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Insect pests of spring-planted canola

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UNIVERSITY OF IDAHO

Flea beetles

Canola is a relatively new crop in the United States, and we still are learning about its insect pest problems.

Because native and weedy mustards grow in all areas of production and canola is a member of the mustard family, we have a ready-made population of insect pests that are resident and preadapted to use canola as a host plant. Our experience has shown that these pests can reach economically damaging levels quickly, often within the first 3 years of canola production.

Control thresholds and timing of treatments of damaging species may differ from one region to the next. Consequently, the information presented in this document is of a general nature. Much of the control information comes from midwestern United States, Canadian, and European production guidelines, studies conducted on other related crops, and the limited studies conducted on canola in the United States. All recommendations are tentative, and will be revised as Idaho scientists generate more definitive information through research.

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Adult flea beetle.



Flea beetle injury to seedling canola. Arrow points to adult beetle.



Flea beetle injury to foliage.

Life history — Flea beetles overwinter as adults and fly to volunteer rapeseed, canola, or wild mustards when temperature reaches 68°F. The shiny black beetles (1/10 inch) move into canola fields just as the seedlings are emerging. Adults feed on the cotyledons and first leaves of seedlings. Eggs are laid in the soil and hatch into larvae that feed on the roots of the canola plant. The larvae feed for 3 to 4 weeks, pupate, and emerge as adults during July or early August. Emerging adults feed on any green plant tissue and then move to protected areas surrounding the field to overwinter. There is one generation per year.

Damage — A major pest of spring-planted canola, the adult beetle feeds on the cotyledon and first true leaves of the developing canola. Adults also attack other plant parts, including the pods. Adult feeding on the cotyledons can lead to seedling death and significant stand loss.

Control — Cotyledons can withstand up to 50 percent defoliation without yield loss. Damage becomes more severe when plants are stressed, particularly during periods of drought. Seedling canola plants will die if the above-ground portion is eaten entirely. Treat with an appropriate foliar insecticide when 25 percent of the cotyledons show severe pitting or tissue loss. Normally, plants are not treated once past the first true leaf stage.

Cabbage seedpod weevils

Life history — Cabbage seedpod weevils overwinter as adults near canola fields in protected areas such as under bark of trees, sheds, wood piles, and trash or in debris. Adults start flying in the spring when the temperature reaches 60°F, the time when wild mustard, winter rapeseed, and canola plants start to bud. Adults feed on the flowers, buds, stems, and pods of the canola. When they fly into the canola field they have mated and are ready to lay eggs. First eggs are laid when the pods are about 1-1/8 inches long. Eggs hatch and the larvae feed on seeds within the



Cabbage seedpod weevil adult on pod.

pod. Larvae eventually exit the pod, drop to the soil to pupate, and emerge as new adults. The newly emerged adults feed on canola and move to overwintering sites. There is one generation per year.

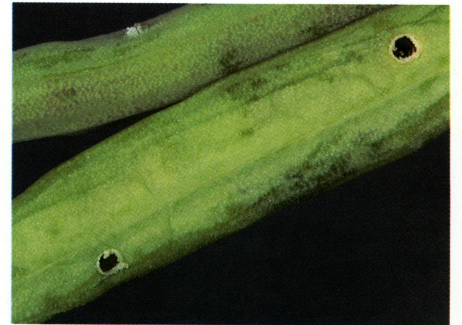
Damage — The small (1/8-inch long) grey weevils lay eggs within feeding punctures on the pods. After hatching, each larva consumes 4 to 6 seeds, and more than one larva can occur in a pod. Yield reductions of 20 to 30 percent are possible from weevil feeding.

Control — Treat after full bloom when 10 to 20 percent of the bloom remains and when 2 to 3 weevils per plant are

present. Do not spray when pollinators are present. Notify beekeepers before spraying.



Larval damage to canola seeds.



Weevil exit holes.

Aphids (cabbage aphids, turnip aphids, and green peach aphids)

Life history — Cabbage aphids are found as nymph and adult stages on

plants of the mustard family throughout the year. Other aphids, such as the

green peach aphid and turnip aphid, may be found during the summer in great numbers. Aphids fly to canola in late spring and return to volunteer rapeseed, wild mustards, and other hosts to overwinter. Several generations of aphids may occur in spring canola.

Damage — Aphid feeding can stop terminal growth leading to a reduction in plant size and seed yield. Damage may be localized within field, and may be of little consequence if infestations occur after pod formation is completed.

Control — There are no established treatment thresholds for aphids on canola. In most cases, spraying is not economical. If the crop was planted late and the plants still are setting pods and if natural enemies such as ladybugs are not present, treatment may be warranted. Do not spray when pollinators are present. Notify beekeepers before spraying.



Aphid colony on terminal.



Aphid colony on leaf.



Aphid colony on pod.

