

Gourd, Bottle—*Lagenaria siceraria* (Mol.) Standl.¹

James M. Stephens²

The bottle gourd is also called birdhouse gourd, trumpet gourd, calabash gourd, and white-flowered gourd. The name bottle gourd is especially appropriate because this plant species is one of the few from which useful and lasting containers can be made. Cucuzzi is a long club-shaped type of *Lagenaria*.



Figure 1. Cucuzzi gourd
Credits: James M. Stephens

The bottle gourd probably originated in Africa and from there was widely distributed in pre-Columbian times, perhaps by floating on the seas. It traveled to India, where it has evolved into numerous local varieties, and from India to China, Indonesia, and as far as New Zealand. Archaeological remains show that the bottle gourd was used in Egypt about 3500 to 3300 B.C.



Figure 2. Bottle gourd
Credits: James M. Stephens

Lagenaria also traveled to the New World. The dried gourds with viable seeds have survived in seawater for at least 200 days. Remains found in Mexico date from 7000 to 5500 B.C. and in Peru from about 10,000 B.C. The bottle gourd is thus an ancient crop, widespread and well used, from warm parts of the temperate zone throughout the dry and wet tropics. It is the only crop known to have been cultivated in pre-Columbian times in both the Old and New World. Recently, seeds and other remains of the gourd have turned up in several archaeological digs in Florida.

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Description

The bottle gourd is a vigorous, annual, running or climbing vine with large leaves and a lush appearance. It grows fast and may begin to flower only 2 months after seeding. The thick stem is furrowed longitudinally.

The vine is branched and climbs by means of tendrils along the stem. The foliage is covered with soft hairs and has a foul musky odor when crushed. The leaves of the bottle gourd are up to 15 inches wide, circular in overall shape, with smooth margins, a few broad lobes, or with undulate margins. Leaves have a velvety texture because of the fine hairs, especially on the undersurface.

The bottle gourd flowers are borne singly on the axils of the leaves, the males on long peduncles and the females on short peduncles. The flowers are white and attractive, up to 4 inches in diameter, with spreading petals. The ovary is inferior and in the shape of the fruit. Otherwise, the male and female flowers are similar in appearance. The anthers are borne on short filaments grouped at the center of the flower. The stigmas are short, thickened, and branched. The brownish seeds are numerous in a whitish green pulp. Each seed is somewhat rectangular in shape with grooved notches near the attached end. Fruit set can be improved by hand pollination.

Lagenaria forms intercross freely, resulting in great variation in vigor and horticultural characteristics. Some varieties differ in earliness of flowering and fruit set by a month or more.

The variation in bottle gourds is sometimes spectacular. The background color is either light green or dark green. The dark green can be distributed as a solid color, as regular or irregular stripes, and as an irregular blotch. The size of the fruit varies from 2 to 12 inches in diameter and from 4 to 40 inches in length. The fruit can have a sterile (seedless) neck that varies from a few to 15 inches in length and from 1 to 2 inches in width. Wider necks usually contain seeds, and the neck may have a seed-containing bulge. The seed-containing portion of the fruit varies from flat to round, cylindrical, club-shaped, or long and narrow. The long, narrow forms are best for vegetables, and the round types serve as containers.

Varieties of *Lagenaria* are known throughout West Africa, where the bottle gourd has been grown for containers, but these cultivars are largely unrecorded in terms of name and characteristics. Probably no region has as much diversity and so many named varieties of bottle gourd as India.

Culture

Lagenaria can be grown anywhere in Florida during the frost-free periods of the year. Seeding in August in North Florida has produced good results. Space plants 9 feet apart. Plant seeds 1½ inches deep in raised beds or mounds. A trellis is advised, but vines may be allowed to run on the ground. With ground culture, the use of mulch helps to prevent fruit-rotting, but fruits often form away from the mulch. Some gardeners prune the vines when 8 feet long to encourage fruiting.

Bottle gourd is likely to be attacked by powdery mildew, mosaic virus, fusarium wilt, and fruit rots. Varieties differ in resistance.

Use

Young bottle gourd fruits of certain varieties are eaten as a boiled vegetable. The best are slightly sweet, tender, and free of bitterness. Other varieties are bitter and may contain poisonous substances. The fruit are often cooked with curries, which mask the natural flavors. The carefully selected varieties of India are choice vegetables, as good and as nutritious as the popular summer squashes. When bottle gourds are to be used as containers, they may be constricted by bands to make particular shapes. The gourds are permitted to obtain a maximum maturity on the vine before harvest. When harvested with a short length of vine, they can be hung from wires below a hot ceiling, where they slowly dry out.

Another technique is to fill the partially cleaned gourds with clean, dry sand, and cover them with sand in a container. This is heated over a fire for several days, drying out the gourds. Patterns may be cut into the gourds before they are dried, or the shells may be forced into desired shapes. Dried gourds are cleaned, painted, shellacked, or waxed. Well-treated gourds become durable containers. The dry hard shells are used for bottles, milk pots, churns, bowls, ladles, spoons, work baskets, floats, pipes, carved objects, and musical instruments. Gourds prepared for Purple Martin houses should be painted with an exterior oil-base white paint to reflect the sun's rays and cool the insides.