GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Cactoblastis cactorum***

Cactoblastis cactorum **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Lepidoptera	Pyralidae

Common name prickly pear moth (English), cactus moth (English)

Synonym *Zophodia cactorum* , Berg

Similar species *Phycitinae*

Summary Cactoblastis cactorum is a moth that preys specifically on cacti species. It has been introduced in various locations around the globe to provide biological control of invasive cacti species and has proved itself successful in Australia and some Caribbean islands. However, from the Caribbean it spread into Florida and has attacked non-target cacti species. It is feared that it will cause large scale losses of native cacti diversity in North America and possibly have a large economic, social and ecological impact in Opuntia rich areas of southwestern USA and Mexico.

view this species on IUCN Red List

Species Description
Females of *Cactoblastis cactorum* have a wingspan of 27-40mm, whilst the males wingspan is slightly smaller (23-32mm). The adult is fawn with faint dark dots and lines on the wings. It normally rests with its wings wrapped around its body. The forewings are greyish brown but whiter toward the costal margin. Distinct black antemedial and subterminal lines are present. Hindwings are white, semihyaline at base, smoky brown on outer half with a dark line along the posterior margin. The average longevity of the adult is 9 days. The incubation period of eggs depends on temperature; the shortest time being 18 days. The eggs usually hatch in 23-28 days. Larvae are gregarious in nature, initially pinkish cream coloured, with black red dots on the back of each segment. Later instars become orange and the dots coalesce to become a dark band across each segment reaching up to 1.5cm. The pupa is enclosed in a fine white silk cocoon which consists of a loose outer covering and a more compact inner cocoon. Pupation sites are usually found among debris of rotting cladodes under stones, logs, bark and just beneath the surface of the soil. The average length of the pupal period is 21-28 days. (Jordan Golubov., pers. comm.., 2005).

Lifecycle Stages
When fully grown the larvae exit the cladodes and individually drop to the ground and find pupation sites, usually in the debris of rotting cladodes (Jordan Golubov., pers. comm., 2005).

Uses
Cactoblastis cactorum is a voracious feeder on cacti in the genus *Opuntia* (prickly pear cacti) and is an example of a successful weed biological control programme. It was introduced from Argentina into Australia in the mid 1920's for the biological control of invasive and non-native *Opuntia*. *C. cactorum* was then intentionally spread from Australia into other countries with prickly pear problems (Solis *et al.* 2004).

Habitat Description
Cactoblastis cactorum require *Opuntia* cacti species to lay their eggs upon.

Reproduction
Oviposition is normally at dusk or early dawn and may be responding to CO2 concentrations around pads (Stange, 1997; Stange *et al* 1995). The number of eggs in a stick varies greatly but the average contain from 76-90 eggs. Each female can deposit several eggsticks; 3-4 but can frequently lay 8-12. In Australia, mating takes place during the early morning hours and copulation has never been documented at night, or after 2100hrs. Adults normally remain inactive during daylight hours. In South Africa, sexual activity is found on the first and second night after adult emergence. In Florida, peak periods of sexual activity begin between nautical and civil twilight and ends before sunrise (for a detailed behavioural sequence of sexual activity see Hight *et al.* 2003)

Nutrition
On hatching, all larvae from one eggstick enter the plant at one point. They tunnel freely within the cladodes, consuming the whole of the interior except the vascular bundles and leaving the undamaged cuticle as a transparent tissue. Burrowing activity usually causes secondary bacterial activity which hastens the destruction of cladodes. When one cladode has been eaten or decayed, the larvae may penetrate into the next segment. During this process the colony usually divides into two or more groups. Adults have no functional mouthparts and emerge only to reproduce (Jordan Golubov., pers. comm., 2005).

General Impacts
Stiling (2002) states that, \"*Cactoblastis cactorum* oviposits by gluing sticks of about 50-90 eggs on cactus spines. The gregarious larvae bore into the pads or cladodes, devouring them from the inside. About four pads are needed for the development of the larvae from a complete egg stick.\" The authors also report that, \"There are at least 31 species of prickly pear in the US that are likely to be attacked by *C. cactorum* and 56 species in Mexico. As well as the threat to wild cacti, there are over 250,000ha of *Opuntia* plantations in Mexico that support a thriving agricultural industry, most of which is centered on harvesting fruits or pads.\"
Stiling (2002) reports that “As well as its commercial value, *Opuntia* is used by a whole community of organisms (109 species of invertebrates, 9 species of reptiles, 54 mammals and 25 species of birds)\". Vigueras and Portillo, 2001; Mellink and Rojas-Lopez, 2002).

Management Info
For details on preventative measures, chemical, physical, and biological control options of *Cactoblastis cactorum*, please see management information compiled by ISSG.

Pathway
Cactoblastis cactorum was introduced to St Kitts, Nevis and Montserrat in the Carribbean (Pemberton, 1995).*Cactoblastis cactorum* in the Florida Keys may have been the result of the moth naturally dispersing across the Caribbean, or it may have been introduced unintentionally on horticultural prickly pear cacti imported into Florida (Solis *et al.*

Principal source: Stiling, 2002. Potential non-target effects of a biological control agent, prickly pear moth, *Cactoblastis cactorum* (Berg) (Lepidoptera: Pyralidae), in North America, and possible management actions. Biological Invasions 4: 273-281

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[1] AFRICA
[1] AUSTRALIA
[1] CAYMAN ISLANDS
[1] KENYA
[1] NEW CALEDONIA
[1] PUERTO RICO
[1] SAINT KITTS AND NEVIS
[25] UNITED STATES
[1] ANTIGUA AND BARBUDA
[1] BAHAMAS
[1] CUBA
[1] MONTSERRAT
[1] PAKISTAN
[2] SAINT HELENA
[1] SOUTH AFRICA
[1] VIRGIN ISLANDS, U.S.

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General information

CONABIO. 2008. Sistema de informaci&#65533;n sobre especies invasoras en M&#65533;xico. Especies invasoras - Insectos. Comisi&#65533;n Nacional para el Conocimiento y Uso de la Biodiversidad. Fecha de acceso.

Summary: English:
The species list sheet for the Mexican information system on invasive species currently provides information related to Scientific names, family, group and common names, as well as habitat, status of invasion in Mexico, pathways of introduction and links to other specialised websites. Some of the higher risk species already have a direct link to the alert page. It is important to notice that these lists are constantly being updated, please refer to the main page (http://www.conabio.gob.mx/invasoras/index.php/Portada), under the section Novedades for information on updates.
Invasive species - insects is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Insectos [Accessed 30 July 2008]
Spanish:
La lista de especies del Sistema de informaci&#65533;n sobre especies invasoras de m&#65533;xico cuenta actualmente con informaci&#65533;n aceca de nombre cient&#65533;fico, familia, grupo y nombre com&#65533;n, as&#65533; como h&#65533;bitat, estado de la invasi&#65533;n en M&#65533;xico, rutas de introducci&#65533;n y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la p&#65533;gina de alertas. Es importante resaltar que estas listas se encuentran en constante proceso de actualizaci&#65533;n, por favor consulte la portada (http://www.conabio.gob.mx/invasoras/index.php/Portada), en la secci&#65533;n novedades, para conocer los cambios.
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