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Date Palm Development Mission of Atul Ltd. in India

Abstract

Atul Ltd. has made long strides in translating its date palm dream - to transform India from the status of a major importer of dates to a major exporter of dates - through a mission mode project. It aims at the massive greening of the deserts of the Western border of India, using date palms, through systematic and scientific approaches, in a phased manner. A well knit strategy is adopted for the effective implementation of the project, on a participatory, public private partnership mode. There are five phases for the implementation of the project. The first part envisages the establishment of model demonstration plantations in key locations. A plantation consisting of seven superior varieties, has been established in an area of 100 hectares at Jaisalmer, Rajasthan. Farm development work on another

40 hectare site at Bikaner, Rajasthan is under progress. The second phase aims to mobilize quality planting materials of superior varieties, consisting of tissue culture plants, for the establishment of plantations. More than 47,000 primary hardened tissue culture date palm plants of four varieties have been imported from Arab nations and subjected to secondary hardening in the newly established nursery at Jodhpur, Rajasthan. The third phase is targeted at capacity building for the generation of tissue culture date palm plants in India, adopting the best protocol available. A joint venture company, Atul Rajasthan Date Palms Ltd. (ARDP), between Atul Ltd and Government of Rajasthan, has been established to set up a Tissue Culture Laboratory at Jodhpur.

The objectives of the fourth phase include large scale scientific



cultivation of date palms in the arid regions of Western India. The fifth phase envisages marketing of fruit and setting up processing industry.

Keywords: date palm, Phoenix dactylifera, tissue culture, cultivation, India, Atul

Introduction

Atul Ltd., a member of Lalbhai Group of companies, is one of the oldest business houses of India. Its registered office is in Ahmedabad, India and its corporate headquarters are located in Atul, Gujarat. It also has offices in the USA, the UK, Germany, China and Vietnam.

Date palm (*Phoenix dactylifera*) is believed to have been introduced to India by some Turkish sailors. Efforts to develop indigenous production of dates in India were initiated during the 1950s by the Indian Council of Agricultural Research. Some commercial varieties of date palm were introduced from the Middle East, Pakistan and USA. Performance of some of these varieties was

encouraging. Arid regions of north-west India, especially Kutch in Gujarat, Rajasthan and south-west Punjab have been identified as potential areas for date palm cultivation in India, besides selected regions in Tamil Nadu, in south India. Currently about 10,000 hectares of land is cultivated with date palm in India, more than ninety per cent being in Gujarat. However, most of the plantations consist of just collection of cultivars / varieties raised from seeds or off shoots belonging to unknown varieties.

Considering the enormous potential of date palm in India, which is the leading importer of dates, Atul decided to support its scientific cultivation in the vast areas of arid lands merging with the Great Indian Desert, spanning over three major states viz., Rajasthan, Gujarat and Punjab. Within a short span of time, Atul has made long strides in translating its date palm dream through mission mode projects, transforming waste lands into greenery with a highly productive and widely acclaimed crop. It will have

major impacts on the economic, social and cultural lives of the poor and marginal farmers of India.

Materials and methods

The date palm project of Atul in India is ambitious. It aims at the massive greening of the deserts of the Western border of India, using date palms, adopting systematic and scientific approaches, in a phased manner.

The striking feature of the project is its bearing on technology and scientific inputs. Date palm cultivation, largely, has not been scientific in majority of the areas where it is grown. Superior planting materials and scientific cultivation can boost up the productivity and quality of this crop. This fact is adopted as the base line in the projects of Atul. Benefits of the project will be alleviation of poverty and hunger, enhancement of rural employments, food security, women empowerment and eco-restoration.

A well knit strategy is adopted for the effective implementation of the project, designed on a participatory, public-private partnership mode. There will be five phases for the implementation of the project.

Phase I – Import of secondary hardened plants and setting up demonstration farms

The first part envisages to establish model demonstration plantations in key locations to convince the farmers about the superior performance of date palms, propagated using tissue culture technique.

Phase II – Setting up nurseries, importing primary hardened plants and hardening them further, in India

The second phase aims to mobilize quality planting materials of superior varieties, consisting of tissue culture plants, for the immediate establishment of plantations. Since,

date palm tissue culture plants are not available in India, Atul has adopted an 'all inclusive approach' with all the major tissue culture date palm suppliers in the Middle East and tied up with the Date Palm Research & Development Unit of the UAE University, Al-Ain, Al Rajhi Tissue Culture Laboratories, Saudi Arabia and UAE, Al-Wathba Marionnet LLC, Al-Ain and Green Coast Nurseries, Fujairah, for sourcing of planting material.

Phase III – Setting up state-of-the-art tissue culture laboratory-cum-production unit with overseas technology

Phase three targets at capacity building for the generation of tissue culture date palm plants in India, adopting the best protocol available. Tissue culture propagation is an effective and efficient alternative for conventional vegetative propagation, to ensure rapid multiplication and establishment of true to type plants of choice varieties (Mohan Jain, 2007).

Phase IV – Acquisition of land and mass propagation of tissue culture date palm plants

Objectives of phase four include mass propagation and scientific cultivation of date palm in the arid regions of Western India.

Phase V – Marketing of date fruit produce and setting up processing industry

This phase encompasses setting up co-operative societies which in turn will do buy back arrangements for purchase and marketing of date fruit with farmers.



