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Approaching Hessian Fly-free Dates in Iowa

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Abstract

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Approaching Hessian Fly-free Dates in Iowa

By Erin Hodgson, Department of Entomology

The Hessian fly (Fig.1) can be a destructive pest in wheat, although there haven't been many reports of this pest in recent Iowa history. Typically, resistant wheat varieties provide sufficient protection against the Hessian fly and growers do not have to adjust planting dates to avoid adult emergence. There are genetic biotypes that can attack resistant fields, and so monitoring for Hessian fly is recommended for wheat growers.



Figure 1. Although not a common pest, growers should monitor for plant damage.

Life cycle. The Hessian fly has two generations per year in Iowa. They overwinter as a resting pupae, often referred to as a "flaxseed" because of the resemblance (Fig. 2). Adults emerge as volunteer spring wheat and early-seeded winter wheat starts to grow. Females lay about 300 eggs in four days. Although wheat is the preferred host plant, they will also deposit eggs in barley and rye. The eggs are reddish and very small, usually laid end-to-end in small groups on the upper leaf surface. Larvae (maggots) prefer to feed within the grooves of the wheat leaf sheath and stem until they pupate before harvest (Fig. 3). Hessian flies spend the summer as a flaxseed in wheat stubble, and the second generation emerges in the fall to feed on emerging winter wheat.



Figure 2. Hessian fly pupae are called flaxseeds and can be found at the crown of wheat plants.



Figure 3. Hessian fly larvae are maggots that feed within the leaf sheath and stem.

Damage. Larvae cause injury to wheat by feeding on leaves, tillers and stems. Hessian flies are considered an economic pest in the fall because they can cause significant damage that can stunt or kill plants. As seed heads begin to fill, heavily infested plants can lodge. High humidity is needed for a significant infestation to develop.

Management. Once a wheat field is infested with Hessian fly, foliar insecticides will not make contact with feeding larvae. Hessian fly management depends on good crop production practices and preventing

infestations. Follow these guidelines to protect yield.

1. *Destroy volunteer wheat*, especially during wet years, to minimize favorable host plants. Mated females will have difficulty finding suitable hosts for their eggs and further reduce the overwintering population if all the volunteer wheat is removed.
2. *Plant a resistant wheat variety* to discourage females from depositing eggs.
3. *Plant after the fly-free date* to ensure emerging plants do not get infested (Fig. 4). Adults are short-lived, so planting after recommended historical dates can improve the overwintering stand conditions.

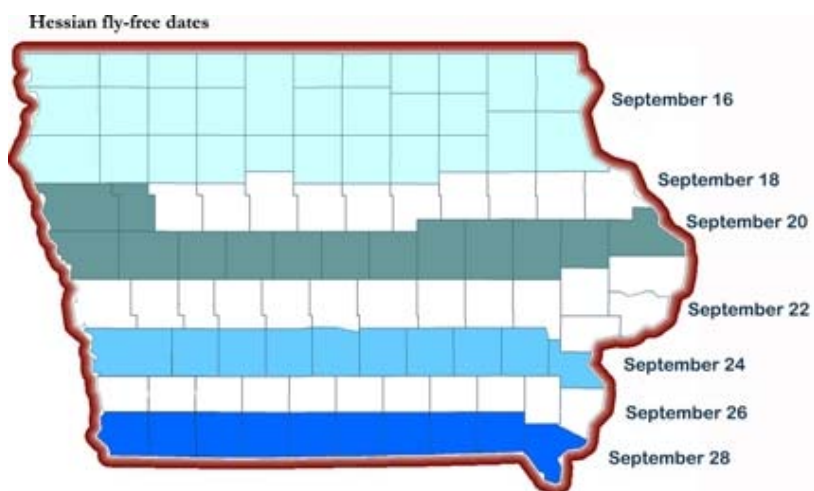


Figure 4. Predicted Hessian fly-free dates for Iowa.

4. *Check areas of the field* with poor stands or stunted plants. Examine the base of the plant (first and second nodes) by pulling the leaf sheath away from the stem. Depending on the time of year, look for larvae or flaxseeds.
5. *Avoid overuse of nitrogen fertilizers* so that wheat plants will not overproduce vegetative growth.
6. *Practice crop rotation* because the adults are weak fliers and they have a limited host range.

Portions of this article originally appeared in a previous ICM [article](#).

Erin Hodgson is an assistant professor of entomology with extension and research responsibilities. She can be contacted by email at ewh@iastate.edu or phone (515) 294-2847.

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