

AVOCADO CATALOGUE

Persea americana

The avocado is known botanically as - *Persea americana*, and is a member of the Laurel family, being a relative of the common shade tree Camphor laurel, Sassafras and Cinnamon families. It is indigenous to Central & South America, West Indies and adjacent areas where the fruit was frequently used as a major element in the staple diet of native tribesman.

Commercial culture of avocados commenced in California, Florida and Hawaii, in the early nineteenth century with the growing of seedling trees of several races. In the later nineteenth century, orchards were established using budded trees of selected varieties from original seedling importation.

In Australia, the avocado industry has gradually expanded in Northern New South Wales, Southern Queensland, and more recently in the lower Murray districts.



The tree is an evergreen, though heavy leaf fall may occur during a season of profuse blossoming. The manner of growth varies from tall, upright types to well shaped, spreading trees.

The nutritional value of avocados is unique among fruits. Its oil content can be used as high as 26% (Fuerte) which gives it an energy value equivalent to bread. In addition, it is low in sugar and this decreases as the fruit ripens from 3%, while the oil content increases.

Each fruit has one seed, which varies in shape and size according to variety. A small seed adhering to the seed-cavity is most desirable. When ripe, the flesh should be soft and with a consistency similar to butter.

Avocado trees are self - fertile and a single tree will produce fruit. (Gwen must be cross-pollinated).

CONTAINER SIZE

Our Avocado trees are produced in two sizes. A 4Ltr poly bag for commercial growers and a 90mm tube for retailers.

ROOTSTOCKS

We graft our avocado trees to the following rootstocks.

ZUTANO seedling stock selected because of its tolerance to both salt and lime.

VELVICK A Guatemalan hybrid stock that imparts tolerance to Anthracnose and later maturity.

ASHDOT A West Indian selection imported from Israeli by ANFIC. The West Indian race is used as the basis of avocado rootstock in Israeli. They tend to have:

- A high resistance to *Phytophthora Cinnamomi* and salinity.
- Good alternative to Zutano
- Good lime tolerance.
- Salt tolerance good, slightly better than Degania and superior to Velvick.
- Good in a wide range of soils from red sands to brown and grey loams.
- Regular bearer.
- Royalty protected variety. (Current charge \$2.00 per tree).
- Non Propagation agreements need to be signed by Growers.

DEGANIA A West Indian selection imported from Israeli by ANFIC. The West Indian race is used as the basis of avocado rootstock in Israeli. They tend to have:

- A high resistance to *Phytophthora Cinnamomi* and salinity.
- Good alternative to Zutano
- It would appear to do a little better than Ashdot in heavier soils
- May have a slightly better lime tolerance than Ashdot.
- Irregular bearer.
- Royalty protected variety. (Current charge \$2.00 per tree).
- Non Propagation agreements need to be signed by Growers

PLANTING

Good soil drainage is an essential requirement, as avocados are prone to ***Phytophthora Cinnamomi*** – root rot fungi in poorly drained situations. In addition, avocados are more prone to injury by root uptake of salts than citrus, and good soil drainage, together with good irrigation layout and management, are necessary to control salts accumulating in the soils.

In our nursery, all trees are propagated in pasteurised media and grown on raised benches to ensure freedom from **Phytophthora cinnamomi**.

It is important to protect the young transplant against wind damage, sunburn, frost and drought. We recommend mulching about the root system and erection of individual tree protectors for the first two years of establishment.

This is best afforded by means of a canopy covering the tree; open only to the North East to allow morning sun to the tree. The canopy can be covered with a shade cloth material or hessian. The tree will eventually grow through this canopy after which it should be both frost hardy and tolerant of full sun.

Avocados prefer light structured soils with free drainage (avoid heavy clay soils.)
Provide ample water during summer period.

Root disturbance should be as little as possible during the transplanting operation. Holes should be dug large enough to take the root system comfortably and should be back-filled with fine topsoil. 225gms of blood and bone mix into the soil at the base of the hole is beneficial. The trees should be planted to the height of the old soil level on the trunks. After filling, fifteen – sixteen litres of water will settle the soil around the roots.

A later dressing every two months or so during the growing season, of a tablespoon of a complete fertiliser (high in nitrogen) such as the high analysis citrus fertilisers, spread evenly under the tree will encourage maximum growth.

Immediately after planting, it is desirable that young trees be staked, for support.

HARVESTING

The avocado is unique in the way it ripens. It matures on the trees but does not ripen until the fruit is picked. The characteristic has an advantage in that the crop will hold on the trees and harvesting time is not critical.

Experience is the best guide to judging maturity of avocado, but some varietal characteristics help to determine when to harvest, such as:

1. A change of colour from green to purple (eg Hass).
2. Fruit stem becomes yellow (eg Fuerte).
3. A dull green shade may replace a shiny green appearance.

If in doubt a sample can be picked and placed indoors. If the fruit ripens in a reasonable time, (7 – 10 days) without wilting, and shows all desirable characteristics of the variety, harvesting can start.

Avocados are best clipped from the trees, rather than plucked, leaving a short portion of the corky stems. This helps prevent mould infection during ripening.

Additional time and care spent in grading and packing this luxury fruit will be well rewarded on the market.

PRUNING

Varietal characteristics and growth habit should be taken into account when forming a newly planted tree. It is very important to avoid a weak crotch or divided trunks. It is best achieved by pinching back young limbs in early stages of growth. Once the tree is established, little pruning is required, as avocado trees tend to shape themselves. Limbs, which cause overcrowding and are in poor shape, can be pinched back and the shoots arising from below the union should be removed.

