

'Arad'—A New Avocado Cultivar

E. Lahav, T. Israeli

Regional Experiment Station, Akko 25212, Israel

I. Regev

Ministry of Agriculture, Akko 25212, Israel

H. Ardity

Kibbutz Maabarot 40230, Israel

U. Lavi, M. Chemo, A. Chapnik, M. Ackerman, O. Feygenberg,
E. Pesis, and D. Sa'ada

Agricultural Research Organization, The Volcani Center, Bet Dagan 50250, Israel

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'Arad' (previously 2-45-88) is an avocado (*Persea americana* Mill.) seedling selected in a breeding project conducted at the Volcani Center, Bet Dagan Israel (Lavi et al., 1991). So far several cultivars have been released: 'Iriet' (Lahav et al., 1989), 'Eden' (Lavi et al., 1997), 'Galil' (Lahav et al., 1998), and 'Lavi' (Lahav et al., 2005).

Origin

In Spring 1987, a 'XX 102' tree was caged with 'N-151-2', in the presence of a beehive, for pollination. Both parents are progenies of the California avocado breeding project (Bergh, 1992). The fruit was harvested in Winter 1988, and the seedling planted in 1989, and bore its first fruit in April 1993.

Description

According to the IBPGR descriptors for avocado (1992): the tree is medium in size (about 5 m in height without pruning). It is smaller than the 'Hass' and similar to the 'Lamb-Hass' (we believe that the small size results from the heavy crop). The leaves are intermediate in size, flat, lanceolate, with straight edges and a slight anise scent. Flush is reddish-brown and the mature leaf light green. Lenticels are hardly observed.

Flowering intensity is medium-strong, similar to the flowering intensity of 'Fuerte' with medium-short panicles. In our experience this flowering intensity is a prerequisite to obtain the heavy crop. The flowering season is from mid-April to mid-May, similar to 'Lamb-Hass' and after 'Hass' and 'Ardith'. 'Arad' belongs to the A flowering group. Its potential as an efficient pollenizer for the cultivars of the B flowering group is under investigation.

'Arad' excels in precocity and bears fruit already in the second year after grafting. The bearing potential surpasses 'Hass' by about 50% and may reach 27 t ha⁻¹. 'Arad' is the best producer cultivar compared to all commercial cultivars in Israel. Its tendency to alternate bearing is not yet known. The attractive fruit is pear shaped (Fig. 1) and uniform. The skin is smooth, glossy, dark green with few lenticels and a yellowish-green

line along some of the fruits. The fruit weight is 180 to 480 g (averaging 300 g), depending on the crop load and harvest season. The fruit stalk is medium and attached slightly off-center. Fruit can be harvested without the stem (snapped) with no damage to the pericarp.

The ripe fruit remains green. The leathery peel separates easily from the flesh and is of medium thickness (like 'Fuerte'). The seed is slightly elongated, small in size, about 8% to 10% of the fruit weight. The flesh is yellow with a green rim, without fibers and with a good buttery flavor. The harvest season is from January to April (similar to 'Fuerte').

Based on preliminary experiments at the Department of Postharvest Science at the Volcani Center, 'Arad' can be stored four weeks at 5°C and 95% RH with no defects or rot. Some rotteness and internal pulp browning is detected towards the end of the harvest season. Rotteness was observed both at room temperature and after cold

storage. The only detected fungus was *Colletotrichum gloeosporioides* which affected the fruit body and not the stem end. Storage experiments to generate sufficient data regarding the incidence of rotteness are in progress. Softening after this period of cold storage at 20 °C, occurs after 4 to 6 d, while shelf life is 9 to 13 d. We recommend starting the harvest of 'Arad' at 19% dry matter. The maximum dry weight observed at the end of April was 29.8%. During this period the firmness is 96 to 147 Newtons.

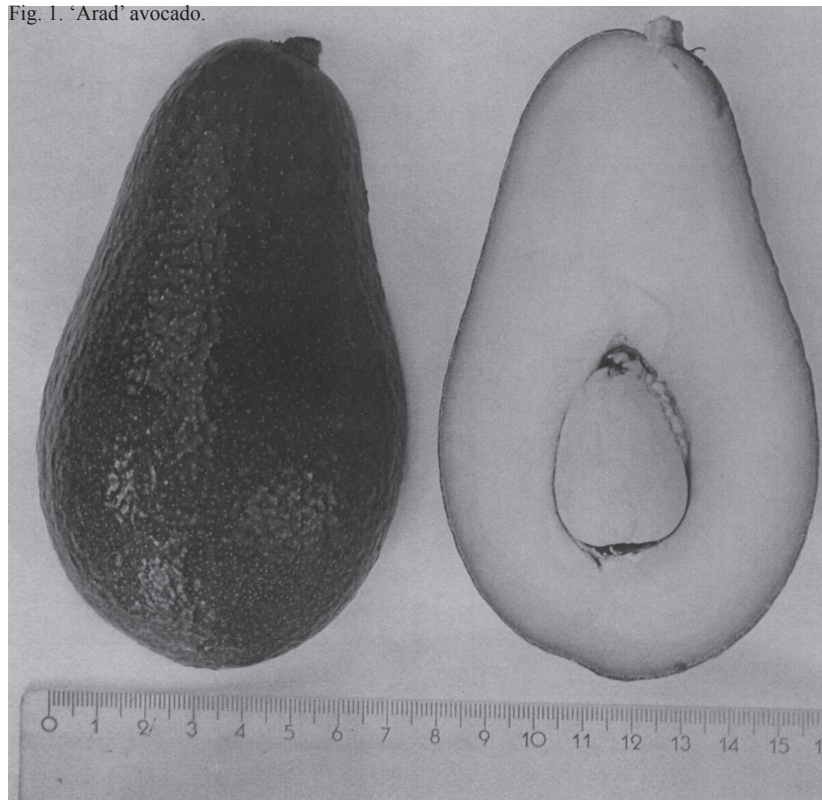
Availability

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

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Fig. 1. 'Arad' avocado.



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