

# Economic Thresholds

Crop	Insect	Economic Threshold
Canola	Flea beetles	25% of the cotyledon surface is destroyed and flea beetles still present. If damage is only along field margins, and beetles are still congregated there, then control measures should be applied to the damaged areas only.
	Grasshoppers	10-14/m <sup>2</sup> if damage is being caused.
	Cutworms	Threshold of a 25-30% stand reduction. It is economical to just treat infested patches, and not whole fields.
	Diamondback moth	Threshold of 100-150 larvae/m <sup>2</sup> in immature to flowering plants, based on 150-200 plants/m <sup>2</sup> 200-300 larvae/m <sup>2</sup> in plants with flowers/pods, based on 150-200 plants/m <sup>2</sup>
	Bertha armyworm	Refer to Table 3.3 on page 111.
	Cabbage seedpod weevil	25 to 40 weevils per 10 sweeps.
	Aphids	Control may be justified when at least 10-20% of the stems are infested with a cluster of aphids in flowering to early pod stages or 25 aphids/10 cm shoot tip after flowering. Rarely an economic issue in Saskatchewan.
	Lygus bug	A threshold of 20-30 Lygus bugs per 10 sweeps is suitable for good growing conditions. Using the lower end of the threshold (about 20 per 10 sweeps) may be appropriate for stressed canola with less ability to compensate for feeding. When most pods become leathery and when seeds inside are firm, lygus bugs can no longer penetrate the pods or seeds with their mouth parts and are no longer an economic threat.
Flax	Aphids	3 aphids/main stem at full bloom. 8 aphids/main stem at green boll stage.
	Cutworms	4-5 larvae/m <sup>2</sup> . Sometimes it is most economical to just treat infested patches, and not whole fields.
	Grasshoppers	2 grasshoppers/m <sup>2</sup> (green boll stage)
Cereals	Aphids	12-15 aphids/stem prior to soft dough stage
	True armyworms	10/m <sup>2</sup>
	Cutworms	Pale western cutworm 3-4 cutworm/m <sup>2</sup> , redback and army cutworm 5-6 cutworm/m <sup>2</sup> . Well established fall-seeded crops or spring seeded crops with good moisture conditions can tolerate higher numbers. Sometimes it is most economical to just treat infested patches, and not whole fields.
	Grasshoppers	8 to 13 grasshoppers/m <sup>2</sup> . Early in the season, when grasshoppers are small, 18 grasshoppers/m <sup>2</sup> and visible crop damage may be a more appropriate threshold.
Wheat	Wheat midge	Conventional wheat: approximately 1 adult/4-5 heads for yield; 1 adult/8-10 heads for grade
Barley	Barley thrips	Insecticide treatments are only effective when applied before heading is complete. 7-8 thrips/stem prior to head emergence indicates it's time to spray. For more precision, use the following formula: # Thrips/stem = (cost of control/expected \$ per bu)/0.4
Canaryseed	Aphids	10-20 aphids on 50% of the stems prior to soft dough stage
Lentils	Aphids	30-40 aphids/sweep, few natural enemies present and when aphid numbers do not decline over a two-day period
	Grasshoppers	2 grasshoppers/m <sup>2</sup> (blooming and podding stage)
Peas	Aphids	If, at the beginning of flowering, there are 9-12 aphids per sweep or 2 to 3 aphids per 8 inch (20cm) plant tip, an insecticide application when 50 percent of plants have produced some young pods will be cost-effective.
	Pea leaf weevil	30% of seedlings with damage (leaf notching) on the clam leaf during 2nd to 5th node stage. The crop is not susceptible to damage after the 6th node stage or it is too late to attempt control.
	Cutworms	2-3 cutworms/m <sup>2</sup>
Alfalfa	Lygus bug	Seed production: 4-5 lygus bugs/sweep at bud and early bloom
	Alfalfa plant bug	Seed production: 4-5 plant bugs/sweep
	Alfalfa Weevil	One of the best control strategies is to cut fields for hay early. If early cutting of the hay crop is not possible, treatment thresholds are based on the following measurements of plant height and levels of larvae. Hay: <30cm plant height, 1 larva/stem; <40cm plant height, 2 larvae/stem; 3 larvae/stem is generally economical to control regardless of crop height. On regrowth for second crop, 2 or more active larvae per crown (4 to 8 larvae per square foot) will require insecticide application Seed: 20-30 third or fourth instar larvae larvae/sweep (90 degree = straight sweep) or 35-50% leaf tips showing damage. In some cases it may be practical to just treat hotspots and not entire fields.
	Pea Aphid	Seed: 100-200 aphids/sweep (when dryland crop is moisture stressed or until mid-August)
	Potato leaf hopper *	Seed: for <9 cm stem height=0.2 adult leafhoppers per sweep; 9-<15 cm stem height=0.5 adults per sweep; 15<25 cm stem height=1 adult or nymph per sweep; 25-<36 cm stem height=2 adults or nymphs per sweep
Sweet clover	Sweet clover weevil	1st year stands: 1 adult weevil/3 seedlings (1/5 seedlings under dry conditions)
		2nd year stands: 9-12 weevil adults per plant

Sweep refers to a 180 degree sweep with a 38 cm (15 inch) diameter net, unless otherwise noted. Supplementary information can be found in the Guide to Crop Protection

\* These insects are rarely found in Saskatchewan.