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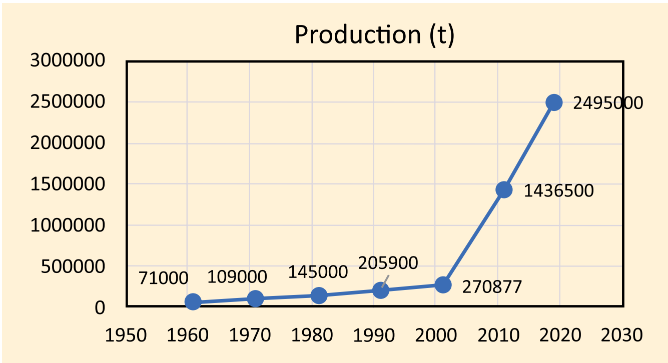
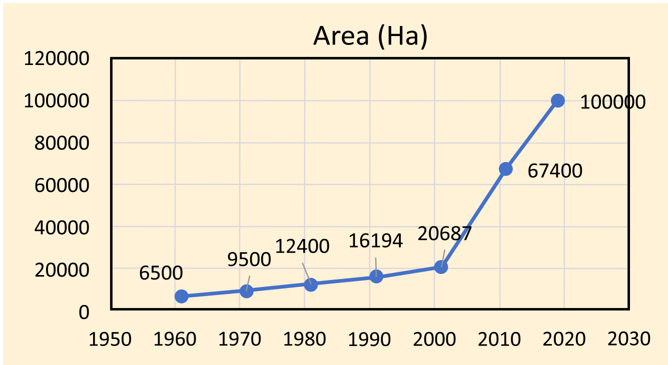
Establishing an Export Value-chain of Watermelon to Dubai Market

Watermelon [*Citrullus lanatus* (Thunb.) Matsum and Nakai] is an important speciality crop accounting for seven percent of the agricultural area devoted to vegetable crops globally. The world watermelon harvested area is about 3.50 million hectares with a production of 117 million tonnes (FAO, 2017). Asia-Pacific accounts for 85% of this production (98.6 million tonnes). India has witnessed a watermelon revolution over the last two decades (2001-2019) with over 820% increase in production and the current production is pegged at 2.5 million tonnes (NHB, 2022). The article discusses the successful collaboration of ICAR-IIHR and a private company, Fit Fresh, in exporting watermelon from India to Dubai Market.

ICAR-Indian Institute of Horticultural Research, Bengaluru is a pioneer research institute working on watermelon for over 5 decades. It is the National Active Germplasm Site (NAGS) with global germplasm resources of over 500 accessions of watermelon. Crop improvement of watermelon at ICAR-IIHR resulted in the development of several popular varieties. Notable among them is a triple disease resistant watermelon variety, Arka Manik which has been well adopted in India and also several South Asian nations. Recently an open pollinated ice box variety named Arka Shyama was developed at the institute.

Productivity doubled to 24.9 t/ha due to wide scale adoption of precision farming practices like transplanting, mulching, drip irrigation, fertigation, etc. Especially, watermelon market in India has transformed over the last decade with the emergence of ice box and mini seeded types catering to nearly 50% of total production. Because of growing demand and adoption of precision farming technologies, watermelon is no longer a summer crop alone but is also being grown during other parts of the year. As the production levels rise, it is important to find new and remunerative markets to increase the farmer's income and retain his interest in the crop. Therefore, an effort was made to develop an export value chain for watermelon to the remunerative markets of Dubai.





