



# EASTERN IDAHO

# PEST ALERT

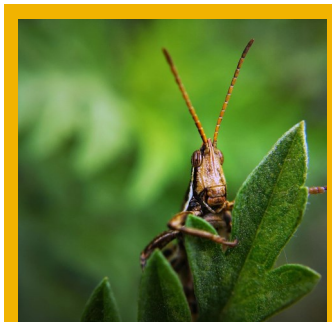
BANNOCK, BINGHAM, BONNEVILLE, CASSIA, FREMONT, JEFFERSON, AND MADISON COUNTIES

## INSIDE THE ISSUE



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**BAD**

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**PHOTO OF THE WEEK**

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**CODLING MOTH**

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# Grasshoppers– Get a Jump on them Early

By Ron Patterson, Extension Educator

Grasshoppers are in the order Orthoptera, and are related to crickets and katydids. They have chewing mouthparts and cause ragged holes in leaves, or eat entire seedlings. From early to late spring the nymphs (immature grasshoppers) emerge and start feeding on local plants.

Grasshoppers lay their eggs in the fall in undisturbed, non-irrigated ground. This can be neighboring rangeland, fallow fields, ditch banks and similar ground. Different species have different hatch times, but the early grasshoppers are out there now. As the summer progresses, grasshoppers become quite mobile and may invade your property from adjacent ground where food sources have become scarce.



Cool, wet spring weather reduces the number of eggs that hatch in a given area. There are also a number of natural enemies that can help keep grasshopper populations down—blister beetle larvae, ground beetle larvae and adults, various birds, praying mantises, and protozoans such as *Nosema locustae*.

Where possible, late fall or early spring tillage does help keep early-season numbers in check. Floating row covers can help protect crops from grasshopper damage.

The best time to control active grasshoppers is at the nymph stage, especially if you are going to use a biological insecticide that contains *Nosema locustae*, which only affects grasshoppers. This is provided in a bait formula that stops the feeding and kills the grasshoppers. Since grasshoppers are somewhat cannibalistic, the grasshoppers that eat those that have been infected with the *Nosema locustae* will also become infected.

I always like to try the non-chemical approach first. Some years, the grasshoppers have a heyday on my raspberries. Every night, after dark, for a couple of weeks, I put my headlamp on and go pick grasshoppers off the raspberry stems. (They like to climb up tall stems at night.) If you have chickens, you can feed the grasshoppers to them the next morning—they love it. After a couple of weeks, the grasshopper damage will become insignificant.

Some of the chemicals that are listed for grasshopper control include: azadirachtin, carbaryl, imidacloprid, esfenvalerate, fluvalinate, pyrethrins, and pyrethroids.

Because grasshoppers are highly mobile, good control requires everyone in the area working together. If you control your grasshoppers, but I don't control my grasshoppers they will move from my place to yours. It works best when it's a neighborhood effort.





# Soil Preparation

Dr. Steven Love, *University of Idaho Extension*

Most plants' nutritional needs are supplied by the soil. Therefore, proper soil preparation will go a long way toward achieving a successful garden.

The ideal garden soil is deep, friable, well-drained and high in organic matter. Soil preparation provides the basis for good seed germination and growth of plants. Managing soils for optimal plant growth is an ongoing process that consists of proper tillage, adding amendments, and proper fertilization and irrigation.

## Regional and textural variation

Soils in Idaho vary widely due to topography, climate, and origin. In southern Idaho, most soils have a high pH (alkaline) and contain very little organic matter. These soils may need extra applications of phosphorus and micronutrient fertilizers and should never be amended with lime or wood ash.

Northern Idaho soils can have a relatively low pH (acidic) and contain plenty of organic matter. Some of these soils may need the pH adjusted upward with lime.

In either location, soils can vary in texture from sand to clay. Sandy soils need constant addition of organic matter, frequent and light applications of water, and constant fertilization. Clay soils may need to be amended with organic matter and/or soil amendments to improve water penetration. It is important to know the characteristics of your soil in order to design an appropriate management plan.

## Improving soils

No matter the soil type, careful use of various amendments can improve soil and provide the best possible starting situation for your plants. The best amendments provide organic matter: manures,



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Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org

composts, peat moss, crop residues, grass clippings, green manures, bark, wood chips, straw, or any number of other materials. Choose the type of amendment according to availability and cost.

Before fertilizing or tilling, it is best to get the soil tested for nutrients, pH and organic matter. Several labs, both university and private, will test your soil for a fee. (Contact your UI Extension county office for a recommendation.) Once you determine fertilizer needs, broadcast

fertilizer evenly on the soil surface and till it in. Make sure the soil is not too wet during cultivation to avoid compaction.



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Andrew Koeser, International Society of Arboriculture, Bugwood.org

# Codling Moth:

## 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.
- 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

Night temperatures in the Victor/Driggs area have been consistently in the 30s and 40s. These temperatures are not conducive to codling moth development, so we will continue to watch for a biofix to late July. Due to the delayed season, there will not be a lot of second-generation activity in the Upper Valley sites. July is forecast to be quite hot, so the dates will change as we get closer.

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. **Remember that actual dates will change as we get closer because of actual temperatures rather than forecasted temperatures.** Use a different insecticide for the second generation to reduce the risk of insecticide resistance.



