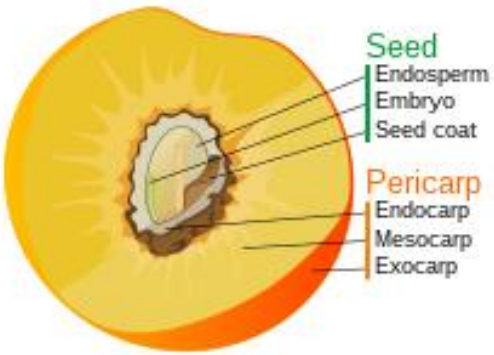
Stone Fruit

So many delicious fruits like **Peaches, Plum, Apricot, Almond and Cherrie** fall into the stone fruit category. Even **Olives**, though we often think of them more as savory, are stone fruits.

A stone fruit is **a fleshy fruit that has a pit or "stone" in the center**. The pit can be **clingstone** or **freestone**, which simply describes how easily the fruit pulls away from the seed. There are 14 common types of stone fruit, including everything from cherries to peaches.

A stone fruit, also known as a **drupe**, has an inner pit surrounded by a fleshy fruit encased with a thin skin. **Peaches and Apricots** are just a few examples of stone fruit. The inner pit of a stone fruit is oftentimes called a "stone".



In botany: a **drupe** or (**stone fruit**) is an indehiscent type of fruit in which an outer fleshy part (exocarp, or skin, and mesocarp, or flesh) surrounds a single shell (the pit, stone, or pyrena) of hardened endocarp with a seed (kernel) inside. These fruits usually develop from a single carpel, and mostly from flowers with superior ovaries.

The definitive characteristic of a drupe is that the hard, lignified stone is derived from the ovary wall of the flower. Other fleshy fruits may have a stony enclosure that comes from the seed coat surrounding the seed, but such fruits are not drupes.

Flowering plants that produce drupes include Olive, pistachio, cashew, and all members of the genus ***Prunus***, including the almond, apricot, cherry, peach, nectarine, and plum.

The term **drupaceous** is applied to a fruit having the structure and texture of a drupe, but which does not precisely fit the definition of a drupe.

Terminology:

The term **stone fruit** can be a synonym for drupe or, more typically, it can mean just the fruit of the genus ***Prunus*.**

Freestone: it refers to a drupe having a stone which can be removed from the flesh with ease. The flesh is not attached to the stone and does not need to be cut to free the stone. Freestone varieties of fruits are preferred for uses that require careful removal of the stone, especially if removal will be done by hand. Freestone plums are preferred for making homegrown prunes, and freestone sour cherries are preferred for making pies and cherry soup.

Clingstone: it refers to a drupe having a stone which cannot be easily removed from the flesh. The flesh is attached strongly to the stone and must be cut to free the stone. Clingstone varieties of fruits in the genus ***Prunus*** are preferred as table fruit and for jams, because the flesh of clingstone fruits tends to be more tender and juicy throughout.

Nut fruit

Plant nut trees as an attractive feature for the garden, adding winter color and crops of nuts from late summer/early autumn.

Botanical definitions:

A Nut in botany is a simple dry fruit in which the ovary wall becomes increasingly hard as it matures, and where the seed remains unattached or free within the ovary wall. Most nuts come from the pistils with inferior ovaries. Nut, in botany, dry hard fruit that does not split open at maturity to release its single seed and all are called ***Indehiscent*** **(not opening at maturity)**. A nut resembles an achene but develops from more than one carpel (female reproductive structure), often is larger, and has a tough woody wall.

Hazelnuts are true nuts. The fruit arises from a compound ovary and does not open to release its single seed.

But did you know that cashews, almonds, and several other common “culinary nuts” are not true nuts either. It is important to know what the definition of a true "Nut" is. **Botanically**, a nut is a dry fruit that consists of a hard shell covering a single seed. Some examples of true nuts include oak, Chestnuts, and Hazelnuts.

In botany, a **fruit** is the seed-bearing structure in flowering plants formed from the ovary after flowering.

Almond

Prunus amygdalus **Family: Rosaceae**

The Origin and distribution:

The Almond probably came from hot arid region of western Asia, but **Dokandol** (plant scientist) considered that almond originated limitedly from Kurdistan of Iraq. Almond is the semi-tropical tree, so it is mainly cultivated between latitudes 30° and 40° N, although under certain mild climatic conditions, cultivation may extend further north.

Almond, considered to be a native of Mediterranean region is a dual propose tree i.e. for nut as well as beauty. Spain, Italy, USA, Morocco, Portugal, Turkey, France, Algeria, Afghanistan and Persia may be taken as the almond growing countries. It is also found in South Africa, South America, Australia and India. It is most favoured nut with Indians who regard it as highly nourishing and of great medicinal value.

In Mediterranean countries, the almond has been confining to marginal and non-irrigated lands, being considered a robust species. The California cultivars are from local seedlings brought from southern Europe and northern Africa.

