

# Pea Leaf Weevil

## Frequently Asked Questions

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### What is Pea Leaf Weevil's lifecycle and how does it damage my pea crop?

The pea leaf weevil (PLW) feeds on legume plants and spends the winter as an adult beetle surviving on alfalfa and other perennial legumes. In the spring, this adult is attracted to feed on annual legume crops like field pea, Faba bean, lentil and bean, however, generally only negatively affects pea and faba bean.

Spring weather conditions can alter the timing and severity of PLW damage. Overwintering adult weevils fly from their winter feeding grounds in perennial legume plants to nearby pea fields when spring temperatures rise above 17 degrees C. Weevils arrive early in pea fields if warm temperatures above 20 degrees C persist for more than a few days in late April or early May, potentially corresponding with higher pea yield losses. Alternatively, if cool weather occurs during the same period, pea yield is generally not as compromised especially when the crop advances past the 6<sup>th</sup> node stage before the weevils arrive.

To continue their reproductive cycle for another year, adult weevils prefer to lay eggs in soil near field pea or Faba bean seedlings, so root nodules of lentil or other legume crops are generally not affected. Eggs are laid in the soil near the stem of pea plants and after hatching from the eggs the worm-like larvae proceed downward to primarily feed on pea nodules resulting in partial or complete inhibition of nitrogen fixation by the pea plant. Just prior to egg laying, adult PLW insects feed on the margins of pea seedling leaves resulting in a notching or scalloping leaf appearance (see Figure 1), however more serious plant damage occurs from nodule destruction.



Figure 1. Pea Feeding Damage (photo: L Dosdall)

## What is the potential range of pea leaf weevil?

The first record of this insect attacking field pea in Alberta was in 2000 near Lethbridge. Since this time PLW's range has expanded considerably and damage to pea crops has increased.

Crop insect forecasters carry out annual PLW surveys that help predict PLW range and levels of damage. Areas of Alberta currently affected are south of Highway 1, as well as in the counties of Wheatland, Newell, Cypress, and Rocky View. Please view the Pea Leaf Weevil Forecast map on the provincial Ropin' the Web web-site.

## What type of control measures are available to me at this time and what is the action threshold?

As a preventative measure, some producers apply an insecticidal seed treatment to pea seeds prior to planting. Research has shown that seed treatment is much more effective in decreasing losses from PLW than foliar treatment.

Post-emergent foliar insecticides can also be applied with the objective to control adult weevils before they lay eggs in soil near pea seedling stems, given that the worm-like larvae that hatch from the eggs move downward to feed on pea root nodules. However, caution should always be used when applying broad spectrum insecticides considering that these insecticides also kill beneficial Ground Beetles that are natural enemies of PLW and other potential crop insect pests.

It is important to use insecticide control when the pea plant is very young. The action threshold is to spray PLW adults when the pea seedling is at the 1 to 3 true leaf stage if one or more feeding notches appear on 30% (3 out of 10 plants along a seed row) of the pea seedlings, and as long as these 30% have received feeding damage to the plant's clam leaf (the most recently emerged leaf). If feeding damage is only apparent on the older, lower leaves and not on the newer clam leaf, the weevil has probably already laid eggs and spraying would be of no value. Therefore, producers should scout for damage on the clam leaf and not on the lower leaves. Since PLW must enter fields from outside, initial damage should occur along field edges, potentially making an insecticide application more economical if weevils are restricted to this field area. This limited spraying would also not harm as many Ground Beetles as would result if the whole field were sprayed.

Fields with high levels of residual nitrogen in the soil, such as those with manure inputs, are less likely to suffer yield losses from PLW and should not require control measures because the pea plant can rely on soil nitrogen

instead of its own nitrogen fixation for adequate growth.

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Contact the Ag-Info Centre, toll-free in Alberta at 310-FARM (3276)

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