Export of watermelon under Fit Fresh company

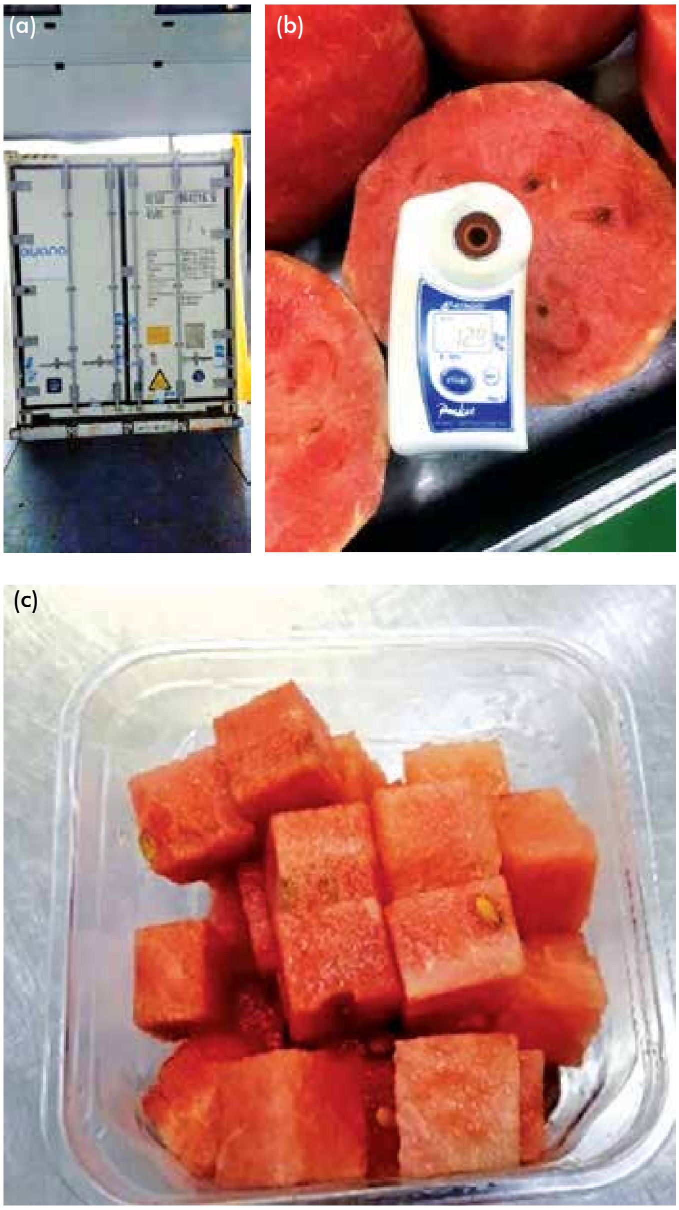
Fit Fresh is a company in UAE producing high quality cold pressed juices, smoothies and fresh made salads catering to retail chains, high end restaurants and Dubai airport. They have tied up with AVPR exports and imports in India to procure fresh watermelon fruits. In 2020, Fit Fresh approached ICAR-IIHR for technical guidance in this regard. Hand holding was done by scientists of IIHR over the last two years for successful shipments to Dubai. The details of technical support included:

- Plot selection criteria based on good agricultural practices *viz*, mulch sheet, no use of weedicide, drip irrigation, use of border maize rows, trap flower crops, pest monitoring with sticky traps and need based chemical sprayings, neem based IPM package, honey bee boxes for pollination and quality fruit set, no spraying during last 15 days of harvest etc were provided to earn the trust of the importer.

Brix and flesh colour test

- Irrigation management at harvest, judging the right harvesting stage and quality testing procedures were practised to maintain desired quality at destination. This included fruit size grading of more than 3 kg, dark rind colour, intensity of red colour of flesh with narrow white margin, TSS of fruit with >13% at the center and >10% at the margin of fruit.
- Transport was carried out in reefer containers of 20 tones capacity. Based on storage trials at ICAR-IIHR, 6-10°C was adopted for cold chain. Harvest and loading happen in early hours of the day. As watermelon rind can withstand weight upto 80 kg, expensive pallet packing was done away and sponge sheet was provided at the bottom of the container. This made it very economical for the exporter, without loss in quality, increasing the volume of fruits per container and reducing logistic costs.
- The container reaches Mumbai Nhava Sheva port from farmers' fields by truck and then loaded onto ship. It takes 7 days to arrive at Fit fresh factory in Dubai. Temperature loggers are used to confirm the temperature maintenance for cold chain during transit. Quality testing at destination is carried out to the satisfaction of the company.

Now the exporter is operating in Maharashtra, Karnataka, Andhra Pradesh and Telangana. It exports atleast 50 tonnes every week for maintaining a regular supply. The local farmers are also happy as they are being paid in the range of ₹ 9-10/kg and earning around ₹ 2 lakhs/acre. Seeing the potential, AVPR exports Ltd has also started supplying watermelon to Nepal by road.



(a) Arrival of container at Dubai; (b) checking for fruit temperature on arrival; TSS of transported fruit; (c) and watermelon cubes for serving

CONCLUSION

Watermelon is an important crop in India which has become more popular during the last two decades earning good returns to farmers. To make the crop more remunerative, a model export value chain of watermelon was successfully established by ICAR-IIHR in collaboration with an exporter to Dubai. After their success, several other export companies are now venturing into marketing watermelon to Dubai and Middle east. Buoyed over the acceptance of Indian watermelons in these markets, exporters are hopeful to increase the trade volumes.

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