Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 03, Issue: 01 (JAN-FEB, 2023)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

Studies on Cape Gooseberry *(Physalis peruviana)*

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Cape gooseberry, (*Physalis peruviana*), also called **goldenberry,** species of ground cherry in the nightshade family (Solanaceae) and its edible fruit. The plant is native to Colombia, Ecuador, and Peru and was widely grown in South Africa beginning in the 19th century, which is likely the source of its common name. It is unrelated to true gooseberries of the genus *Ribes* (family Grossulariaceae). Cape gooseberries are bittersweet, slightly tart, and quite juicy. They have some of the acidity of a cherry tomato and notes of citrus fruits, pineapple, peaches, and cherries.

Cultivation

It has been widely introduced into cultivation in tropical, subtropical, and temperate areas such as Australia, China, India, Malaysia, and the Philippines. *P. peruviana* thrives at an annual average temperature from 13 to 18 °C (55 to 64 °F), tolerating temperatures as high as 30 °C (86 °F). It grows well in Mediterranean climates and is hardy to USDA hardiness zone 8, meaning it can be damaged by frost. It grows well in rainfall amounts of 800–4,300 mm (31–169 in) if the soil is well drained, and prefers full sun or partial shade in well-drained soil, and grows vigorously in sandy loam.

The plant is readily grown from seeds, which are abundant (100 to 300 in each fruit), but with low germination rates, requiring thousands of seeds to sow a hectare. Plants grown from year-old stem cuttings will flower early and yield well, but are less vigorous than those grown from seed.

Physical description

The Cape gooseberry is a perennial plant but is commonly grown as an annual in temperate climates. The simple velvety leaves are roughly heart-shaped and usually have entire (non-toothed) margins. The creamy yellow flowers are solitary and somewhat bell-shaped with five fused petals, each with a brown or purple spot at the base. Like the tomatillo, to which it is related, the plant is noted for the inflated baglike calyx (fused sepals) that encloses a fleshy orange berry.

Uses

Cape gooseberry fruits can be eaten fresh or cooked and are used for both sweet and savoury dishes. They are commonly used in baked goods and to make jams, chutneys, and sauces. In Hawaii they are often combined with couscous and

coriander as an accompaniment to scallops. In Colombia and Andean countries they feature in yogurts, ice creams, and savoury sauces, whereas in Brazil and some parts of Europe they are dipped in chocolate and served as petits fours.

Flowering quince, (genus *Chaenomeles*), genus of three species of flowering plants in the rose family (Rosaceae), native to eastern Asia. Flowering quince is cultivated primarily as an ornamental for its showy flowers, though its astringent applelike fruit can be used in preserves and liqueurs and holds some potential as an alternate fruit crop. The members of the genus are related to traditional quince (*Cydonia oblonga*) and Chinese quince (*Pseudocydonia sinensis*).

Pests and diseases

In South Africa, cutworms attack the Cape gooseberry in seedbeds, red spiders in the field, and potato tuber moths near potato fields. Hares damage young plants, and birds eat the fruits. Mites, whiteflies and flea beetles can also be problematic. Powdery mildew, soft brown scale, root rot and viruses may affect plants. In New Zealand, plants can be infected by *Candidatus liberibacter* subsp.

Nutrition

According to nutrient analyses by the USDA, a 100 g serving of Cape gooseberries is low in food energy (222 kilojoules or 53 kilocalories) and contains moderate levels of vitamin C, thiamin and niacin, while other nutrients are negligible (see table). Analyses of oil from different berry components, primarily its seeds, showed that linoleic acid and oleic acid were the main fatty acids, beta-sitosterol_ and campesterol_ were principal phytosterols and the oil contained vitamin K and beta-carotene.

Culinary uses

P. peruviana is an economically useful crop as an exotic exported fruit, and is favored in breeding and cultivation programs of many countries. *P. peruviana* fruits are marketed in the United States as *goldenberry* and sometimes *Pichuberry*, named after Machu Picchu in order to associate the fruit with its origin in Peru.

Cape gooseberry is made into fruit-based sauces, pies, puddings, chutneys, jams and ice cream, or eaten fresh in salads and fruit salads. In Latin America, it is often consumed as a *batido* or smoothie, and because of its showy husk, it is popular in restaurants as a decorative garnish for desserts. To enhance its food uses, hot air drying improves qualities of dietary fiber content, texture and appearance.

In basic research on fruit maturation, the content of polyphenols and vitamin C varied by cultivar, harvest time, and ripening stage.

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