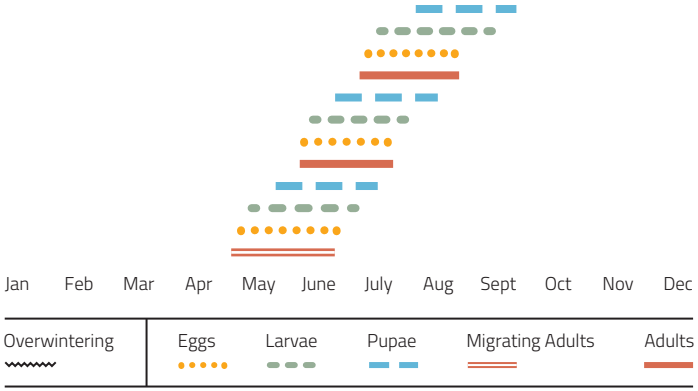
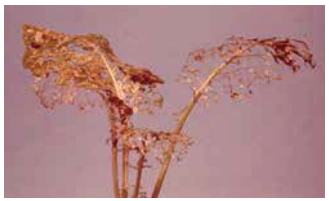
Diamondback moth – caterpillar, cocoon
John Gavloski, Manitoba Agriculture, Food and Rural Development

Moth, diamondback

Plutella xylostella (Linnaeus)



Diamondback moth – eggs
AAFC



Diamondback moth – damage
AAFCa

Diamondback moth – adult
Alberta Agriculture and Rural Development

Hosts

Canola, mustard, and many cruciferous vegetables and weeds.

Identification

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.

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.

Life Cycle

Adults are carried up on winds from the southern U.S. each spring. Establishment and number of overlapping generations (up to 3) vary from year to year depending on strength of south winds and number of migrants. Females lay their complement of 30-200 minute, disc-shaped green or yellow eggs in twos or threes on the upper and lower surfaces of leaves. Larvae pupate in a lace-like, silken cocoon on the plant. Populations die off in the fall.

Feeding Damage

ADULTS: Feed on nectar of flowers.

LARVAE: Newly hatched larvae tunnel in the leaves before exiting to 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.

Similar Species

Young imported cabbageworm larvae (p. 82) have similar colouration but do not wriggle backwards or drop on a silken thread when disturbed.

Monitoring/Scouting

Pheromone traps are available to detect arrival of moths in the spring. Or consult provincial agricultural pest survey web sites for early warnings. In July and August, scout fields for signs of damage and/or larvae. Inspect 5-10 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^2 at each stop and calculate larvae/m^2.

Economic Threshold

100-150 larvae/m^2 in immature and flowering canola; 200-300 larvae/m^2 (20-30/ft^2) in podded canola.

Management Options

BIOLOGICAL: Four important parasitoids attack this pest: *Diadegma insulare* (Cresson), *Diadromus subtilicornis* (Gravenhorst) (Ichneumonidae) (p. 135), *Microplitis plutellae* (Haliday) (Braconidae) (p. 130), and *Trichogramma praetiosum* Riley (Trichogrammidae) (p. 138). Ground beetles (p. 115), spiders (pp. 111-114), Cotesia plutellae (Kurdjurnov) (p. 130) and other generalist predators attack larvae; outbreaks of pathogenic fungi can limit or prevent population development later in the season.

CULTURAL: Control weed hosts and volunteer canola which allow sites for establishment of spring migrants.

CHEMICAL: Consult provincial recommendations for products and timing.

Diamondback moth – damage
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Field Crop and Forage Pests and their Natural Enemies in Western Canada:

Identification and Management



Agriculture and Agri-Food Canada
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1. Pea leaf weavil (*Sitona lineatus*) and leaf damage - Jonathon Williams, AAFC
2. *Pteromalus puparum* parasitizing an imported cabbage worm cocoon (*Pieris rapae*) - T. Haye, CABI
3. Lacewing (*Chrysopa* sp.) adult - John Gavloski, Manitoba Ministry of Agriculture
4. Grasshopper - Jesse MacDonald, AAFC

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