ARC • LNR

Compiled by Hildegard Klein
ARC-Plant Protection Research Instititute

2.8 Harrisia cactus / Moon cactus (*Harrisia martinii*)

ORIGIN OF THE WEED

Harrisia cactus (fig.1) is a native of the Chaco Province of Argentina and Paraguay (South America).

BIOCONTROL AGENTS

Read more about biological control in general in leaflet 1.3 in this series, and about biocontrol in cactus species in leaflet 2.1.

Harrisia cactus is controlled in South Africa by two insect species: a mealybug and a stem-boring beetle.

a. Harrisia cactus mealybug, *Hypogeococcus pungens*

Background information on agent

Consult leaflet 2.5 in this series for essential information on the life cycle of this insect, its potential as biological control agent and its implementation.

Mealybug damage to harrisia cactus

Typically, an infested plant becomes a mass of twisted and distorted stems (fig 2) and, if it is attacked severely, it could stop growing altogether. The flowerbuds are also attacked and plants that have been infested by mealybugs for three years hardly flower or produce fruit at all. Eventually the entire plant dies (fig.3), including the underground tubers. Any young plants that germinate, as well as regrowth from tubers, become infested rapidly and will also die.

b. Harrisia cactus stem-boring beetle, *Alcidion cereicola*

Background information on agent

Consult leaflet 2.6 in this series for essential information on the life cycle of this insect (see fig. 4), its potential as biological control agent and its implementation.

Stem borer damage to harrisia cactus

Larval feeding (fig. 5) destroys the vascular (transport) tissue and kills the affected branches. About 15 to 20 larvae are necessary to kill all above-ground parts of even the largest plants (fig. 6). In addition, the wounds are attacked by micro-organisms that cause the plant to rot. The larvae do no reach the underground tubers, however, and consequently the plant will regrow from its roots.

Because the larvae cannot survive in young, juicy stems, the stem borers tend to kill the large, woody plants and to leave the young ones undamaged. However, when the mealybugs are also present, all the above-ground tissue can be destroyed within 4 to 5 years.

Figure 1. Harrisia cactus, with its characteristic red fruits. The seeds are bird dispersed.

Figure 2. Harrisia cactus growth tips distorted by feeding mealybugs.

Figure 3. Harrisia cactus killed by the mealybug.

2.8 Harrisia cactus / Moon cactus *(Harrisia martinii)*

CONTROL STRATEGY	
Isolated and very sparsely-distributed cactus	Chemical control - e.g. MSMA
Dense cactus infestations	Biological control - mealybug (and stem borer, if available)

Dense infestations of harrisia cactus should not be controlled chemically. The mealybugs and stem borers are so effective that, combined, the two insect species can control harrisia cactus without the need for any other control measures. The stem borers destroy the old, woody stems while the mealybugs attack the young stems and regrowth. Even the mealybugs will kill the plants, but this will take somewhat longer than if both species are present.

CONTACT PERSONS

Consult leaflet 1.4 in this series for the most updated contact details.

- Biocontrol research: Weeds Research Division, ARC-PPRI (Rietondale), Private Bag X134, Pretoria 0001; Tel (012) 329 3269; Fax (012) 329 3278; e-mail weeds@plant2.agric.za.
- Supply of biocontrol agents: National Department of Agriculture: Directorate of Agricultural Land and Resource Management (D:LRM): your nearest Provincial Office.

FURTHER READING

KLEIN, H. 1999. Biological control of three cactaceous weeds, *Pereskia aculeata* Miller, *Harrisia martinii* (Labouret) Britton and *Cereus jamacaru* De Candolle in South Africa. *African Entomology Memoir No. 1. Biological control of weeds in South Africa (1990-1998)*: 3-14.

McFADYEN, R.E. & TOMLEY, A.J. 1978. Preliminary indications of success in the biological control of Harrisia cactus *(Eriocereus martinii Lab.)* in Queensland. *Proceedings of the First Conference of the Australian Weed Science Societies*: 108-112.

ISBN 1-86849-174-9

© 2002 ARC-Plant Protection Research Institute (http://www.arc-ppri.agric.za)
Application for permission to reproduce or translate all or part of this publication should be made to: The Director, ARC-Plant Protection Research Institute, Private Bag X134, Pretoria 0001.

Page design: Sanet du Plessis. This leaflet was printed by United Litho, with financial assistance from the *Working for Water* Programme of the Department of Water Affairs and Forestry and the National Department of Agriculture
Copies can be obtained from the librarian, ARC-PPRI at the above address.

Figure 4. Adult of the harrisia cactus stem borer, and a stem damaged by its larvae.

Figure 5. A stem borer larva in its tunnel.

Figure 6. An old harrisia cactus plant partially killed by the stem borer.