

INTENSIVE NOPALITO PRODUCTION OF *Opuntia copena* V1 IN HIDALGO STATE, MEXICO

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The farm that is the subject of this paper is near the town of Progreso in the state of Hidalgo, Mexico, at 20°19'54" north latitude and 99°13'49" west longitude (about 85 miles north of Mexico City). The farm is 5600 feet above sea level and has a semiarid climate. Intensive nopalito production is conducted on 3 hectares using plastic tunnels and sprinkler irrigation.

The nopalito crop is in a sandy alkaline soil.

The system and the variety copena V1 were developed by Colegio de Postgraduados of Chapingo, Mexico.

The rainy season is in summer. However, with an annual average precipitation of 19 inches, weekly irrigation is needed most of the year. An overhead sprinkler system is used.

Fertilizer is organic chicken manure, which provides heat to the nopales and stops weed growth. Fertilizer is applied after each pruning.

Usually, there are no pest or disease problems, particularly when weeds are prevented. But if weeds are present, there can be pests such as leaf miners, grasshoppers, and wild grana bugs.

Three production systems have been developed. The one stem and the nopalitos. The next is two stems and the nopalitos, which is one and a half times more productive than the one-stem system. The three-stem system is the least productive — 50 percent less than the two-stem system. This farm uses the two-stem system.

Stems are planted next to each other with six inches between rows. The crop beds are 4 feet wide with 4 feet between each crop bed. This is a high-density system that allows from 35 to 40 stems per 10 square feet. Fewer weeds grow between the nopalito plants than in other systems.

Nopalitos are harvested every six weeks in summer and every nine weeks in winter.

Pruning is required to promote sprouting of new nopalitos, which, depending on their age, are used for fresh market or to propagate new plants. These nopalitos are obtained four to six months after sprouting, depending on the season.

The cladodes should be treated with copper sulfate, then left to dry for three weeks before planting. The cladodes can be stored laying down or standing up. The first way saves space, but the stems deform. However, the deformation disappears three weeks after planting.

We get few days of freezing temperatures during December, January, and February. To achieve production during the low-temperature season, plastic-film tunnels are needed to prevent frost damage. The tie system for tunnel support is very important in keeping the plastic in place.

As said before, the nopal variety is copena V1, which is juicy, has low fiber content, high yields in weight, and fewer, smaller spines than other cacti. The thick cuticle makes it very resistant to hail damage.

The nopalito can be consumed, but it must be boiled. An exquisite jam can be made or nopalitos can be prepared in salted water or vinegar.

The nopales can be fed to grana bugs under an intensive production system or fed to cattle and other animals. Because this cactus has a thick cuticle, cleaning can sometimes be a problem. We have solved that problem by developing a machine that peels and chops the nopalito.