



## Prickly Pear Cactus: Food of the Desert

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Figure 1: Prickly Pear fruit and pads.

The prickly pear cactus can be found in desert regions of the Americas, ranging from Canada to the Southern regions of South America.<sup>1</sup> Even though it is native to the Americas, it has been known to be grown around the world.

Just within the Sonoran Desert of Southwestern United States and Mexico, there are 18 species of prickly pear.<sup>2</sup> Some of the commonly grown species in the Sonoran and Mojave Deserts include Engelmann's, Santa Rita, Indian Fig, and Beavertail.<sup>1</sup> Information about common species found in Arizona is listed on page 2.

The prickly pear consists of cactus pads that are segmented and grow on top of other pads (Figure 1). The

pads themselves are actually a modified stem that is flat rather than round.<sup>1</sup> Pads of the cactus are considered to be either spineless or spine-containing, but both actually have at least small spines. Prickly pear with spines have visible thorns, while spineless varieties have glochids, which are small areas on the pad where barbed bristles are located.

The leaves or pads of the prickly pear are often referred to as *nopales* (or *nopal*, singular) when they are whole, and as *nopalitos* when they are diced in food preparation.

Each cactus nopal can produce several flowers that bloom in the spring. Once the blooms of these colorful flowers fade, the fruits emerge.<sup>3</sup> The cactus flower, the fruit skin and the pulp inside vary in color depending on the species. They can be white, green, yellow, orange, red, purple, or brown.

The cactus fruits, called prickly pears, cactus pears, cactus fruit, figs or tunas in Spanish, are oval-shaped berries with glochids covering a juicy pulp inside (Figure 1). The fruits vary considerably in color, size. They typically grow to about 2 to 3 inches in length with larger fruits reaching 5 inches) depending upon the variety of prickly pear cacti.<sup>2,3</sup> The flavor of the fruit may also differ depending on the variety, but is most often compared to watermelon. The fruit ripen during the warmest and driest months of the year.<sup>4</sup> The varieties with dark reddish-orange or purple skins and deep red-purple flesh tend to be the sweetest available in the United States.<sup>3</sup>

In locations such as Australia, the prickly pear is considered a pest<sup>1</sup>; however, in the Americas, Native groups in the desert southwest have used the prickly pear cactus as a source of food. Some Native groups including the Cahuilla, Akimel O'otham, and Tohono O'odham have used the young cactus pads or *nopales* of the prickly pear. The Western Apache, Southern Tonto, Southern Yavapai and the Paipai exclusively harvest the fruits of the prickly pear. The Tohono O'odham and Cahuilla use both the cactus pad and fruits.<sup>5</sup>

## Common Species of Prickly Pear Found in Arizona<sup>6</sup>

**Beavertail Prickly Pear** (*Opuntia basilaris*): This cactus is found in Coconino, La Paz, Maricopa, Mohave, Yavapai and Yuma Counties in Arizona. It grows at elevations of from sea level to up to 8,000 feet. The pads are blue-grey in color with tan or reddish-brown spines. Beavertail bloom in the spring with a large dark-pink to light pink-flowers.



*Opuntia basilaris* in bloom (photo by Sue Smith, Yavapai County Native & Naturalized Plants Database, [cals.arizona.edu/yavapaiplants](http://cals.arizona.edu/yavapaiplants))

**Englemann Prickly Pear** (*Opuntia engelmannii*): This cactus is found in Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai and Yuma Counties in Arizona. It grows in elevations of 1,000 to 8,000 feet. Englemann Prickly Pear have widely spaced white to yellow spines. The yellow to orange color flowers bloom in spring. The fruits are deep red to purple in color.



*Opuntia engelmannii* with fruit (photo by Mary Barnes, University of Arizona)

**Mojave Prickly Pear** (*Opuntia erinacea*): This cactus is found in Mohave and Coconino Counties in Arizona. It grows at elevations of 3,500 to over 8,000 feet. The pads are oval with long, hair-like spines the vary in length. The flowers bloom in spring ranging in color from yellow to dark pink. Mature Mojave Prickly Pear fruit are dry becoming a spiny burr.



