HORTSCIENCE 30(1):158. 1995.

'Gil': A New Avocado Cultivar

E. Lahav, U. Lavi, S. Mhameed, and C. Degani
Agricultural Research Organization, The Volcani Center, P.O. Box 6, Bet Dagan 50250, Israel

D. Zamet
Akko Experiment Station 25212, Israel

S. Gazit
The Hebrew University of Jerusalem, Faculty of Agriculture, P.O. Box 12, Rehovot 76100, Israel

'Gil' (previously Akko 11-19) is an avocado (*Persea americana* Mill.) seedling selected in a breeding project conducted at the Akko Expt. Station, Western Galilee, Israel (Lavi et al., 1991). This seedling was named 'Gil' and is being released because it is similar to 'Hass' in productivity, color, and taste but has larger fruit.

Origin

In Spring 1972, a 'Tova' tree (Slor and Spodheim, 1972) was caged with a beehive for self-pollination. The fruit were harvested in 1972, and the resulting seedlings were planted in Spring 1974. 'Gil' was found among this seedling population. It is the third cultivar to be selected in the project after 'Iriet' (Lahav et al., 1989) and 'Adi' (Lahav et al., 1992).

The population of the caged 'Tova' was examined by isozyme analysis using phosphoglucomutase and leucine aminopeptidase, and 77% of the progeny was identified as resulting from cross-pollination. 'Gil', like 'Tova', was found to be homozygous in *Pgm-1* (FF) and *Lap-2* (FF) (Torres and Bergh, 1980). However, in view of the high percentage of hybrids in 'Tova' progeny, it is unlikely that 'Gil' is a self-offspring of 'Tova'. Indeed, the DNA fingerprint pattern of 'Gil' includes DNA bands that do not appear in the DNA fingerprint pattern of 'Tova', suggesting that 'Gil' originated from a cross between 'Tova' and an unknown pollen donor.

Description

The tree is upright and medium-small in size (smaller than 'Hass'). Leaves are medium-small, lanceolate, and fairly acute at both ends; they are almost flat with slightly wavy edges. Flush is green-brown with no lenticels on the young branches. No anise scent is noticeable in the leaves. Its cold resistance is similar to that of 'Hass'. Flowering intensity is medium, and the inflorescences are small and compact with a short stalk. Flowering season is similar to 'Hass'. 'Gil' belongs to the A flowering group. Its potential as a pollenizer for cultivars of the B flowering group still needs to be investigated.

The mature fruit is uniform in size and shape. It is pear-shaped with a short neck (Fig. 1). The skin is slightly pimpled with a medium gloss. Average fruit weight is ≈300 g, with a range of 250 to 400 g compared to the 160 to 220 g of 'Hass'. Fruit is black when ripe or when fully mature but can be harvested even when still green. The fruit can be stored on the tree for 2 to 3 months after it turns black (usually from March onward).

Preliminary studies show that fruit storage qualities are good (Zauberman et al., 1991, 1992). Fruit harvested from January to March (flesh dry weight 20% to 24%; firmness 1 day after harvest 120 N) stored well for 3 weeks at 5C. Shelf life after this period of cool storage was 8 to 10 days, the same as fruit kept at 20C.

The peel separates easily from the flesh and is similar in thickness to that of 'Hass' or slightly thicker. No stone cells were detected in the peel. Seed is egg-shaped and relatively large, 16% to 18% of the fruit weight. The flesh is pale yellow with green margins near the skin. Texture is buttery firm, becoming slightly doughy at the end of the harvest season (May). We consider the flavor to be good, with some nut-like characteristic. Occasionally, slight bitterness was noticed. The cut flesh shows slow enzymatic browning; browning was absent 6 h after cutting at room temperature. Harvest season lasts for ≈6 months, from the end of December until June. Sometimes, toward the end of the harvest season, small reddish fibers appear in the flesh, but fruit quality is not reduced.

The seedling excelled in the late 1970s and was distributed throughout the avocado growing area in Israel. Many of these trees now are in full production. It seems that due to its relatively large fruit, 'Gil' also can be recommended for areas with high summer temperatures, where fruit size might be reduced.

'Gil' is being patented, and graftwood may be obtained from the Agricultural Research Organization, The Volcani Center, Bet-Dagan 50250, Israel.

Literature Cited

Lahav, E., U. Lavi, D. Zamet, C. Degani, and S. Gazit. 1989. Iriet—A new avocado cultivar. HortScience 24:865–866.

Lahav, E., U. Lavi, C. Degani, D. Zamet, and S. Gazit. 1992. 'Adi' a new avocado cultivar. HortScience 27:1237.

Lavi, U., E. Lahav, A. Genizi, C. Degani, and S. Gazit. 1991. Quantitative genetic analysis of traits in avocado cultivars. Plant Breeding 106:149–160.

Slor, E. and R. Spodheim. 1972. Selection of avocado varieties in Israel. Yrbk. Calif. Avocado Soc. 55:156–157.

Torres, A.M. and B.O. Bergh. 1980. Fruit and leaf isozymes as genetic markers in avocado. J. Amer. Soc. Hort. Sci. 105:614–619.

Zauberman, G. et al. 1991. Storage of new avocado cultivars, p. 61. 1990/91 reports (in Hebrew). Dept. Fruit and Vegetable Storage, Agr. Res. Organization, Bet Dagan, Isreal.

Zauberman, G. et al. 1992. Storage of new avocado cultivars, p. 21. 1991/92 reports (in Hebrew). Dept. Fruit and Vegetable Storage, Agr. Res. Organization, Bet Dagan, Isreal.

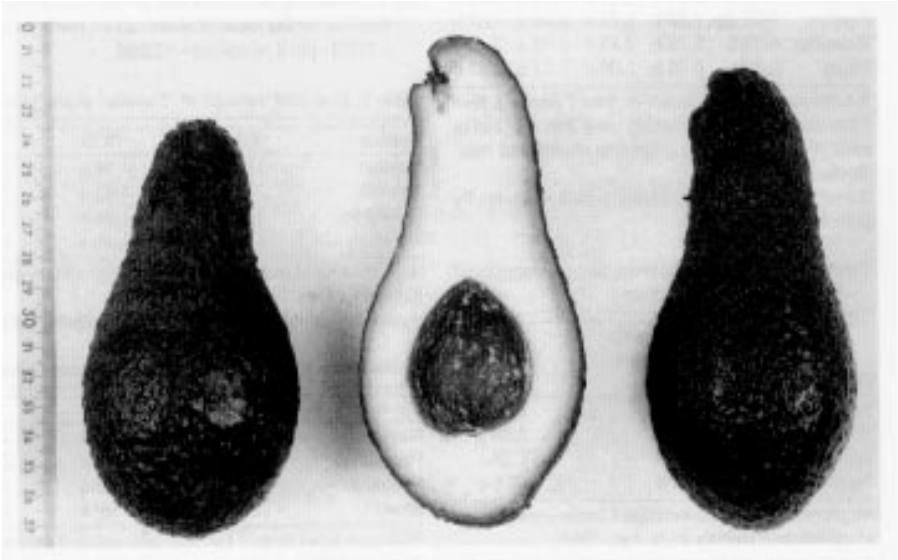

Fig. 1. Fruit of 'Gil' avocado (scale in millimeters).

Received for publication 18 May 1994. Accepted for publication 2 Sept. 1994. Contribution from the Agricultural Research Organization, The Volcani Center, Bet Dagan, Israel. no. 1439-E, 1994 series. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked *advertisement* solely to indicate this fact.