-29, 2011	Nayagadh and Boudh / M/s.Vaidehi Palm Pvt. Ltd.	21
May 18-19, 2011	Ganjam / M/s. Godrej Oil Palm Ltd.	39
May 29-30, 2011	Dhenkanal / M/s. Foods Fats and Fertilizers Ltd.	24
June 3-4, 2011	Rayagada and Koraput / M/s. Lakshmi Balaji Oils Pvt. Ltd.	33
	Total	117

In these training programmes, lectures were delivered on cultivation practices for oil palm. Visit to experimental fields were arranged to demonstrate method of



fertilizer application, irrigation, ablation, weeding, mulching and harvesting. Pest, disease and disorders symptoms were also shown. Farmers were shown video films on "oil palm cultivation" and oil palm plantations of progressive farmers. Literature on oil palm cultivation practices was also provided.



RESEARCH ARTICLES PUBLISHED

B. Narasimha Rao, K. Suresh, S. Sunitha and G. C. Satisha. 2011. Nutrient management in oil palm plantations under irrigated and rainfed conditions-A review. Plant Horti Tech. 10(6): 42-47.

MEETINGS CONDUCTED

Institute Management Committee meeting

The XXII Institute Management Committee meeting of Directorate of Oil Palm Research was held on June 25, 2011 at DOPR, Pedavegi. After a visit to experimental fields and laboratories, a brief presentation was made on research and Institute activities of DOPR. The committee discussed agenda items relating to research programmes of the Institute, plan and non plan works and equipments as well as human resources development programmes of the Institute.

Research Advisory Committee meeting

The XII meeting of Research Advisory Committee of Directorate of Oil Palm Research was held on June 27, 2011 at DOPR, Pedavegi. The meeting was chaired by Dr. N.N. Singh, Vice Chancellor, Birsa Agricultural University, Ranchi and the following members attended: Dr. S. Rajan, Asst. Director General (Hort.I), ICAR, New Delhi; Dr. J.J. Solomon, Former Joint Director, CPCRI Regional Station, Kayankulam, Kerala; Dr. Veeraragava Thatham, Former Dean, Faculty of Horticulture, TNAU; Dr. L.V. Kulwal, Former Director of Extension, Maharashtra; Dr. Purushotham, Director of Research, APHU, Tadepalligudem, A.P.; Dr. S. Arulraj, Director, Directorate of Oil Palm Research, Pedavegi, A.P.; Sri S. Rama Reddy, Oil Palm Farmer, East Godavari District, A.P.; Sri B. Veera Raghava Rao, Oil palm Farmer, Krishna District, A.P.; Dr. P. Kalidas, Principal Scientist, DOPR, Pedavegi – Member Secretary. All the scientists of DOPR also participated in the presentations and discussions.

Institute Research Committee meeting

Fourteenth Institute Research Committee meeting of Directorate of Oil Palm Research was conducted during June 29-30, 2011 at DOPR, Pedavegi. All the scientists of DOPR participated in the meeting. Progress reports of the ongoing research projects as well as externally funded projects were presented and the progress made was reviewed.

TRAININGS / WORKSHOPS / CONFERENCES / SEMINARS / MEETINGS ATTENDED

Dr. P. K. Mandal, Sr. Scientist attended a three months training programme on 'Marker Assisted Selection (Horticultural Crops)' at Michigan State University, USA from March 1, 2011 to May 30, 2011

Dr. S. Arulraj, Director and Dr. Goutam Mandal, Sr. Scientist attended training programme on "Employer's Perspective on Labour related Laws" at NAARM, Hyderabad during May 10-12, 2011.

Dr. S. Arulraj, Director attended National Conference on "Horti Business-Linking Farmers with Market" held at Dehradun during May 28-31, 2011.

Dr. P. Kalidas, Pr. Scientist attended Third Congress on Insect Science held at Punjab Agricultural University, Ludhiana during April 18-20, 2011.

Dr. K. Ramachandrudu, Scientist(SS)(Hort.) and Dr. L. Saravanan, Scientist(Ag. Entomology) participated in the state level workshop on oil palm organised by the Department of Agriculture, Mizoram at Aizwal during April 20-21, 2011.

Dr. K. P. Deepthi, Scientist (Pl. Pathology) attended the review meeting on "National consultation cum training on diagnostics in horticultural crops" chaired by Dr. H. P. Singh, DDG(Hort.), ICAR held at CPRI, Shimla during April 15-17, 2011.

FEASIBILITY STUDIES CONDUCTED

Dr. L. Saravanan, Scientist was nominated as a member of the joint survey team constituted by Department of Agriculture, Govt. of Tamil Nadu to study the feasibility of oil palm cultivation in Kanyakumari district of Tamil Nadu and the survey was conducted during May 24-27, 2011.

VISITS TAKEN UP

Dr. K. Ramachandrudu, Scientist (SS) (Hort.) and Dr. L. Saravanan, Scientist (Ag. Entomology) visited the oil palm plantations and nursery in Mizoram during April 18-19, 2011. A report on "Condition of over aged seedlings and nursery management in Mizoram" was submitted.

NEW APPOINTMENTS/PROMOTIONS

- Dr. S. Arulraj took over charge as Director, DOPR on 19.4.2011.
- Sri. B. K. Sinha joined as Senior Administrative Officer on 6.5.2011.
- Sri. Y.J.E. Samuel joined as UDC on 27.5. 2011.
- Sri. K.S.N.D. Mathur, Assistant promoted to Assistant Administrative Officer on 8.4.2011.
- Sri. P. Gowri Shankar, Assistant promoted to Assistant Administrative Officer on 3.6.2011.
- Sri. V.V.S. Krishna Murthy, T-2 (Library Assistant) promoted to T-3 with effect from 19.9.2009.
- Sri. P. Ramalingeswara Rao, T-2 (Driver) promoted to T-3 with effect from 1.4.2009.
- Sri. E. Perayya, T-2 (Driver) promoted to T-3 with effect from 1.4.2009.

RETIREMENTS

- Smt. I. C. Rajamma, Technical Officer (T-5), DOPR, Research Centre, Palode retired on 1st May 2011 (on voluntary retirement)
- Smt. E. J. Mary, Assistant Administrative Officer, DOPR, Research Centre, Palode retired on 31st May 2011 (on superannuation)

TRANSFERS

- Sri. B. Satish, Assistant Administrative Officer transferred to CRIDA, Hyderabad on promotion as Administrative Officer on 2.4.2011.
- Dr. Shinoj Subramanian, Scientist transferred as Programme Coordinator, Krishi Vigyan Kendra (CMFRI), Narakkal, Ernakulam on promotion on 23.4.2011.

Edited by :

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