

# SCOUTING FOR DIAMONDBACK MOTH



**Diamondback moth** occurs each year throughout the Prairies, but the numbers that blow in and establish vary considerably from year to year and location to location. Larvae feed on the leaf surfaces, creating shot holes and completely consuming leaves except the veins. Larvae will also feed on the flowers, developing pods, and strip bark from stems and pods, causing a frosted appearance in severely infested areas. Feeding damage can reduce seed quality and yield.

## Prevalence:

- Hosts include canola, mustard, and many cruciferous vegetables and weeds.
- Adults are carried up on winds from the southern U.S. each spring. The species is capable of producing as many as four generations per year in the Prairies.

## When and how to scout:

- From June to late August, scout fields for signs of damage and/or larvae.
- Inspect 5 to 10 areas of the crop. At each stop, carefully pull up a plant and beat it against a smooth surface to count the dislodged larvae.
- Estimate the number of plants/m<sup>2</sup> at each stop and calculate larvae/m<sup>2</sup>.

## How to identify:

- Mature larvae: 8 mm long, narrow, green caterpillars that wriggle backwards and readily drop on a silken thread when disturbed. Terminal prolegs extend slightly backwards in a fork-like fashion.
- Adults: small (12 mm long), very active moths with 18-20 mm wing span; when at rest, the forewings create diamond-shaped patterns along the mid line.

## Spray thresholds:

- 100-150 larvae/m<sup>2</sup> in immature and flowering canola; 200-300 larvae/m<sup>2</sup> in podded canola.

## BENEFICIALS

### BENEFICIAL INSECTS THAT HELP TO CONTROL DIAMONDBACK MOTHS



Photo courtesy K. Schulz

## DAMSEL BUG

### How to identify:

- Long and slender
- Enlarged front legs

### How they help with control:

- Damsel bugs are important predators of diamondback moth. In a laboratory study an average of 131 eggs or 95 larvae of diamondback moth were killed by a single of female adult in 24 hours at 24°C (Ma, Keller, Ren).
- Damsel bugs also eat aphids, moth eggs, small caterpillars, leafhoppers, mites and lygus bug nymphs.

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# BENEFICIALS



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## PARASITOIDS (BRACONIDAE, ICHNEUMONIDAE, TRICHOGRAMMIDAE)

### Three important parasitoids attack diamondback moth:

- Ichneumonidae – *Diadegma insulare* (Cresson) parasitizes the larvae and *Diadromus subtilicornis* (Gravenhorst) parasitizes the pupae
- Braconidae – *Microplitis plutellae* (Haliday) parasitizes the larvae
- Trichogrammatidae – *Trichogramma praetiosum* Riley parasitizes the eggs

### How to identify:

- Depending on the species, they can be extremely small – for smaller species 4 or 5 will fit on the head of a pin, which makes them difficult to identify.

### How they help with control:

- Females insert one or more eggs into a host egg.
- Over a 10-year period in Saskatchewan, 35% to 81% of first generation larvae of the diamondback moth were parasitized by *Diadegma insularis* and *Microplitis plutellae*, averaging 68% (Putnam).



## GROUND BEETLES

### How to identify:

- Head at eyes narrower than section behind head
- Elytra (front wings) may have striations or pits
- Run rapidly when disturbed
- Adults range in size from less than 3 to 30 mm

### How they help with control:

- Ground beetles are important predators of insect pests, with about 400 species on the Prairies and upwards of 80 species present in any field (Holliday et al. 2014).

## Other Beneficials:

- Spiders



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