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Avocado squeezing is bad: Science

Acoustic tools, laser technology, ultrasounds: scientists are trying it all to stop consumers from bruising avocados when testing them for ripeness.

In a survey of Australian avocado consumers, 97 per cent admitted to squeezing the fruit before purchasing it. And research shows consumers 'test', on average, three times more fruit than they actually buy.

A new study – being funded by Hort Innovation and conducted by the Queensland Department of Agriculture and Fisheries (QDAF) in collaboration with The University of Queensland and Avocados Australia – is aiming to limit damage to avocados by giving consumers more options to identify ripeness.

Hort Innovation chief executive John Lloyd said significant investment had been made into research and education tools to support the careful handling of the fruit from picking to shop shelves, and identifying how to limit avocado squeezing in store is the next step.

"Past research that has been conducted through Hort Innovation has identified various ways to ensure the careful handling of the fruit during the picking, packing and freight stages to ensure consumers are receiving the best quality avocados possible. This new work looks beyond that at what studies have shown to be the most dangerous time for the fruit: when it is exposed to consumers," he said.

QDAF lead researcher Professor Daryl Joyce said his team is looking at education, point-of-sale signage, technology and packaging options to limit injuries to Aussie avocados on shop shelves.

He said any squeezing or compression events generally cause enough damage to show as bruising of the fruit flesh, and it takes about 24 hours for this to develop and become visible.

"It has been found that shoppers typically apply compression forces ranging from 3 to 30 Newtons (N) to firm-ripe avocado fruit when assessing ripeness. For context, a 'slight' thumb compression of 10 N applied to a firm-ripe fruit causes bruising to appear within 48 hours at 20°C."

Prof Joyce said previous research shows most consumers do not link their 'bad avocado experience' with excessive handling. "Only 42 per cent of shoppers surveyed agree with the statement that 'bad avocados have been handled or touched too much'."

He said studies have shown that posters at the point of purchase are most useful for avocado selection, and tips on storage, ripening and usage. Arranging displays into different ripeness categories has also been shown to reduce fruit handling by shoppers.

"A prototype decision-aid tool, based on a force-sensing resistor placed between the thumb and the fruit, was also recently developed and tested by scientists for in-store use. In-store surveys found the device was favourably received by shoppers but it is still some time away from commercialisation."

The research project, Supply Chain Quality Improvement – Technologies and Practices to Reduce Bruising, is due for completion in May.

Avocados Australia chief executive John Tyas said for now, if consumers needed to 'test' fruit for ripeness, they should gently press the stem end only. He also said consumers should not fear buying fruit that is not yet ripe.

"Your store-bought avocado should ripen within a few days as the ripening process will have already begun. If you want to be sure, simply put the fruit in a bag with a banana," he said. "However, if the fruit has already started to ripen this will not make it ripen any quicker."

During the 2016/17 financial year, more than \$5.3 million was invested in research, development and marketing for the avocado industry through Hort Innovation.

Grower enthusiasm and passion for a strong and vibrant industry recently led to the Hort Innovation Board meeting with the Avocados Australia Board to discuss industry priorities now and into the future to further build upon the rise and rise of the Australian industry.

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