

## Date palm\*

A meeting on date palm was held recently under the chairmanship of N. K. Krishna Kumar (ICAR) and presided by R. M. Chauhan (S. D. Agricultural University (SDAU), S. K. Nagar). A. M. Patel (SDAU) welcomed the chief guest, special invitees, researchers from different ICAR institutes and SAUs, private company representatives and farmers involved in date palm cultivation. S. K. Sharma (Central Institute for Arid Horticulture (CIAH), Bikaner) spoke about the objectives of the meeting: (i) to review the on-going research project on date palm tissue culture at different centres: CIAH, Bikaner; Central Arid Zone Research Institute (CAZRI), Jodhpur; Anand Agricultural University (AAU), Anand and Date Palm Research Centre (DPRS), SDAU, Mundra, and (ii) consultation meeting to understand the scenario of date palm in private sector and interaction with progressive farmers engaged in date palm cultivation from Gujarat and Rajasthan.

During the meeting, five publications on date palm were released by Krishna Kumar (DPRS, SDAU), who also delivered the inaugural address. He stressed upon the importance of dryland and temperate horticulture in the future to reduce malnutrition, particularly among women and children. He pointed out the opportunities such as diverse germplasm and land suitable for cultivation of date palm in Gujarat and Rajasthan. He also suggested that our research focus on date palm should be 60% on quality of date rather than yield, developing packages and practices, especially on drip irrigation and fertigation, date palm plantlets production through tissue culture, pesticide residue analysis for export purpose, etc. In his presidential address, Chauhan mentioned the role of molecular markers on clonal fidelity testing and pollination methodology for higher fruit yield.

Technical session was chaired by Krishna Kumar and co-chaired by Sharma. J. R. Faleiro (Food and Agriculture Organization (FAO), Riyadh, Saudi Ara-

bia (SA)) delivered a special lecture on 'A global perspectives on date palm: current status, emerging challenges and future prospects'. He presented global food price increase around 200%, where date palm will be the future crop as it has higher energy (3000 cal/kg) with better minerals and pharmacological value. It was mentioned that 60% of the processed dates are produced in the Middle East and North Africa. Out of 40 date-producing countries, India has not been listed as no processed dates are produced here. India has better productivity compared to other countries, though date palm plantations are scattered with seed progenies. Therefore, emphasis should be given for uniform date palm plantation with better agronomic management of orchard to increase its potential. Varieties such as Medjool, Deglet Nour, Khalas and Barhee are being cultivated in most of the countries. More than 100 cultivars are being maintained in the date palm gene bank at FAO, Al-Hassa, SA. It was highlighted that pollination by sponge technique applied manually would be the best method and 20–30% thinning of fruit was also recommended for better yield. Faleiro mentioned that the demand for organic production of date is increasing. Among the five groups (based on quality of date) of date importing countries, India is found to import the lowest quality of date and stands in group-V. Similarly, among three groups of date exporting countries, Israel is in group-I. The incidence of red palm weevil in date palm and its management were also discussed. Importantly, movement of red palm weevil from ornamental palms to date palm in SA was also presented. The role of Date Palm Global Network and International Date Council working under FAO in problem solving through contractual mode was also presented.

Presentations of on-going research project on 'Production and demonstration of tissue culture raised plants under three locations and collection and maintenance of elite germplasm of date palm' funded by ICAR were made by the respective centres. N. Subhash (Plant Tissue Culture Laboratory, AAU) presented the repeatability of tissue culture protocol for elite date palm cultivar and

exotic variety Barhee. He also suggested that mother culture of date palm used for tissue culture should be maintained by the concerned institute/university and every tissue culture date palm plant should be tested for clonal fidelity. Anitha Karun (CPCRI, Kasaragod) presented work on tissue culture of palms (coconut, arecanut, oil palm and date palm). Possibility of developing dihaploids in palms for genetic improvement and necessity of sampling technique for clonal fidelity testing of tissue culture date palm plants were also discussed. Muralidharan (DPRS, Mundra) presented work on germplasm of date palm available in Kachchh region, Gujarat. About 17 exotic and 62 local elite cultivars have been established at DPRS for conservation. There was discussion on criteria for selection of elite genotypes from natural population. It was decided that importance to be given on parameters such as sweet taste, earliness and colour as 60%, 30% and 10% respectively. Kaul (CAZRI, Jodhpur) presented somatic embryo formation in date palm cv Muscut-2. Dhurendra Singh (CIAH, Bikaner) presented the field evaluation report of elite date palm tissue culture plants supplied by AAU. He presented the height and number of leaves of tissue culture raised date palm plants at the age of one year.

Technical session-II 'Scenario of date palm tissue culture work in private sector and interaction with present date palm growers' was chaired by Krishna Kumar and co-chaired by R. M. Chauhan and S. K. Sharma. In this session, various representatives of the private sector such as ACE Biotech, Hyderabad; Atul Ltd, Jodhpur; Kachchh Crop Services Ltd, Gajod; Sarjan Biotech, Bhuj; ECO Cell, Bhuj and Saliah Dates Nursery/Dates India, Krishnapuram, farmers from Gujarat and Rajasthan involved in date palm cultivation, scientists from ICAR and SAUs and officials of state agriculture/horticulture departments participated in the discussion.

From the discussion, it was identified that India needs early maturing varieties with tolerance to rain. To reduce somaclonal variation in tissue culture-raised date palm plants, the ratio between explants and the number of plants raised

\*A report on the annual review meeting cum consultation meet on date palm held on 21 June 2014 at the Date Palm Research Station, Mundra.

should be maximum of 1:2000 and clonal fidelity testing of tissue culture-raised plants through molecular markers and sampling method for detection were suggested. To avoid somaclonal variation, date palm growers should know the origin of the plants and reputation of agents must be known before importing. Cultural management practices are needed to manage red palm weevil. A pesticide residue analysis laboratory needs to be established in SDAU for exporting dates from India in future. It was also decided to have *in situ* and *ex situ* germplasm conservation of genotypes of various qualities of date. Cold storage facility needs to be established for storage of date fruits by the Government or co-operative society among farmers. Visual method is the best for detection of red palm weevil. Early maturing and rain-tolerant genotypes of date palm may

be identified from germplasm collection of different countries which are most needed in India for the production of *pind* stage date suitable for processing. The reason for yield reduction in date palm at second and third year of fruiting in Tamil Nadu needs to be identified.

Establishment of national collection of date palm cultivars/genotypes and development of descriptors for conservation and improvement of date palm are necessary. Field evaluation of tissue culture date palm plants should be critical. Availability of monoecious date palm may be explored in the available germplasm. Private firms should maintain demonstration trial plot of tissue culture date palm. Mapping of areas suitable for date palm cultivation needs to be done on the basis of climatic factors and irrigation facilities in non-traditional areas. Cultivar Barhee was found suitable for

long-distance transport and harvesting should be done at early *doka* stage.

An exhibition on date was also inaugurated by Krishna Kumar. A total of 75 elite clones from 14 villages covering 5 talukas of Kachchh region were exhibited, of which 46 were red fruit categories, 22 yellow fruit and 7 mixed types.

Keeping in view the importance of date palm in the country, it was felt that there is a need to have an 'Indian Date Palm Society' to foster better relations between farmers and researchers.

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