

Jicama

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Figure 1. Jicama Tubers

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INTRODUCTION

Jicama (*Pachyrhizus erosus*) of the fabaceae or leguminosae family is a short-lived perennial, often grown as an annual leguminous climbing vine, which during short days will flower, produce long, inedible pods, and develop tuberous roots. These are few in number per plant, usually spherical, but often lobed, and weighing several kilos per plant. The flesh of the root is white and crisp, even after cooking, and is covered with a tan skin or cortex, which is easily removed by peeling.

Jicama, (pronounced, HEE-kah-mah) also known as **yam bean**, originates in Meso-America and is naturalized in agricultural areas throughout the tropics. It is excellent for commercialization where markets exist, a useful home-grown crop for varying the diet, and a novelty vegetable for special uses due to its taste and crisp texture.

USES

Jicama produces a tuberous root somewhat similar in shape to a turnip which is mostly eaten fresh, but can be

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pickled or cooked, eaten as a snack, a delightful addition to a fresh salad (such as with carrots or celery), or as a starchy staple. It is a favorite food in Mexico and South East Asia where it is appreciated for its crisp texture and sweet, starchy flavor. It is now popular in the USA and can be found in grocery stores throughout the country. For the small gardener and farmer, jicama yields well and is easy to produce.

Jicama is produced almost exclusively for the tuber, although the very young pods are sometimes used as a cooked vegetable. **Mature seeds, pods and leaves contain rotenone and cannot be eaten. They are toxic!** When used fresh, the tuber is peeled and the root sliced or cut into sticks. These may be eaten plain, with sauce, or combined in a mixed green or fruit salad. In Southeast Asia, a common condiment to put on fresh jicama sticks or slices is a mixture of sugar, salt and crushed red pepper.

As a cooked vegetable, the root can be prepared with or without peeling, and used as a principle starchy vegetable, or combined with other ingredients in soups, stews or stir-fries. Its crispness makes it useful as a substitute for Chinese water chestnut or bamboo shoots. They retain this crispness upon cooking, especially when added later than the rest of the ingredients.

Large or old tubers can be processed for starch by grinding and settling the starch (sinking) in water. The fiber of the tough stem can be used as cord, or for weaving nets for fishing.

Whether fresh or cooked, as a vegetable dish or staple food, the jicama root adds a large amount of starch and a medium amount of protein and sugar to the diet. It is low in saturated fat, cholesterol, potassium, sodium and phosphorus. This makes jicama a good food for those with kidney problems. It is also a good source of dietary fiber and vitamin C. A “good source” of a particular nutrient is one that contains a substantial amount in relation to its calorie content, and contributes at least 10% of the US Recommended Daily Allowance (RDA) of the nutrient for an adult.

	Water	Protein	Fiber	Calcium	Potassium	Iron	Vit A	Vit C	Energy
Jicama	85.1 g	1.4 g (9 %)	4.9 g (25%)	15 mg	150 mg (4-7%)	.6 mg	trace	20 mg	159 kcal
US RDA	-	45-65 g	19-30 g	1200 mg	2000-3500 mg	8-18 mg	400-1300 mcg	60-200 mg	47 kcal/kg
	-	low	good	low	low	low	low	good	-

Table 1. Nutrition Content of Jicama. Amounts are taken from a 100-gram edible portion of the root. USDA.

CULTURAL REQUIREMENTS

Jicama grows during hot weather and has a moderate water requirement. It is highly flexible with respect to soil tolerance. The vines may produce more with trellising, but this is not done at ECHO and yields have been quite adequate. Jicama can be grown in most tropical situations and in the Temperate Zone where summers are long.

Tuberous root development is initiated by short days (beginning in October in the Northern Hemisphere). We have planted seed at several times of the year here at ECHO in SW Florida. Regardless of planting date, tubers are not well-formed until days become very short, around December. For maximum size, tuber harvest is usually in January and February. Vines planted in early spring are so vigorous that by the time short days give the signal to produce tubers, large, distorted tubers burst from the ground. Tubers from seeds planted in May and June had the best combination of good size and appearance. Seeds planted in August gave apple-sized tubers, though the taste and crispness were superior. As the tuber ages, sugars are converted to starch, changing the texture and flavor accordingly.

Jicama is normally planted from seed which are large and produced in adequate numbers. They can also be planted from the perennial tuberous roots. This technique is particularly valuable in improving yields by selection.

The seeds are planted in normally loosened soil, 1.5 cm (0.5 in) deep, in-row spacing at about 15 cm (6 inches) with sufficient space between rows for construction and maintenance of trellises, if desired (1-3 meters). They can be grown without fertilizers, but grow better and yield more when fertilized. Fertilizer should be high in phosphorous, and low in nitrogen and potassium. Planting is done during lengthening days (spring), and tuberization will occur during shortening days 5-9 months later. Seeds can be saved if the plant is not harvested for tubers until the seeds are dry.

The foliage and seeds contain rotenone, a natural pesticide. For this reason, jicama suffers from few pests.

The tubers are harvested when examination shows them to be large enough, usually 8 to 10 cm (3 to 4 inches) in diameter. At this stage they have a nice shape and are succulent and easy to peel and slice. Later harvests yield larger roots, though knobby, much higher in starch and not as sweet. Overall yields per hectare are large, 40-50 metric tons or more. After digging, stems are removed; the roots are cleaned by hand or washed, and marketed. The roots can be stored several weeks at normal room temperatures, or several months when refrigerated. Longer storage is achieved by delaying harvest.