



EASTERN IDAHO

PEST ALERT

BANNOCK, BINGHAM, BONNEVILLE, CASSIA, FREMONT, JEFFERSON, MADISON, AND TETON COUNTIES

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Ground Beetles

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Ground beetles are a complex of carabid ground-dwelling beetles that do a lot of good in our yards and gardens. Over 2400 species are known in North America and their color ranges from black to brown. Size ranges from 1/10 inch to 1 3/4 in long. Both the adult and larvae are generalist predators.



Adult Ground Beetle

each day. Some will even kill more than they can eat.

During the day they can often be found in leaf litter, the upper layers of the soil, mulch and under rocks. They will also trek across open ground during the day.



Since most of their lives are spent in and on the ground, the best way to encourage ground beetles is to reduce tillage. Maintain a permanent no till bank or area in the yard or garden. Here are links for more information about ground beetles.

<https://extension.sdstate.edu/ground-beetles-predators-provide-benefits-agricultural-landscapes>

<https://ipm.ucanr.edu/natural-enemies/predaceous-ground-beetles/>



Ground beetle larva feeding on a caterpillar. Merle Shepard, Gerald R. Carner, and P.A.C Ooi, Insects and their Natural Enemies Associated with Vegetables and Soybean in Southeast Asia, Bugwood.org

They most commonly feed at night on ground-dwelling pest eggs and larvae. Some adults will climb during the night to feed on caterpillars and soft-bodied insects. Larvae and adults will consume their body weight in prey



Ground beetles may climb plants to eat soft bodied insects such as these

Root Weevil

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Weevils are in the beetle family and are characterized by their long snout. Some species have very long snouts, such as the hollyhock weevil and some have a blunt snout, such as most of the root weevils.

Life cycle and damage

Most common weevils have one generation per year. They spend most of their lives underground. They overwinter as larvae and feed on roots when the soil is warm enough. In late winter and early spring, the larvae complete their development and go into the pupal stage, which is also underground. The adults emerge in mid- to late- spring. It is the adults that cause the characteristic notching along the leaf margin. The adults mate (some actually reproduce asexually) and lay their eggs in soil cracks. In a few days these eggs hatch and the larvae start feeding on plant roots. Fall and early spring is when the most serious damage occurs due to the size of the larvae.

Plants commonly fed on by root weevils include peony, lilac, strawberry, rose, grape, privet, spruce and raspberry. Some root weevil species are host-specific while others feed on a wide range of host plants. Identifying the specific pest is not as important as recognizing the damage and applying control to the affected plants.

The adult weevil is a nocturnal feeder, so they are seldom seen. They hide under duff on the ground, then climb up the plant after sunset to begin feeding. But the larvae that feed on the roots are doing the most damage. Root weevil adults don't fly and so the larvae are most likely feeding on plants that show the feeding damage of the adults.

Management

Adult control should take place as soon as the notches appear on the leaves. This will result in fewer eggs being laid at the base of the plant. Adult roots weevils can be controlled by spraying the base of the plant with any of several pyrethroid products such as permethrin, bifenthrin, cyfluthrin, or cyhalothrin. On ornamental plants a systemic insecticide containing imidacloprid can be applied to the root zone. Care should be taken to avoid spraying the flowers and upper leaves of the plant when it is in bloom as that may adversely affect pollinators.

For larval control, predators from the ground beetle complex will help keep root weevil numbers low. Entomopathogenic nematodes (nematodes that kill insects) can be purchased and applied as a soil drench at the base of affected plants. For nematodes to remain effective the soil should remain moist, but not saturated.

Here is more information about Root weevils.

