

## Queen of the night cactus (*Cereus jamacaru*) in South Africa

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Queen of the night, *Cereus jamacaru* De Candolle, family Cactaceae (formerly misidentified in South Africa as *C. peruvianus* (L.) Mill.) is a large, upright-growing, cylindrical cactus species of South American origin that was most probably imported by succulent collectors. Because of its attractive shape, its large, white flowers and edible fruits it is a popular ornamental plant in many gardens in South Africa. It is also often planted as a hedge. What gardeners do not realize, is that this plant spreads into the surrounding veld and threatens our natural vegetation.

The generic name – which means “torch” – refers to the candelabra-like appearance of the plant. Queen of the night is also known as Peruvian apple cactus, while in Afrikaans it is known as “nagblom” or “bobbejaanpaal”.

### Morphology

Queen of the night is a perennial succulent tree, usually 6 to 7 m tall, which normally consists of a short main stem from which numerous thick, vertical branches grow. It does, however, sometimes occur as a multi-stemmed shrub. The stems are succulent, green and spiny, and they are covered with a bluish, waxy layer. The stems have 4 to 9 (usually 6) conspicuous lateral ribs on which spines occur in groups of 6 to 8. The spines are 10 to 20 mm long, sharp, straight, and dark coloured. Each group of spines occurs on a brown or grey protuberance, the areole, arranged 10 to 25 mm apart on the ribs.

The stems are indented at irregular distances to create the impression of segments. The very young growth tips have succulent leaves on the ribs, but these soon drop so that the plant can be regarded as being leafless. The lateral branches arise from the dormant axillary buds between the spines in an areole. The plants have a shallow but extensive root system.

In spring the plant produces large, funnel-shaped flowers consisting of a long tube that widens towards the top. The flowers are about 150 mm long and 70 to 100 mm in diameter. The scale-like leaves that cover the tube are thick and green to pink while the thinner, inner petals are white.

As the name indicates, the flowers open at night and usually close again the next morning, although they might remain open on cool, cloudy days. The flowers are visited by many bees which, together with night-flying insects, are responsible for pollination of the plant.

When the flower wilts, the petals and stamens drop while the ovary enlarges to form a fleshy, almost spherical fruit about 40 mm in diameter. The skin of the fruit is smooth and spineless, red to pink in colour but gradually changes to amber. The edible flesh is white, sweet and aromatic and contains



Clockwise, from right: A multi-stemmed plant in flower. Ripe fruit showing tiny black seeds. Areoles with spines on the ribs of a stem.

a large number of small, black seeds about the size of a pin-head. When ripe, the fruit splits along one side. Birds and baboons enjoy feeding on the fruit.

Queen of the night is sometimes confused with the indigenous naboom (*Euphorbia* spp.) which also have succulent stems with lateral ribs, but the Euphorbias have a more distinct main stem. The stems are also more deeply indented, the spines occur in pairs, the flowers are small and inconspicuous and the plants exude a toxic, milky white latex when wounded.

### Distribution

This weed is indigenous in South America and was probably brought to South Africa by succulent collectors. With the exception of Hawaii where it is sometimes a pest in pastures, and Australia, where it has only recently been found to be invasive, it has not assumed weed proportions anywhere else in the world. It was only proclaimed a weed in South Africa as recently as 1982.

In South Africa, queen of the night infestations are limited mainly to the warmer parts of Gauteng, North West, Mpumalanga and Limpopo Provinces, where they especially occur in the bushveld to the north of the Magalies Mountains. One of the worst infestations is at Kameelpoort, north-east of Pretoria, where queen of the night has infested some 3 000 ha of land. Smaller infestations occur in the vicinity of Soutpan, Warmbaths, Pienaars River, Hammanskraal, Pretoria North, Rust de Winter, Groblersdal, Thabazimbi, Rustenburg, Brits, Krugersdorp and the Cradle of Humankind area. It is, however, found as a cultivated ornamental in many South African gardens where, especially in the warmer areas, it could be a potential source of infestation. It is sometimes planted as security hedges.

