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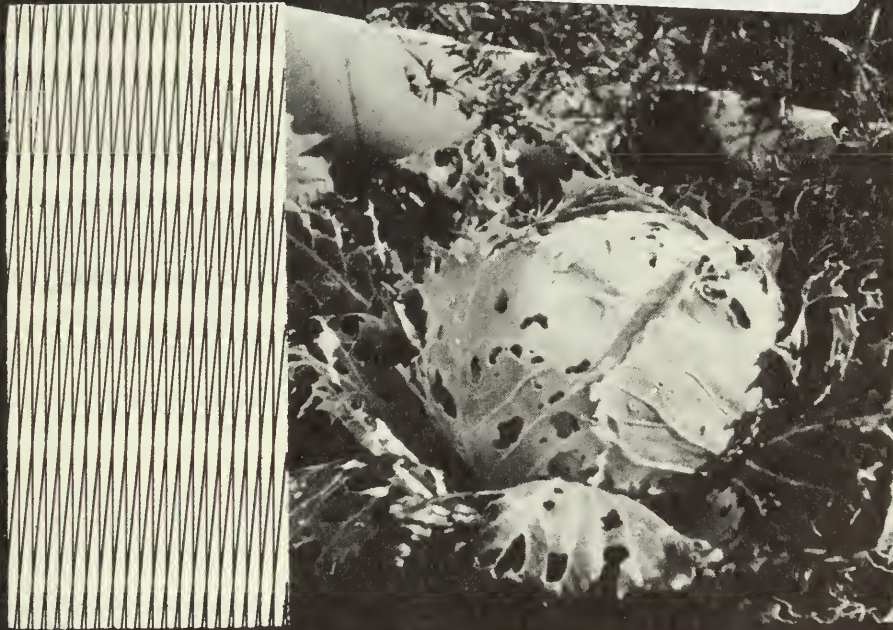
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RESEARCH BRANCH

# CONTROL OF THE PURPLE-BACKED CABBAGEWORM IN NEWFOUNDLAND

by

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The purple-backed cabbageworm<sup>1</sup> is a serious pest of cabbage, rutabagas (swede turnips), and summer turnips in Newfoundland. In cabbage, the caterpillars tunnel from the undersides of the leaves up into the head and leave large amounts of excrement throughout the edible portion of the plant. When plentiful, the insect defoliates turnips and even tunnels into the roots (Figure 1), rendering them unfit for market.

## DESCRIPTION AND LIFE HISTORY

The purple-backed cabbageworm develops through four stages: the egg; the larva, or caterpillar; the pupa; and the adult moth. There is only one generation of this insect each year in Newfoundland.

Moths begin to emerge from July 16 to July 23, depending upon the season. They are usually most abundant about two weeks after they first appear. They emerge from soil where turnips or cabbages were grown the previous year and from surrounding headlands, where large numbers of moths may be seen resting on vegetation during the emergence period. The moth (Figure 2) is straw yellow with irregular dark-brown lines, and has a wing spread of about 1 inch.

After mating, the female moth lays her eggs (Figure 3) in compact masses on the undersides of the lower leaves of susceptible plants. Egg masses contain from 2 to 52 eggs, and because of their bright-yellow color are very conspicuous. The eggs are ovoid with transparent margins and look somewhat like fish scales. The period of egg laying varies from 17 to 29 days, starting from July 16 to July 25 and ending from August 11 to August 19, depending upon the season.

Four to eight days after they are laid, the eggs hatch into small green caterpillars with distinctive black heads. The caterpillars immediately start feeding on the underside of the leaf and continue to feed for four to five weeks. When fully grown, they are about  $\frac{3}{4}$  to 1 inch long, robust, and very bristly (Figure 4). The upper surface is purplish brown, the underside somewhat ash gray. Conspicuous yellow and white bands run lengthwise the entire length of the body.

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<sup>1</sup> *Evergestis pallidata* (Hufnagel).

In early October the caterpillar becomes sluggish and leaves the host plant to spin its cocoon (Figure 5) in the soil near the plant or along the surrounding headlands. After spinning its cocoon the caterpillar contracts to about two thirds of its original length and overwinters. The cocoon is ovoid and about half an inch long, and has a smooth interior lined with dark-gray silk. On the outside it is covered with soil particles, and is therefore difficult to find.

The caterpillar changes to a pupa within the cocoon (Figure 6) during the last two weeks of June. The pupa is light brown and about half an inch long. The moth escapes from the cocoon through the loosely constructed end.