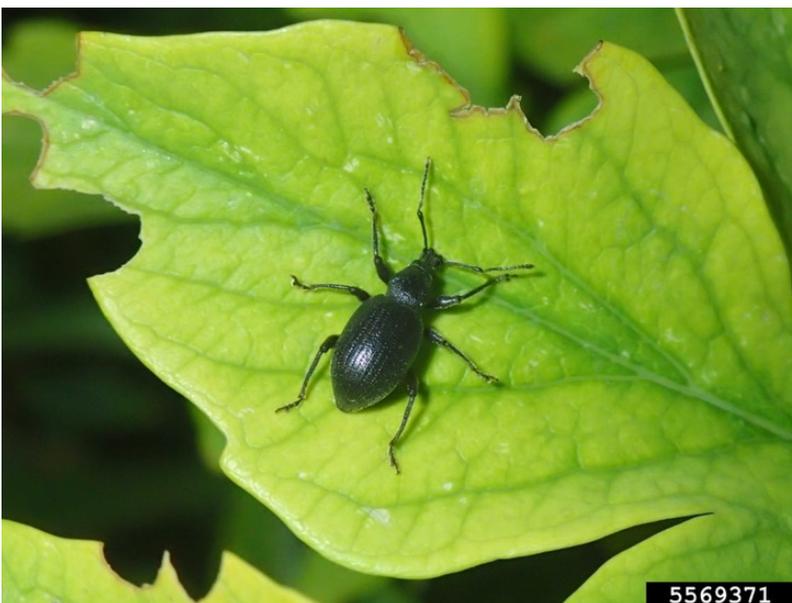
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<https://extension.colostate.edu/docs/pubs/insect/05551.pdf>



Lilac root weevil larva. Whitney Cranshaw, Colorado State University, Bugwood.org



Lilac root weevil adult. Whitney Cranshaw, Colorado State University, Bugwood.org

Codling moth

One application of insecticide will not control codling moth. You must continue control according to the product label throughout the season and over successive generations. This will typically mean two applications for each generation 2 – 3 weeks apart, depending on the product you use.

Conventional production options

High fruit damage in past years:

- o Apply the first application for either Option A (insecticide) or Option B (oil) at the listed date.
- o For Option A, repeat the insecticide spray 14 days later, for a total of 2 applications in the first generation.
- o For Option B, apply the insecticide spray at the listed date once.
- o When the “start date” for the 2nd generation is provided, spray every 10-18 days until Sept. 15. Be sure to observe the pre-harvest interval.
- o Pick a different product to use for each generation.

Low fruit damage in past years:

- o Apply the first application for either Option A (insecticide) or Option B (oil) at the listed date.
- o For Option A, do not spray again.
- o For Option B, apply insecticide at the listed date.
- o Wait until the “start date” for the 2nd generation is provided, and spray on that date, and repeat 14 days later, for a total of 2 sprays.
- o Do the same for the 3rd generation.

Pick a different product to use for each generation.

Organic production options (other than bagging)

High fruit damage in past years:

- o Apply the first application for either Option A (insecticide) or Option B (oil).
- o For Option A, repeat twice, spaced 7-10 apart, for a total of 3 applications in the first generation.
- o For Option B, apply insecticide at the listed date and re-apply 7-10 days later.
- o When the “start date” for the 2nd generation is provided, spray every 7-10 days until Sept. 15.
- o Pick a different product to use for each generation.



Low fruit damage in past years:

- o Apply the first application for either Option A (insecticide) or Option B (oil).
- o When the “start date” for the 2nd generation is provided, spray every 10-14 days until Sept. 15.
- o Pick a different product to use for each generation.

Codling moth spray schedule

Moths have been trapped in most regions! This table will provide spray dates for codling moth at the given region. Select the region that has similar climatic conditions to determine when to begin spraying. Note that you will need to spray more than once to control the codling moths throughout the season.

Spray Timing Table					
Location	Option A Apply First Spray	Option B		Greatest Period of Egg Hatch 1 st Generation	End of 1 st Genera- tion
		Apply Oil	Apply First In- secticide		
Burley	--	--	June 17	June 16 – July 6	unknown
Pocatello Airport/ Chubbuck	--	--	June 21	June 20 – July 9	unknown
Pocatello East Side	--	--	--	June 10 – 30	July 12
Fort Hall	June 18	June 17	June 29	June 28 – July 16	unknown
Blackfoot	June 19	June 17	June 27	June 26 – July 13	unknown
Idaho Falls Airport	June 17	June 16	June 28	June 27 – July 15	unknown
South Idaho Falls	--	--	June 18	June 17 – July 8	unknown
Ucon	June 25	June 24	July 4	July 3 – 18	unknown
Rigby	June 29	June 27	July 10	July 9 – unknown	unknown
Ririe	June 27	June 15	July 7	July 6 – unknown	unknown
Rexburg	June 25	June 23	July 4	July 3 – unknown	unknown
Sugar City	June 27	June 25	July 6	July 5 – unknown	unknown
St Anthony	June 28	June 26	July 7	July 6 – unknown	unknown
Driggs	unknown	unknown	unknown	unknown	unknown