## Propagation

The main propagation method of queen of the night is by means of seed. The conspicuous colour of the fruits attracts birds and monkeys, which eat the fruit flesh and disperse the seeds in their droppings. As a result, cactus seedlings appear under trees and along fences, wherever the birds perch or roost. Any specimen of queen of the night in a garden is therefore a potential source of infestation.



Clockwise from left: Plants tend to appear under trees and along fences. Regrowth from a cut stem. Seedling in grassland.

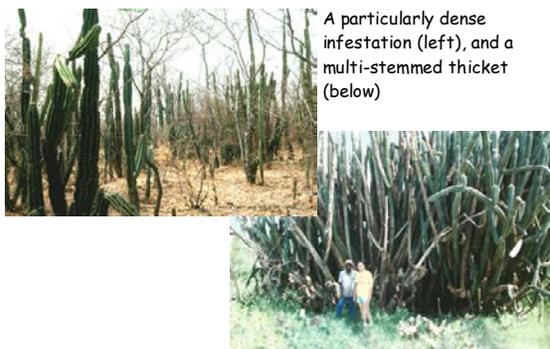
It has been found that the seedlings require finely textured soil and enough shade to develop. Infestations are, however, also found in sandy soil and in open grassland.

Although to a lesser degree, queen of the night also propagates vegetatively since parts of the stems that touch the ground readily set root. The succulent stems remain viable for a long time after the plant has been felled or uprooted.

## Problems

The greatest danger of this plant lies in its ability to replace the natural vegetation and invade pastures. Cactus plants growing in grassland can seriously reduce the grazing potential of the land. The dense, spiny infestations under trees prevent animals from finding shelter in the shade.

In tall grass Queen of the night seedlings often remain undetected until they are taller than the grass, and by this time the cactus could already have produced fruits. It is also difficult to eradicate the plant since it does not die easily. Because the plant has no natural enemies in South Africa, it can invade large areas undisturbed.



A particularly dense infestation (left), and a multi-stemmed thicket (below)

## Legislation

Queen of the night has been proclaimed a weed (Category 1 plant) under the Conservation of Natural Resources Act of 1983 (Act 43 of 1983), as amended in 2001. The plant may therefore not be distributed or be allowed to spread. Furthermore it may occur in no urban area anywhere in the Republic and it must be effectively controlled on all farm units in the Republic. Owners and occupants are therefore obliged by law to control this plant in their gardens or on their farms.

## Control

Previously it was recommended that the plant be treated chemically by the application of MSMA (Masmar L2032, Act 36/1947). However, since the development of an exceptionally effective biological control strategy, the use of herbicides is considered unnecessary and even undesirable, and the state's herbicide subsidy on MSMA for this purpose has been withdrawn. Instead, biological control should be used wherever practicable.

Two biocontrol agents are available against queen of the night: a sap-sucking mealybug (*Hypogeococcus pungens*) and a stem-boring beetle (*Aloidion cereicola*). The biocontrol agents, and the strategy for implementing them, are discussed separately.



Two biocontrol agents keep queen of the night cactus under effective control in South Africa: the stem-boring beetle, *Aloidion cereicola* (left) and the mealybug, *Hypogeococcus pungens* (right).

Biocontrol may be replaced by the physical removal of the cactus (by uprooting) only where the cactus plants are small and isolated and would not sustain a population of biocontrol agents for a period sufficient to allow them to disperse onto surrounding cactus plants. Single, isolated seedlings should be uprooted and suspended from a fork in a tree, or placed onto a rock or concrete surface, where they will be unable to set roots again. Care must be taken that no part of the plant is left lying where it can root. Under no circumstances must pieces of the plant simply be carted away to be discarded, since this is one of the most common ways in which cactus infestations originate.

Adapted from: De Beer, H. 1987. Queen of the night. *Farming in South Africa*. Weeds Series A.15.