How to use a sweep net

- Use a standard 38 cm diameter net. Sample when the foliage is dry. If the foliage is wet small insects may stick to the inside of the sweep net bag making it difficult to identify them and giving you an inaccurate count.
- Hold the net with the hoop end nearer to the ground in front of you. The plane of the hoop should be perpendicular to you.
- Swing the net from side to side in a full 180-degree arc. Sweep one stroke per step as you casually walk through the field or down the row.
- Hold the net with the hoop end nearest to the ground slightly ahead of the upper rim.
- Tilt the net opening so the lower edge of the rim is even with the top of the plants.
- In short vegetation, swing the net as deeply as possible.

In taller vegetation, swing only deep enough to keep the upper edge of the sweep net opening even with the top of the plants. In general, don’t let the net go more than 25 cm below the top of the plants.

- Each passage of the net is considered one sweep. Check with your Canola Council agronomist, provincial agricultural representative or guides to crop protection for economic thresholds and control recommendations.

G E N E R A L  S C O U T I N G  T I P S

When and How

Sweep fields weekly to check canola for the kind and number of insects present. Sweeps with a sweep net can be used to find insects high in the canopy, but also inspect all plant parts (including roots) for damage and sweep for insects low in the canopy or on the ground. When pests approach economic threshold levels, sample daily. Remember, for most insects (except lygus, cabbage seedpod weevil) thresholds are based on numbers per unit area or amount of plant damage rather than counts per sweep.

Where

In fields of less than 100 acres, check a minimum of 10 locations. In fields greater than 100 acres, check a minimum of 10 locations. There are several scouting patterns used when checking fields based on pest distribution and field configuration.

Pattern 1: Use when pests are uniformly distributed throughout the field. This pattern looks like an X, Z or W, excluding field edges. Pests that fit this pattern include bertha armyworm, diamondback moth, aphids, and lygus bugs.

Pattern 2: Use when pests are at field edges. Scout by walking along field edges. Examples include flea beetles and grasshoppers.

Pests of Seedlings

Cutworms
- Damaging species include redbacked (photo), pale western, army, dark-sided and dyling. They range up to 35 mm long.
- Damage – depends on species. Larvae can feed on cotyledons, leaves or stems at or under soil surface. Cut off plants will die.
- Scout in seedling to rosette stages. Check top 5 cm of soil around cut-off plants.
- Action threshold is about 25 to 30% stand reduction, but damage may be patchy. Watch for bare areas showing up.

Flea Beetles
- 2 to 3 mm long, black/bluish sheen, or black with two yellow stripes.
- Damage – shot-holes in cotyledons and first leaves.
- Scout May through June when crop is in seedling stage.
- Consider foliar insecticide application when damage to leaves reaches 25% defoliation, if flea beetles are still present.

Red Turnip Beetle
- 7 mm long, red and black patches on the head and 3 black stripes running down the back.
- Damage – feeds on leaves; can consume entire plants, and moves in from field edges.
- Scout field edges in early June.
- No economic threshold available – spraying of field margins is often effective.

Beneficial Insects

Honey Bee
- Clear winged, black/yellow body. Beneficial pollinator.

Hover Fly
- Small brightly coloured flies that resemble bees. Beneficial pollinator and larvae are predators.

Lacewing Adult
- Pale green with slender body and delicate, long, green wings. Beneficial predator.

Lady Beetle Adults, Pupa & Larva
- Larvae look like alligators, with orange and black patches on the back. Adults are orange with black spots. Beneficial predator.

Lacewing Larva
- Larva have spindle-shaped bodies with prominent pincher-like mouthparts, resembling tiny alligators. Beneficial predator.

Parasitic Wasp Adult
- Small slender wasp with long antennae. Beneficial parasite.

Pests of Plants in Rosette to Pod stage

**Alfalfa Looper**
- 25 mm long, light green/olive, with a paler head, a light stripe down each side, and two light stripes along the back. Mature larvae have a swollen abdomen.
- Damage – leaf feeding, flower and pod clipping.
- No economic threshold available. Delaying insecticide application as long as possible may allow viral diseases to reduce populations.

**Aphids**
- Aphids frequently cover the entire top 5 – 8 cm of plants; green or black and winged or wingless.
- Do not usually cause economic losses.

