

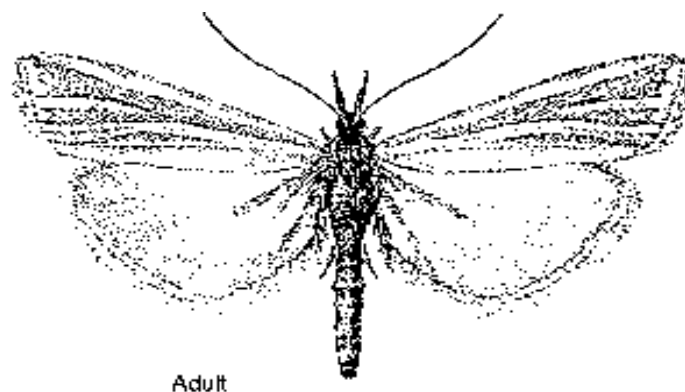


Pasture webworm

The larvae of pasture webworm¹ damage wheat and barley crops mainly in the marginal cereal-growing areas of the Lower North and on Eyre Peninsula in SA. They damage crops that have been sown within three weeks of the initial cultivation of land that has been in pasture for at least three to five years. A number of different species of webworm are involved; pasture webworms are native grass-feeding species that probably increased in number with the introduction of pasture grasses to the above areas and with the use of short autumn fallows. An increase in the use of various minimum tillage techniques before sowing cereals after a pasture phase may further increase the incidence of this pest in crops.

Identification

The adults are light cream moths with dark longitudinal markings on the fore-wings. They are slender moths about 12mm long. The larvae vary in colour from distinct light green to dark green-brown. They have distinct dark "shields" or raised patches over their bodies and grow to about 12mm long.



Adult

5 mm



Larva

5 mm

Hednota spp. (Lepidoptera: Pyraliidae)

Damage

Pasture webworm damage is recognised by the presence of severed cereal plants or leaves that are spread at different angles in the crop. Sometimes leaves may protrude from silk-lined tunnels made by the larvae at the base of the plants. The major damage occurs during seedling emergence and during the following two weeks or so of crop growth.

In heavily infested areas bare patches appear in the crop and, with fewer numbers of larvae, extensive thinning of the crop can occur.

The severity and extent of damage varies from year to year, mainly depending on rainfall. Early opening rains in autumn assure green feed for young larvae. By contrast, late opening rains do not allow the growth of suitable green feed and many larvae die of starvation. In addition, large areas of grassy pasture in the marginal areas are usually sown with cereals in years with early rains. These crops are often sown with minimal cultivation and within a short time after cultivation, both of which increases their susceptibility to damage by pasture webworm.

The incidence of pasture webworm damage can be expected to increase in crops sown following the various minimum tillage techniques. This increase is because the timespan between the pasture being sprayed with herbicide and crop emergence is too short to starve the larvae. In WA, more than 90 larvae a square metre can be found in a crop established with minimum tillage methods compared to one larva a square metre in a crop established with conventional cultivation. The higher larval density will completely destroy a crop.

Life cycle

Pasture webworm has one generation each year.

The moths fly at night during March to May and lay their eggs on the ground. During the day, the moths shelter in standing dry grass. The eggs hatch in one to three weeks, depending on the temperature, and the young larvae then construct silk-lined tunnels in the soil. They feed on the foliage of grasses and cereal plants by cutting of leaves at ground level and taking them into their tunnels. The early-hatched larvae finish feeding by June, but later-hatched larvae may not be fully fed until up to three months later. Mature larvae seal their tunnels with silk and remain dormant throughout summer; they pupate in autumn just before emerging as adults.

Control

Cultural control

Pastures that are heavily grazed before March are not attractive to moths and are not favourable for the survival of larvae. This grazing management can be used to reduce the incidence of this pest in paddocks that are to be sown to cereals following minimum cultivation.

After an initial full cultivation or use of a knock-down herbicide, the risk of damage is slight if the time of sowing the crop is delayed for at least four weeks. The young larvae cannot survive starvation for more than three weeks. Delayed sowing may not be advisable in marginal areas where early sowing is essential to maximise the benefits of any moisture. In these areas, crops should be sown as early as possible despite the risk of being infested. Infested crops should then be treated with insecticide without delay at the first sign of damage to seedlings.

Biological control

There are no known parasites, predators or pathogens that effectively control pasture webworm in cereal crops.

Chemical control

Inspect crops for damage every few days after plant emergence and apply insecticide if there are 10 or more damaged plants per square metre. Even heavily infested crops will recover if spraying is not delayed.

Little benefit is obtained from spraying crops later than three weeks after crop emergence. Most of the damage would have been done by this time and, if damage is not severe, then older crops can compensate for continued damage by pasture webworm.

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