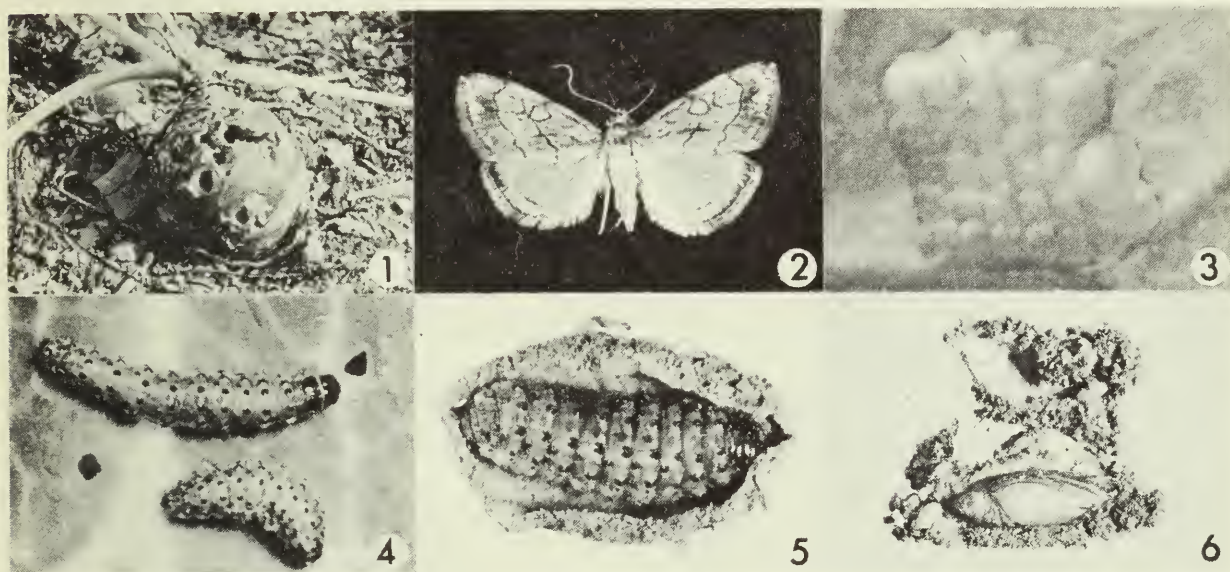


Figure 1. Swede turnip injured by the purple-backed cabbageworm.  
 Figures 2 - 6. The purple-backed cabbageworm.  
 2, Adult moth,  $1\frac{1}{2}$  times natural size.  
 3, Egg mass, 6 times natural size.  
 4, Full-grown caterpillars,  $1\frac{1}{2}$  times natural size.  
 5, An opened cocoon showing the contracted overwintering caterpillar,  $2\frac{1}{2}$  times natural size.  
 6, Pupa within cocoon,  $2\frac{1}{2}$  times natural size.

### CONTROL

Cabbage, particularly early and midseason varieties, must be protected against the purple-backed cabbageworm if considerable damage is to be avoided, but swede turnips can survive a light infestation. For best results apply insecticide when the eggs are hatching, usually in late July and early August.

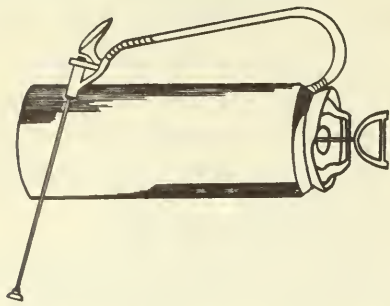
#### Chemical Control

DDT, either as a spray or as a dust, is very effective against the purple-backed cabbageworm. Apply a spray containing 1 pound of 50 per cent DDT wettable powder in 50 gallons of water to cabbage and turnips at 125 gallons per acre, or apply 3 per cent DDT dust at 35 to 50 pounds per acre.

One spraying or dusting is usually sufficient, if properly timed. *For cabbage within three weeks of harvesting, use 1 per cent derris dust at 35 pounds per acre, since DDT is toxic to warm-blooded animals.*



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COMPRESSED-AIR SPRAYER



PUFFER-DUSTER

For small areas or gardens, apply the spray either with a small compressed-air sprayer or with an ordinary lime brush. Just dip the brush into the insecticide mixture and shake it along the row.

You may apply dusts easily with a small hand puffer-duster, or by placing the material in several folds of cheesecloth or burlap and shaking it over the plants.

**Cautions:** Follow closely all the cautions listed on the insecticide label. The interval required 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 in order to avoid residues that would render the crop unfit for sale.

### Cultural Control

Deep, thorough cultivation during late fall and early spring helps to reduce the overwintering population of the insect, and kills many of the caterpillars in their cocoons. As the cocoons are most often found near the soil surface, fall plowing also helps to destroy the larvae by burying them more deeply.

It is advisable not to plant summer turnips near fields of late-maturing varieties, for the early varieties may attract the female moths to both the early and the late varieties from fields some distance away.

### SUMMARY

The purple-backed cabbageworm is a major pest of cruciferous crops throughout Newfoundland.

To control this insect, use a spray containing 1 pound of 50 per cent DDT wettable powder in 50 gallons of water at 125 gallons per acre, or a 3 per cent DDT dust at 35 to 50 pounds per acre.

*For cabbage within three weeks of harvesting use 1 per cent derris dust at 35 pounds per acre, since DDT is toxic to warm-blooded animals.*

For best results, apply the insecticide when the eggs are hatching, usually during the last week of July or early August.

Follow closely all the cautions listed on the insecticide label.

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For further information, write to the Experimental Farm, St. John's West, Newfoundland, or consult your local agricultural fieldman.

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