



IRTA Selected Almonds

‘Vairo’, ‘Constantí’, ‘Marinada’ and ‘Tarraco’

IRTA
RESEARCH & TECHNOLOGY
FOOD & AGRICULTURE



IRTA Selected Almonds

IRTA is the **Agrifood and Technology Research Institute** founded in 1985, part of the Agricultural Department of the Catalan Government. IRTA's mission is to become a scientific reference of the agrifood sector, fostering innovation towards sustainable primary production and processing systems, to improve the quality and safety of foods having a direct impact on the environment and human health.

Since its foundation, IRTA has carried out outstanding research in fruit production, improving plant materials and developing new technology. Within the Fruit Production Programme, IRTA introduces the **IRTA Selected Almonds**, a series of almond varieties released from its own breeding programme.

These varieties, with outstanding agronomic and commercial behaviours, are characterized by late blooming time (reducing frost risk), self-fertility (decreasing pollination problems), high cropping capacity, disease tolerance and high quality fruits.

Improved plant material is a key factor in new irrigable almond orchards, and traditionally local Spanish and Mediterranean cultivars have had significant limitations. The range of traditional cultivars has undergone a remarkable renewal over the last 25 years due to the spread of varieties generated by the breeding programmes.

Some years ago IRTA registered three cultivars: 'Masbovera', 'Glorieta' and 'Francolí' with features more adapted to the current climate and orchard needs. These varieties achieved a wide distribution and high acceptance with almond producers with reported plantations of around 600,000 plants worldwide.

As a result of the efforts of its own breeding programme, in 2011 IRTA released 'Vairo', 'Constantí', 'Marinada' and 'Tarraco' varieties. These new **IRTA Selected Almonds**, which obtained the Plant Material Rights from the Spanish and Community Plant Variety Office, have been very well received by the sector and are being distributed very quickly in selected nurseries around the world.

VAIRO®



‘Vairo’ shows some outstanding traits. Self-fertile, with good autogamous level. Late blooming (similar to ‘Guara’ and ‘Ferragnès’). It is highly productive due to its considerable bearing intensity and vigour. Easy to train and prune. It produces good kernels. It is tolerant to “*fusicoccum*” (*Phomopsis amygdali*) and highly tolerant to “red leaf blotch” (*Polystigma amigdalinum*). Early harvesting season.

- Seedling derived from the cross, ‘4-665’, selection x ‘Lauranne’, made in 1991.
- Plant Variety Rights: OEVV (TOV Number 2509) and CPVO (Decision Number EU 28898).



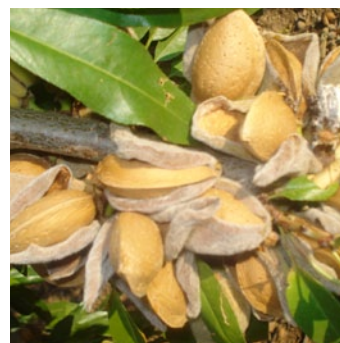
Tree

Very vigorous, which allows to maintain a good balance between production and vegetative growth; medium-upright; very easy to train and prune; nuts located mainly on spurs, but also on brindles and on one-year-old shoots.



Flower

Late blooming time, similar to ‘Guara’ and ‘Ferragnès’. Self-fertile, with good autogamous level.



Nut and Kernel

Cordate shape; hard shell; shelling percentage about 29%; without double kernels.
Kernel medium size (1.2 g); skin smooth and clear, without shrivelling.



Taste And Uses

Sweet almond and very tasty, very rich in monounsaturated fatty acids. Very long shelf life.
High fat and protein contents. Perfect for snacks and nougats.

CONSTANTÍ®



‘Constantí’ shows fair productive capacity, vigorous tree and also well adapted to rain-fed farming. It is late blooming (similar to ‘Guara’ and ‘Ferragnès’) and self-fertile, with good autogamous level. Very easy to train and prune. It produces good kernels. It is tolerant to “*red leaf blotch*” but susceptible to “*fusicoccum*”.

- Seedling derived from the cross ‘FGFD2’ selection x ‘Open pollination’, made in 1993.
- Plant Variety Rights: OEVV (TOV Number 2504) and CPVO (Decision Number EU 28897).



Tree

Vigorous, which allows it to maintain a good balance between production and vegetative growth; upright; very easy to train and prune; nuts located mainly on spurs, but also on brindles and on one-year-old shoots.



Flower

Late blooming time, similar to ‘Guara’ and ‘Ferragnès’. Self-fertile, with good autogamous level.



