

Adarcias: An Almond x Peach Hybrid Rootstock

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Additional index words. *Prunus amygdalo-persica*, propagation

Adarcias is an almond x peach hybrid [*Prunus amygdalo-persica*] developed at the Estación Experimental de Aula Dei, Zaragoza, Spain, for use as a rootstock for peach [*P. persica* (L.) Batsch]. Cambra (1990) has described a parallel almond x peach hybrid, Adafuel.

Peach scions grafted on Adarcias grow well; trees are less vigorous than on GF 677 or Adafuel. Cropping efficiency is higher or similar to that of either of these other hybrids (Table 1) (Moreno et al., 1994a, 1994b). Adarcias maiden trees have a semivigorous and upright growth, compared to the spreading shape of GF 677.

This rootstock is easily propagated by hardwood cuttings (Table 2). In addition, it can be propagated by in vitro techniques (J.A. Marín, personal communication).

Adarcias adapts well to light and calcareous soils, but it requires good drainage.

Tests performed in the nursery have shown that Adarcias is resistant to *Coryneum beijerinckii* Oud. and *Tranzschelia prunispinosae* (Pers.) Diet.

Origin

Adarcias was selected from openly pollinated seedling populations. Starting in 1970, selection work was performed at Estación Experimental de Aula Dei. The clone was initially tested as Arbucias and was selected because it had good rooting ability (Table 2), less vigor, and a higher or similar productivity index than other almond x peach hybrids when used as a rootstock (Cambra, 1979; Moreno et al., 1994a, 1994b) (Table 1).

Adarcias would be suitable for peach cultivars to avoid excessive vigor, to increase

planting density when tree size needs to be controlled, or to reduce production costs.

Compatibility

Adarcias has shown good compatibility with 20 tested peach and nectarine cultivars. It also has been tested with almond [*P. dulcis* (Mill.) D.A. Webb]. This rootstock also is graft-compatible with Japanese plum (*P. salicina* Lindl.) cultivars, although the range of cultivars tested is not extensive. The compatibility with European plum and prune (*P. domestica* L.) cultivars depends on the grafted cultivar (Moreno et al., 1994c).

Description

One-year-old shoots are green in spring or summer and intensely red in winter. They usually bear one flower bud per node. Internodes are medium in length, and leaves are peach type, large, and pale green with wavy serrated margins. The mean length : width ratio of the leaf blade is 16 : 6, slightly lower than that of GF 677 (12 : 4). Leaf petioles generally have more than two reniform nectaries and two short stipules. Leaf fall is intermediate.

Adarcias has showy, large, light-pink flowers with 45 to 50 stamens and one pistil that remains low beneath the anthers. Fruit are intermediate between peach and almond, with a 27-g mean weight, a 39-mm length, and 35-mm width. The epidermis is pubescent and orange-yellow. The stone is free and rounded, and the seed is bitter and dark-golden brown.

Availability

Almond x peach hybrid Adarcias registration is in progress at the Instituto Nacional de Semillas y Plantas de Vivero, Ministry of Agriculture. Small amounts of rooted cuttings or budwood can be obtained from the Estación Experimental de Aula Dei. Adarcias is free of all known viruses (Cambra, 1981).

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Table 1. Rootstock effects on trunk cross-sectional area (TCSA) and productivity index of 'Catherine' and 'Flavortop' for the first 10 years.

Rootstock	Catherine		Flavortop	
	TCSA (cm ²)	Productivity index (10 kg·cm ⁻²)	TCSA (cm ²)	Productivity index (10 kg·cm ⁻²)
Adarcias	240 a ²	6.4 a	207 a	12.2 b
Adafuel	362 b	5.2 a	380 c	9.2 a
GF 677	324 b	5.8 a	280 b	12.0 b

²Mean separation within columns by Duncan's multiple range test at P ≤ 0.05.

Table 2. Percent rooting of hardwood cuttings of Adarcias, Adafuel, and GF 677 treated with 4000 ppm indolebutyric acid.

Rootstock	Year			Mean
	1989-90	1990-91	1991-92	
Adarcias	83	67	80	77
Adafuel	88	71	84	81
GF 677	77	51	65	64

Received for publication 20 Sept. 1993. Accepted for publication 4 Feb. 1994. 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.