Results and discussion

The arid regions (mainly in Rajasthan, Gujarat and Punjab) cover nearly 12 per cent land area of India. Of this, about 60 per cent (13 million hectares arable lands and 6 million hectares wastelands) can be developed into clusters of date palms, with proper interventions and technical inputs.

Rajasthan, having the largest arid zone land, occupies almost 60 per cent of the arid regions in India. This region has sandy soil of 8 to 10 pH, low rainfall and high temperature. This is further characterized with salinity, brackish underground water, strong wind erosion and low soil fertility which make the cultivation of crops difficult. However, date palm can withstand such extreme stress

conditions. Rajasthan has the massive Indira Gandhi Canal Irrigation Programme which caters to more than two million hectares. This makes Rajasthan and adjoining regions of Punjab and Gujarat ideal for cultivation of date palm in India.

Atul and the Government of Rajasthan have outlined a plan for tissue culture date palm cultivation in 2000 hectares in five years. Also, there is a long term plan of cultivating 1,00,000 hectares in further 10 years. This is expected to generate a requirement of more than 15 million tissue culture date palm plants in India in the next 10-15 years.

More than 47,000 primary hardened tissue culture date palm plants of Barhee, Khalas, Khunezi and Medjool varieties (along with male plants) have been imported from Arab nations and subjected to secondary hardening in the newly established nursery at

Jodhpur, Rajasthan. The nursery area is 10 ha and consists of more than 5000 m² of hardening facilities. The nursery is equipped with modern drip irrigation and fogging systems. The plants belonging to the varieties Barhee, Medjool, Khalas, Khunzi and Madsari male maintained for one year in the nursery recorded excellent growth (plant height: 54.5 - 75.0 cm; collar girth: 7.8 - 11.6 cm; number of leaves: 6.2 - 8.8; number of pinnate leaves: 1.3 - 2.6; length of the longest leaf: 33.1 - 49.3 cm; width of the largest leaf: 4.2 - 5.3 cm).

A plantation consisting of seven superior varieties, has been established in an area of 100 ha at Jaisalmer, Rajasthan, using tissue culture derived date palm plants of

Barhee, Khadrawy, Khalas, Khunezi, Medjool, Saggai and Zamli. This includes the required number of male plants of Madsari male and Ghannami male also, for effecting pollination. Also, a specific demonstration farm has been established here. Modern techniques of farm development, irrigation and fertilization have been adopted. The irrigation is based on ground water source. Excellent growth was observed for the plants of the above varieties grown in the main field. Plants of the Barhee variety recorded collar girth: 17.3 cm, number of leaves: 8.2, number of pinnae per leaf: 22.0 and length of the longest leaf: 63.8 cm, one year after field planting.

The importing of primary hardened plants and their further hardening before distribution to farmers, with Government subsidy will continue for further three or four years till the phase three of this project is implemented to generate indigenously produced tissue culture planting material.

A joint venture company, Atul Rajasthan Date Palms Ltd (ARDP), between Atul Ltd. and the Government of Rajasthan, has been established to set up a state-of-the-art Tissue Culture Date Palm Laboratory at Jodhpur with overseas technology. This is a typical example of public-private partnership programme where private sector brings in technology, co-operation and efficient management, while the Government support the infrastructure and networking of farmers. Construction of the Tissue Culture Laboratory is in progress.

A Memorandum of Understanding was signed between the UAE University, Al Ain and Atul in presence of H.H. Sheikh Nahyan Mubarak Al Nahyan, Minister for Scientific Research and Higher Education, UAE to transfer technology of tissue culture of date palm to Atul.

Atul is planning to acquire vast areas of arid lands in Rajasthan and set up plantations of tissue culture date palm plants. Also, the Governments of the Western States of India have decided to expand the area under date palm cultivation. In this context, Atul has taken a major role to serve as a leader for date palm development in North West India. This will help create employment in rural arid regions, empower women and reduce the impact of green house gases. The joint efforts of Atul and the Government of Rajasthan shall help farmers to get date palm plants at a subsidized cost and encourage large scale cultivation of this crop. Atul shall provide training modules and other support services to the farmers for adopting the best scientific practices for date palm cultivation. Atul has developed a team of extension personnel, farm managers, scientists, academicians and marketing personnel for this purpose. Technical bulletins for promoting scientific date palm cultivation are being distributed to the farmers. Classes and field training are being organized at the demonstration farms..

Setting up of co-operative societies, which in turn will make buy back arrangements and marketing of date fruit, is aimed at the final phase. Infrastructure for collection of date fruit, grading, processing, packing, storage, logistics, branding, distribution and marketing would be established.

Atul is fully committed to make its dream of turning the dry deserts of India into high calorie green landscapes. It endeavors to involve all stakeholders in its journey to make this dream a reality.

Conclusions

India is the largest importer of date fruit. Atul has made substantial

contributions to the date palm development programme in India. Atul is working in unison with all the key stakeholders to implement this unique project, in public-private partnership mode, wherein the strength of public sector and private sector are effectively converged for the project. The project is being implemented in five phases to have continuity and sustainability. It will help generate wealth in desert areas, empower rural population, particularly women and generate rural employment.

Acknowledgements

Thanks to the UAE University, Al-Ain and the Rajasthan Horticulture Development Society for supporting the date palm mission of Atul in India.

Literature Cited

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