*Opuntia erinacea* in bloom (photo by Rokelle Reeve, University of Arizona)

**Santa Rita Prickly Pear** (*Opuntia santa-rita*): This cactus is found Cochise, Pima and Santa Cruz Counties in Arizona. This cactus grows at elevations of 2,000-5,300 feet. The pads for this cactus are round with bluish-gray to purple color. The yellow flowers bloom in spring. The fruit on the Santa Rita Prickly Pear are relatively small and reddish purple in color.



*Opuntia santa-rita* with distinct purple-coloring (photo by Nora Graf, Yavapai County Master Gardener)



## The Prickly Pear Pads in Cooking

### Selecting and Harvesting the Cactus Pads (*Nopales*)

*Nopales* are commonly found in markets and farmer's markets in the Southwest either fresh or preserved through canning. However, when harvesting cactus pads, there are a few things to keep in mind.

Look for young and tender pads during spring when they are considered the most succulent and have the fewest spines.<sup>3</sup> Fresh pads should be firm (full of water) and bright green in color.<sup>7</sup> (see Figure 2).

Use thick leather gloves when harvesting cactus pads because their spines and *glochids* will penetrate skin easily. Next, identify the pad you would like to remove. It should be firm and without blemishes. Then, hold the top of the pad gently in one hand and cut the pad from its supporting pad with a sharp knife. It is recommended to harvest prickly pear pads in the mid-morning hours when acid content is at its lowest.

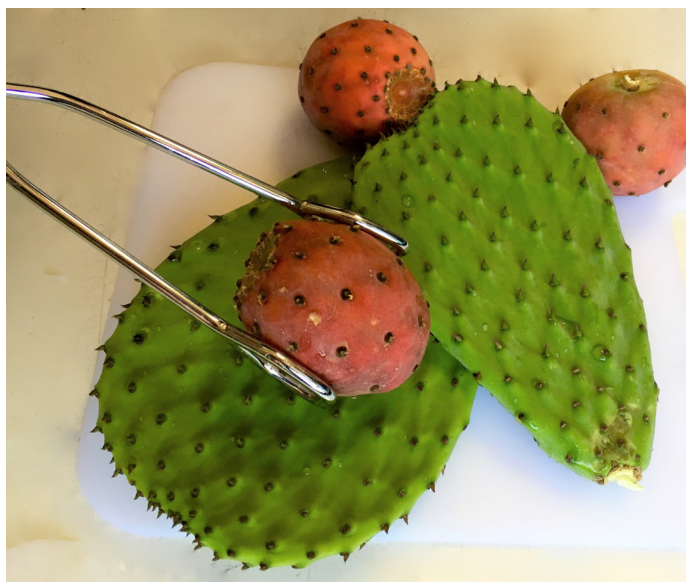


Figure 2: Harvested nopales and tunas.

### Preparing the Cactus Pads

*Nopales* have a versatile flavor and texture and are often compared to asparagus, okra, or French beans. They can be used in a variety of ways including: eaten raw or sautéed or steamed and added to soups, stews, salads, and egg dishes. *Nopales* are generally sold fresh with their spines removed, but they are also available canned and pickled, allowing these vegetables to be available all year round.<sup>8</sup>

