

## Pecan Nut: A Unique Nutritious Nut of Poonch

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### **Introduction:**

Nuts are becoming increasingly popular as a crunchy and nutritious snack. Pecan [*Carya illinoensis* (Wangenh) K. Koch] is one of the most popular edible nuts. Poonch district in Jammu and Kashmir holds the reputation of "Pecans Capital of India." Pecans can be available in the markets year around in this region. It has a high nutritional value containing a rich amount of protein, vitamins, carbohydrates and nut oil. In comparison to walnut, pecans are paper-shelled, kernels are delicious, buttery yet rich-flavoured in taste and fetch a good price in the market ranging from Rs. 500-600 per kilogram.

The pecan tree is a large deciduous belonging to the hickory family, *Juglandaceae*. A typical pecan has a buttery rich shell which is golden brown outside and beige inside. The kernel occupies 40-60% of the space inside the shell. This kernel has a grooved surface but is slightly more oval in shape. The sweet, rich and buttery flavour and texture of pecan can be attributed to its high levels of monounsaturated oils. It has a fat content of over 70% which is the highest among all the nuts.

A pecan, like the fruit of all other members of the hickory genus, is not truly a nut but is technically a drupe, a fruit with a single stone or pit, surrounded by a husk. The husks are produced from the exo-carp tissue of the flower, while the part known as the nut develops from the endocarp and contains the seed. The husk itself is aeneous, oval to oblong, 2.6-6.0 cm long and 1.5-3.0 cm broad. The outer husk is 3.0-4.0 mm thick, starts out green and turns brown at maturity, and splits off in four sections to release the thin-shelled nut.

### **Cultivation**

Pecan trees are generally sold as either seedlings or paper-shell grafted trees. The seedling trees are of less value producing the smaller, hard-shell nuts. Fine paper-shell grafted pecan trees are of orchard quality producing larger, paper-shell nuts that sell at a higher price (Sanjay-Swami, 2015). There are many pecan varieties available for planting. Varieties are selected on characteristics such as nut size, percent kernel (nut meat percentage of total nut weight), tree shape and production capacity. Pollination is somewhat of consideration in larger plantings. A single pecan tree may produce ample pecans for home use.

Pecan tree grows well in a variety of soil types, except poorly drained soils. When planting pecan trees, dig a hole that is, at least, two feet wide and three feet deep and back fill with well-drained soil. Pecan trees should be spaced 40 to 60 feet apart in orchard plantings and not closer than 40 feet for home plantings (Sanjay-Swami, 2016). However, pollination may occur between trees over 200 feet apart. Pecan trees are generally cross-pollinated in nature because, within a pecan variety, the maturation of the staminate (male) and pistillate (female) flowers occur at different times. This condition is known as dichogamy. To ensure the production of nuts, you must plant two varieties. Some self-pollination may occur, however, it is highly recommended to plant at least three varieties together for maximum pollination and production. The pollination periods of each tree can be classified as either protandrous, those that shed pollen *before* they can receive pollen (Type 1) or protogynous, those that shed pollen *after* becoming receptive to pollen (Type 2). One should mix Type 1 and Type 2 for the best pollination and highest yields.



**Inflorescence: (a) Whole-female**



**(b) Whole-male**



(Pecan nut enveloped by involucre)



(Raw pecans)

(Pecan kernel)

A protandrous variety such as 'Desirable' has catkins (male flower) which mature first and release their pollen, followed by the nutlet (female flower) becoming receptive to pollen after pollen shed of the 'Desirable' trees is past. A protogynous variety such as 'Schley' or 'Elliott' has female flowers which mature and become receptive before the catkins mature and release their pollen. For example, 'Elliott' pistillate flowers are receptive when 'Desirable' is releasing pollen, followed by 'Desirable' nutlets becoming receptive when 'Elliott' is releasing pollen. A variety that has no overlap in pollen release and nutlet receptivity is said to have "complete dichogamy".

A pecan tree should be precocious (begin bearing at an early age), but should not overbear as a mature tree to the point that nut quality is unacceptable or that the tree becomes a severe alternate bearer. Older cultivars are generally less precocious than the newer ones, which begin producing as early as 5 or 6 years. Generally, trees begin producing a few nuts three to four years after planting. Significant production can be achieved in six to eight years. Good production will begin in the ninth or tenth year.

### **Harvest your pecans after the shucks open**

One method for retrieving the pecans is to carefully shake the tree branches so that the nuts fall to the ground. Then you can immediately pick them up. Do not leave them on the moist ground or in wet leaves; they will get water-logged and split or even sprout. Using a slender fishing pole to shake off the nuts helps to lightly flick pecans out of the open hulls within your reach without much damage to next year's crop, which occurs only on the new years' growth.

### **Dry your fresh pecans to prepare them for storage**

Pecans can be kept for a longer duration if they are dried to a low level of water moisture. They will store best when their shells are solidly filled-in and their oil content is high. To dry them, spread pecans indoors on a dry floor or on screens that have been set high off the ground under a shelter, safe from precipitation and ground moisture. It should take about 2 weeks for the pecans to thoroughly dry. A good indication is that pecan nut meat will snap when it has been properly dried. Store the pecans in the refrigerator for up to 6 months in airtight storage containers that prevent absorbing odours from meats, vegetables or fruits. To keep the pecans even longer, store them in the freezer.

Pecans come in various sizes such as mammoth, extra-large, large, medium, small and midget. In the market, however, you might come across shelled, unshelled, salted, sweetened, etc. Try to buy whole "un-shelled" or "with shell" nuts instead of processed ones. They are generally available in airtight packs as well as in bulk bins.

Add a hand full of pecan nuts to your diet to maintain sufficient levels of minerals, vitamins, and protein.

### **References:**

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