



# IMBRICATE CACTUS

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The imbricate cactus (*Opuntia imbricata*) (Haw.) (D.C., family Cactaceae) has been regarded as a noxious weed in South Africa since the fifties because of its tremendous ability to invade grazing, and also because of its vicious thorns that can seriously injure animals. Although not as aggressive as jointed cactus (*O. aurantiaca*) or rosea cactus (*O. rosea*), it is nevertheless vitally important for landowners to recognise and eradicate it wherever it occurs before it causes serious problems.

Imbricate cactus is also known as imbricate prickly pear. The common Afrikaans names are "imbrikaatkactus", "kabelturksvy", "toukactus" or "skubkactus".

## MORPHOLOGICAL DESCRIPTION

Imbricate cactus is an open, erect, branched succulent that reaches a height of 4 m. A large number of cylindrical joints (cladodes) arise from the main stem at all angles. The main stem has a

diameter of 6 to 18 cm. The dull-green cladodes are not flattened as in the case of the prickly pear, but are round in cross-section. The cladodes reach a length of as much as 38 cm and a diameter of 4 cm. They are covered with oblong, raised ridges that give the cladode the appearance of braided rope. Each ridge ends in a round protuberance (areole) with a group of 8 to 30 long, sharp, spreading spines that can reach a length of 3 cm. Each spine is initially covered by a pale-yellow to whitish papery sheath that can be easily removed to expose the brownish spine. The fine barbs on the spines ensure deeper penetration of a spine that has pierced an animal's skin. When the cladodes are young, they have small, pointed leaves which gradually drop off as the cladodes age.

At the tips of the cladodes groups of dull, purple-red flowers, about 4 cm in diameter, occur during November. Each of them produces an oval, yellow fruit about the size of a biggish plum. The fruit is initially covered with knobs, but eventually it becomes fairly smooth. The fruit contains a large



FIG. 1 - Typical imbricate cactus



FIG. 2 - Imbricate cactus with flower



FIG. 3 - Large, dying imbricate cactuses infested with cochineal

number of dull-yellow, flattened, kidney-shaped, mucous-covered seeds. The fruit usually remain on the plant for 3 to 5 years.

Rosea cactus - that could be confused with imbricate cactus since both bear dark-pink flowers - differs from imbricate cactus in the following respects: rosea cactus is smaller (height 1.5 m), has a much denser white thorn cover and it is a sturdy, compact plant. Another related plant, jointed cactus, has, in contrast with the imbricate cactus, yellow flowers, slightly flattened segments and its spines have no sheaths. The plant is also much smaller than the imbricate cactus (0.5 m tall).

## DISTRIBUTION

Imbricate cactus is indigenous in the southern USA and also in Central and Southern Mexico. It is a weed in Australia and South Africa.

It is not known when and how the plant entered South Africa, but it can be accepted that succulent collectors brought it into the country as an ornamental for rockeries. Gardeners were also undoubtedly responsible for the rapid spread of the weed to virtually all parts of the country.

At present imbricate cactus occurs in the OFS, Natal, the south-western parts of the Transvaal and the Cape Province. It is assuming alarming proportions in the Northern Cape, specifically at Douglas, Barkly West, Griquatown, Warrenton and Kimberley. There are also a number of heavy infestations in the Eastern Cape districts of Steytlerville, Willowmore, Oudtshoorn and Murraysburg. According to a report published in 1983, the weed occurs on 208 farms in 21 districts of the Free State Region. These infestations cover a total area of 8 250 ha. At the peak of infestation an impenetrable thicket of imbricate cactus - as tall as 2.4 m - covered nearly 85 ha of land on a farm near Griquatown. This infestation has since been eradicated by mechanical means.

Since imbricate cactus is well adapted and has an excellent distribution mechanism, the danger exists that it may invade the desert-like or semi-desert veld types of the Cape Province and overrun the veld. However, it usually grows best on good soil mainly in the temperate summer rainfall regions.

## GROWTH AND REPRODUCTION

Imbricate cactus propagates vegetatively and, to a lesser extent, through seeds. The flowers give rise to yellow fruit with a large number of seeds. However, since the fruit are hard and unpalatable they are not eaten by man or beast so that this is not an important method of distribution.

The rapid spread of the weed throughout the country should rather be attributed to keen gardeners who plant the imbricate cactus on their rockeries and then allow it to spread to the veld, together with the fact that the thorny cladodes easily break off the mother plant, drop to the soil and form roots. In fact any part of the plant, including the fruit, that drops on the ground will take root and give rise to a new plant. This trait makes mechanical eradication very difficult.

## DANGERS

The weed properties of imbricate cactus lie in its ability to spread rapidly and to take over a patch of land completely. This drastically reduces the grazing potential and restricts free passage of man and beast. The vicious thorns - armed with barbs - penetrate the feet and skin of animals, causing great discomfort and injuries. Moreover, it is extremely difficult to eradicate the plant once it has become established since any part that breaks off gives rise to a new plant.

## LEGISLATION

Under the Conservation of Agricultural Resources Act 1983 (Act No. 43 of 1983), imbricate cactus has been proclaimed a weed in all parts of the Republic. In terms of these regulations no-one may disperse or permit the dispersal of the weed. It may not occur within an urban area and if it occurs on any farm unit in the Republic, it must be effectively controlled.

## CONTROL

The cochineal insect, *Dactylopius tomentosus* (Lamarck), was imported in 1969 for the biological control of imbricate cactus. The insect is effective in certain arid areas west of 26° latitude. It destroys loose cladodes and small plants and defoliates large plants, thereby restricting spread of the weed. Large plants that are infested by the insect will be destroyed provided that the plant is chopped down close to the ground.

Chemical control should be limited to areas where the insect is not effective and to individual plants as well as to the edges of heavy infestations. Although no chemicals have yet been registered for the control of imbricate cactus, research in this field continues.

Farmers who identify imbricate cactus infestations on their farms are asked to contact their nearest agricultural extension office.