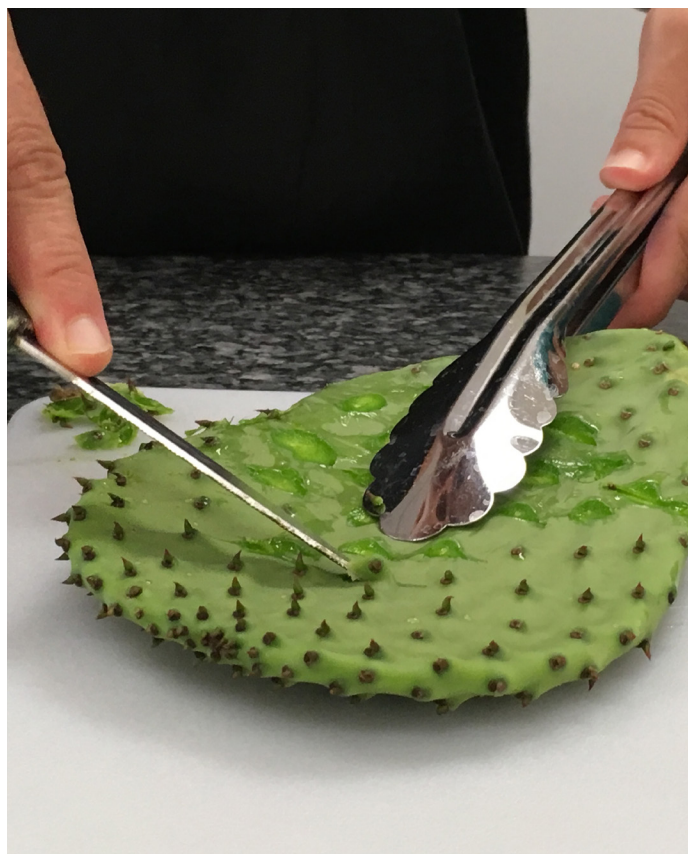


Figure 3: Removing the "eye" with the tip of the knife and tongs.

Wear gloves while preparing *nopales* that have spines in place. Rinse *nopales* with water before removing spines. Hold the base of the pad firmly and use a blunt knife to scrape across the pad on an angle until all the spines and tiny *glochids* are removed. Next, remove each 'eye' where the spines were with the tip of the knife (see Figure 3). Then, with a vegetable peeler, peel the pads on all sides and slice according to the needs of the recipe.

### Storing the Cactus Pads

Raw pads can be stored in the refrigerator for about a week. *Nopalitos*, or cut and diced fresh cactus leaves, should be consumed or cooked as soon as possible.<sup>7</sup>

### Nutritional Content

*Nopales* are good source of vitamin C, calcium, and magnesium. One cup of raw *nopales* is 14 Calories and contains 13 percent of recommended daily value of vitamin C, 13% of calcium and 11% of magnesium. They contain very little saturated fat and cholesterol.<sup>9</sup>



## Recipe

### Nopales and Scrambled Eggs<sup>10</sup>



#### Ingredients:

- 8 nopales (cactus pads)
  - 1 small onion, finely chopped
  - 1/2 teaspoon fine sea salt
  - 6 eggs, lightly beaten
- Makes 6 servings

#### Directions:

1. Prepare nopales as outlined in on page 3.
2. Cut the prepared nopales into 1/4-inch strips.
3. In a large frying pan, over medium high heat, heat the oil.
4. Add nopales to pan.
5. Add the onion and salt.
6. Cook, stirring frequently, until the nopales are tender and most of their gel-like liquid has evaporated (15 to 20 minutes).
7. The nopales will turn from a bright green to more of an olive color.
8. Add the eggs and cook, stirring until the eggs and nopales are combined and the eggs are set (about 3 minutes).



Cut *nopales* into 1/4 inch strips.



Add *nopales* strips to pan.



Add onion and salt.



Add eggs and cook.

#### Nutrition Information<sup>9</sup>

(1 serving)

Serving size: 5/6 cup (196 g)

Calories 110; Carbohydrates 7 g; Protein 9 g; Total Fat, 5 g;

Saturated Fat 2 g; Trans Fat 0 g;

Cholesterol 210 mg; Fiber 3 g; Total Sugars 3 g; Sodium,

300 mg; Vitamin D 6% DV; Calcium 15% DV; Iron 10% DV;

Potassium 8% DV.



# The Prickly Pear Fruit in Cooking

## Selecting and Harvesting the Fruit

Select fruit that is at the peak of ripeness for best quality and sweetness. Unlike many other fruits, prickly pear fruit will not continue to ripen once it has been picked. Mature fruit will be darker in color, such as dark red or purple, and will be firm while also giving to gentle pressure. They should have a high percentage of pulp, low seed content, and a peel that is easy to remove.<sup>2,3</sup>

When harvesting fruit, always use tongs and thick gloves to avoid contact with large spines and tiny *glochids* on the pads and fruit. Twist, rather than pull the fruit from the pad to avoid tearing it.<sup>3,11,12</sup>

## Preparing the Prickly Pear Fruit

The raw fruit can have a range of flavors, depending on the variety. It may taste similar to watermelon, strawberries, honeydew melons, figs, bananas, and citrus. It can be eaten raw on its own; included as an ingredient in salads, fruit salsas and desserts; used as a topping for cereal or ice cream or the juice can also be boiled down into prickly pear syrup, sauces, jelly or candy. The fruit's round, black seeds can be dried and ground into flour.<sup>3,8</sup>

The fresh prickly pears in the market have most of the bristly spines removed. Some techniques for initially removing the spines include singeing them off with fire or scrubbing each fruit with a vegetable brush under running water. Always rinse the fruit before removing spines. Once *glochids* have been thoroughly removed, slit the skin in a couple of places and use a fork to lift the skin and pull it off. Then cut the fruit in half, remove seeds and slice or cube.<sup>4,8,12</sup> It is recommended to wear plastic gloves while preparing the fruit to prevent juice potentially staining hands.