**Bertha Armyworm**
- Mature larvae pale brown to velvety black/brown, 25 to 40 mm long, light brown head, and yellowish orange stripe along each side.
- Damage – leaf, stem and pod feeding.
- Scout late July through early August.
- Economic threshold for foliar insecticides ranges from 8 to over 30 larvae per m², depending on cost of spraying and price of canola.*

**Cabbage Cutworm**
- When disturbed will cut up, Dark grey to green with yellowish pink stripes along the back, and are 30 mm long.
- Damage – leaf feeding.
- Scout May through July, especially along edges of the field.
- No firm economic threshold is established but it is thought to be about 15 grasshoppers per m² (slightly higher than for cereals).

**Cabbage Root Maggot Larva**
- Small (6 – 10 mm), white, legless larvae (maggots) hatch in three to five days.
- Damage – eat their way through canola roots, creating feeding tunnels.
- Economic threshold is 20 to 30 larvae/0.1 m² at the pod stage (10 to 15 larvae/0.1 m²).

**Cabbage Seedpod Weevil Adult**
- Adult is grey, 3 to 4 mm long with a prominent curved snout.
- Damage – feeding on flower buds causes bud-blasting. See maggot information.
- Scout using sweep net sampling, from bud stage through flowering.
- Economic threshold for foliar insecticide at 10% to 20% bloom is an average of at least two weevils collected per sweep.

**Cabbage Root Maggot Adult**
- Adults resemble house flies but are smaller (3 mm), dark grey in colour with a dark stripe along the back of the abdomen, and are covered with many black bristles.
- Damage – adults do not cause damage, check roots for larvae.
- Check for maggots on the roots of canola.

**Cabbage Seedpod Weevil Maggot**
- Larvae are white and grub-like and feed on seeds in developing pods.
- Damage – larvae eat developing seeds, causing yield loss. Pods are susceptible to shattering and disease from small exit holes created when larvae emerge to pupate.

**Clover Cutworm**
- Adults are large with large legs and wings.
- Damage – nymphs and adults feed on leaves, stems and pods.
- Scout May through July, especially along edges of the field.
- No firm economic threshold is established but it is thought to be about 15 grasshoppers per m² (slightly higher than for cereals).

**Diamondback Moth Adult**
- Small narrow moths with diamond pattern on wings at rest.
- Adults do not cause damage. See larva information.

**Diamondback Moth Larva**
- 7.5 mm long, smooth, pale yellowish green larvae and wriggle vigorously from silken threads hung from leaves.
- Damage – mature larvae cause leaf, stem and pod stripping.
- Scout July through early August.
- Economic threshold is 20 to 30 larvae/0.1 m² at the pod stage. The threshold may be slightly lower at early flowering (10 to 15 larvae/0.1 m²).

**Grasshopper**
- Adults are large with large legs and wings.
- Damage – nymphs and adults feed on leaves, stems and pods.
- Scout May through July, especially along edges of the field.
- No firm economic threshold is established but it is thought to be about 15 grasshoppers per m² (slightly higher than for cereals).

**Imported Cabbageworm**
- White butterfly (43 to 65 mm wing span) with one to four black spots on the wings and very active during the day.
- Adults do not cause damage.

**Imported Cabbageworm Larva**
- Larvae are green with a velvety texture, faint brown/black, magnification have many black bristles.
- Damage – feeding causes twisted pods.
- Feed on leaves, but do not cause economic losses.

**Lygus Bug**
- Pale green to reddish brown to black, with a “V” mark one third of the way down the back. Young nymphs are pale green, often with five black dots on back, and lack comities of aphids.
- Damage – suck sap from leaves, stems, flowers and pods. Cause flower blasting and thistledown seeds.
- Scout from pre-bud until seeds within pod become firm.
- Economic thresholds – can vary from 4 to over 30 per 16 sweeps depending on crop and insect stage, cost of control and canola price.*

**Painted Lady Larva**
- Mature larvae are black (40 mm long) with spikes along the back and yellow stripes along the side.
- Damage – feed on leaves. Do not cause economic losses.

**Thrips**
- Tiny black specks in a sweep net. Under magnification have brown/black, linear-shaped body.
- Damage – feeding causes twisted pods.
- Do not usually cause economic loss.

**Pod Damage**
- Do not usually cause economic loss.