

PISTACHIO CATALOGUE

Pistacia vera

The pistachio nut grows on a small tree or shrub classified as *Pistacia vera*. *Pistachica* is a genus of the family Anacardiaceae and is related to cashew (*Anacardium occidentale*), mango (*Mangifera indica*) and the pepper tree (*Schinus molle*).

Pistachios can be grown in a range of temperature climates, but commercial plantings require more exacting conditions. Ideally, pistachios require cold winters and hot, dry summers so the major growing areas tend to be the Murray and Murrumbidgee Irrigation areas, with some smaller plantings in Western Australia and Eastern South Australia. The quality of imported pistachio nuts is generally poor in comparison with Australian pistachios, which are fresher, have a superior flavour and do not require fumigation like imported nuts.



CONTAINER SIZE

Grafted pistachio trees are supplied in a 4Ltr poly bag.

Rootstocks can be supplied in either a 4Ltr poly bag or 70mm tube.

GROWING MEDIA

At Sunraysia Nurseries we take great care with our plants by growing them in pasteurised (aerated-steam treated) media to prevent Phytophthora contamination.

CHILLING FACTOR

Insufficient winter chilling in the Australian growing areas due to mild winters and possibly progressive climate change has also become a priority issue. Warmer winters affect breaking of dormancy in pistachio trees, which is common with many other deciduous fruit and nut trees, they require winter chilling to ensure uniform budburst and flowering. Pistachios generally require about 1000 hours below 7.5C each winter for commercial nut production.

Summer and Autumn should be dry and rain free to prevent staining of shells and a build up of a fungus producing Aflatoxin.

(Aflatoxin is a toxic compound that is produced by certain mould and contaminates stored food).

POLLINATION

Pistachios are dioecious, meaning male and female flowers are on separate trees. Therefore male and female trees must be present for fruit set or a branch from a male tree must be grafted to a female tree. A pollinator density of 1 Male in 15 Female trees is now considered adequate.

After pollination, nuts, which are produced in bunches near the shoots extremities, develop very rapidly and the outside shell may reach full size after a few weeks. At this stage it is almost empty and the kernel develops during the following 3-4 months.

PLANTING DISTANCES

ROW SPACE	TREE SPACE	TREES PER ACRE
Single	9.75m x 9.75m	42
Single	9.10m x 9.10m	48
Double	9.75m x 4.90m	84
Double	9.10m x 4.50m	96

VARIETIES

CSIRO has an extensive collection of Pistacia species and cultivars at Merbein Field Station in the Sunraysia irrigation district have conducted field trials on grower's properties. The CSIRO variety Sirora, which has come to be the industry standard in Australia, came out of this program. It has the important characteristics of high yield and high percentage split which is important for successful commercial growers.

SIRORA (FEMALE)

ORIGIN: Seedling from an open pollinated Red Aleppo. Parent plant is growing at USDA Station, Chico, California.

HABIT: Spreading. Wider than tall.

VIGOUR: Slightly vigorous.

LEAVES: Leaflets rounded, usually 3, lateral leaflets overlapping the terminal, length/breadth ratio 1:3.

COLOUR: Rose flush, becoming pink while ripening.

WEIGHT: 1.0g de-hulled, air dry.

SHAPE: Intermediate hazel, slightly flattened at the suture.

% SPLIT: 93%

ROOTSTOCK SPECIES

P. terebinthus. L. is a dense shrubby spreading tree, 2-6m high. Has resistance to both nematode and fungi. It is preferred for closer planting and heavier textured soils.

It is tolerant of both acid and alkaline soils and well suited to shattered rock soils. It is recommended for non-irrigated orchards but only under adequate rainfall.

Pioneer Gold 1 This new disease resistant rootstock seed is an F1 hybrid, which is patented by its American breeder. It gives the orchard tree a high degree of tolerance to verticillium wilt with very uniform growth and increased vigour over *P. terebinthus*, which can result in increased yields. Please note that pistachio's grafted onto the patented hybrid, Pioneer Gold 1, incur (an additional) charge of \$2.00.

PESTS AND DISEASE

Because of its antiquity and wide distribution, the pistachio is host to a wide range of pests and diseases. Those that have proved serious wherever pistachios are grown are summarised.

- *Capnodis cariosa* a stem and root borer.
- *Ceroplastes rusces* scale that can affect stem, leaves and fruit.
- *Ceutorrhynchus* weevil that destroy flowers and pollen.
- *Recurvaria pistaciola* moth feeds inside fruit.
- *Megastigma pistacia* wasp found inside fruit.
- *Plodia interpunctella* moth that attacks fruit.
- *Tinea Pistaceae* moth that eats shots and buds.
- *Armillaria melea* a fungus that attacks roots and base of stem.
- *Phomopsis* sp. Attacks buds and inflorescences.
- *Uromyces Pileolaria* a rust fungi that attacks leaves and stems.
- Rosetting and witches-broom virus.

- Mites, Aphids and Thrips.

PRUNING AND TRAINING

Pistachio trees do not respond to pruning in the same way as other deciduous fruits. The reasons for this are:

- as trees age a greater proportion of buds formed are floral
- pistachio shoots have very strong apical dominance so that few side shoots are formed.
- buds on shoots older than one year tend to drop off. Vegetative buds form only at or near the end of shoots that result from each growth flush.

Young trees however should be shaped and trained to suit the orchard practice by rubbing out unwanted shoots and encouraging branches with wide crotch angles. This should be done during the first five years before flower buds become dominant.

Aim for an unbranched trunk approximately a metre high and four or five well separated scaffold branches capable of being shaken by a tree shaker when trees are mature.

Pruning at the end of the growing season can encourage a more suitable framework to develop. The only other pruning necessary is to remove crossing or overcrowded branches.

NUTRITION AND WATER

Depending on soil fertility and irrigation frequency, 20g-60g nitrogen per tree per year for the first four years should be adequate. Mature trees probably require a dressing of about 250g nitrogen per tree.

Pistachio trees are extremely drought tolerant but little or no crop is produced when trees are stressed. Any water or nutritional stress during the period from November to February when nuts are filling will reduce the crop.

The irrigation requirement has not been accurately determined but the crop could probably be successfully grown with 400 to 600mm of rain provided this was distributed in the late winter to early summer period.

HARVESTING AND STORAGE

Nuts are harvested when the hull, the crisp covering around the shell, becomes fairly loose. Normally nuts can be shaken from the tree. Remove hulls soon after harvesting. Dip hulled nuts in water to moisten the shell and spread them in the sun to dry.

Many of the shells will split. One method of processing is to boil the nuts in a salt solution for a few minutes, then redry and store. Stored in plastic bags, pistachios will last at least 4 to 6 weeks in the refrigerator. Frozen, they will last several months.