

Newsletter



Grasshopper Control in Gardens and Small Acreages

By Bonface Manono

Grasshoppers are highly mobile insects that damage yards and fields. Their mobility makes them difficult to control. Grasshopper populations fluctuate greatly, and periodic outbreaks can cause considerable damage. Problems tend to increase in early summer and can persist until hard frosts. There are over 100 grasshopper species in Colorado with different food preferences. However, five species cause most damage (Table 1 & Figure 1).



Figure 1. Grasshopper number corresponds with the number in table 1 below (Source CSU Extension Fact Sheet No. 5.536)

Among vegetable crops, grasshoppers prefer lettuce, carrots, beans, sweet corn, and onions but tend to avoid squash, peas, and tomatoes (leaves, not fruit). They less commonly feed on leaves of trees and shrubs but do during outbreak years. When they rest on twigs, grasshoppers can damage shelterbelt plantings, gnaw on bar

causing small branches to die back.

Grasshopper Life History

Grasshoppers go through a simple metamorphosis life cycle (egg, nymph, adult). They lay eggs in the form of tight clustered pods in the soil during summer and fall. These eggs hatch into tiny first stage nymphs that move to the surface to feed on tender foliage during the following spring depending on temperature. These first days are critical, and survival is dependent on favorable weather and food availability. The flightless nymphs gradually develop small wing pads and molt through five or six stages before becoming adults. Adult grasshoppers spend their time feeding, mating, and laying eggs. They are capable of flying great distances. Species that winter in the egg stage die out in late summer and early fall.

Grasshopper Control

Natural Controls

a) Weather related factors are important in grasshopper control. For example, during egg hatch, cold and wet weather can destroy newly hatched grasshoppers. Similarly, very dry winter and springs can deny them the required tender new plant growth.

b) Natural enemies can feed on grasshoppers. For example, blister beetle species develop on grasshopper egg pods. Further, adult robber flies predate on grasshoppers during summer.

Inside this issue

- [Grasshopper control in gardens and small acreages.](#)
- [The power of grief.](#)
- [Yellow and white clover: a weed or beneficial forage species?](#)
- [Be careful with blister beetles this summer.](#)
- [HPAI update.](#)
- [Resources and events](#)

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Some flies are internal parasites of grasshoppers while birds like horned larks and kestrels, feed heavily on grasshoppers. Grasshoppers are also frequently eaten by coyotes.

c) Grasshoppers are infected by unusual diseases. Example, *Entomophthora grylli* fungus infects grasshoppers and causes them to move upwards and cling to plants and kill them. A nematode (*Mermis nigriscens*) also develops in grasshoppers killing them. Both these are favored by wet weather.

Table 1: Primary damaging grasshoppers in gardens and small acreages in Colorado (Source: CSU Fact Sheet No. 5.536)

No.	Common Name	Scientific Name	Comments
1	Differential grasshopper	<i>Melanoplus differentialis</i>	<ul style="list-style-type: none"> ➤ Often first grasshoppers found moving into gardens. ➤ One of the largest in the genus <i>Melanoplus</i>.
2	Migratory grasshopper	<i>Melanoplus sanguinipes</i>	<ul style="list-style-type: none"> ➤ Often the most damaging species to croplands. ➤ An early hatching species ➤ Capable of long migration flight.
3	Two-striped grasshopper	<i>Melanoplus bivittatus</i>	<ul style="list-style-type: none"> ➤ Most common species damaging gardens ➤ Migrates from empty lots, roadsides, and other undisturbed sites. ➤ Often hatches in late spring, a few weeks later than many grasshoppers.
4	Redlegged grasshopper	<i>Melanoplus femurrubrum</i>	<ul style="list-style-type: none"> ➤ Widely distributed grasshopper ➤ Feeds on many garden plants. ➤ Tends to be most abundant in moist sites. ➤ One of the later hatching species.
5	Clearwinged grasshopper	<i>Camnula pellucida</i>	<ul style="list-style-type: none"> ➤ An early hatching grasshopper ➤ Restricts feeding to grasses.