Botanical definition:

Almond **(*Prunus amygdalus*)** belongs to the family **Rosaceae,** Genus **Prunus** and Subgenus **Amygdulus**. Morphologically and taxonomically, almond is very closely relating to peach. The tree characters of peach and almond are very similar. The chief differences between them are found in matured fruits. The fruit of peach is a delectable esculent (Exocarp and Mesocarp), that of almond inedible (Exception seeds).

The flesh of peach is fleshy, juicy and soft, that of almond thin, tough and leathery. The pit of peach must be removed, while that of almond drops off naturally from hard flesh which splits at maturity. The pit of peach is deeply sculptured and of bone-like consistency, that of almond is nearly smooth and in some varieties thin and soft in texture. The buds of almonds are solitary and pointed those of peach in triplets with the central bud being pointed and vegetative; and the side buds rounded and floral. The leaves of peach are bigger and greener than almond leaves. The wood of almond trees is tougher, vigorous and living extend period than of peach.

Importance and Uses:

The almond is the most favored nut as it is highly nourishing and has great medicinal value. Almond is a rich source of proteins, minerals, fat and vitamin B_1 (Thiamine nitrate). The kernel of almond is very high energy source and results in 655 calories per 100g fresh weight. It contains protein 20.8 %, fat 58-60%, mineral matter 2.9%, fiber 1.7%, carbohydrate 10.5%, calcium 0.23%, phosphorus 0.49%, iron 3.5%, and vitamin B_1 240mg/100g. Kernels of almond contain rich amount of copper which is considered good for human brain. Kernels of bitter almond were found to contain 55.6% lipids, 18.9% protein, 2% fiber, 2.3% ash, 7.9% total soluble sugars and 0.27% hydrocyanic acid.

There are two main group of commercial almond, **sweet almond** (Edible almond) and **Bitter almond** (Inedible almond) which using for getting the flavoring substances and Prussic acid (pharmaceuticals).

Very valuable oil called (**badam roghan)** is extracting from almond and it is considering having a high medicinal value. Almond oil is used in confectionary, also for pharmaceutical and cosmetic preparations, bitter almond kernels are used in perfume and pharmaceuticals. The nuts are usually eaten when they are

ripe. Green nuts can also be consumed, and they are picked before the outer husk begins to lose its color and harden. The nuts are then opened and the kernels eaten in the milky stage with lightly sugared.

Climatic adaptations and soil type:

As almond is known have low chilling requirements, warmer aspects are preferable for its cultivation. The chilling requirements is about (200-600) hours around 7.2 °C, almond can be grown successfully both in temperate and subtropical areas with low rainfall. Commercial almond growing in California and the Mediterranean area is limited to those areas with little or no frost hazard, due to an early blossoming characteristic of the almond. The almond is also susceptible to injury by rains in spring and summer because complicate insects moving, washing of pollen and pistil excretions or pollen explosion or decreasing soil airing, increase blossom and fruit infection by brown and green rots, so all these will be cause flowers and fruit dropping; foggy and rainy weather during the summer results in brown stains on the shells of the ripening nuts do not suit it, lowering their market value. The area where almonds are being grown successfully in the world are located between 30° to 40° N or S. Elevation of prominent almond-growing areas ranges from above 250-1500m above sea level. Almond has more chances of success on the northern and northern eastern aspects of the hills as compared to the southern and southern western sides. Almond requires a fairly large number of heat units for crop maturity and may not do well at places where summers are cool and foggy. Due to early flowering habit it is very susceptible to spring frosts. Windbreaks are considered useful. Blossoms, with petals exposed but yet opened, have been known to withstand cold up to (– 1°C) but those with fallen petals are killed at (0°C). The cool and dry areas it’s a suitable for growing almond trees.

Cultural requirements:

Almonds are not very fastidious in their soil requirements; however the good drainage is essential. In poorly drained soils, even well grown almond trees collapse suddenly whenever the soil remains saturated for 3-4 days. Almond orchards produce best on the deep light sandy loam and fertile types of soils, while heavy soils are not desirable. Shallow soils overlying calcareous subsoil tend to dry out rapidly during summer unless frequently irrigated. Although the almond is more resistant to dry soils than most other orchard trees, it shows definite response to standard summer irrigation on all soils.

The almond has a high nitrogen requirement (680-900g N /mature tree) similar to the peach and in deficiency tend to flowers drop, less fruit set and seed shrinkage. Nitrogen should be given in three split doses (February, March and April). However, it will tolerate a lower available potassium content of the soil than prunes and apples and its zinc requirement seems to be a little lower than for most other fruits. Boron may be deficient in the sandy soils. The soil management program for the almond is similar to that of the peach.

Tree spacing has been 5X5m or 7X7m, for irrigated culture, depending on soil fertility; 9X9m or 12X12m, for non-irrigated culture.