

## *Roystonea regia*

### Scientific classification

Kingdom : Plantae

Clade : Angiosperms

Clade : Monocots

Order : Arecales

Family : Arecaceae

Genus : *Roystonea*

Species : *R. regia*



*Roystonea regia*

### Description

*Roystonea regia* is a large palm which reaches a height of 20–30 metres (66–98 ft) tall, (with heights up to 34.5 m (113 ft) reported) and a stem diameter of about 47 centimetres (19 in). (K. F. Connor reports a maximum stem diameter of 61 cm (24 in).) The trunk is stout, very smooth and grey-white in colour with a characteristic bulge below a distinctive green crownshaft. Trees have about 15 leaves which can be up to 4 m (13 ft) long. The flowers are white with pinkish anthers. The fruit are spheroid to ellipsoid in shape, 8.9–15 millimetres (0.35–0.59 in) long and 7–10.9 mm (0.28–0.43 in) wide. They are green when immature, turning red and eventually purplish-black as they mature.

Root nodules containing *Rhizobium* bacteria have been found on *R. regia* trees in India. The presence of rhizobia-containing root nodules is usually associated with nitrogen fixation in legumes; this was the first record of root nodules in a monocotyledonous tree. Further evidence of nitrogen fixation was provided by the presence of nitrogenase (an enzyme used in nitrogen fixation) and leghaemoglobin, a compound which allows nitrogenase to function by reducing the oxygen concentration in the root nodule.<sup>[7]</sup> In addition to evidence of nitrogen fixation, the nodules were also found to be producing indole acetic acid, an important plant hormone.

## Uses

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*Roystonea regia* has been planted throughout the tropics and subtropics as an ornamental. The seed is used as a source of oil and for livestock feed. Leaves are used for thatching and the wood for construction. The roots are used as a diuretic, and for that reason they are added to *tifey*, a Haitian drink, by Cubans of Haitian origin. They are also used as a treatment for diabetes.

Fibres extracted from the leaf sheath of *R. regia* have been found to be comparable with sisal and banana fibres, but lower in density, making it a potentially useful source for the use in lightweight composite materials. An extract from *R. regia* fruit known as D-004 reduces benign prostate hyperplasia (BPH) in rodents. D-004, is a mixture of fatty acids, is being studied as a potential alternative to finasteride for the treatment of BPH.