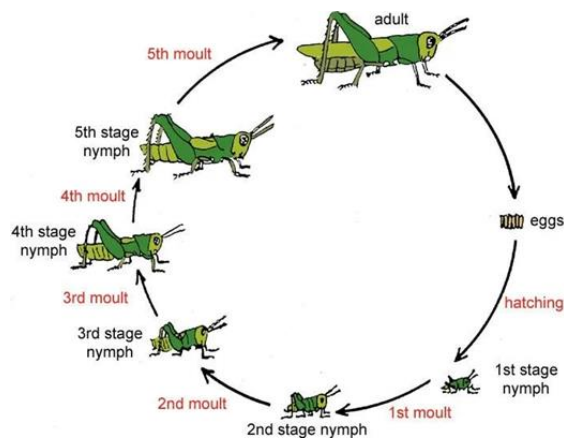


Figure 2. Life cycle of a grasshopper. Source: <https://www.pinterest.com/pin/407505466260084491/>

3.2 Managing Grasshoppers

The number of grasshoppers in late summer and early fall gives a good indicator of subsequent year infestations. Detection of young nymphs in spring can help determine when eggs hatch, location of egg beds and sites where early season activity originates. Control involves spay and baits.

(i) Insecticide (chemical) spays.

To be effective, sprays should be directed at young grasshoppers, at sites where egg laying occurs and nearby vegetation. Spraying may be done in May at lower elevations and June at higher elevations. Adding canola oil to insecticide

sprays can improve control by making treated foliage more attractive to grasshoppers.

Table 2: Common insecticides used to control grasshoppers (Source CSU Extension Fact Sheet No. 5.536)

Common Name	Trade Name(s)	Labeled Uses, Comments
carbaryl	Sevin	<ul style="list-style-type: none"> ❖ Used on a wide variety of fruits and vegetables (1-14 day preharvest interval). ❖ Available for use as sprays, dust and in baits.
acephate	Orthene	<ul style="list-style-type: none"> ❖ Has systemic activity in plants ❖ May persist longer than most other insecticides. ❖ Uses are limited to non-edible crops.
permethrin	Many trade names.	<ul style="list-style-type: none"> ❖ Widely available for garden use ❖ Most formulations allow use on a wide variety of fruits and vegetables. ❖ Fairly short persistence of effect for grasshopper control.
diflubenzuron	Dimilin	<ul style="list-style-type: none"> ❖ Growth regulator that affects chitin formation as grasshopper nymphs molt. ❖ Effective only on immature insects but has long residual activity. ❖ Restricted Use insecticide. Most use will be by licensed pesticide applicators.

(ii) Baits

Baits are made by mixing insecticide with bran or some other carrier. Once applied, they kill grasshoppers feeding on them, but limit effects on other present insects. Baits containing carbaryl (Sevin) are limited and expensive for use in large areas. Bait sprays do not need to completely cover the sprayed vegetation. Since grasshoppers are mobile, successful control may require a community effort.

(iii) Other Controls

a) Watering grasshopper breeding areas to promote plant growth. This will prevent grasshoppers moving to desirable plants.

b) Protecting susceptible plants by screening or cheesecloth barriers. It should be noted however, that grasshoppers can chew most fabrics.

c) Poultry (turkeys, guinea hens and chicken) can be used to control grasshoppers by feeding on them. However, these poultry may cause substantial injury to the garden.

Reference:

CSU Extension Fact Sheet No. 5.536 by W.S. Cranshaw and R. Hammon (2013). Grasshopper Control in Gardens and Small Acreages. <https://extension.colostate.edu/topic-areas/insects/grasshopper-control-in-gardens-small-acreages-5-536/>

Bonface Manono is the CSU/NRCS Small Acreage Management Specialist for the Mountain Region.

Cottage Foods in Colorado

Colorado Senate Bill 12-048 allows individuals to produce, sell and store certain types of "cottage food" products in an unlicensed home kitchen that are non-potentially hazardous and that do not require refrigeration.

Approved Colorado Cottage Food Products include:

Click on the specific food product link for details.



[Baked Goods](#)



[Candies and Confections](#)



[Dehydrated Produce](#)



[Flour](#)



[Fruit Empanadas and Tortillas](#)



[Honey](#)



[Jams, Jellies, Preserves and Fruit Butter](#)



[Nuts & Seeds](#)



[Teas, Herbs and Spices](#)

Colorado State University Extension has developed a nationally recognized training program that covers the specifics of the Colorado Cottage Food Act and how to safely operate a food business from a home kitchen.

