ATGA
Australian
Table Grape
Association Inc.

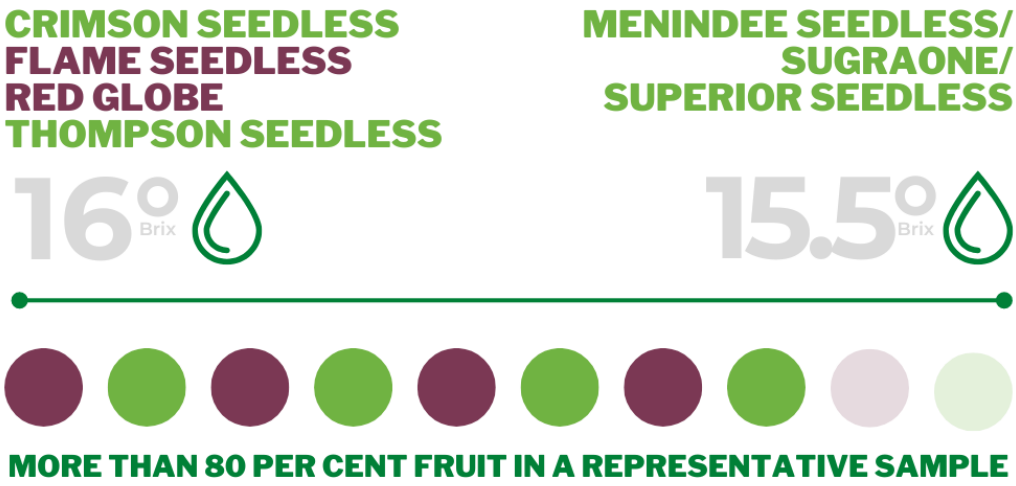
33 Madden Avenue, Mildura,
Vic., 3500 Australia
australiangrapes.com.au
enquiries@atga.net.au
+61 3 5021 5718

On-Farm Testing of Table Grapes During Picking

Background

The Australian table grape industry's minimum maturity standards for Crimson, Flame, Menindee, Red Globe and Thompson were implemented in October 2019, and align with consumer taste expectations.

The standards have been designed to achieve a minimum of 80% consumer acceptability at retail. Brix is the preferred maturity measure. To meet the minimum maturity standard:



The following protocol has been designed to help growers test fruit in boxes as they are being picked, to validate whether the picked fruit meets the minimum maturity standard.

Objective

The aim of these procedures is to assess fruit maturity at the time of harvest, by collecting and analysing samples of fruit that are representative of the fruit being picked.

The purpose of this document is to enable growers to validate that fruit being picked meets the minimum maturity standard.

Producers should check fruit continuously during picking and make appropriate harvest management decisions which ensure the picked fruit continues to meet the minimum maturity standard. A pre-harvest maturity assessment protocol is also available.

Equipment required

When testing in-field:

- Refractometer for measuring Brix (preferably digital), with a current calibration certificate (less than 12 months old).
- Mobile device and/or or paper and pen to collect information
- Clean water for zero setting the digital refractometer

When testing in the shed:

- Bunch snips
- Small ziplock bags pre-labelled
- Permanent marker
- Large ziplock bags
- Mobile device, with camera, email and compass function
- Eski
- Garlic crusher to extract juice from each berry
- Refractometer to measure Brix (preferably digital) with a current calibration certificate (less than 12 months old)
- Distilled water or tap water for zero setting the digital refractometer
- Lint-free cloth or tissues to clean refractometer

Sampling grapes from boxes immediately post-harvest

Pickers pick bunches into boxes in the field. At regular intervals during harvest, a picking supervisor should sample at least 80 berries from 20 boxes (but up to 300 berries from 20 boxes).

Grape Selection

Pickers should not choose a berry because it "looks good". It can help to not look at fruit as it is being selected. Reject any damaged fruit.

Use clippers carefully to access berries in tight bunches and make sure berries are not damaged.

At a minimum, pickers should select two (2) berries from two (2) bags in a box, selecting from 20 boxes to sample 80 berries, but up to 300 berries from 20 boxes (three (3) berries from five (5) bags).

Care should be taken that 32 grapes are picked from the tops, 32 from the middle and 16 from the bottom of bunches. For 300 grapes that would be 120, 120, and 60, respectively.

The more berries tested, the greater confidence pickers can have that fruit being packed is reaching minimum maturity (i.e. ≥ 80% of fruit in a representative sample have Brix ≥ 16°).

When to start sampling and how often

Start testing right at the start of each day's picking and sample regularly through the day.

Taking measurement

- Ensure that your refractometer has been calibrated. This should be done annually.
- If using a digital refractometer, find a testing location out of direct sunlight. Otherwise the error message “HHH” will show
- “Zero” the refractometer each day, prior to use
    - Clean the refractometer well with a dry lint-free cloth or tissue
    - Fill the refractometer well with distilled water or deionised water
    - Press the **Start** key and check if the Brix reading is **0.0**.
    - If not, with water in the well press the **Zero** key. The display should read **000**.
    - Clean the refractometer well with a dry lint-free cloth or tissue.
- Select the first berry to be measured.
- Using your fingers or a garlic crusher, extract enough juice to place in the refractometer well. Press the **Start** key.
- Record the Brix measurement. You can enter readings into the App or spreadsheet supplied or simply write them down.
- Rinse the refractometer well with clean water and dry with a lint-free cloth or tissue.
- Repeat the previous four steps until all berries are measured.
- Count the number of readings of 16° Brix or more (15.5° for Menindee) and divide that number by the total number of fruit tested. To calculate the percentage multiple by 100. If the percentage is 80% or more, the sample has met the minimum maturity standard.
- If using the spreadsheet or app, the percentage is automatically calculated when you have finished entering all readings.
- Send the completed spreadsheet or photo of your written data to grapes@qualityassociates.com.au. If you have any questions, please contact Andreas Klieber on 0438 356 394.

Decision making

Once you have measured 80 berries, the number of berries with a Brix reading of less than 16.0° (15.5° for Menindee/Sugraone/Superior) should be less than 17.

Pick another berry and measure it. Cross off your earliest reading. With the latest 80 readings, count the number of berries with a Brix reading of less than 16.0° (15.5° for Menindee/Sugraone/Superior Seedless) and so on. This should be less than 17. Adjust picking accordingly.