

# COMMON PESTS

## OF ROOT CROPS

### Colorado potato beetle

(*Leptinotarsa decemlineata*)

Oval beetles with yellow and black stripes. The yellow eggs are laid in clusters on the underside of leaves. They hatch in 4–9 days. The larvae are hump-backed, red grubs that mature in 2–3 weeks. There can be one to four generations per year. The adults overwinter 20–25 cm (8–10 in.) underground.

The beetles and larvae attack potato, tomato, eggplant, pepper and various weeds in the nightshade family. They can defoliate plants and spread disease (e.g. spindle tuber, bacterial wilt/ring rot).

#### Control:

- Handpick.
- Plant resistant varieties (e.g. Katahdin, Sequoia potato).
- Interplant with garlic, marigolds, dead nettle, and beans, or plant horseradish (in containers to prevent spreading) at ends of rows.
- Mulch with 30-cm (1-foot) layer of clean hay or straw.
- Dust with diatomaceous earth.
- Spray with “bug juice” (blend larvae and beetles; mix with water and soap).
- Spray with *Bacillus thuringiensis* var *san diego* and *B.t.* var *tenebrionis*.



### Potato flea beetle (*Epitrix cucumeris*)

Tiny black or brown, jumping beetles that feed on weeds and tree foliage until vegetable shoots appear. They may feed for over two months. Flea beetles hibernate in the soil under crop stubble.

The adults attack potato, tomato, eggplant and other nightshades leaving tiny shot-like holes in leaves. The larvae attack underground parts and transmit plant diseases (e.g. spindle tuber, blight, brown rot, scab and scurf).

#### Control:

- Cultivate frequently (to destroy eggs), and till after harvest (to kill adults).
- Remove weeds (their food) and plant debris (their hibernation sites).
- Repel with small containers of equal parts creosote and agricultural lime.
- Sprinkle hardwood ashes on plants 2–3 times per week.
- Protect seedbeds with floating row covers.
- Seed thickly and thin after the early-season danger is past.
- Apply garlic spray and diatomaceous earth.
- Pass sticky shields or boxes over infested plants to catch beetles as they jump.
- Interplant with cabbage family crops.
- Grow near shade-giving crops (flea beetles don't like shade).



### Wireworm (click beetle) Family *Elateridae*

The yellowish to brown larvae are shiny, slender and hard. They are found year-round in most soils. They live two to five years, moving only a few yards in this time.

The adults are elongated brown or black click beetles that flip in air when placed on their back. They live mostly on the soil or underground, but can fly. Do not confuse with beneficial ground beetles.

The larvae are very destructive and hard to control. They attack many crops including potatoes, beets, beans, lettuce, cabbages, carrots, onions, peas, turnips, small grains and grasses. They eat the underground parts of stems, roots and seed. The crop may fail to germinate, come up in patches and then die, or wither later in the season.

#### Control:

- Avoid planting susceptible crops on land that has recently been sod. Ideally, the sod should be cut, stacked, composted and returned to the soil only when well decomposed.

**Note:** growers should contact their certification bodies before using any new pest control substances.

- Rotate crops.
- Turn over the top 25 cm (10 in.) of soil very early in spring, leaving it rough for a few weeks.
- Lure with perforated potatoes impaled on sticks and buried 2–3 cm (1 in.) deep; shake “worms” out of them into soapy water every few days.
- Collect under boards resting on soil surface.
- Sow a row of corn between susceptible crops; wireworm will prefer corn roots, which can be dug up later and burned.



## Cabbage maggot

*(Hylemya brassica)*

The adults look like small houseflies that start to emerge in April. The small white eggs are laid in soil or at the base of plants. The larvae are legless, white maggots. There can be two to four generations per year.



The larvae attack members of the cabbage family; other root maggots affect celery, chard and beets. They tunnel through or feed on the surface of roots, leaving brownish grooves. The plants become stunted with discoloured lower leaves. They wilt in the sun and often die. The larvae may introduce diseases (e.g. bacterial soft rot, fungal blackleg).

The similar onion maggot attacks onions only.

### Control:

- Put 3 cm (1 in.) of wood ash in tin cans set into ground around stems.
- To protect radishes, spade in generous amounts of hardwood ashes.
- Cover the area around stems with oak-leaf mulch or with a square of tarpaper when transplanting.
- Cover seedbeds with floating row cover (to impede egg-laying adults).
- Use radishes as a trap crop.
- Remove infested roots before life cycle is completed.
- Protect their enemies, especially rove beetles.
- Rotate with non-susceptible crops (e.g. legumes, grains); wait at least three years between cabbage plantings.
- Apply diatomaceous earth on roots when transplanting.

## Imported cabbageworm (cabbage butterfly)

*(Pieris rapa)*

White butterfly with three to four black spots on each wing. The tiny, yellow, bullet-shaped eggs are laid singly on the undersides of leaves. They hatch in a week or so into

velvety green caterpillars with orange and yellow stripes. They feed for about 15 days and then pupate. The adults emerge from the cocoon in about ten days. There can be several generations per year. The pupae overwinter in crop debris.

The caterpillars attack the cabbage family, lettuce and nasturtiums. They eat large irregular holes in leaves and crawl or bore into cabbage heads. They also contaminate plants with their waste (greenish to brown pellets).

### Control:

- Apply diatomaceous earth.
- Handpick.
- Sprinkle moist plants with wood ash, a flour and salt mixture, sour milk or garlic infusion.
- Apply *Bacillus thuringiensis* (as a last resort).



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