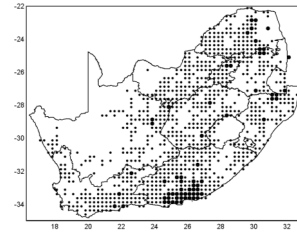
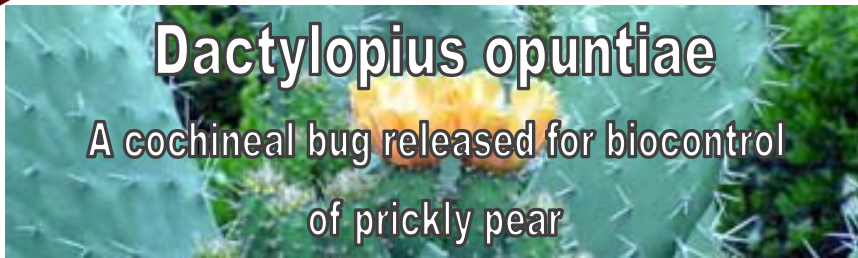


ARC-PPRI FACT SHEETS ON INVASIVE ALIEN PLANTS
AND THEIR CONTROL IN SOUTH AFRICA

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The cochineal bug, *Dactylopius opuntiae*, was released as a biological control agent on prickly pear (*Opuntia ficus-indica*) in the Eastern Cape Province in 1937. The original consignment of insects was introduced from Australia.

DESCRIPTION

Cochineal insects are sap-sucking bugs which feed and complete their life-cycle on cactus plants. Females and nymphs secrete and cover themselves in a waxy, white thread which provides shelter, and gives them the appearance of balls of fluff (i). Their body fluid is a deep red, but this is only obvious when the insects are squashed.

LIFE CYCLE

Females attach themselves to the plants by their mouthparts, and remain in that position throughout their lives. Beneath their fluffy covering, they produce large numbers of red eggs. The eggs hatch almost immediately to produce red nymphs called crawlers, some of which usually settle at the base of the spines, away from light. Most of the crawlers congregate on the highest point of the cladode, from where they are dispersed to new plants by wind. Their wax threads provide buoyancy. Nymphs undergo two instars (growth stages), after which females remain sedentary and attached to the plant, while males pupate to become winged adults. The adult male looks like a small fly with two long tails. Males use flight to locate mates, and are short-lived.

FEEDING DAMAGE

Male cochineal insects never feed as adults (iii). All feeding damage is caused by the females and nymphs which suck sap from the cactus segments. Within a few weeks of the cochineal being established on a plant, yellow areas appear on the cladode, which eventually drops off. Although new cladodes may grow, these will also drop off provided cochineal remains on the plant. Depending on the severity of the infestation, the trunk will also eventually die. Large plants that are still alive two years after infection should be felled, and all the cochineal-infested cladodes stacked underneath the felled stem to ensure that the plant does not regrow. There are two biotypes of *D. opuntiae* in South Africa—one controls prickly pear, the other controls Australian pest pear (*Opuntia stricta*). These biotypes will survive on either cactus species, but are only effective in controlling their preferred host plant. Thus, when harvesting cochineal, it is important to select the correct biotype for the correct plant.

IMPACT ON PRICKLY PEAR

Dactylopius opuntiae is an extremely damaging biocontrol agent (iv), and is capable of killing a small cactus plant within months, or a large cactus plants within two years. Unfortunately, heavy rain may wash the insects off the plants and affect their efficacy until the population has built up sufficiently to control the cactus. The insects fare better in the dry season, and in more arid areas.



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