



Pepino: An Exotic Vegetable

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ALTHOUGH pepino looks like a melon, it belongs to the same family as tomato, potato, peppers and eggplant—Solanaceae. Pepino is known around the world by many names like, melon pear, melon shrub, mellow fruit, pepino dulce and sweet pepino. In Europe, the demand for pepino has significantly increased due to its high nutritional value, flavour and attractive appearance.

Pepino is also a good option for kitchen gardens and for intercropping in newly planted orchards. It has also been identified as a potential crop for greenhouse cultivation.

Pepino is presumed to be native to the temperate Andean regions of Columbia, Peru and Chile, though it is not

known in the wild, and its domestication is unknown. The Spanish Conquistadors reported that it was being cultivated on the coast in the Moche Valley of Peru. The fruit is common in the markets of Columbia, Ecuador, Bolivia, Peru and Chile. It is also well known in South American countries, New Zealand and Australia. Recently, it has been introduced to the Nilgiri hills in Tamil Nadu from the Northern Andes. Attempts have been made to produce commercial cultivars and to export the fruit in New Zealand, Turkey and Chile.

Pepino, a perennial shrub reaching to a height of 150 centimetres, is profusely branched. The plant bears white with bluish or purplish shade flowers in clusters. The long-stalked fruits borne in clusters are medium to large in size (15-600 g) and either round, ovoid, or elongated. The young fruit is pale green to white in colour, however, as it ripens,

attractive purple stripes appear along the fruit's length, and the background colour changes to a light golden yellow.

The fruit on ripening gives off an exotic fragrance from the stem end. A good-quality pepino fruit will have smooth skin, sweet smell and will be as firm as a partially ripened plum.

On ripening, pepino fruit is highly juicy and moderately sweet. Its juice recovery is around 94-98%, depending upon cultivars. A medium serving (100 grams) of its fruit provides 80 calories of energy and 5 grams of dietary fibre. The fruits are rich in minerals and vitamin C but low in starch and soluble sugars. The level of glucose and fructose decreases during ripening, whereas, sucrose concentration increases as the ripening progresses. A discernible reduction has also been noticed in contents of protein, ash and fat as the fruit turns from raw to mature. A good feature of this fruit is the absence of oxalates in it.

The flavour of its fruits is described as a delicious blend of cucumber and honeydew melon.

In recent years, pepino has elicited an increasing interest from exotic fruit markets. It can be consumed in various

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ways like green and cooked vegetables, in fruit and spinach salads, fresh fruit as dessert and delicious fruit juice and squash. Pepino is great served peeled and cubed or sliced. Contrary to other fruits, in pepino the original flavour is retained during canning process, and hence, it has a better preference among consumers.

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Being a relatively hardy species, pepino grows in its native place at altitudes ranging from close to sea level to 3,000 metres. However, it performs best in a warm and relatively frost-free climate. The plant can survive at as low as -2.5 C temperature, if the freezing temperature does not prolong too much, though the plant drops many of its leaves. However, the optimum temperature range for its growth and development is from 15 to 25 C.

Low yield as a result of occasional lack of fruit set may hamper the introduction of pepino as a new crop in areas with mild-winter climate. Sensitivity to high temperature, lack

of pollen release, competition with vegetative growth, low light intensity in certain types of greenhouse and the peculiar characteristics of each cultivar have been identified as the main causes of unfruitfulness. However, the development of parthenocarpic clones, where there is no need of pollination for setting fruits, can overcome poor fruit set caused due to absence of pollination.

Pepino grows naturally upright by habit, thus, can be cultivated as a free-standing bush. Sometimes, its plants are pruned and trained on trellises, and sometimes additional support is provided to withstand the weight of fruits from pulling the plant down.

Being a fast growing crop, it bears fruits within four to six months after planting. The fruits should be harvested with immense care since any physical injury to the fruit may lead to decaying. The stage of harvesting is chosen as per the market demand.

Generally, the fruits at fully ripe stage are harvested for table use, partially ripe, i.e., yellow green fruits for the local market and the light green colour fruits, which are physiologically mature but still unripe, could be harvested for distant markets since such fruits are suitable for cold storage purpose since in ripe

pepino fruits, increase in weight loss, ethylene production, respiration rate and 1-aminocyclopropane-1-carboxylic acid (ACC) levels as well as decrease in fruit firmness and Hue angle may occur, if these fruits are exposed to chilling temperature during storage.

The quality of mature pepino fruits can be maintained for up to 21 days under controlled atmosphere storage conditions at temperatures of 5-10 C. However, the ripe pepino fruit may be sold in local fresh markets as a ready-to-eat fruit. This crop is exported mainly by sea freight and often reveals a poor external and sensory quality with a short shelf life when arriving at the designated market. Sucrose ester as a postharvest surface coating can prolong shelf life of pepino.

However, it is less effective than the use of polyethylene-foodtainer, which reduces fresh weight loss, transpiration rates and fruit softening. This coating also delays ripening, as indicated by a higher retention of fruit colour changes and inhibition of carotenoids synthesis.

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