Extension Bulletin 0856

insect answers

EUROPEAN CRANE FLY: A LAWN AND PASTURE PEST

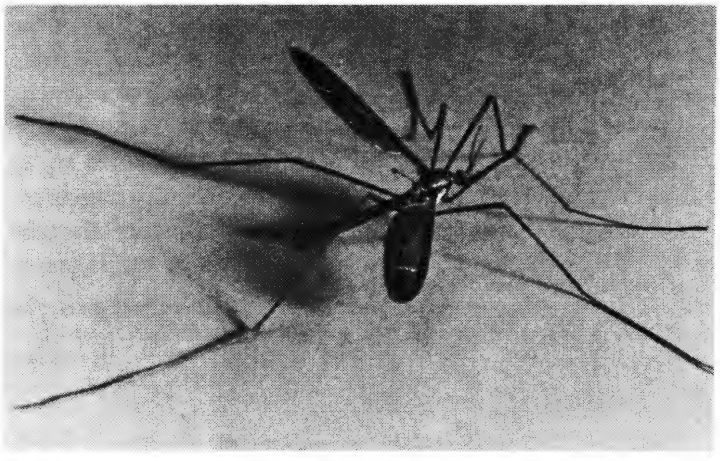
The European crane fly, *Tipula paludosa*, is a pest which has become established in western Washington. Although largely a turf and pasture pest, it has been found feeding on such hosts as annual and perennial flowers and several types of vegetables and small fruits.

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.

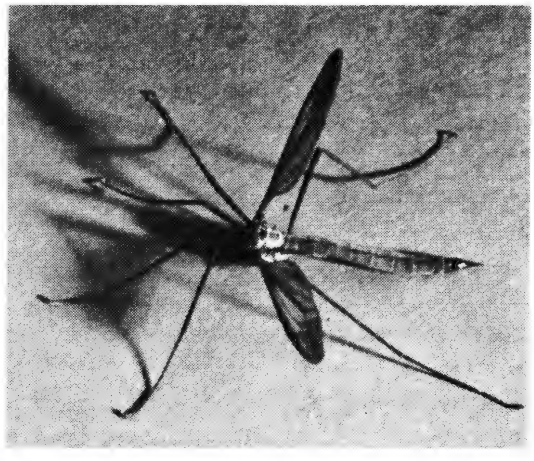
Life Cycle

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, wormlike larvae, which develop a tough skin; they 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 aboveground 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.



Adult male.



Adult female.

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Leatherjacket in soil.

Pupa in soil.

Control (Pastures)

At present, there is only one material registered for use against crane fly on pastures, and it is registered for commercial use only. If chemical control in pastures becomes warranted, check with a licensed consultant (e.g., County agent) for recommendations and current information on product use. 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% 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 highly toxic insecticides 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 dairies than others.

- How operations are affected by length of the restriction between insecticide application and allowing the cows back onto the pasture.

- The age and condition of the pasture: Newer pastures and poor, thin pastures are more 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, loss of yield value will probably exceed 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, disc under vegetative debris before adults begin to emerge. This will minimize the possibility of infestation the following year.

Control (Turf)

On turf, control crane flies by using registered insecticides between April 1 and April 15. Such insecti-

cides can be found in the Pacific Northwest Handbook or WSU EB0482, Home Lawns. All WSU Cooperative Extension county offices have copies at their disposal.

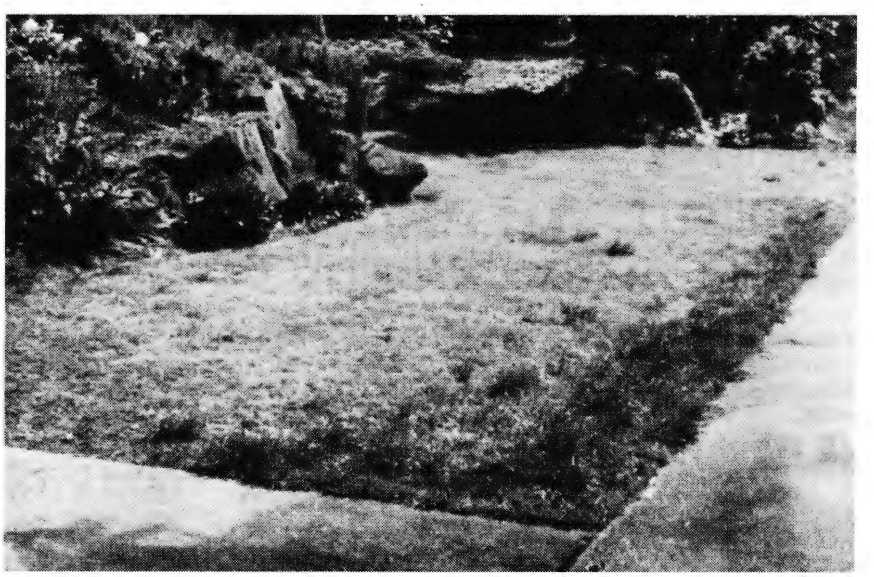
Several of the registered products come as granules. Be careful in spreading granules so children and pets cannot come in contact with them. Avoid spills and keep products off areas such as walks and patios. Some waterfowl and other birds are very susceptible to certain insecticides. Be sure to check the label for cautionary statements. (Note: Several scientists have observed that good fertilizer programs have masked the effects of cranefly feeding.)

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, 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, application should not be needed the following spring. 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. It suggests spraying without knowing whether a pest problem will occur in spring. Research has shown that, often as not, natural controls may largely eliminate high fall populations. Thus, populations have dropped below damage levels the following spring, demonstrating no need for sprays. Therefore we recommend monitoring in early spring to justify treatment.

Monitoring European Crane Fly Populations

Survey the turf area in early spring (February–March) or when temperatures are consistently warmer. Select three or four random spots in the lawn, 6" x 6" (0.25 foot^2). Dig up the top layer (1 to 2 inches) and tear apart samples to count the larvae. Larvae usually will be located at the base of the vegetative layer (thatch) or very shallow in



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

the soil. Multiply the number of crane fly larvae you find in each sample by 4. If this number exceeds 25 per square foot, and the turf is thin, consider a chemical control. If the lawn is generally unthrifty, treatment at lower levels (10 to 15 larvae per square foot) may be necessary. Healthy lawns on which growers use best management practices have been known to have 40 larvae per square foot and not show any damage.

If sampling is done by a professional turfgrass manager, use a 4-inch-diameter cup cutter in three or four random spots. Pull cores 1 to 2 inches deep and tear them apart to count larvae. Multiply the number of crane fly larvae found in each core by 11.5 to give you the number of larvae per square foot.

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