

Table grape quality improvements underway

Work is well underway to help the Australian table grape industry consistently supply consumers with great tasting fruit.

Table grape maturity data collected from farms and supermarkets this season is currently being analysed and interim specifications are expected to be set for some varieties before next season.

The strategic levy investment project *Table Grapes Supply Chain Quality 2017-2020* (TG17002), is part of the Hort Innovation Table Grape Fund.

The key objective of this three-year project is to develop robust systems that will allow the Australian table grape industry to supply high quality fruit that consistently satisfies consumer taste expectations. This will lead to improved consumer confidence that they will get a good eating experience whenever they purchase Australian table grapes, which will encourage repeat purchasing.

Grower-driven research

This project was initially proposed to Hort Innovation in direct response to requests from growers.

Australian Table Grape Association Chief Executive Officer Jeff Scott said many concerned growers had approached the ATGA in past years, worried about the volume of immature fruit hitting the early season market.

“We commissioned this project to measure the level of maturity of fruit in market and quantify the amount of immature fruit,” Mr Scott said.

“Every year we would like all growers to be patient and to wait until their fruit is at the required proven maturity level before harvesting. As we all know, if a consumer has an unsatisfactory eating experience due to immature fruit, then they won’t purchase grapes for six to eight weeks.”

A key focus of the project is to ensure that consumers have a good eating experience every time they purchase Australian table grapes, right from the start of the season. The project aims to deliver this by:

- Measuring maturity of fruit pre-harvest, at retail, and export.
- Identifying maturity specifications that will enable the industry to meet market and consumer demands.

“We would like to see some average



Produce Quality Inspector, Behrang Saber, measuring a bunch of Crimson Seedless grapes at the Rudge Produce Laboratory in Melbourne. Each individual berry was measured for Brix, acid, size and its 3D position in the bunch.

standards developed for industry to abide by to produce fruit that will be accepted by consumers from an eating quality point of view,” Mr Scott said.

“If we can have that consistency of maturity throughout the industry, then we will have a win:win. Consumers will know that when they buy Australian table grapes they will get a mature quality product, and growers should get a better return.

“Our aim is to have mature fruit in store whenever supermarket testing is done.”

The project team

Delytics has been contracted by Hort Innovation to lead this project in collaboration with the ATGA, Kitchener Partners and Rudge Produce Systems.

Delytics has a proven track record of developing fruit maturity specifications to improve consumer acceptance. Their achievements include helping Australian Calypso mangoes become the market leaders in 2011 and assisting Citrus Australia identify the maturity measures for the quality standards they adopted in 2014.

In 2016, Delytics helped the unregulated New Zealand citrus industry increase the consumer acceptability of Navel oranges from 67% to 96% through a customised system that was adopted industry-wide.

“Delytics achievement with New Zealand navels is a good demonstration of what can be accomplished when a whole industry works together for a common consumer-focused quality