Ingredient	Efficacy	Residual length	Comments
Conventional			
Carbaryl (old Sevin products)	Good	14	
Gamma-cyhalothrin (Spectracide Triazicide)	Good to Excellent	14 – 17	Last application at least 21 days prior to harvest
Malathion (Bonide Malathion, Hi Yield Malathion)	Good	5 – 7	Max 2 applications; some products are pears only
Zeta cypermethrin (Garden Tech Sevin)	Good to Excellent	14 – 17	Last application at least 14 days prior to harvest
Organic			
Azadirachtin (Safer BioNeem)	Fair to Good	7 – 10	
Codling moth virus (Cyd-X)	Good (if populations)	7	Works best when used at beginning of generation
Kaolin clay (Surround)	Fair	7	Produces protective barrier
Oil (All Seasons Oil, EcoSmart, Neem)	Fair	3	Recommended for the first application of the generation only
Pyrethrin (Ortho Fruit Spray, Fertlome Fruit Tree Spray, Safer End All)	Good	3 – 5	
Spinosad Monterey/Fertlome Spinosad	Good	7 – 10	Max 6 applications

Fireblight



Once your trees are done blooming you can ignore the spray dates and just prune out fire blight infected tissue as soon as symptoms appear.

Most backyard growers will not need to apply an antibiotic if they are diligent. Fire blight symptoms begin to show up two weeks after full bloom. New infections can be pruned out on a dry day as soon as they show up. Pruning tools need to be disinfected between each pruning cut. Rubbing alcohol, 10% bleach solution or disinfectant wipes work. If spray is warranted, it should be applied just before or after a wetting event and is effective for four or five days. Most garden centers carry streptomycin (don't use too often or resistance may develop).

Fire blight risk based on weather forecast—remember that in addition, blossoms must be open, and a wetting event must occur. This is a description of the key words and suggested actions in the chart.

Burley and Pocatello may have open apple blossoms soon.

Exceptional—Outbreak may occur if blossoms are wetted, no matter the blight history of your orchard. Apply antibiotic within 24 hours before or after the wetting event. Biological products should already be present on flowers and may not work as well if only applied at this risk period.

Extreme— Outbreak may occur if blossoms are wetted, no matter the blight history of your orchard. Apply antibiotic within 24 hours before or after the wetting event. Biological products should already be present on flowers and may not work as well if only applied at this risk period.

High—If unprotected flowers are wetted, infection is possible. If flowers are numerous, you may choose to protect every 2 - 3 days with biological product during the high-risk period. Or, apply antibiotic within 24 hours before or after the infection (wetting) event.

Caution—Wetting at this point is not likely to lead to infection, except within a few yards of an actively oozing canker. Continue to closely monitor the fire blight forecast, and consider applying biological sprays to reduce the potential build-up of blight bacteria if High risk is forecast in three or four days.



Burley	No blooms	N/A
Pocatello Airport	No blooms	N/A
Pocatello Eastside	No blooms	N/A
Fort Hall	No blooms	N/A
Blackfoot	No blooms	N/A
Idaho Falls/Ammon/ Shelley	No blooms	N/A
Idaho Falls Airport	No blooms	N/A
Ucon	No blooms	N/A
Rigby	No blooms	N/A
Rexburg	June 16 – 17 June 18 – 22 June 23	Caution High Extreme
Sugar City	June 16 June 17 – 20 June 21 – 22 June 23	Low Caution High Extreme
St Anthony	June 16 – 17 June 18 – 20 June 21 – 22 June 23	Low Caution High Extreme
Driggs	June 16 – 20 June 21 June 22 June 23	Low Caution High Extreme

