

Invasive cactus species in Kenya

A large number of cactus species, which are mainly native to the Americas, have been introduced to Kenya. Of these more than five, including *Opuntia stricta* (Australian pest pear) [1], *O. engelmannii* (Cows tongue cactus) [2], *O. elatior* [3], *O. monacantha* (drooping prickly pear) [4], *O. ficus-indica* (Sweet prickly pear) [5], *Austrocylindropuntia subalata* (Colville cactus) [6], *Cereus jamacaru* (Queen of the night) [7], and others are known to be invasive in Kenya, especially in the arid and semi-arid rangelands. It is predicted that without management more than 70% of our natural pasture will be lost to invasive plant species.

In Africa, ***Opuntia stricta*** is naturalized in Botswana, Namibia and Swaziland. It is invasive in South Africa, Angola, Tanzania, Kenya, Ethiopia, Morocco, Tunisia and Madagascar. This same species was considered to be Australia's worst weed ever, covering almost 24 million hectares before host specific and damaging biological control agents were introduced. In Kenya, this weed is invasive in Laikipia, especially around Doldol, and in Tsavo East National Park and surrounds, where it has invaded more than 500 km². In these areas it is mainly wildlife (baboons and elephants) and livestock that eat the fruit and contribute to its spread.



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Opuntia stricta can be managed through manual/mechanical, chemical and biological control. Manual/mechanical control is only effective in controlling isolated plants or small infestations – any plant parts dropped during these clearing operations will root and establish new plants. Chemical control is expensive because high concentrations of herbicides need to be applied. The most cost-effective control strategy is biological control, which is the natural control of a pest by introducing host specific and damaging natural enemies. In the case of *O. stricta*, two natural enemies are known to be effective, the cactus moth (*Cactoblastis cactorum*) and the cochineal insect (*Dactylopius opuntiae*). The latter has been introduced to Laikipia, but only after confirming its host specificity and after approval was granted by KEPHIS and NEMA [1]. It is important to reiterate that this sap-sucking bug cannot feed or develop on any native plants or crops.

Females and nymphs of the cochineal are tiny and cannot easily be seen with the naked eye. What one does see on plants are balls of fluff – these are the waxy white threads which are secreted by females and nymphs to provide them with shelter [2]. Females attach themselves to the plant, and remain in that position for their whole life. Beneath the fluffy balls they produce red eggs which hatch to produce red nymphs known as crawlers. These crawlers are dispersed to new plants by the wind using their waxy threads for buoyancy [3]. The male crawlers pupate and emerge as winged adults [4] – they never feed and as such are short-lived. There are no native species of cochineal in Africa.

A number of agencies/organizations have contributed to this work including CABI, OI Jogi, KEPHIS, KALRO, NEMA, GEF SGP and ARC-PPRI (South Africa).

