



Digitized by the Internet Archive
in 2012 with funding from
Agriculture and Agri-Food Canada – Agriculture et Agroalimentaire Canada

PUBLICATION 1071
APRIL 1960

Control of the Colorado Potato Beetle in Canada

By F. M. Cannon

CANADIAN AGRICULTURE LIBRARY
BIBLIOTHEQUE CANADIENNE DE L'AGRICULTURE



RESEARCH BRANCH

630.4
C212
P. 1071
1960 C0743

CANADA DEPARTMENT OF AGRICULTURE

CONTROL OF THE COLORADO POTATO BEETLE IN CANADA¹

by

F.M. Cannon

Research Laboratory, Charlottetown, P.E.I.

The Colorado potato beetle², often called the 'potato bug' by growers, is one of the best-known insects in North America. The original home of the beetle was on the eastern slopes of the Rocky Mountains in the United States. Its main food was the weed known as the sandbur or buffalo bur. When the early settlers planted potatoes within the range of the insect, it deserted the weeds for the cultivated plant and multiplied far beyond its original numbers. It then spread eastward at the rate of about 85 miles a year, until it reached the Atlantic coast in 1874. When it was spreading, little was known about insecticides and it multiplied almost unchecked until about 1865, when it was discovered that paris green would poison it.

This beetle may damage potato plants severely. However, in potato-growing areas where spraying against diseases and insects is a regular practice it has been so scarce that it has not been a serious problem recently.

The beetle is found in every province of Canada except Newfoundland. Potatoes are its favorite food but it may be found on tomato, eggplant, tobacco, petunia, and other plants.

DESCRIPTION, LIFE HISTORY, AND HABITS

The adults are egg-shaped beetles about 3/8 inch long and 1/4 inch wide. They have alternate black and yellow stripes running lengthwise along the wing covers, five of each color on each wing cover. The beetles hibernate in the soil at a depth of 3 to 10 inches. In the spring they come out about the time early-planted potatoes come through the ground. They lay their orange-yellow eggs on the undersides of the leaves in groups of a dozen or more. Each female lays 300 to 500 eggs during a period of four to five weeks. The overwintered adults then die.

About a week after the eggs are laid they hatch into small, humpbacked, reddish larvae that devour the foliage. The larvae have two rows of black spots on each side of the body. They grow very fast, molt four times, and become full-grown in two to three weeks. When they reach maturity they are orange-colored. The mature larvae enter the soil, make round cells, and change into yellowish, motionless pupae.

¹Revision of *Processed Publication Series, Entomology, No. 92.*

²*Leptinotarsa decemlineata* (Say).

The pupae change into adults in about a week. The adults feed for several days, and then they either enter the soil for the winter or lay eggs for a second generation. In Canada there is usually only one generation a year but a second develops in some areas.

CONTROL ON POTATOES

The larvae of the Colorado potato beetle are much more readily controlled with insecticides than the adults. Also, young larvae are more easily controlled than older ones. Therefore, apply sprays or dusts when the eggs begin to hatch. Only one application is usually needed during the season; more may be needed if the weather is unfavorable.

Almost any of the common insecticides will control the beetle. DDT has been widely used on potatoes for the past 10 years, and now there is some evidence that strains resistant to this chemical have developed in certain areas.

Where DDT is still effective, spray potatoes with:

50 per cent DDT wettable powder at 2 pounds per 100 gallons per acre
or 25 per cent DDT emulsible concentrate at 1 quart per 100 gallons per acre.

OR apply a 3 per cent DDT dust at 35 pounds per acre.

In areas where DDT has not been effective recently, spray with any one of the following in the amount indicated per 100 gallons per acre:

Thiodan, 25 per cent wettable powder, at 2 pounds;

Thiodan 2, emulsible concentrate, at 1 quart;

20 per cent endrin emulsible concentrate at 1 pint;

toxaphene at 1 pound of active ingredient; or calcium arsenate at 4 pounds or lead arsenate at 5 pounds.

In small gardens where power spraying or dusting is not practical, protect the potato plants by hand spraying or dusting. Mix 1 tablespoon of 50 per cent DDT wettable powder with 1 gallon of water, and wet the foliage until it drips. OR place about 1 pound of 3 per cent DDT dust on a piece of fine cheesecloth or burlap about 18 inches square, gather the corners and sides of the cloth in the hand to form a bag, and shake the dust lightly over the infested plants.

CAUTIONS: These recommendations are for control of the Colorado potato beetle on potatoes only. For other crops, follow closely all the cautions listed on the insecticide label; this is especially important if the insecticide is applied to edible parts of plants such as tomatoes, peppers, and eggplants. The interval needed between the last application and harvest varies with the crop, the material used, the number of applications, and the amount applied. Keep to the interval given to avoid residues that would render the crop unfit for sale.

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

For further information, consult your agricultural representative or provincial entomologist, or write to the nearest insect laboratory of the Canada Department of Agriculture or to the Scientific Information Section, Canada Department of Agriculture, Central Experimental Farm, Ottawa.

SUMMARY

The Colorado potato beetle is found in all provinces of Canada except Newfoundland. The larvæ feed voraciously on the foliage and may reduce the potato crop seriously. DDT is recommended for control except in some areas where strains of the beetle resistant to DDT have developed. In these areas, Thiodan, endrin, toxaphene, calcium arsenate, or lead arsenate should be used.

Copies of this publication may be obtained from:
Information Division
Canada Department of Agriculture
Ottawa, Ontario

QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1960

Cat. No. A43—1071