Chemical Controls For Fire Blight	Brand Name	Chemical Name	Application Timing
	Bonide	Fixed-copper	Pre-bloom
	Drexel	Copper Sulfate	When wet weather coincides with flowering
	Kocide	Copper Hydroxide	Note: copper can damage foliage and fruit
	Miller	Lime Sulfur oil	Early bloom, Dormant
	FireLine	Oxytetracycline	Early bloom to petal fall
		Kasugamycin	Early bloom to petal fall
	Actigard	Acibenzolar-S-methyl	Early bloom to petal fall

Table and information from Cornell University Extension

Read and follow pesticide labels with any product

To manage fire blight, it is important to remove diseased wood during the dormant time (before buds form in spring). A general antimicrobial can be put on green tips to lessen chance of disease. Defense inducers can be applied before bloom. Protectants can also be applied during blooming. Protectants should be applied with the onset of wetting events (heavy rain or moisture). Sometimes post-bloom applications to blossoms give continued

For more information: <https://blogs.cornell.edu/biocontrolbytes/2019/04/26/battling-fire-blight-with-biologicals/>

protection to shoots.

Biological products for Fire Blight: Cornell University Extension

Product	Active Ingredient	Mode of Action
Firewall	Streptomycin	antibiotic – kills pathogen
Blossom Protect	<i>Aureobasidium pullulans</i> strains DSM14940 & 14941	competitive with pathogen
Bloomtime Biological	<i>Pantoea agglomerans</i> strain E325	competitive with pathogen
BlightBan	<i>Pseudomonas fluorescens</i> strain A506	competitive with pathogen
Serenade Optimum	<i>Bacillus amyloliquefaciens</i> strain QST713	antibiotic metabolites
Double Nickel	<i>Bacillus amyloliquefaciens</i> strain D747	antibiotic metabolites
Serifel	<i>Bacillus amyloliquefaciens</i> strain MBI600	antibiotic metabolites
Regalia	extract of <i>Reynoutria</i> (giant knotweed)	resistance inducer
LifeGard	<i>Bacillus mycoides</i> isolate J	resistance inducer

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UPCOMING EVENTS

JUNE 23 MASTER GARDENER CONVENTION

Be sure to contact our office for more information! You won't want to miss out on this spectacular gardening seminar with catered lunch included. Register by June 16, 5pm for reduced rate of \$35

JUNE 27 IDAHO HOME GARDEN TIPS**SUMMER WEED CONTROL**

TOM JACOBSEN, EXTENSION EDUCATOR

June 27 | 7:00pm MT

Make sure you get on top of those stubborn weeds this summer! Learn how to identify weeds and the best ways to manage them.

PLANT TALK**RON PATTERSON & REED FINDLAY**

June 27 | 7:30pm MT

Following our class, we will have our Plant Talk question and answer session. Feel free to join us on zoom to ask any of your gardening questions!

JULY 11 IDAHO HOME GARDEN TIPS**SUCCESSION PLANTING**

RON PATTERSON, EXTENSION EDUCATOR

July 11 | 7:00pm MT

If you've ever wanted to start a second crop of cool season vegetables, such as radishes, peas, lettuce and other cool season plants for a fall harvest, this class is for you! Ron will discuss which plants you can do this with, and when to start.

PLANT TALK**RON PATTERSON & JARED GIBBONS**

July 11 | 7:30pm MT

Following our class, we will have our Plant Talk question and answer session. Feel free to join us on zoom to ask any of your gardening questions!



PHOTO OF THE WEEK: Photo credit: BYU-Idaho office of Admissions

PHOTO OF THE WEEK:**DON'T MISS OUT ON MASTER GARDENER CONVENTION!!**

Friday, June 23, on BYU-I campus.

Anyone is welcome! Register by June 16, 5pm for reduced rate of \$35. Call 208-529-1390 to register. A whole day of gardening classes including a catered lunch.

**UNIVERSITY OF IDAHO
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