

HPIPM:Hessian Fly

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Identification (and life cycle/seasonal history)

Hessian fly, *Mayetiola destructor* (Say), larvae are small, 4.8 millimeters (3/16 inch), greenish-white, legless, headless maggots found underneath lower leaf sheaths. The pupal stage appears as a small, 4.8 millimeters (3/16 inch), brown seed-like cases containing a maggot, often referred to as a "flaxseed." Adult flies have a red-brown to dusky-black body and dusky wings. They resemble mosquitoes in form and are about four millimeters (1/6 inch) long.

Hessian flies overwinter as flaxseeds in volunteer or fall-sown wheat. After adults emerge in the spring they mate, lay eggs, and die after one to two days. Females lay eggs on the upper leaf surfaces that hatch in about three to ten days. Newly hatched maggots crawl down the leaf and enter the plant at the junction of the sheath and stem. There may be one or more generations in the spring and in the fall.

Plant Response and Damage

Maggots feed by rasping plant tissue and sucking plant juices that ooze from the irritated surface of the stems of wheat and barley. Plant tissues near feeding sites are stunted and abnormal. Leaves may appear thickened, erect, and bluish green in color. The central stem is often missing. Infested stems usually break over at the time of head formation.

Management Approaches

Resistant Varieties

There are tolerant and resistant wheat varieties available. Some adapted varieties have moderate resistance.

Biological Control

Small, parasitic wasps attack Hessian fly maggots and may be important in suppressing populations. Currently, there are no management practices for increasing parasite populations.

Cultural Control

Planting date has been used in some states. Where soil blowing is not a hazard, planting after September 20 to 25 should avoid damage. Deep plowing of infested stubble will reduce numbers of surviving flies. Crop rotations that include barley or other crops should reduce fly populations.

Chemical Control

Seed protectants containing the active ingredients imidacloprid (several formulations) and thiamethoxam (Cruiser) are effective against Hessian fly. Also, studies in the southeastern US indicate that well-timed pyrethroid applications can be effective as a Hessian fly rescue treatment [2] (<http://www.aces.edu/dept/grain/documents/HessianFlyScoutingGuide.pdf>) .

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