

Hessian fly and Barley stem gall midge

What are these pests?

Hessian fly (*Mayetiola destructor*) and Barley stem gall midge (*Mayetiola hordei*) are two serious fly pests of wheat and barley. They resemble mosquitoes, and feed on the leaves, stems and heads of plants, resulting in stunted growth and reductions in grain yield and quality. Hessian fly has been known to cause crop losses of up to 40%. Control of these pests would rely on host plant resistance and cultural control as chemical control methods are unreliable.

What do they look like?

These closely related flies are extremely difficult to tell apart and look similar to mosquitoes.

Adults are small flies 2-4 mm long, have one set of wings with a few weak veins, and beaded and elongated antennae. Larvae are maggots (legless) and can grow up to 3-4 mm in length with a cylindrical body shape tapered at one end.

Hessian fly larvae (initially white in colour and then turning brown) lodge between leaf sheaths above nodes. The pupa and puparium, present towards harvest at the base of the plant, are dark brown in colour, up to 6 mm long, slightly tapered in shape and commonly known as “flaxseeds”.

For Barley stem gall midge, larvae are pale red at first, becoming milky white. The most distinguishable characteristic that is produced from direct feeding is the formation of pea-sized galls (swellings of the plant tissue) at the base of host plants between the leaf sheath and stem.

What can they be confused with?

There are no flies in Australia that attack cereal plants ‘above ground’ that could be confused with these pests. While these pests are difficult to tell apart, they are both exotic to Australia and any insect matching these descriptions should be reported immediately.



Adult Hessian fly

Scott Bauer, USDA Agricultural Research Service, Bugwood.org



Brown ‘flaxseed’ pupae lodged at the base of the plant

FAO



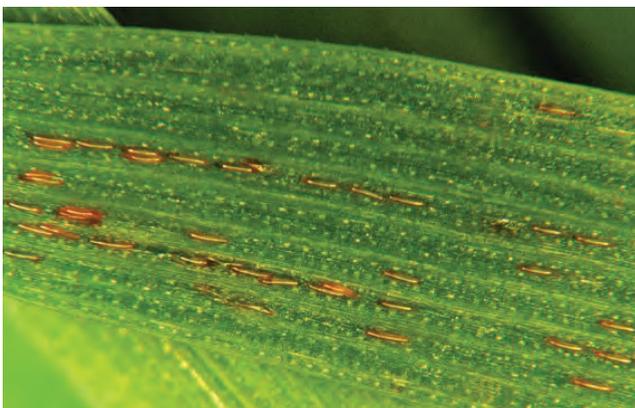
Hessian fly larvae can be seen feeding near the base of the plant

Department of Entomology, University of Nebraska - Lincoln



Department of Entomology, University of Nebraska – Lincoln

Hessian fly pupae with the characteristic 'flaxseed' appearance



Department of Entomology, University of Nebraska – Lincoln

Hessian fly eggs deposited on the top surface of a wheat leaf



Department of Entomology, University of Nebraska – Lincoln

Discolouration and stunted growth resulting from Hessian fly infestation

What should I look for?

Feeding damage on cereal plants can cause leaf discolouration, from a darker green to bluish green or yellowing of new growth in seedlings. Plants are often stunted and tillers can become weakened causing plants to lodge.

The 'flaxseed' pupae imbedded into cereal stems, particularly on wheat, is the most detectable stage of Hessian fly development. Barley stem gall midge can be detected by the galls produced on barley stems.

How do they spread?

Adults actively fly and can be dispersed by wind currents. All life stages can also spread by 'hitchhiking' on straw and other plant material.

Where are they now?

Hessian fly is widespread in the USA and Europe. Other countries such as New Zealand, Africa and Russia have had detections of the pest. Barley stem gall midge has been recorded in northern Africa, Spain, UK and France.

How can I protect my farm?

Check your farm frequently for the presence of new pests and unusual symptoms. Make sure you are familiar with common grain pests so you can tell if you see something different.

If you see anything unusual, call the Exotic Plant Pest Hotline

**EXOTIC PLANT PEST HOTLINE
1800 084 881**



Disclaimer: The material in this publication is for general information only and no person should act, or fail to act on the basis of this material without first obtaining professional advice. Plant Health Australia and all persons acting for Plant Health Australia expressly disclaim liability with respect to anything done in reliance on this publication.