CINCTURING

1. Cincturing of a mature, healthy Avocado tree over 10 years old, appears to assist fruit set particularly where biennial bearing is a problem.
2. The method by which this occurs is not completely understood. It may be a response to the greater supply of sugars trapped in the cinctured limb, or it may be due to a delayed flowering response on that limb.
3. Cincturing involves the removal of a complete ring of bark 18mm (3/4 an inch) wide from the base of the trees major limbs.
4. Only a 1/3 – 1/4 of the whole tree should be treated so as not to set the tree back too much. The treated limbs should be well labeled so that they are not cinctured again for 4 – 5 years.
5. The greatest benefit will be gained before cincturing in the off year to try and encourage more uniform fruit set and even out the crop load.

RACES OF AVOCADO

There are three main races of avocado (and many hybrids between the races) from which the main varieties have originated. Briefly, the characteristics of those are:

WEST INDIAN – Native of West Indies, Central and South America – tree are very sensitive to cold – skin of fruit is always smooth and leathery, seed is fairly large and

loose in seed cavity and the two halves of the seed are rough on the surface, the fruit stems are short.

GUATEMALAN - Native of Central American highlands, much more resistant to cold, the new growth is a reddish bronze colour not green – skin of fruit is always thick and rough, the seed is small and tight in the cavity, each half is smooth and the fruit stem is long.

MEXICAN - Native of Mexican highlands and mountain country running down as far as Chile. The leaves and young fruit of this race possess a characteristic aniseed, camphor odour when crushed, fruit is small with skin thin and smooth, and the seed is large and smooth.

VARIETIES

Most Australian commercial varieties are either Guatemalan or Mexican origin, or are hybrids of those two races.

BACON A vigorous upright grower with smooth green oval shaped fruit, weighing approximately 300-400gms the fruit matures June – Mid July, and falls from the tree when ripe. It is used to pollinate Hass and Gwen, and is a relatively frost tolerant variety. Its flower type is B. The tree has a 4m spread and 15m height.

EDRANOL An upright growth habit, with a glossy green pear shaped fruit, weighing approximately 300-400gms. The flesh texture is very good. It is used to pollinate Fuerte and Hass in South Africa. Its flower type B. It matures August – October, and the tree has a 3m spread and 9m height.

FUERTE Is a tree of spreading growth habit, with smooth green pear shaped fruit of magnificent quality. Fruit weight is approximately 300-400gms and matures June – October. It is the most widely planted of all varieties and is relatively frost tolerant. The tree has a 12m spread, 8m height and a flower type of B.

***GWEN** A moderately vigorous small upright, spreading tree with green skinned, larger than average sized fruit. It matures 7 – 14 days after Hass, September – January. Consistently heavy bearer, especially in early years, of quality fruit exhibiting good tree storage, and weighing approx 200-300gms. The tree has a 4m spread, 8m height and a flower type of A. Gwen must be cross pollinated. We recommend Ryan.

HASS Large upright spreading tree, with a thick pebbly, purple coloured skin, fruit is oval shaped. The fruit texture is of excellent quality with an approximate weight of 250gms. It matures September – January. It is used to pollinate Bacon, Fuerte and Sharwill. The tree has a 9m spread, 10m height and a flower type A.

HAZZARD Is a compact upright grower with pebbly green coloured skin. Fruit is pear shaped weighing approximately .45kg. The fruit matures September – December. The tree is susceptible to zinc deficiency and is as frost tolerant as Hass. The tree has a 4m spread, 4m height and a flower type of A.

***LAMB HASS** Very similar to Hass except that it matures 4-12 weeks later. Dark purple coloured fruit. Flower type A.

JALNA Is a vigorous upright growing tree, with smooth skinned green pear shaped fruit. Maturing April – May. When ripe the fruit will fall from the tree. The tree has a 5m spread, 9m height and a flower type of A.

MILLICENT An upright growing tree with glossy, green thick skinned & oval shaped fruit. The fruit matures September – December, and weighs approximately 400gms the tree has a 3m spread, 8 height and a flower type of B.

REED A vigorous upright growing tree with green skinned & oval fruit. Maturing November – March, and weighs approximately 500gms. The tree has a 4m spread, 9m height and a flower type of A. Sharwill is used to pollinate this variety.

RINCON Is a tree of low spreading habit. Its fruit has smooth glossy green skin, and is pear shaped with a narrow neck. It matures July – October and weighs approximately .300gms. It is used to pollinate Fuerte. The tree has a 6m spread, 4m height and a flower type of A.

RYAN An upright spreading tree with green skinned smooth pear shaped fruit. Weighing approx 300gms and maturing November – January. The tree has a 6m spread, 8m height and a flower type of B. It is used to pollinate Gwen.

SHARWILL Is a tree with vigorous upright habit much like Hass. The fruit is green skinned and pear shaped, ripening August – November and weighing approximately 350gms. The fruit texture is of excellent quality. The tree has a 8m spread, 10m height and a flower type of B. This variety pollinates Rincon and Has. Particularly suited to coastal regions.

WURTZ Fruit is green skinned, pear shaped and of good quality. Matures November – February, and weighs approx. .30kg. The tree has a 6m spread, 4m height and a flower type of A. Wurtz trees are compact and have downward hanging branches.

ZUTANO Very Vigorous upright growth habit, with smooth green skinned & oval shaped fruit. Maturing March – July and weighing approximately .38kg. Like Bacon, it is very suited variety to wind break planting, and is relatively frost tolerant. The tree has a 6m spread, 15m height and a flower type of B.

*** Royalty Protected Variety** Varieties registered with Plant Breeders Rights must be sold to commercial growers only in minimum lots of 20 and growers must sign a non-propagation agreement. Therefore these varieties are not available to Retail Centers.