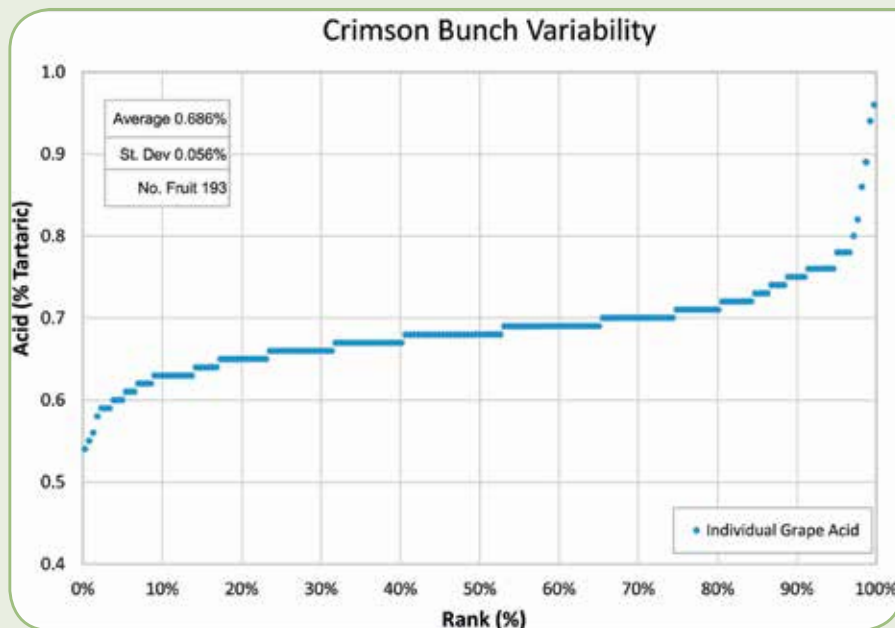


Figure 1. Crimson bunch variability. This graph shows the acid content of each of the almost 200 individual grapes (blue circles) in the bunch of Crimson Seedless that Behrang measured. This data in conjunction with 3D position data allowed the maturity variability in the bunch to be modelled. Understanding when the bulk of the grapes in a bunch are mature will ensure the maturity standards set by this project will provide the industry with a robust process for giving consumers consistently good tasting product.



Woolworths agronomist Henry Fisk (pictured) says having the best product in store will benefit the whole industry.

goal,” Mr Scott said.

“I believe it’s possible for the Australian table grape industry to achieve a similar result if the majority of our industry adheres to the maturity specifications that will be developed as part of this project.”

First season progress

On-farm monitoring was carried out in Emerald, Queensland from late October until late November, and in the Mildura region from mid-December to track the maturity of different varieties in various locations. Sampling also continued after harvest to help determine the optimal harvest time.

Mystery shoppers started buying random samples twice a week from three supermarkets from mid-November. The samples were measured for Brix, acid and size. By using new equipment recommended by Delytics the acid in individual berries was able to be measured from only 0.3 millilitres of juice.

Delytics Managing Director Mark Loeffen said testing individual berries allowed an understanding of the variability of maturity within a typical bunch of table grapes. “Knowing that will help us set fact-based maturity standards that will help provide consumers with a consistent good quality product.”

Rudge Produce Systems collected and measured fruit using a customised sampling protocol developed by Delytics to take into account the

variability within bunches and blocks. The data was analysed by Delytics each week and then uploaded to a cloud-based platform where growers and interested industry partners could see what was happening on-farm and at retail in real-time.

“Supermarket monitoring gives us an independent insight into the quality of table grapes at retail, which is known to strongly influence repurchasing rates,” Mr Loeffen said. “It also provides a broader picture of what is actually happening in the market, as the on-farm monitoring covers only a very small percentage of growing blocks.”

The data collected this season has provided the ATGA with objective evidence of the maturity level of fruit in market for a number of varieties. This will help the project team track consumer-liking improvements as the project progresses.

Industry support

Both Woolworths supermarkets and Costa have demonstrated their support for this project by contributing valuable data collected at their own cost.

Woolworths has given the project team access to several seasons of non-grower identifying maturity data, which will help compare quality variations between seasons. Woolworths monitors fruit maturity in-store and expects suppliers to adhere to minimum standards.

Woolworths agronomist Henry Fisk said the company was very supportive of all

fruit maturity initiatives. “We know that when we provide customers with the best quality produce at the right offer, they’ll come back and shop with us again. Making sure we have the best product in store will benefit the whole industry.”

Costa monitored two of their proprietary varieties across six blocks on three farms, following the sampling protocols developed by Delytics, and provided the data to the project team to include in their industry analysis.

“We’ve been a strong advocate for grape maturity testing for a number of years and are very pleased to be involved in this project,” said Costa National QA Manager - Citrus & Grapes Wendy Stewart.

“We see it as an integral part of the table grape industry and future domestic and export markets. It will definitely benefit the industry if everyone is following a similar testing process.”

Next steps

Interim specifications will be set for selected varieties before the start of the 2018/19 season. The scope of these specifications will be determined by the data collected and the consultation process with industry.

Monitoring is scheduled to start again in Emerald, Queensland around mid-September 2018.

Once the interim specifications are set, growers, marketers and retailers will be encouraged to adopt them.

Mr Scott said one of the hopes of this project was that enough growers voluntarily agree to follow the specifications, so the supermarket monitoring has a more positive result next season.

“We want the number of retail samples that don’t meet specification to drop right away.

“With the cooperation of the industry, we should be able to achieve that.”

This project has been funded by Horticulture Innovation Australia Limited using the table grape levy and funds from the Australian Government.