Images from iStock images

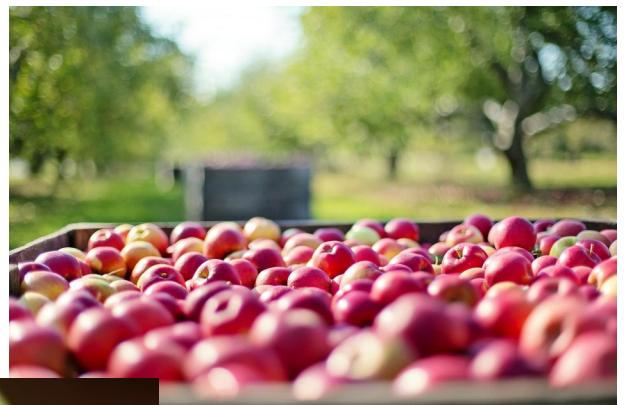
Spray Timing Table

First Generation

Location	Option A Apply First Spray	Option B		Start of Peak Egg Hatch 1 <sup>st</sup> Generation	End of Peak Hatch 1 <sup>st</sup> Generation	End of 1 <sup>st</sup> Generation
		Apply Oil	Apply First Insecticid e			
Burley	--	--	--	--	--	—
Pocatello Airport	--	--	--	--	--	—
Pocatello East Side	--	--	--	--	--	—
Fort Hall	--	--	--	--	--	July 21
Blackfoot	--	--	--	--	—	July 30
South/East Idaho Falls	--	--	--	--	--	July 24
Idaho Falls Airport	--	--	--	--	--	July 23
Ucon	--	--	--	--	—	July 31
Rigby	--	--	--	--	—	August 6
Ririe	--	--	--	--	July 21	August 10
Rexburg	--	--	--	--	--	July 23
Sugar City	--	--	--	--	—	July 31
St Anthony	--	--	--	--	—	August 3
Driggs	—	—	—	—	July 25	August 9



Second Generation				
Location	Start of 2 <sup>nd</sup> Generation hatch	Start of Peak Egg Hatch 2 <sup>nd</sup> Generation	End of Peak Hatch 2 <sup>nd</sup> Generation	End of 2 <sup>nd</sup> Generation
Burley	July 28	August 9	unknown	unknown
Pocatello Airport	July 28	August 10	unknown	unknown
Pocatello East Side	July 21	July 30	August 13	unknown
Fort Hall	July 30	August 14	unknown	unknown
Blackfoot	August 8	unknown	unknown	unknown
South/East Idaho Falls	August 4	August 17	unknown	unknown
Idaho Falls Airport	August 3	August 17	unknown	unknown
Ucon	August 11	unknown	unknown	unknown
Rigby	unknown	unknown	unknown	unknown
Ririe	unknown	unknown	unknown	unknown
Rexburg	August 2	August 17	unknown	unknown
Sugar City	August 12	unknown	unknown	unknown
St Anthony	August 15	unknown	unknown	unknown
Driggs	unknown	unknown	unknown	unknown



Whitney Cranshaw, Colorado State University,  
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Ingredient	Efficacy	Residual length (days)	Comments
<b>Conventional</b>			
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
<b>Organic</b>			
Azadirachtin (Safer BioNeem)	Fair to Good	7 – 10	
Codling moth virus (Cyd-X)	Good (if populations low)	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, Fertilome Fruit Tree Spray, Safer End All)	Good	3 – 5	
Spinosad Monterey/ Fertilome Spinosad	Good	7 – 10	Max 6 applications



## Fire Blight

At this point, prune out any new fire blight strikes as they happen. Don't wait until the end of the season or winter/spring pruning. Remember to disinfect your tools between each cut.

## EASTERN IDAHO

## PEST ALERT

## UPCOMING EVENTS

**JULY 26 7:00 PM** IDAHO HOME GARDEN TIPS

HARVESTING VEGETABLES

RON PATTERSON, EXTENSION EDUCATOR

**7:30 PM** PLANT TALK**AUGUST 9** NO GARDEN TIPS CLASS!!**AUGUST 8-12** BONNEVILLE COUNTY FAIR**AUGUST 23** IDAHO HOME GARDEN TIPS

CONSERVING WATER IN THE LANDSCAPE

TOM JACOBSEN, EXTENSION EDUCATOR

**7:30 PM** PLANT TALK**SEPTEMBER 13** IDAHO HOME GARDEN TIPS

TENDER SUMMER BULBS

**SEPTEMBER 27** IDAHO HOME GARDEN TIPS

FALL LAWN CARE

RON PATTERSON, EXTENSION EDUCATOR

**7:30 PM** PLANT TALK**OCTOBER 11** IDAHO HOME GARDEN TIPS

DIVIDING PERENNIALS

**OCTOBER 25** IDAHO HOME GARDEN TIPSWINTER PROTECTIONS OF ROSES,  
GRAPES, CANE BERRIES ETC.**7:30 PM** PLANT TALK

PHOTO OF THE WEEK: Photo credit: Daria Y.

## PHOTO OF THE WEEK:

Tis the season for fresh cane berries!! If you love berries, look for a you-pick patch or for sales on local berries at the store. If you're interested in growing your own berries, consider taking some of our gardening classes. Either way we sure hope you get to enjoy some fresh blackberries or raspberries this summer! Yum!

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