
Biology and management of leatherjackets

Background

Leatherjackets are the larvae of crane flies (*Tipula* spp.) which are better known as daddy longlegs. The largest populations are found in grassland and populations in infested fields can reach 0.6 million leatherjackets/ha. The threshold population for field crops is 0.25 million/ha. Crops of brassicas, courgettes and roots following grass may suffer most damage. Damage is usually seen in spring with young plants and seedlings the worst affected.

Nature of damage

Wilting of plants is usually the first sign of a leatherjacket attack; they feed just below the surface of the soil destroying the roots and underground stems of plants. When night time conditions are warm and damp, leatherjackets may also feed on the surface, cutting off plants at soil surface level or making ragged holes in leaves. Damage may occur during late autumn or during mild periods in winter, but most damage takes place in April/May when the leatherjackets are large and feeding voraciously.

Natural enemies

Starlings and rooks are the main bird species to feed on leatherjackets. It is unusual for the numbers in a large population to be greatly affected by viruses or parasites.



Life history

Leatherjacket larvae are greyish-black or brown in colour, are legless and without a distinct head. They are usually soft and plump, but have a tough skin.

Crane fly adults are large flies with slim bodies, long ungainly legs and have narrow wings. They emerge in late August and early September, shortly afterwards eggs are laid in the soil. A single female may lay as many as 300 small oval black eggs.

The larvae hatch in about a fortnight, at this stage they are very vulnerable. Large numbers of larvae perish unless the weather is cool and damp during this hatching period. The larvae grow slowly over winter, but will be about 40 mm long after the main spring feeding period. During summer the larvae change into pupae in the soil before emerging as adults.

Control measures

Cultural

- Cultivation helps to expose large numbers of larvae to the risk of desiccation and predation by ground beetles and birds. Grassland or setaside should be broken up in early spring. If leatherjackets are numerous the ground should be kept weed free and no crops planted until after mid summer.
- Placing a large black plastic sheet or tarpaulin over moist soil overnight will encourage leatherjackets to come to the surface. These can then be collected or left for the birds.

Bio-control

- Control of leatherjackets can be achieved by using nematodes e.g. *Steinernema feltiae*. Applications should be done when the leatherjackets are young and active (Sept/Oct)

Further information

Books and papers

- David Frost (2003) Review of pest and weed control in organic systems, *Organic Centre Wales*
- Marion Gratwick, *Crop Pests in the UK – Collected edition of MAFF leaflets*, MAFF / ADAS Published by Chapman & Hall, London 1992

Websites

- Cyber-Help for Organic Farmers (USA) , <http://www.certifiedorganic.bc.ca/rcbtoa/training/pestmanagement.htm>
- Database of IPM Resources (USA) <http://ippc.orst.edu/DIR/index.htm>
- Henry Doubleday Research Association <http://www.hdra.org.uk>
- Organic Integrated Pest Management (USA) http://www.attra.org/attra-pub/summaries/organic_ipm.html
- The *Pest Bulletin*, HDC. <http://www2.warwick.ac.uk/fac/sci/hri2/hdcpestbulletin/>

Please note that the USA based websites may not be appropriate in terms of pest life cycles, timing of management operations etc.

Organic Centre Wales · Technical note No 6 · September 2005

*Published by Organic Centre Wales, Institute of Rural Sciences, University of Wales
Aberystwyth, Ceredigion, SY23 3AL. Tel. 01970 622248*

Organic Centre Wales and its partners cannot accept any responsibility for the consequences of any actions taken on the basis of its factsheets or other publications.