

# Castor Seed



The **castor oil plant**, *Ricinus communis*, is a plant species of the Euphorbiaceae and the sole member of the genus *Ricinus* and of the subtribe Riciniinae. Its seed is the castor bean which, despite its name, is not a true bean.

Castor seed is the source of castor oil, which has a wide variety of uses. The seeds contain between 40% and 60% oil that is rich in triglycerides, mainly ricinolein. They also contain ricin, a poison, which is also present in lower concentrations throughout the plant.

The toxicity of raw castor beans is well-known, and reports of actual poisoning are relatively rare. Children could conceivably die from as few as three beans; adults may require eight or more. As an example of the rarity of castor bean poisoning, in recent years there have only been two cases reported in all of England, and in both the victims recovered uneventfully.

In February, 2008, a 57-year-old man in Las Vegas, Nevada, called for medical assistance from an Extended Stay hotel. Ricin and castor beans were subsequently found in the man's room.

Castor seeds have been found in Egyptian tombs dating back to 4000 BC. Herodotus and other Greek travelers have noted the use of castor seed oil for lighting and body ointments.

Global castor seed production is around 1 million tons per year. Leading producing areas are India, China and Brazil. There are several active breeding programmes.

## Habitat and growth

Although castor is probably indigenous to the southeastern Mediterranean region and Eastern Africa, today it is widespread throughout tropical regions. Castor establishes itself easily as an apparently "native" plant and can often be found on wasteland. It is widely grown as a crop in Ethiopia. It is also used extensively as a decorative plant in

parks and other public areas, particularly as a "dot plant" in traditional bedding schemes. This plant is named *Ricnu* in Maltese.

Although monotypic, the castor oil plant can vary greatly in its growth habit and appearance. It is a fast-growing, suckering perennial shrub which can reach the size of a small tree (around 12 m), but it is not hardy. However it grows well outside, at least in Southern England, and the leaves do not appear to suffer frost damage in sheltered spots, where it remains evergreen. In areas prone to frost it is usually shorter and grown as if it were an annual: it can reach a height of 2–3 m in a year (if sown early, under glass, and kept at a temperature of around 20°Celsius/68°Fahrenheit until planted out). The glossy leaves are 15–45 cm long, palmate, with 5–12 deep lobes and toothed margins. Their colour varies from dark green, sometimes with a reddish tinge, to dark reddish purple or bronze. The stems and the spherical, spiny seed pods also vary in pigmentation. The pods are more showy than the flowers (the male flowers are yellowish-green with prominent creamy stamens and are carried in ovoid spikes up to 15 cm long; the female flowers, borne at the tips of the spikes, have prominent red stigmas).

Selections have been made by breeders for use as ornamental plants: 'Gibsonii' has red-tinged leaves with reddish veins and pinkish-green seed pods; 'Carmencita Pink' is similar, with pinkish-red stems; 'Carmencita Bright Red' has red stems, dark purplish leaves and red seed pods; all grow to around 1.5 m tall as annuals. 'Impala' is compact (only 1.2 m tall) with reddish foliage and stems, brightest on the young shoots; 'Red Spire' is tall (2–3 m) with red stems and bronze foliage; 'Zanzibarensis' is also tall (2–3 m), with large, mid-green leaves (50 cm long) with white midribs. (Heights refer to plants grown as annuals.)

## Uses

**Usage in ethnobotany** The use of castor seed oil in India has been documented since 2000 BC for use in lamps and in local medicine as a laxative, purgative, and cathartic in Unani, Ayurvedic and other ethnomedical systems.











Castor seed and its oil have also been used in China for centuries, mainly prescribed in local medicine for internal use or use in dressings.

The oil has undecylenic acid, a powerful chemical for dermal fungus.

The oil is known to have been used as an instrument of coercion by the Fascist militia (Camicie Nere) under the regime of Italian dictator Benito Mussolini. Dissidents and regime opponents were forced to ingest the oil in large amounts, triggering severe diarrhoea and dehydration, which could ultimately cause death. This punishment method was originally thought of by Gabriele D'Annunzio, the Italian poet and Fascist supporter, during the First World War.

It was used in rituals of sacrifice to please the gods in early civilizations.

# Production

Top Ten Castor Beans Producers — 2005				
Country	Production (Int \$1000)	Footnote	Production (MT)	Footnote
 India	351,332	C	870,000	*
 People's Republic of China	108,226	C	268,000	*
 Brazil	71,374	C	176,743	F
 Ethiopia	6,057	C	15,000	F
 Paraguay	4,644	C	11,500	
 Thailand	4,038	C	10,000	F
 Vietnam	2,181	C	5,400	F
 South Africa	1,979	C	4,900	F
 Philippines	1,615	C	4,000	*
 Angola	1,413	C	3,500	F
No symbol = official figure, F = FAO estimate, * = Unofficial figure, C = Calculated figure;				
Production in Int \$1000 have been calculated based on 1999-2001 international prices Source: Food And Agricultural Organization of United Nations: Economic And Social Department: The Statistical				

India is world leader in Castor Beans Production followed by China and then Brazil.