It is also possible to extract the prickly pear juice. To drink, dilute the juice with water or add to lemonade or other drinks to make a refreshing beverage. The juice can also be further processed to make jelly or syrup.

## Storing the Prickly Pear Fruit

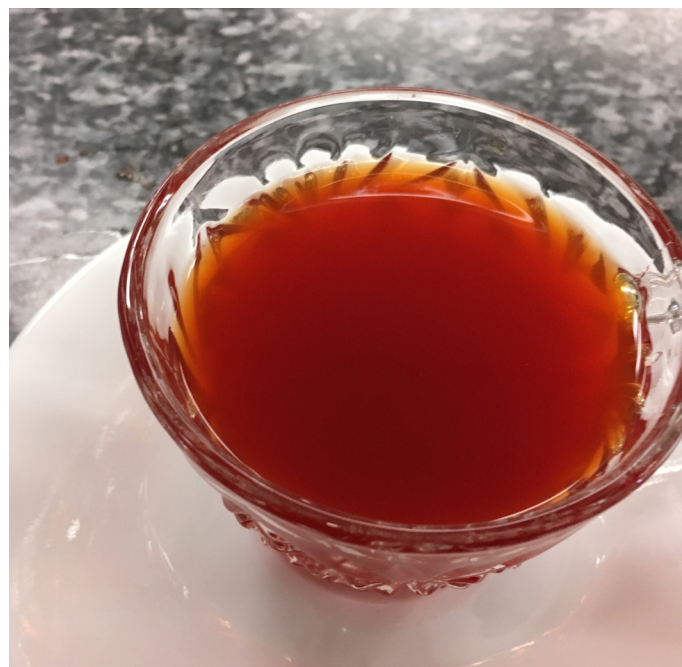
Whole, ripe fruit will last about a week when stored in cool temperatures, but not refrigerated. To keep longer than a week, whole fruits can also be stored in the freezer and processed later into juice after thawing. Juice can be frozen into cubes by filling ice trays and putting into the freezer until solid, then transferring the cubes to freeze storage bags.<sup>3,8,13</sup>

## Nutritional Content

The prickly pear fruit is an excellent source of dietary fiber and vitamin C. One cup of raw fruit is 61 Calories and contains 5 grams of fiber and 35 percent of recommended daily value of vitamin C. They contain very little sodium and no saturated fat.<sup>9</sup>

## Recipe

### *Prickly Pear Juice*



### Preparation Method 1:<sup>13</sup>

Glochids are removed from whole fruit before juice is extracted.

#### Directions

1. Rinse fruit.
2. Remove all *glochids* as described in “Preparing the Prickly Pear Fruit” section on this page.
3. Once the *glochids* are removed, cut the fruit into halves or quarters.
4. Place the fruit into a blender or food processor and blend until the fruit is liquefied.
5. Remove the fruit from the blender by placing it in a fine mesh strainer or strainer with cheese cloth that is over a large bowl.
6. Strain the fruit through the strainer, pressing the fruit on the side of the strainer to get as much juice as possible.
7. Approximately 12 fruits will make 1 cup of juice.

## Preparation Method 2:<sup>13</sup>

Fruit are cooked to extract juice and glochids are removed through straining juice.

### Directions

1. Rinse fruit.
2. After rinsing, use tongs to place fruit on clean cutting board and remove any damaged spots. It is not necessary to remove the *glochids* as you would when preparing raw or sliced fruit.
3. Wash fruit with a hard water spray and cut into halves.
4. Place washed fruit in a large pan and cover with water.
5. Cook the fruit for 10 minutes, then mash with a potato masher and cook another 10 minutes.
6. Strain the slurry through a very fine mesh strainer or a colander lined with cheese cloth or coffee filter.
7. Use a spoon to press the juice from the seeds and skins



Strain cooked, mashed fruit.



Clean fruit and remove damaged spots.



Press the juice from the seeds and skins through cheese cloth.



Cook and mash fruit.



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