

to enforce. The implications of molecular taxonomy vis-a-vis morphological identifications were brought out.

A. N. Shylesha (ICAR-NBAIR) presented an overview of invasive insects and potential threats. He mentioned the impact of invasives, recent introductions, their routes of invasion and measures taken to contain damage caused by them. M. Krishna Reddy (ICAR–Indian Institute of Horticultural Research, Bengaluru) highlighted the invasive diseases, quarantine and impact of climate change on alien invasive diseases. Considering the importance of trade, he stressed the need to strengthen pest risk analysis for quarantine pests and invasives. Intensifying efforts to develop diagnostic techniques will be of immense value during surveillance and it would aid in monitoring the entry and spread of invasives. He opined that capacity building and networking by linking quarantine systems must coexist to contain the ill-effects of invasive diseases.

The need for domestic quarantine and management strategies for invasives was emphasized by Rajan (ICAR). He opined that details on extent of damage, preventive measures taken and success obtained in management of invasives are to be documented. He also suggested that the population map of invasives in the country be prepared. Replying to this, Shylesha mentioned that the initial observation of invasions are localized and therefore at a low profile. He endorsed the need to monitor the spread and develop action plans to contain them and prevent their spread.

Reacting to the deliberations, Virak-tamath was of the opinion that authenti-

cation of reports on invasives must be in place prior to reporting, as misreporting does more damage to the country's trade and farming community. Reporting of new pest species is to be done with care and their identity is to be confirmed by taxonomists prior to reporting or taking up further work on the management of the pest. This can be operationalized when State Agricultural Universities, ICAR and quarantine authorities work in tandem. Sushil informed that researchers, students, developmental agencies and the public must be sensitized to the issues related to bio-security and quarantine risks.

The meeting also had attendance from the private sector. Uday Narayan Bhat (Koppert Biosystems) presented the challenges faced in trade of invertebrate biocontrol agents. He highlighted policies that caused delay in executing trade of biocontrol agents. The cumbersome processes involved in getting clearances on regulatory issues for biocontrol agents were flagged. He called upon the authorities to simplify procedures for import of invertebrate biocontrol products. Responding to the issues raised by the private sector, Sushil informed that fast-track clearances cannot be issued for import of bioagents as they have to be examined for safety to non-target organisms, prior to approval for importation. He also suggested that industry can exploit indigenous bioagents for mass multiplication, as this would conserve the biodiversity and safeguard the bio-security of the nation. On the issue related to permission for importing bumble bees, the house felt that the performance of the

species would be suited for temperate regions and that local strains could be exploited for pollination purpose.

The decisions that emerged out of the deliberations as follows: (i) Postgraduate curriculum for entomology to include topics on quarantine and bio-security issues. (ii) Designated repositories to be established in line with international standards. (iii) A national-level database to be commissioned for biocontrol agents. (iv) Forecasting and forewarning of invasive threats to the country to be strengthened. (v) Reports on invasives in the country to be authenticated with taxonomic confirmation. (vi) Taxonomists should form a part of the quarantine facilities at ports of entry to facilitate effective handling of the introductions. (vii) Domestic quarantine to be strengthened and the management strategy for introduced pests to be framed and popularized. (viii) Creation of awareness of invasives in the nine ports. (ix) Researchers, developmental agencies and public to be sensitized to issues related to bio-security. (x) Need to enable free exchange of dead and live insects for research without the intervention of the Biodiversity Act. (xi) Possibility of extending the validity of the import permit for bioagents from six months to two years to be explored.

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MEETING REPORT

Way forward for oil palm research and development in India*

Vegetable oil is the main source of fat for human consumption and is critical for the nutritional security of the human population. However, there is a major deficit in vegetable oil both for edible and industrial purposes in the country.

*A report of the one day 'National Consultation Meeting on Oil Palm' held on 26 July 2014 at Hyderabad, conducted by Directorate of Oil Palm Research (ICAR), Pedavegi.

India occupies a prominent place in global oilseeds scenario with 12–15% of area for cultivation of oil seeds, 6–7% of vegetable oil production, 9–10% of the total edible oil consumption and 13.6% of vegetable oil import. In spite of having the largest area under oilseeds production in the world (26.77 m ha), the country still imports more than 50% of total vegetable oil requirement at enormous cost. The proportion of import has

increased from a meagre 3% in 1970–71 to almost 56% in 2012–13.