For questions regarding this training or products, contact: cottagefoods@colostate.edu. For the 2024 Training schedule (online and in-person sessions) [click here](#).

For regulatory questions about the Colorado Cottage Foods Act or to confirm a product can be sold under the Colorado Cottage Foods Act, contact the Colorado Department of Public Health and Environment at cdphe.mfgfd@state.co.us.

The Power Of Grief

By Kirsten Wulfesberg

I've heard there are 3 certainties in life: death, taxes, and change. We will all experience each in our lives and while that is universal, it will impact each of us differently based on our own experiences, perception, coping and support. It's important to know grief is not just the result of a death, though that's the most accepted cause. Grief can be the result of any change or transition we experience, which happen far more often than death. (And of course, taxes can cause grief, too!)



[Elisabeth Kubler Ross](#) was a pioneer in studying death and the grieving process. She identified [5 stages](#) (now thought of as reactions, as we do not progress through them linearly):

- Denial—*"This can't be happening, there has to be a mistake..."*
- Anger—*"This is _____'s fault, someone or something is the reason this happened!"*
- Bargaining—*"If I only _____ then _____ would be different..."*
- Depression—*"I miss _____ and all the things associated..."*
- Acceptance—*"I don't like it but I guess this is my/the new reality."*

When we experience any transition, change, or loss, we don't progress from denial, to anger, and so forth. We bounce around from perhaps bargaining to depression, then back up to denial. Typically, you'll notice a general progression towards acceptance with some periodic phases of other reactions. If you ever find yourself stuck in one phase for an extended period, it might be time to seek [professional help](#).

Good Grief.

Wait, what? How can anything good cause grief? Again, transitions can cause grief reactions, including things that seem like an 'upgrade' or something you've worked towards, like:

- Buying a new car or moving into a new house (Saying goodbye to an object that has wonderful memories or "got me through" a period of your life...)
- Retirement (Congratulations! And an identity change...)
- Kids moving out and/or leaving for college (Success! And an empty nest...)
- What else?

Other Complications?

Life is complex. We may be in the anger phase while working through a divorce. At the same time, we may be in the bargaining phase about a work project that didn't go as planned, and the depression phase regarding the previous death of a loved one. And right in the middle of this we move to a nice home, but it's in a new neighborhood and we need to re-learn how to get to the bathroom in the dark. That's complicated, confusing, and overwhelming!



What's helpful?

There is no one-size-fits-all method of coping with any transition or loss. And DO NOT, by all means, be hard on yourself if a new transition brings up an old one you thought you "worked through." It doesn't mean you did a "bad job," it just means your body and soul are touched by the similar emotion you felt the first time...memories are not saved just for thoughts! (See my previous article about The Power of Emotional Language for more information.)

- *Talk, talk, talk with your support system* about the way the transitions are impacting you emotionally, physically, cognitively, etc.

- *Say thank you to the person/place/thing that is gone* and appreciate what you learned from them.
- *Go from room to room in your house* (or sit in the car) and appreciate the good memories and say goodbye to the old memories.
- *Take time to acknowledge the change and how things are different*, create new purpose.
- *Be creative*: write, draw, sing, dance to express yourself.
- *"Who Moved My Cheese?"* is great read regarding change...
- *And if needed, seeing a therapist can be helpful, too.*

was originally printed in the [LiveSmart Colorado Blog](#) on Thursday, February 29, 2024.

Kirsten Wulfesberg, is the CSU Behavioral Health Specialist, Mountain Region based at Buena Vista office, Chaffee County

BEEKEEPING IN THE MOUNTAIN WEST

Are you a hobbyist beekeeper or looking forward to venture into sideline beekeeping? If so, we have a science-based beekeeping course for you:



This CSU Course is:

- Tailored for the Mountain West.
- Based on six individual courses done separately or bundled together to save money.
- Taught by industry experts & experienced instructors.
- Offered in a flexible self-paced format.

