



Stahmann Farms



PECAN FACTS

Origin

The pecan (*Carya illinoensis*) is a tree-nut native to North America. It is thought that they originated around southern Illinois and were transported elsewhere by the waters of the Mississippi River. Pecans made up a large proportion of the diet of the native Americans in the region and it was noted that they subsisted on the nuts during the winter months.

Pecans have only been commercially cultivated for about 140 years and it is only in the last 75 years that there has been a major development of the commercial pecan industry, initially in the USA and then internationally.

Botany

Pecan is a member of the *Carya* genus, which includes hickories and walnuts. Pecan trees can grow to an enormous size with one tree in Tennessee growing to 3.3 m in diameter and over 40m high. Pecan trees are known to live for up to 800 years, and there are trees in commercial orchards in the USA that are 80 years old.

The pecan is a deciduous tree, losing its leaves over the winter months. Most deciduous flowering plants require a given number of "chill hours" before they can produce fruit. Pecans do not have a high chilling requirement, but it is recommended that they have at least 400 hours of temperatures at or below 7°C. Pecans have a growing season of 240 to 280 days, with the nuts being on the tree for 6 to 7 months.

Physiology

Pecan trees are monoecious, meaning that male and female flowers occur separately on the same tree. The male flowers, called catkins, contain pollen. They are long and slender in appearance, occurring at the base of new shoots and along the length of the supporting one-year-old wood in clusters of two to three stalks. The female or pistillate flowers are found on the spikes at the tips of new branches in clusters of three to ten green flowers.

Pecans exhibit dichogamy, a condition in which pollen shed and stigma receptivity occur at different times. This characteristic minimises self pollination and promotes cross pollination.

For this reason, at least two varieties with complementary flowering characteristics are required in an orchard for adequate pollination.

Those varieties in which the pollen is shed before the stigma are receptive are called protandrous (Type I), while those in which the stigma is receptive before pollen is shed are termed protogynous (Type II).

Stahmann Farms use mainly Wichita (protogynous) and Western Schley (protandrous) varieties, although Cape Fear (protandrous) has been used in more recent plantings.

Tree health and conditions in the year prior to the current flowering have a significant bearing on current flower numbers and vigour. Most trees are pollinated by the wind. Pollen grains are light in weight and will carry on the wind for considerable distance. Rain and fog inhibit pollination.





PECAN FACTS



Pecans produced from seed are not true to type. This means that a nut produced by a given variety will not, when planted, produce the same variety as the parent. To propagate a tree of a given variety, buds or shoots of the preferred variety must be grafted onto seedling rootstock.

Alternate Bearing

One of the most significant problems facing pecan production is alternate bearing. This refers to the pecan's tendency to bear a relatively heavy crop of nuts one year and a lighter crop the next year. These cycles can create an uneven cash flow for pecan producers.

Physiologically, alternate bearing is related to the carbohydrate levels stored in the root system at the end of the growing season. After a year of heavy production, carbohydrate levels are diminished.

Soil and Water Requirements

Pecans grow best on deep, fertile, sandy loam or loam soils with a clay subsoil. Any soil with adequate water-holding capacity will do, provided it is deep enough. The type of soil, whether a sand or loam, will determine in many respects the spacing and type of management program. Pecans should not be planted on poorly drained soil, hardpan or stiff clays, or thin sands with a high water table.

Pecans are very sensitive to water stress and a good watering program is essential to ensure high yields and quality. On a flood irrigated program, mature trees will require approximately 8ML per hectare per annum (depending on soil conditions). With sub-surface drip irrigation, there is the potential to halve this water use (again depending on soil conditions).

Most orchardists use a combination of evapo-transpiration recordings and soil-water measurements (through capacitance probes) to schedule irrigations.

Harvesting and Curing

Mechanical harvesting involves shaking the pecans on a properly-prepared orchard "floor" with a tree shaker, and then either windrowing them with a sweeper and picking them up with a mechanical harvester.

The nuts are cleaned through a pre-cleaning line which removes leaf, sticks, dirt, and other extraneous material. A spray-rinse removes dust and surface dirt from the nuts before they are gently dried.

Once dry the pecans can be stored in cool dry conditions for 12 months or more.

Yields

Trees do not normally produce commercial yields until about year seven, after planting. Mature trees may average 3500 kg per hectare, with highly productive orchards producing up to 5000 kg per hectare.



For more information, please visit one of the following sources:

www.pecangrowers.org.au Australia's Pecan Growers Association website which provides an insight into pecan growing, pecan facts, equipment and a library of books and images.

www.ilovepecans.org National Pecan Shellers Association (USA) a wealth of information

