



Pest Common Name

Pea Weevil

Pest Scientific Name

Bruchus pisorum

Host Plants

Field peas (*Pisum sativum* L.)



Figure 1. Pea weevil (*Bruchus pisorum*) adult.
Source: Dennis Schotzko, University of Idaho.

Integrated Pest Management of Pea Weevil in Peas

Description

Adult pea weevils are not classified as true weevils and lack the characteristic weevil “snout.” They are small yet robust beetles, about 1/4 inch (6 millimeters) in length and 1/10 inch (2.5 mm) wide (Figure 1). Adults are brown with black, gray, and white patterning on their wing coverings (*elytra*). The *elytra* do not cover the entire abdomen, leaving the rearmost part exposed. Larvae can reach 1/5 inch (5 mm) in length and are legless with a white body and brown head. Eggs are bright orange and about 1/16 inch (1.5 mm) long.

Biology

Pea weevils have only one generation per year, with development taking 7–12 weeks. Adults overwinter in seeds and plant debris in the soil or in stored seed. When adults emerge, they can fly as far as 4 miles (6.4 kilometers) to find pea plants, where they feed on pea pollen before mating. Females deposit eggs on the outside of green pea pods. Larvae hatch 1–2 weeks later and burrow directly through the pod and into the maturing seed. Larvae develop within the pea seed, slowly hollowing it out through their feeding. Larvae feed for about 4–8 weeks before pupating. Adults may remain in the seed to overwinter or may emerge to overwinter under the bark of trees or buried within litter.

Damage

Pea weevils feed strictly on field pea (*Pisum sativum* L.). Larvae and adults feed within pea seeds, reducing the weight of the seed by 30%–90%. Adults exiting the seed leave a noticeable 0.08–0.12-inch (2–3 mm) hole (Figure 2). However, damage from larvae feeding is not easily observed, with only minor “windows” forming in seeds (Figure 3), and may only be noted once seeds reach storage facilities. Pea weevil feeding significantly reduces market value of the seed, making dry peas unfit for human consumption and decreasing germination rates and stunting plant growth if infested seeds are sown. Pea weevils can cause 42%–82% seed damage in the Pacific Northwest; even higher rates of infestation are documented worldwide. See [Reddy et al. 2018](#) for details on pea weevil damage.

Authors

Desireè Wickwar, Entomologist,
University of Idaho Extension (IPM
program), Kimberly Research and
Extension Center

Sanford Eigenbrode, Distinguished
Professor, Department of Entomology,
Plant Pathology, and Nematology,
University of Idaho, Moscow



Figure 2. Adult pea weevil (*Bruchus pisorum*), emerging from an infested pea. Courtesy of Brad Stokes, University of Idaho.



Figure 3. Infested peas, showing “windows” from being hollowed out by pea weevil (*Bruchus pisorum*) feeding. Courtesy of Brad Stokes, University of Idaho.

Monitoring

Adults are the easiest stage to monitor in the pea weevil life cycle and are generally considered to be the most reliable and effective to monitor as well. Monitor pea weevils from the flowering stage through crop maturity. Every two weeks sample 8–10 sites, focusing around field edges where an infestation is most likely to occur. At each sample site make twenty-five 180° sweeps and count the pea weevils collected. Average the number of pea weevils per 25-sweep sample across 8–10 samples. In the Pacific Northwest (Idaho, Oregon, Washington), a treatment threshold of two adults per twenty-five sweeps is generally used (Blodgett 2006).

Monitoring for the presence of immature stages in dried peas may be key to determining if postharvest management is necessary, but it can be challenging. Soaking peas in water softens them and allows them to be cut open to check for an internal infestation. Once adult exit holes are widely observed, economic damage may have already occurred.

Management

Primary Management Tactics

Remove volunteer plants and plant debris after harvest. Store pea straw well away from pea fields (at least four miles) or eliminate it before spring by burning

it or feeding it to livestock. These practices reduce overwintering populations and eliminate potential sources of infestation.

Physical

- Bury or destroy crop residue after harvest (i.e., via discing or grazing), as it may harbor overwintering pea weevils.

Cultural

- Control volunteer peas.
- Plant as early as possible to facilitate an early or on-time harvest that will reduce yield loss due to shattering and minimize the number of adults that emerge into the field, enter hibernation sites, and then may reinfest crops the next year.
- Remove or destroy pea plant residue that can serve as a source of future infestation in the following ways:
 - grazing — removes stubble in fields
 - move baled stubble at least four miles from fields to be planted in peas
 - clean up spilled seed and plow under the seeds remaining in a field to a depth of 6–8 inches (15–20 centimeters)
 - remove and destroy vines from home gardens as soon as they no longer provide edible peas

- In large fields, border trap cropping using an earlier blooming variety or an earlier planting can reduce infestation in the main crop. Note: the trap crop needs to be treated or plowed under to keep the areas from becoming a source of future infestation.

Biological

- Avoiding the use of broad-spectrum insecticides helps to conserve communities of resident predators and parasitoids (e.g., *Eupteromalus leguminis* and *Uscana senex*) that help keep pea weevil populations in check.

Chemical

- Insecticides are most effective if applied before bloom, when pea weevils are present but before females have laid eggs.
- Additional applications may be necessary if pea weevils are still present 10–14 days after the first spray.
- If pea weevils are not high in number, border spraying may be sufficient to achieve the desired level of control.
- Fumigate if pea weevils are found in peas directly after harvest, in storage, or in purchased seed to prevent further damage from feeding within seeds and to prevent adults emerging to serve as a source for future infestation.
- The PNW Pest Management Handbooks website provides recommendations for pesticides to use in the management of pea weevil in [green and dry peas](#) and [dry edible and seed peas](#).

Further Reading

Blodgett, S. 2006. “Dry Peas: Pea Weevil.” *High Plains IPM Guide*. <https://agresearch.montana.edu/wtarc/producerinfo/entomology-insect-ecology/PeaWeevil/HighPlainsIPM.pdf>.

Reddy, G. V., A. Sharma, and R. L. Gadi. 2018. “Biology, Ecology, and Management of the Pea Weevil (Coleoptera: Chrysomelidae).” *Annals of the Entomological Society of America* 111(4): 161–71. <https://academic.oup.com/aesa/article/111/4/161/5052938>.

Caution: Read Pesticide Labels

Pesticide labels override other recommendations.

ALWAYS read and follow the instructions printed on the pesticide label. The pesticide recommendations in this UI webpage do not substitute for instructions on the label. Pesticide laws and labels change frequently and may have changed since this publication was written. Some pesticides may have been withdrawn or had certain uses prohibited. Use pesticides with care. Do not use a pesticide unless the specific plant, animal, or other application site is specifically listed on the label. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

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.

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