The Oil Palm Area Expansion Programme was implemented in 11 states with moderate results. However, oil palm productivity in various regions was not at the desirable level though very high fresh fruit bunch (FFB) yield of 53.2 tonnes/ha was recorded in a farmer's field in Mysore. An average yield of 20 tonnes/ha was recorded in the coastal districts of Andhra

Pradesh. Hence, there is an urgent need to improve the oil palm productivity in India. Considering the importance of this task, the Government of India launched the 'National Mission on Oilseeds and Oil Palm (NMOOP)' on 1 April 2014, with an objective of increasing the oil palm FFB productivity from the present level of 5–7 to 15 tonnes/ha before the end of the Plan period. In order to discuss the emerging issues related to oil palm cultivation, productivity trends, system efficiency and its overall development in the country, a National Consultation Meeting was organized by the Directorate of Oil Palm Research (DOPR; ICAR) on 26 July 2014 at Hyderabad. About 125 participants representing all the stakeholders of the oil palm industry, viz. farmers, processors, policy planners, researchers and department officials from 14 oil palm-growing states attended the meeting. The meeting was chaired by N. K. Krishna Kumar (ICAR, New Delhi). A. Padma Raju (Acharya NG Ranga Agricultural University, Hyderabad). B. M. C. Reddy (Dr YSR Horticultural University, Venkataramannagudem), D. L. Maheshwar (University of Horticultural Sciences, Bagalkot), S. K. Malhotra (ICAR, New Delhi), P. Rethinam (formerly at APCC and NRC for Oil Palm), K. U. K. Nampoothiri (formerly at CPCRI and Dr M.S. Swaminathan Research Foundation, Odisha), K. S. Varaprasad (Directorate of Oilseeds Research, Hyderabad) and other dignitaries participated in the discussions. State-wise and stakeholder-wise presentations were made and corrective measures were suggested. The following recommendations emerged from the meeting.

- Oil palm could play a critical role in Indian national economy in view of

high oil yield potential as well as high demand for vegetable oils resulting in import of more than 50% of domestic consumption requirements.

- Thrust shall be given for strengthening the Oil Palm Development Programme with higher area targets. The present area target of 25,000 ha/annum should be enhanced to 1.00 lakh ha/annum and subsequently to 2.00 lakh ha/annum to bridge the prevailing huge trade gap.
- Efforts should be made to increase the productivity of existing oil palm plantations with proper management and it should be possible to achieve the yield target of 15 tonnes FFB/ha by the end of 12th Five Year Plan. Performance based incentives could be offered to farmers achieving better yields.
- Better management of young plantations shall be ensured so as to achieve 20 tonnes FFB yield/ha from the fourth year onwards.
- Incentive pattern provided for oil palm development under NMOOP needs to be revised to cater to the emerging needs.
- Oil palm research should be strengthened for evolving hybrids with higher FFB yield, oil content, dwarfness and compactness.
- Possibility could be explored for enhancing net farm income through wider spacing in oil palm plantations to give better scope for accommodating remunerative inter-crops.
- Oil Palm Act shall be enacted in all the oil palm growing states of the country.
- In mid-land and upland areas, more emphasis could be given for promotion of oil palm in regions with more than 900 mm rainfall or in command areas with canal irrigation for 3–8 months.

- In each state, oil palm could be promoted in high potential districts only, avoiding those areas with sub-optimal conditions for oil palm cultivation.
- Terms and conditions for oil palm crop insurance should be formulated to ensure benefit to farmers.
- Oil palm entrepreneurs shall establish Development Departments for providing the required extension service to oil palm farmers.
- Harvesters' Bank is to be established by each entrepreneur – FFB harvest could be undertaken by the processor and the cost could be deducted from FFB price to ensure harvest at correct maturity level.
- 25% duty could be imposed on the import of crude palm oil and part of the income could be ploughed back for supply of oil through PDS and part of income could be used for the motivation of oil palm farmers and processors.
- Meetings of National Level Steering Committee and State Level Project Monitoring Committees are to be held regularly to review the progress of NMOOP.
- In all the states (other than Andhra Pradesh), where oil palm sector is in early growing phase, FFB rate, as fixed by the Government of Andhra Pradesh, could form the basic minimum price for FFB to be procured in these states. The resultant gap in price structure could be shared by the State Governments and processors.
- National Level Consultation Meeting of all stakeholders in oil palm sector could be held once in two years.

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