Nut and Kernel

Round shape; hard shell; shelling percentage about 27%; without double kernels. Kernel medium size (1.2 g); thin clear skin, with some shrivelling; higher oil stability.



Taste And Uses

Sweet almond and very tasty, very rich in monounsaturated fatty acids. Very long shelf life. Very high fat and high protein contents. Perfect for snacks and nougats.

MARINADA®



‘Marinada’ is highly productive and very precocious. It flowers very late (after ‘Ferragnès’). Self-fertile, showing a good autogamous level. Very easy to train and prune. Produces good kernels. It is tolerant to *“fusicoccum”*. Very precocious and showing medium vigour, can be useful for establishing high-density orchards at close spacing.

- Seedling derived from the cross ‘Lauranne’ x ‘Glorieta’, made in 1994.
- Plant Variety Rights: OEVV (TOV Number 2506) and CPVO (Decision Number EU 28900).



Tree

Medium vigour, its vigour allows it to maintain a good balance between production and vegetative growth; medium-upright; very easy to train and prune; nuts located mainly on spurs.



Flower

Extra-late blooming time, after ‘Ferragnès’. Self-fertile, with good autogamous level.



Nut and Kernel

Cordate shape; hard shell; shelling percentage about 31%; without double kernels.
Kernel medium size (1.3 g); attractive skin, smooth and clear.



Taste And Uses

Sweet almond and tasty. Medium fat and very high protein contents. Perfect for snacks and light foods.

TARRACO®



‘Tarraco’ is highly productive and very precocious. It flowers very late (after ‘Ferragnès’). It is very easy to train and prune. Good kernel, big-sized. It is very tolerant to *“fusicoccum”* but susceptible to *“red leaf blotch”*. It is self-incompatible and thus needs cross-pollination. It can be associated with Marinada as their blooming times overlap.

- Seedling derived from the cross ‘FLTU18’ selection x ‘Anxaneta’, made in 1991.
- Plant Variety Rights: OEVV (TOV Number 2508) and CPVO (Decision Number EU 28899).



Tree

Medium vigour; medium-upright; very easy to train and prune; nuts located mainly on spurs.



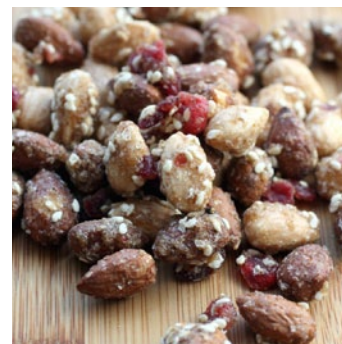
Flower

Extra-late blooming time, after ‘Ferragnès’. Self-incompatible, needs cross pollination.



Nut and Kernel

Oblong shape; hard shell; shelling percentage about 32%; without double kernels. Kernel big size (1.7 g); skin smooth and clear.



Taste And Uses

Sweet almond and very tasty, very rich in monounsaturated fatty acids. Very long shelf life. High fat and protein contents. Perfect for snacks.

A close-up photograph of almond flower stamens, showing yellow anthers and white filaments. The background is blurred, showing more of the flower and some green leaves. On the left side of the image, there is a vertical bar with four colored segments: orange, blue, yellow, and green.

IRTA Breeding Programme: a view to the future

The almond crop has an undeniable importance in Spain and in all Mediterranean countries. Orchards are often located in very marginal soils, achieving very low yields; however, a slow but a very steady trend towards higher crop yield (drip irrigation, better soils, productive cultivars, etc.) is recently being implemented. Nevertheless, more efforts need to be made in crop reconversion with new plant materials and new technology in order to become competitive.

The breeding programme at IRTA began in 1975, with the objective to obtain almond varieties from controlled crosses, focusing on increasing orchard competitiveness by improving the quality of plant material. The specific objectives of such varieties are late flowering cultivars (reducing frost risk), self-fertility (decreasing pollination problems), high cropping capacity, fruit quality, easy training and pruning, good vigour and tolerance to adverse conditions (diseases, drought, etc.).

The programme has already achieved significant progress and success. Yet IRTA keeps working in that direction to face the future of the fruit production with the most advanced selections and new crosses, regarding a good variety as a set of outstanding characteristics, with particular emphasis on quality, tolerance to diseases and extra-late blooming.

TECHNICAL CONTACT: xavier.miarnau@irta.eu

INNOVATION MANAGER: rosana.garcia@irta.eu

IRTA



Generalitat de Catalunya
Government of Catalonia

IRTA Torre Marimón

Ctra. C-59 km 12,1
Caldes de Montbui
08140 Barcelona

T (+34) 93 467 40 40
F (+34) 93 467 40 42
international@irta.eu
www.irta.eu