Diamondback moths

Life history — Diamondback moths move to canola in late spring or early summer from volunteer canola, rapeseed, and other mustard hosts. The migration of the moth may be from local populations or populations that have developed in more southern latitudes. Eggs are laid on undersides of lower leaves. The young larvae hatch and first mine the leaves, eventually eating holes in them. They may move up the plant to feed on the growing tip. The next generation lays eggs higher on the plant. These larvae, as they mature, move to the buds, flowers, and seedpods to feed.

Damage — The small (up to 1/3 inch long), greenish larvae make tiny irregular holes in the leaves. Larger larvae feed upon buds, flowers, and developing seedpods. Seedpod damage can lead to development of undersized, poor quality seed. Foliar damage

by diamondback moths looks bad, but significant yield losses are not common. Damage is much worse when plants are drought or heat stressed. Pod damage is likely to occur if lower foliage is damaged by drought or other insects.

Control — Cool, wet weather during and after egg laying will reduce populations below economic levels. Usually damage is considered severe enough to treat when populations reach 28 per square foot or

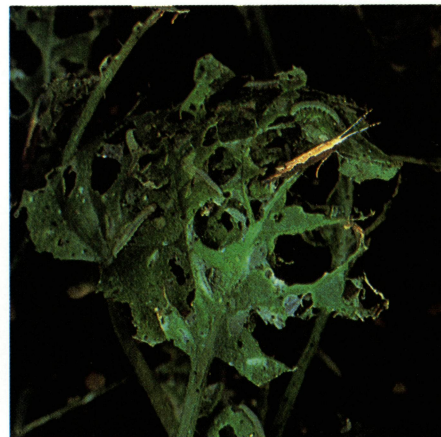
10 per plant, and the plants are under drought or other stress.



Diamondback moth larva.



Adult diamondback moth.



Larval damage to canola.

Lygus bugs (several species)

Life history — These pale green, light brown, or dark brown bugs overwinter as adults in protected areas and move to canola fields throughout the season. During wet years, lygus usually remain on weedy hosts, but during dry years they move to cropland and cause damage. Several generations occur each year. It takes about 6 weeks from the time the eggs are laid in the plant stems until the new adults are ready to lay eggs. The nymphs hatch and feed upon the growing tips, buds, flowers, or seed.



Bud damage.



Seed damage from lygus feeding.



Lygus adult.

Damage — Lygus feeding causes shedding or blasting of buds and flowers. Lygus feeding upon pods inhibits seed formation. Often seeds fed upon by lygus will collapse or have lesions. Usually small seeds or damaged seeds are lost during harvest.

Control — Treatment levels for lygus bugs are not known. Sampling programs for lygus have not been developed. Research indicates that plants are sometimes able to compensate for bud and flower damage by lygus.

Acknowledgment — Lygus bug photos compliments of Richard Butts, Ag Canada, Lethbridge, Alberta, Canada.

Cutworms (several species)

Life history — Several species of cutworms can damage canola. Cutworms overwinter as eggs or as small larvae in the soil. They attack the plants as they emerge in the spring and feed until the worms are full grown. They pupate and emerge as adults in August or September. Depending on the species, adult females lay their eggs in loose soil or at the base of stubble or



Redbacked cutworm adult.



Redbacked cutworm larva.

weedy plants to repeat the cycle.

Damage — Pale to dark grayish-brown, 1/2- to 1 1/2-inch long cutworm larvae feed at night. They may be found under clods and debris near damaged canola plants in a curled position during the day. Evidence of cutworm feeding includes small plants cut off just above soil level or foliage of larger plants heavily fed upon with no insects



Darksided cutworm larva.

present. Damage may be in small to large areas of the field. Damage at the edge of fields or areas within fields that were weedy the fall before are also characteristic of cutworm attack and damage.

Control — Since damage may be only in patches, control may be necessary in only small areas of the field. Small canola plants are not like cereals that can tiller to regenerate lost foliage; they die when the leaves are eaten. The treatment threshold is 3 larvae per square yard. It may be difficult to find all cutworms during the day, so the amount of damage and remaining stand count should also be taken into consideration. Insecticide applications should be made during evening hours because cutworms feed at night.

Loopers and armyworms

Life history — Looper caterpillars are green, tan, or brownish caterpillars that loop when they crawl. Armyworm caterpillars are dark blackish-brown with a yellowish stripe. All caterpillars are from 1/2 inch to 1 1/4 inches long and are found in among the foliage of the plants during the day. Loopers and armyworms overwinter as pupae in the soil. Adults emerge and lay eggs on weeds in canola fields at seeding time. The next generation move to canola and start laying eggs under the newest



Alfalfa looper.

leaves just before flowering. The young larvae hatch and begin feeding upon the foliage. They also cut off the buds and flowers in

small patches in the field.



Bertha armyworm.



Western yellowstriped armyworm.

Damage — Serious defoliation may occur in areas of the field with leaves, small stems, buds, and pods being eaten.

Control — Usually, loopers and armyworms are not serious pests of canola and rarely require any treatment. Since damage may be only in patches, control may be necessary in only small areas of the field. Currently, there are no established treatment guidelines.

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