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WARNING

- Recommendations on the use of pesticides are subject to change.
- BEFORE USING ANY PESTICIDES mentioned in this bulletin check with your agricultural representative or provincial authority to make sure your proposed use is still recommended.
- This warning applies to ALL pesticides which include insecticides, herbicides, fungicides, nematocides, etc.
- Commercial pesticide products are marketed in a wide range of container sizes and formulations. They are available at garden centers, hardware stores, pet shops, etc. ALWAYS read labels and follow instructions carefully.



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in Field Beans

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ALBERTA DEPARTMENT OF AGRICULTURE

CONTROL OF THE POTATO LEAFHOPPER IN FIELD BEANS

by

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INTRODUCTION

The adult of the potato leafhopper (Figure 1)² is about an eighth of an inch long, pale green and wedge-shaped. It is broadest at the head and tapers evenly to the tips of the wings. It is very easily disturbed, and flies or jumps rapidly from plant to plant. In recent years it has been abundant in commercial bean and potato fields. This leafhopper injures the bean plant by piercing the leaves and stems with its beak and sucking the juices. The greatest damage usually occurs before the tendrils develop. The plants grow more slowly and in severe cases the leaves curl and turn yellow and then brown; this condition is known as hopperburn (cover illustration). Plants that are free of the insects are also less susceptible to disease and other disorders.

DISTRIBUTION

This insect is common in Eastern Canada; it is most abundant in southern Ontario, especially in the bean and potato-growing areas bordering the lower Great Lakes. It also occurs in Manitoba, but it is seldom found west of that province.

LIFE HISTORY

The potato leafhopper does not overwinter in Canada. During the winter it is found in the United States near the Gulf of Mexico. Apparently the adults move north during late April and May. They appear in small numbers in southern Ontario in late May, and by late June may be found in northern Ontario and southern Manitoba. The leafhoppers are widely distributed by the time beans are up.



Figure 1. Adult of the potato leafhopper.

¹Resigned on February 10, 1960.

²*Empoasca fabae* (Harr.).

The eggs are laid in the main veins on the undersides of the leaves, or in the leaf stems. After about 10 days the eggs hatch into nymphs. These resemble the adults but lack wings; they are very active, and have the habit of running sideways over the edge of the leaf to the side that is turned down. At first the nymphs are nearly colorless and so small that it is almost impossible to see them. They molt, or shed their skins, five times before reaching the adult stage, becoming larger and greener after each molt. They become full-grown in about two weeks. There are usually two large generations and small third and fourth generations each season.

CONTROL

This insect may be controlled by the proper application of insecticides, either as sprays or as dusts. You should be alert for a leafhopper outbreak if the weather is hot and humid during the latter part of June and early July.

Carefully examine the undersides of the leaves on several bean plants, beginning about mid-June. Note whether leafhopper nymphs are present; if you find at least three per plant, promptly apply one of the insecticides recommended below. Examine the plants carefully as the nymphs are small and very active; you can easily overlook them. The presence of cast skins may indicate that nymphs are on the plants.

Several applications of insecticide may be necessary for adequate control. Begin about mid-June and continue at 10-day intervals throughout July, until cultivation ceases in the field, if nymphs are still present. Thoroughly cover both upper and lower leaf surfaces. Use one of the following materials.

Sprays

- DDT, 50% wettable powder 2 pounds per acre
 - Methoxychlor, 50% wettable powder 2 pounds per acre
 - Malathion, 25% wettable powder 4 pounds per acre
 - Sevin, 50% wettable powder 2 pounds per acre
- NOTE: If you use a low-volume sprayer (20 to 40 gallons per acre) be sure that the return to the spray tank keeps the insecticide in suspension and that the nozzles do not clog.
- Do not use a wettable powder with a gear type pump.
- If the Mexican bean beetle is present on the beans, Sevin is the preferred insecticide.

Dusts

- DDT, 5%..... 20 pounds per acre
 - Methoxychlor, 5% 20 pounds per acre
 - Malathion, 4% 25 pounds per acre
- Apply the dust when the air is still, either in the early morning or in the evening. A light canvas or cotton sheet, attached to the back of the dusting machine, and allowed to drag at least 10 feet behind, helps to keep the dust down and give better control.



CAUTIONS

These recommendations are for the control of the potato leafhopper only on beans ripened in the field.

Follow the instructions on the manufacturer's label about use of the insecticides and the cautions in handling them and in using treated plants as fodder.

SUMMARY

The potato leafhopper, the insect that causes hopperburn in field beans, may be controlled with DDT, methoxychlor, malathion, or Sevin, applied as either sprays or dusts. The first application should be made about mid-June, and several others should follow at 10-day intervals depending on the severity of the infestation.

A brand name is used in this publication because the chemical name is too difficult for general use and there is no official common name for the active ingredient.

For further information write to the Entomology Laboratory, Chatham, Ontario.

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