

Dawson Melon Co: Understanding customer preferences and addressing supply chain issues to export consistent high-quality specialty melons to Japan

Case Study by John Agnew, Department of Agriculture and Fisheries

The opportunity

Red Cliffs melon grower/packer Brad Dawson is confident that the family business will grow its exports to Japan due to a better understanding of customer wants and an improved knowledge of supply chain issues impacting quality and shelf-life.

Dawson Melon Company has a reputation for quality and consistency because they do things right. Since there is always an opportunity to learn, they became involved in a federally funded project aimed at increasing the volume of quality melons exported to Japan. The project, led by Melons Australia and run by DAF examined the growing, harvesting, handling, packing and transport of rockmelons to understand practices and identify areas for improvement.

Brad said that “work by DAF identified where temperature problems have been occurring in our supply chains which led to changes in domestic freight logistics”.

Other areas identified for potential improvement included variable brix and handling at harvest.



Image 1: Brad Dawson, Dawson Melon Co, discussing rockmelon quality with his export agent and importer in Japan.

The project enabled Brad to meet his Japanese importers for the first time to discuss their needs, resolve misunderstandings and compare whole and fresh cut melon quality in wholesale and retail markets. Brad said that “the trip gave me a better

understanding of how our melons are placed in the Japanese market presenting an opportunity to increase the volume of our offering as well as diversify our offering (i.e., evaluate other melon types/varieties)”.

Identifying and correcting cold chain issues

Temperature monitoring from picking to the packshed occurred using USB loggers attached to fruit and real-time loggers in field bins. Real-time loggers also measured temperature in melon cartons (Image 2) from the packshed onwards in several domestic and export shipments to Japan.



Image 2: Real-time temperature/location logger in a consignment of Dawson's rockmelons

Rockmelons should be stored and transported between 2-5°C. During a site visit in Autumn 2021, a temperature issue was identified at dispatch and in transport. Melons were picked up from the packshed cold room by a local transport company for temporary storage and consolidation at their depot. The load was then transported by refrigerated freight forwarder to Melbourne. “Real-Time” temperature logger data showed that melons left the packshed at 8°C and were stored at the local depot at 12-13°C. They were transported to Melbourne at 12-14°C. Cool Autumn temperatures in the paddock and short supply chain length meant that these temperature excursions probably didn't adversely impact quality and shelf life for consumers. However, it may be a different story during peak production in the hot summer. As a result of the

logger information, the Dawsons changed practice to organise a direct pick-up by freight forwarder from their packshed. They also instructed them to reduce truck set temperature for the journey to Melbourne.

Rockmelons – Red Cliffs to Japan

A follow-up visit in Summer 2022 was designed to assess the impact of higher ambient temperatures on rockmelon quality. Melon pulp temperature in the field increased from an average of 10°C (April 2021) to 32°C in February 2022. It took up to 37 hours for melon surface temperature to drop to 6°C (using forced air cooling) once field bins were placed in the cold room. This reinforced to Brad the value of checking pulp temperature to ensure melons are at optimum temperature before dispatch.

There was an improvement in temperature recorded at dispatch and during road transport to Melbourne (Figure 1). Melons left the packshed at 6.5°C and averaged 8°C in road transport. Temperature at the exporter averaged 8°C, but there was a spike to 15°C which coincided with delivery at the airport. The average temperature during the flight to Japan was 9°C. The supply chain was short, being 5 days from harvest to importer. Although there is still room for temperature management improvement, Japanese customers were happy with melon firmness and brix levels. It may have been a different story if the supply chain was longer, for example if sea freight was used or trans shipping delays were encountered.

Aiming for brix of 12 and above

The Dawsons generally grow long shelf-life rockmelon varieties because they travel well. However, these melons do not naturally “slip”, making it more challenging for pickers to select mature fruit. Inexperienced and lax staff do tend to pick more immature melons (with lower brix). Brix measured in a recent rockmelon consignment averaged 10.9° but ranged from 9° to 13° at dispatch. In Australia, melon brix should be above 10° (Rogers 2013). During Brad’s discussions with importers in Japan they expect a minimum brix of 12° for rockmelons but prefer 14-15°. When retailing cut fruit, the average brix is usually printed on the product label and the Japanese customers pay great attention to this information.

Dawsons use a refractometer and taste-testing to check sweetness (brix) before harvest. Staff are trained and given refreshers about correct harvesting procedure, but behaviour can’t be “policed”.

More Information

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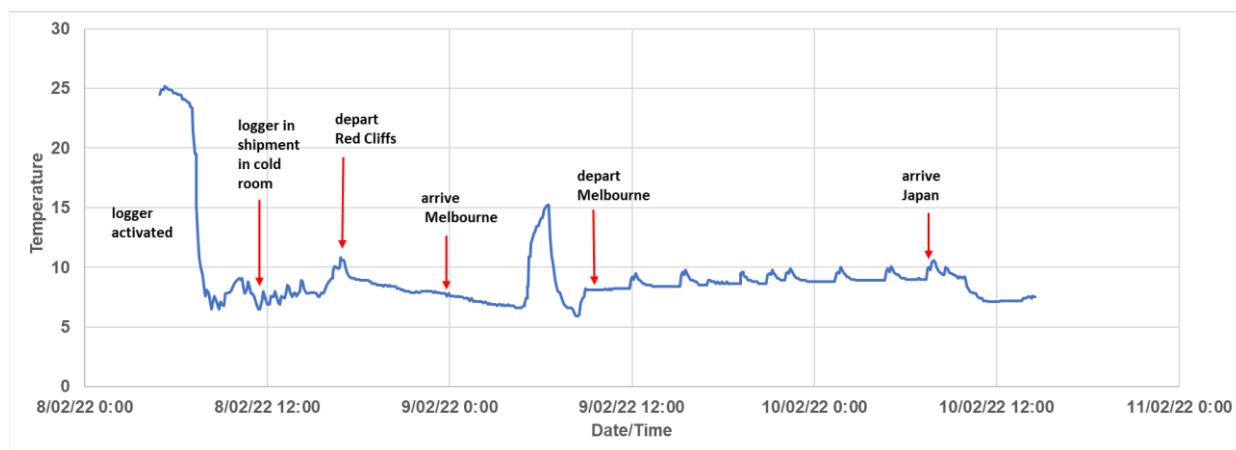


Figure 1: Rockmelon Temperature (°C) Red Cliffs to Japan, February 2022

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