

Cooperative Extension System Agricultural Experiment Station

Current Information Series No. 885

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Pea Weevil and Its Control

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Adult pea weevil.

Pea weevils occur in Idaho wherever peas are grown. They damage the seeds of both green and dry peas. Infested succulent peas show only dotlike larval entrance holes or "stings." In more mature peas, small larvae are visible just under the pea skin. Infested peas are unmarketable for canning or freezing.

Infested dry peas or seed peas have stings at harvest. When a weevil later emerges from the pea, it leaves a neat, clean circular hole about $\frac{1}{10}$ inch in diameter. Larval feeding destroys seed viability, and weevily peas have little commercial value.

Appearance

The adult pea weevil is a short, chunky, egg-shaped beetle about $\frac{1}{5}$ inch long. Its overall color is brownish, flecked with patches of white, black and gray. The wing covers are short, allowing the tip of the abdomen to be seen from above. Eggs are orange, oblong, slightly less than $\frac{1}{16}$ inch long and attach to the pod with a clear glue. The larva is C-shaped and cream colored with a brown head. The mature larva is about $\frac{1}{4}$ inch long nd changes to a white pupa that resembles the adult.

Life History

Adult pea weevils spend the winter in hibernation. They are commonly found with peas in storage, in protected places such as abandoned buildings, in crevices of fence posts, under the bark of trees such as ponderosa pine and in field and forest debris. Adults may remain in hibernation for 2 years.

Adults are active in spring and fly to pea fields at about the time peas start to blossom. The adults are strongly attracted to pea flowers and will feed on pollen for 4 to 10 days before the females their lay eggs.

Typically, the weevils concentrate on field margins as they move from overwintering sites. If weevils move into pea fields before bloom, they will distribute more evenly. Little movement, if any, occurs from field to field after bloom. Once the weevils have started feeding on pea pollen or laying eggs on pods, movement within a field is less than 100 feet a day even under ideal flight conditions. These behaviors can be used to advantage when considering insecticide treatments for control of pea weevil.





Developing pea weevil larva.

Larval entrance holes or "stings."

Egg laying usually begins on newly formed pods and continues as long as fresh pods are available. A female may lay up to 300 eggs, usually singly, and glues them to the surface of green pea pods. Larvae hatch in 6 to 9 days and burrow directly through the pods and into the developing pea seeds. The point of entry appears as a small spot or "sting" on the pea surface. Only one larva develops in a single seed, and it consumes most of the contents.

Larval development takes about 5 weeks. Before pupation, the larva prepares a circular exit hole through which the adult can emerge. The exit hole is covered by the nearly transparent outer skin of the pea. The pupal stage lasts from 1 to 3 weeks, sometimes longer, depending on fall and winter temperatures.

Damage to stored peas results only from field infestation early in the growing season. Weevils do not lay eggs on dry, mature peas or on peas in storage because adults require pollen for development of their reproductive systems. Consequently, no increase in weevil numbers occurs in peas held in storage.

Prevention

Control programs for pea weevil must begin with preventive practices. Several measures can reduce overwintering pea weevil populations:

- 1. Keep harvested peas in containers from which weevils can't escape, such as closed bins, until cleaning and separation of weevily peas.
- 2. Quickly destroy or grind into animal feed all light and heavy screenings from processing and cleaning plants that may contain live weevils.
- 3. Fumigate dry pea stocks that may contain live weevils.
- 4. Plant weevil-free seed. Weevils escape from infested

seed that has been planted and may infest the new crop.

5. Plow under field refuse and shattered peas as soon after harvest as possible.

Control

Field Treatment

Commercial peas have varying tolerances for pea weevil damage. Generally, green peas grown for processing should be treated when one or more adult weevils are observed in 100 180-degree sweeps of an insect net 15 inches in diameter. Each processing company has its own guidelines for treatment of processing peas, so check with your fieldman when you observe the first adult weevils.

Higher pea weevil infestations can be tolerated in dry peas or peas grown for seed. Weevil-infested peas, because they have lower specific gravities, can be mechanically removed from field-run peas as they are cleaned and prepared for use. Dry peas under most field conditions are not treated until an average of three or more weevils are observed in 50 180-degree sweeps during the flowering stage.

Pea weevil numbers that exceed the economic thresholds and go untreated can result in 10 percent to more than 50 percent weevil-infested peas at harvest and serious economic loss. Austrian winter peas usually receive more damage than spring peas because they bloom and set pods for a much longer time.

Treatment in Storage

Only aluminum phosphide is currently registered for treating pea-weevil-infested seed and stored dry peas to be used for food or feed. Rates depend upon size, kind and temperature of the storage area. Check the pesticide label for exact rates.

Insecticide	Dosage rate (lb a.i./acre)	Remarks
Asana	0.025 to 0.05 lb	Use on dry peas only. Do not apply within 21 days of harvest. Do not exceed 0.2 lb per acre per season. Do not feed or graze treated vines.
Imidan	1 lb	Do not apply within 7 days of harvest. Do not graze or feed forage within 7 days of application. Do not cut treated, fresh pea forage for hay within 10 days of application.
methoxychlor	1.5 lb	Do not apply within 7 days of harvest.
malathion	1 lb	Do not apply within 3 days of harvest. Do not apply to forage within 7 days of harvest.
malathion ULV	8 fl oz	Do not apply within 14 days of harvest.
parathion	0.5 lb	Do not apply within 10 days of harvest. Do not apply to forage within 15 days of harvest.
Penncap-M	0.5 lb	Do not apply within 10 days of harvest for pods or within 15 days for forage. Do not apply more than 1 lb per acre per year. There are geographical restrictions on the use of Penncap-M in Idaho. Do not apply if bloom is evident on Austrian winter peas or on weeds in the field.

 Table 1. Insecticide recommendations for control of pea weevil on blossoming peas. (Treat within 7 to 10 days of first bloom as podding begins.)

Pesticide Residues — Recommendations for use are based on currently available labels for each pesticide listed. If followed carefully, residues should not exceed the established tolerances. To avoid excessive residues, follow label directions carefully with respect to rate, number of applications, and minimum interval between application and reentry or harvest.

Groundwater — To protect groundwater, when there is a choice of pesticides, the applicator should use the product least likely to leach.

Trade Names — To simplify information, trade names have been used. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

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