

Acknowledgment:

This procedure has been adapted from the [NZ Avocado Roll Test](#).

The particular contribution of Lynnaire Avers and Ben Tuck from Seeka Ltd is noted in developing this protocol.



ROLL TEST

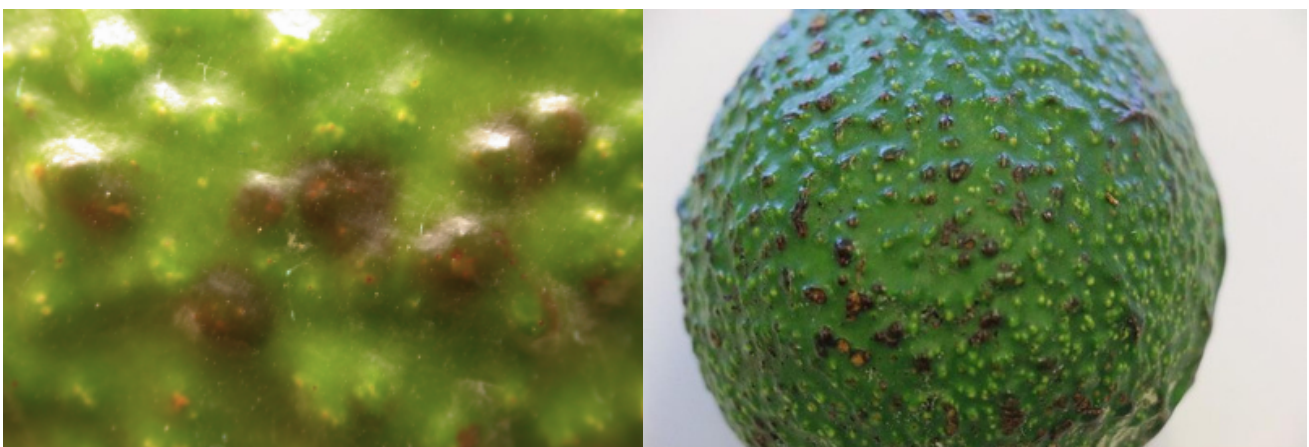
for lenticel damage

Harvesting around wet weather events has an impact on the quality of fruit as turgid lenticels are more susceptible to post harvest damage. If you are harvesting around wet weather ---

- **Avoid harvesting if more than 5mm of rain has fallen in 24hrs**
- **Complete the following Roll Test before you commence picking**

Method:

1. Select five good quality clean fruit of mixed sizes (from different trees and compass points around a tree) - Ensuring there is enough room in the bucket to get a good 'roll'.
2. Cut stems to 5mm or less.
3. Place fruit in a smooth sided 10L bucket.
4. Roll fruit for 15-20 seconds in a clockwise motion.
5. Assess peel damage (ie. bruised or ruptured lenticels) after 10, 20 and 30 minutes (refer visual guide and table over page).
6. Calculate sensitivity index and record results.



Lenticel damage worsens with time. Collapsed or ruptured lenticels will initially appear pale but then darken to a brown then black colour. Photo credit: NZ Avocado

Step 5. Assessing peel damage:

Use the following visual guide to assist your estimates of the proportion of lenticel damage. The damage may be quite pale at 10 and 20 minutes. Close inspection will be required when the burst lenticels are lighter in colour. Wait longer to do your assessment if you have difficulty seeing the peel damage.

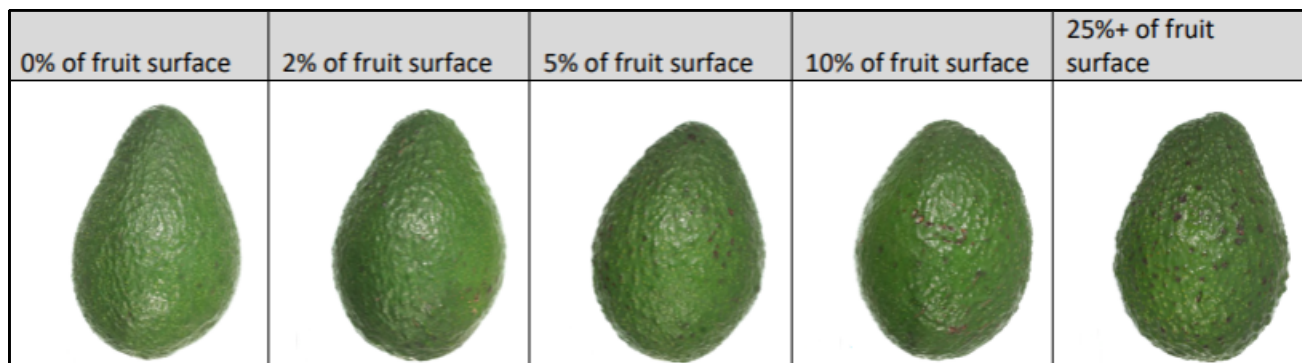


Photo credit: Queensland Department of Agriculture and Fisheries

Step 6. Calculating sensitivity index:

Use a table set out as below to determine your sensitivity index. In the worked example below the sample fails to the roll test as it exceeds 0.5.

→ **A result of LESS THAN 0.5 is required to pass the roll test.**

		10 mins (% est)	20 mins (% est)	30 mins (% est)
Fruit	1	10		
	2	20		
	3	25		
	4	15		
	5	20		
Average = (Total %/5)		90/5 = 18		
Sensitivity index = average severity/time in minutes		18/10 = 1.8 (fail)		

Notes: Windy and 18°C

Examples of a pass with the roll test after different time periods

Sensitivity index = average severity / time in minutes.	
Fail	Pass
Sensitivity index of greater than or equal to 0.5	Sensitivity index of less than 0.5 (e.g.) After 10 mins if average severity <5% After 20 mins if average severity <10% After 30 mins if average severity <15%

