

Fruit quality of 'Sharwil' Avocado grown at three locations in South Kona

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CTAHR and USDA/ARS researchers recently completed a project that investigated the changes in fruit dry matter content, oil content and sensory quality throughout the harvest season for 'Sharwil' avocados grown at three orchard elevations during the 2007 and 2008 seasons (see Table 1).

Fruit quality was similar in both seasons regardless of orchard elevation, although the time of harvest within the production season did affect quality. Late season fruit had a higher dry matter and oil content, were smaller in size, and had a shorter shelf life than early and midseason fruit. Fruit flavor and texture, which were evaluated using an expert sensory evaluation, did not change throughout the season. Mean dry matter content ranged from 32% (30 Jan.) to 38% (24 Apr.) in 2007 and from 29% (8 Jan.) to 40% (29 Apr.) in 2008. Percentage of oil content ranged from 21% to 25% in 2007 and from 18% to 28% in 2008. 'Sharwil' fruit with a minimum mean oil content of 18% had 29% dry matter and acceptable sensory quality. The dry matter and oil contents of individual avocados were highly correlated ($r = 0.97$).



Photo by Ken Love

These results will be used to develop a maturity standard for 'Sharwil' avocados based on dry matter content at harvest, and to develop guidelines for postharvest practices. The use of quality standards will allow producers to provide more consistency in the fruit sent to market.

Abstracted from:

Chen, Nancy J., Wall, Marisa M., Paull, Robert E., Follett, Peter A. Variation in 'Sharwil' Avocado Maturity during the Harvest Season and Resistance to Fruit Fly Infestation.

Table 1. Average fruit quality for 'Sharwil' avocados harvested from orchards located at different elevations in South Kona, HI.

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Year	Orchard	Fruit wt (g)	Firmness (N)	Dry matter (%)	Oil content* (%)	Days to ripen	Sensory attributes [†]	
							Flavor	Texture
2007	1 (427 m)	241.7 b [‡]	186.9 b	35.58 a	23.21 a	8.1 b	6.17 a	6.59 a
	2 (540 m)	244.6 b	193.4 a	33.31 b	21.93 b	8.3 b	5.85 b	6.31 b
	3 (610 m)	276.3 a	193.3 a	32.88 b	21.63 b	9.2 a	5.74 b	6.32 b
2008	1 (427 m)	264.7 b	206.9 b	35.14 a	23.10 a	7.7 a	6.04 a	6.35 a
	2 (540 m)	275.7 a	217.7 a	33.07 b	21.24 b	7.9 a	5.80 a	6.05 b

*Percentage of oil content is expressed on a fresh weight basis.

[†]Sensory attributes were rated on ripe fruit on a scale from 1 (least favorable) to 9 (most favorable).

[‡]The values are the averages of fruit harvested from Jan. through Apr. 2007 and 2008. Fruit weight, firmness, dry matter, and oil content were measured at harvest. Means within columns followed by the same letter were not significantly different by Waller-Duncan k-ratio *t* test at $P < 0.05$.