

'Eden'—A New Avocado Cultivar

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The avocado (*Persea americana* Mill.) breeding project in Israel is located at the Volcani Center in Bet Dagan and at the Akko Experimental Station. So far three cultivars from the project have been released: 'Iriet', 'Adi', and 'Gil' (Lahav et al., 1989, 1992, 1995). In Bet Dagan, ≈6500 seedlings were screened in the last 10 years. During each harvest season, fruit are picked once a month from each seedling, and 22 traits are evaluated. The performance of each seedling is scored in a Microsoft Excel file and summarized at the end of the season. These data are used for selection of new avocado cultivars as well as studying the genetics of avocado (Lavi et al., 1993).

Origin

'Eden' (BD-40/100) was selected at the Volcani Center. The seedling resulted from a 'Pinkerton' tree that was caged with 'N-151-2' in 1986. The seedling was planted in 1988 and bore its first fruit in 1991. Analysis of minisatellite (Lavi et al., 1991) and Simple Sequence Repeats (Lavi et al., 1994) DNA markers, verified it as a hybrid of the two caged cultivars.

Description

'Eden' is described according to IBPGR descriptors for avocado (1992). The tree canopy is medium to small (slightly smaller than 'Hass') and the tree shape is columnar. Leaves are intermediate oblong-lanceolate and dark green. No anise scent is noticeable in the leaves. Flowering is profuse in April and the flower type is A.

'Eden' fruit is ovate shaped (Fig. 1) and fairly uniform in shape and size. Fruit weight is 250–400 g, averaging ≈280 g, ≈30% heavier than 'Hass' (Table 1). The skin is brilliant dark green with medium thickness (Guatemalan type with stone cells). The peel separates easily from the flesh in ripe fruit. The seed is round, small to medium in size (≈10% to 15% of the fruit weight), and separates cleanly from the flesh. The flesh is yellow, buttery in texture, and largely free of fibers. A panel of

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experts carrying out comparative tests judge the flavor to be good and nut-like. The harvest season starts in November and fruit can be kept on the tree until April (similar to 'Hass').

Fruit may be stored for at least 24 days at 5 °C and 95% relative humidity. Softening at room temperature (20 °C) takes 10 to 15 days.

Preliminary results show that 'Eden' starts to bear fruit 2 to 3 years after grafting, and its productivity seems to be very good. The tree may require pruning to control a tendency to biennial bearing.

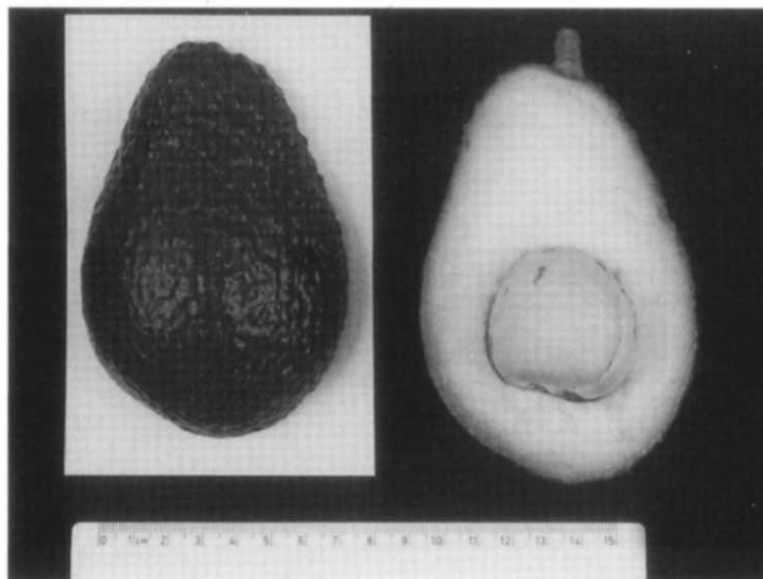


Fig. 1. Fruit of 'Eden' avocado (scale in mm).

Table 1. Performance of 'Eden' and 'Hass' in 16 traits.

Trait	Cultivars	
	Hass	Eden
Average fruit weight (g)	210	280
Skin color	Black	Dark green
Gloss	Slight	High
Surface ²	Slightly pimpled	Slightly rough
Thickness	Medium	Medium
Texture	Leathery	Leathery to stony
Seed size ³	13% to 17%	10% to 15%
Ease of peeling	Good	Good
Flesh color	Yellow-green	Yellow
Fibers	Slight	Slight
Bitterness	None	None
Sweetness	None	None
Aroma	Medium	Medium
Flavor	Very good	Good
Softening time	10–15 days	10–15 days
Harvest duration	November–May	November–April

²Skin surface: pimpled = the skin has small protrusions on the surface, rough = the skin has grainy surface.

³Seed size is measured as percent of fruit weight.

Availability

'Eden' is being patented, and can be obtained from the Agricultural Research Organization, the Volcani Center, Bet Dagan, Israel.

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