

PUMPKIN PRODUCTION



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Pumpkin: An Introduction

Pumpkins are actually a group of squash plants, fruits of which are large, round, with smooth, ribbed skin and with deep yellow to orange color. Fruit has a thick shell which contains seeds and pulp. Numerous pumpkin cultivars are available in the market that varies in shape, size and colour of flesh. Most parts of the pumpkin are edible, including the fleshy shell, pumpkin seeds, the young leaves, and the pumpkin flowers.

Taxonomy

Kingdom	Plantae
Order	Cucurbitaceae
Genus	Cucurbita
Species	Pepo/maxima/moschata
Binomial name	Cucurbita pepo/C.maxima/C.moschata

Origin and Distribution

Pumpkins are native to North America. Largest producers of pumpkins include the United States of America, Canada, Mexico, India, and China.

Plant Description

Pumpkins are tender, annual, herbaceous plants with trailing stems. Pumpkins are monoecious plants and produce both male and female flowers. Flowers are pollinated by honeybees; in the absence of honeybee population in the growing fields, hand pollination may be done. Pumpkin fruit is, botanically, a berry known as pepo. Pumpkin fruits are large and an average-sized fruit weighs between 3 and 8 kilograms. Color of pumpkins is due to the presence of orange carotenoid pigments, including beta-cryptoxanthin, and alpha and beta carotene. These carotenoid pigments are precursors of provitamin A; in other words, these compounds are converted to vitamin A within our body.

Growing Pumpkin

Climate Requirements: Pumpkin is a warm season crop and prefers plenty of direct sunlight; the plant is tolerant to partial shade and can be grown along with other tall plants. Pumpkin is not as sensitive to frost as melons; however, sometimes, frost may be detrimental. In tropics, the crop may be planted in early July. It grows well in regions with a comparatively low temperature and high humidity. Pumpkin varieties require 110-120 days to reach maturity. A frost-free season of about four months is essential for quality fruit production.

Soil Requirements: Pumpkins grow well in well-drained, rich soils with good water holding capacity. Though they have a spreading growth habit, they have a shallow root system and therefore shallow cultivation is recommended. The plants can be grown in medium acid soils but do best at a pH of 6.0 or 6.5.

Sowing Time and Seed Rate: Propagation is by seeds; seeds may be sown from January to March in the plains for the summer crop. For the rainy season crop, seeds are sown in June-July, just before the onset of the monsoons. In the hills, seeds are sown in March-April. The average number of seeds per 100 gram is 600. The seed rate per hectare is 7 to 8 kg.

Planting: Single row system may be followed for planting pumpkins. Rows of ridges are prepared in the main fields. Seedlings are planted on raised ridges at 30-40 inches apart. Between two rows, 8-12 feet spacing may be given; this will give sufficient space for the spreading of the plants.

Fertilizers and Irrigation Requirements: Pumpkin crops may suffer if soil moisture is less and hence it is necessary to keep the soil moist always, especially during the vegetative growth phase. However, both drought-like and overwatering conditions should be avoided. Regarding fertilizers, pumpkins are heavy feeders and hence nitrogenous fertilizers should be applied liberally.

Harvesting and Yield: Pumpkins should not be harvested until they are fully ripe, that is, when the rind has hardened. A portion of stem attached is left at the time of harvest. The fruits are placed on small piles or in a heap and then allowed to dry in the sun or cured for a few days. Yield is about 20-25tons/ha. The recommended storage temperatures are 15-20OC for the first 2-3 weeks and then 10-15OC as a standard temperature at 75% relative humidity.

Food Uses

Most parts of the pumpkin plant are edible. Pumpkin flowers are used as a flower vegetable. Pumpkin leaves are used as a leafy vegetable. Pumpkin fruit is used to prepare sweet dishes by cooking with butter, sugar, and spices.

Pumpkin fruits are used in soups, and for making desserts and candies, and as a flavouring ingredient for both alcoholic and non-alcoholic beverages.

Pumpkin seeds may be used a substitute for sunflower seeds; seed oil may be extracted from pumpkin seeds; pumpkin seed oil is used for various cooking purposes. Pumpkin seeds may be roasted and eat like groundnuts. Canned pumpkins are also quite popular nowadays.



Nutrition in Pumpkin

According to USDA, the nutrition in raw pumpkins is as follows:

Nutrient	Unit	Value/100 g
Protein	g	1
Fiber	g	0.5
Calcium	mg	21
Iron	mg	0.8
Potassium	mg	340
Zinc	mg	0.32
Vitamin C	mg	9
Thiamin	mg	0.05
Riboflavin	mg	0.11
Niacin	mg	0.6
Vitamin B-6	mg	0.061
Folate	µg	16
Vitamin A	IU	8513
Vitamin E	mg	1.06
Vitamin K	µg	1.1

Other Uses of Pumpkin: Pumpkins have medicinal properties and are used in folk medicines. Pumpkins may be used as a cattle fodder. In the United States, carved pumpkins are associated with the harvest festival called Halloween.

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