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## THE EUROPEAN CRANE FLY: A LAWN AND PASTURE PEST

The European crane fly, *Tipula paludosa*, is a pest which has become established in western Washington. Although largely a turf and pasture pest, it has been found feeding on such hosts as annual and perennial flowers and several types of vegetables and small fruits.

The adult crane fly has very long legs and looks like a large mosquito with a body about one inch long, not including the legs. Homeowners are alarmed when thousands of these large flies gather on the sides of homes. The crane fly does not bite or sting; it does no damage to houses; but its numbers do excite homeowners.

### Life Cycle

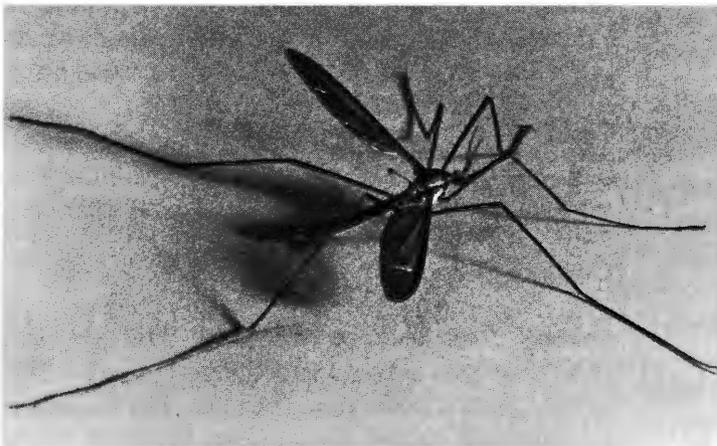
Adult crane flies emerge from soil of lawns, pastures, and other grass areas from late August to mid-September. The females mate and lay eggs in grass within 24 hours after emerging. These eggs hatch into small, gray-brown, worm-like lar-

vae which develop a tough skin, and are commonly called "leatherjackets." The leatherjackets feed on the root crowns of clover and grass during the fall. They winter in the leatherjacket stage. As the weather warms in the spring, they continue to feed. Damage by their feeding may become especially noticeable in March and April. During the day, leatherjackets mostly stay underground, but on damp, warm nights they come to the surface to feed on the above-ground parts of many plants. Leatherjacket feeding stops about mid-May.

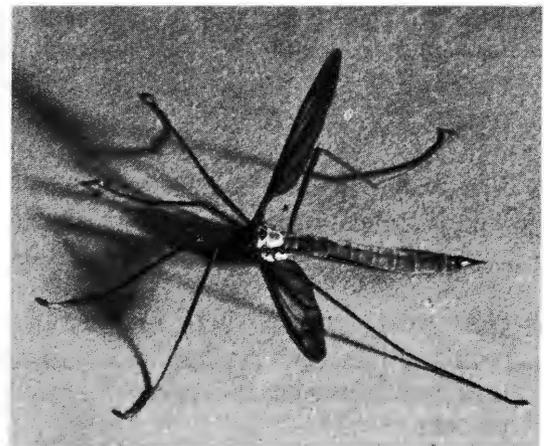
Leatherjackets go into a nonfeeding stage just below the soil surface during July and August. From late August through September pupae wriggle to the surface and the adult crane flies emerge.

### Control (Pastures)

At present, the only material registered for use against crane fly on pastures is methyl parathion



Adult male.



Adult female.



**Leatherjacket in soil.**

This material\* is registered for commercial use on pastures only. On any field that begins to exceed 10 crane flies per square foot, we suggest applying as much fertilizer as practical and keep grazing pressure low until June 1. At levels between 25 and 50 crane flies per square foot, the decision to treat or not to treat should be influenced by the following:

- **Date:** Crane fly larval populations will generally decline by 50 percent between March 15 and May 15 through natural control. Insecticide application is most effective between April 1 and April 15, although March 15 to May 15 is the period when damage occurs.
- **The hazard of using methyl parathion on that field.** Consider nearby houses and the potential for drift downwind onto neighbor's place or cattle.
- **The availability and cost of replacement food.** This may be more critical for some dairymen than others.
- **How operations are affected by the 15-day restriction between methyl parathion application and allowing the cows back onto the pasture.**
- **The age and condition of the pasture:** Newer pastures and poor, thin pastures are more



**Pupa in soil.**

susceptible to damage than are well-established and vigorous pastures.

- **Soil type:** Pastures on "lighter" sandy soils are more susceptible to damage than those on heavy clay soils.
- **The extent of the total acreage of the farm that is infested by crane fly.** It is difficult to justify treatment of the whole farm because a few minor isolated patches of pasture show damage.

At levels greater than 50 crane flies per square foot, there will probably be a loss of yield value greater than the expense of treatment. If the threatened pasture is needed, then treatment is suggested. Do not plant vegetables, corn, or other grains in crane fly-infested pastures until after May 15. In areas with immediate past history of crane fly, vegetative debris should be disced under before adults begin to emerge to minimize the possibility of infestation the following year.

#### **Control (Turf)**

On turf, crane flies can be controlled by using the following insecticides and suggested rates per 500 square feet of lawn area. They should normally be applied between April 1 and April 15:

\*A special local needs registration has been granted for this use in Washington under Section 24(c), FIFRA.

Diazinon 25% EC at 4 fl. oz./15 gal. water  
\*Diazinon 16.75% EC at 6 fl. oz./15 gal. water  
Diazinon 5% G at 1¼ lb., spread dry (apply water to lawn after use of granules)

*Do not use Diazinon on sod farms or golf courses!*

\*Dursban 6.79% EC at 4½ fl. oz./15 gal. water  
Dursban 0.5% G at 3.5 lb., spread, then water in with 15 gal. water

Be careful in spreading granules so children and pets cannot come in contact with them. Avoid spills and keep off areas such as walks and patios. Some waterfowl and other birds are very susceptible to diazinon.

The application dates mentioned above reflect normal years and, as such, are generalizations. There have been years when temperatures in December and January were unseasonably warm, and since European crane fly undergoes a weak hibernation, prolonged warm periods can awaken them. Such warm periods result in early feeding that leads to serious lawn damage at that time of year. Therefore, if warm winters occur, then one should watch the lawn carefully for damage development, particularly if the area has had a history of crane fly problems.

Preventive fall applications (between October 1 and October 31) have been successful. This is the time when most of the eggs have hatched and the

larvae are small and vulnerable. This application period is encouraged for turf/sod industries to prevent possible shipment of crane fly to uninfested areas, and for golf greens which are extremely expensive to repair. If a fall application is made, then there should be no need for an application the following spring, since this insect has only one generation annually. Fall spraying is not recommended for homeowners because it is prevention spraying. As a rule this is not good practice because it suggests spraying when a pest problem in spring may not even occur. Research has shown that, often as not, high fall populations may be largely eliminated by natural controls, and thus the same populations the following spring have dropped below damage levels, demonstrating *no* need for sprays.

Therefore, we recommend surveying in early spring (March) or when temperatures begin to become consistently warmer to see if crane fly is abundant. This can be done easily by selecting four or five random spots in the lawn (one square foot each), digging up the top layer (1–2 inches) and counting larvae. If the average number of crane flies for these samples exceeds 25 per square foot, you should consider a chemical treatment. If lawn is generally unthrifty, treatment at lower levels (10–15/ft<sup>2</sup>) may be necessary.

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**Crane fly damage to lawn. The lighter area is damaged lawn.**

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Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

The law requires that pesticides be used as the label directs. Uses against pests not named on the label and low application rates are permissible exceptions. If there is any apparent conflict between label directions and the pesticide uses suggested in this publication, consult your county Extension agent.

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