Course Details:

1. Tuition:
 - Full Program - \$299
 - Individual courses - \$69
2. Course type
 - For the Mountain West.
 - Open-entry, fully self-led, and online
3. Questions?
 - Outreach_team@colostate.edu
 - (970) 491-2131

[Click here to go to the Online Beekeeping Registration site.](#)

Yellow and White Sweet Clover: A Weed or Beneficial Forage Species

By Lyndsay Gonzalez

Although yellow and white sweet clover seed is sold by many seed companies, in some instances, it is considered a weed. Sweet clovers are non-native plants and can potentially compete with native or more desired plants and can be toxic to animals.

Sweet clover is a legume. It is in the pea family and can fix atmospheric nitrogen and make it available to neighboring plants. This may reduce the need for applications of nitrogen fertilizer. As a biennial, yellow sweet clover has a 2-year lifecycle. During the first year, the plant puts much of its energy into developing a root system. This sometimes results in only a few inches of aboveground growth and often causes it to go unnoticed in a landscape with other plants. During the second year, sweet clover uses more energy for above ground growth. It puts up stalks with yellow flowers.



Figure 3: Yellow clover

White sweet clover generally produces less biomass than yellow clover. It is also often taller and stemmier producing lower quality forage. Other differences are white clover is less drought tolerant, easier to establish, and flowers later. Seeds can remain viable in the soil for 30 to 40 years.

Although sweet clover is usually a less desirable legume for pasture or hay production, it has high forage yield potential in the second year of growth. It can provide

high quality forage if grazed or cut at the correct time. As with many other legumes, this plant attracts pollinators, provides good nesting habitat for birds such as pheasants and grouse, and can attract wild ungulates such as deer and elk. Sweet clovers can be great for building soil health due to their nitrogen fixing abilities and deep tap roots.

As forage legume, there are some negative aspects of sweet clover. Rapidly declining quality and palatability as the plant matures means timing of harvest or use is extremely important. As the stem diameter and height increases, the proportion of leaves decreases. This results in reduced digestibility, protein, sugars, and palatability. Thus, it can potentially cause bloat in ruminant animals and can be toxic if it is baled at too high moisture content. This is caused by a substance in the plants called coumarin. When hay molds, coumarin is converted to dicoumarol which is an anti-clotting agent and can lead to hemorrhaging. Ensuring the hay is fully cured before baling is the best way to prevent potential problems. There is a low risk of toxicity when grazed, but it is still a potential problem.

Despite these negative aspects, yellow and white sweet clover can be a good forage species and beneficial for wildlife and pollinators. If managed properly, sweet clover can produce high yields of nutritious forage for grazing livestock and wildlife or can be harvested for hay. If managed improperly, it can result in stemmy, low quality feed that can cause health problems or death of livestock caused by bloat or hemorrhaging. Because of the potential toxicity, it is generally not recommended to grow in fields to be used as forage for livestock. It can however be an appropriate cover crop option.

Lyndsay Gonzalez is the CSU Small Acreage Management Coordinator, Boulder County

Be careful with blister beetles this summer.

By Karla Melgar Velis

Blister beetles are in force this summer, they feed on grasshopper eggs so, although they are natural predators of grasshoppers, they pose risks for horses and cattle as they produce toxic chemicals that can contaminate hay. Keep an eye out in the fields for blister beetles and treat any infestations to prevent damage to livestock and horses.



Three-striped blister beetle
(*Epicauta occidentalis*)

Source:
blister- *Epicauta occidentalis* © 2008 Edward
Trammel
(<https://bugguide.net/node/view/213928/bgpage>).
CC BY -ND-NC 1.0

Spotted blister beetle
(*Epicauta maculata*)

Source:
Spotted Blister Beetle - *Epicauta maculata* ©
2006 Lynette Elliott
(<https://bugguide.net/node/view/78113>). CC BY -
ND-NC 1.0



Black blister beetle (*Epicauta pennsylvania*)

Source:
Bruce Marlin, 2023, black blister beetle, [photograph]
(https://www.lakecountyeexam.com/freeaccess/blister-beetles-found-in-lake-county-can-kill-horses/article_1f58d952-2ef-11ee-9faf-1fc5892ed068.html)



Blister beetle habits and life cycle:

Blister beetles are members of the Meloidae family. There are approximately 35 species known to occur in

FIGURE 4. COMMON SPECIES OF BLISTER BEETLES IN COLORADO

Colorado, however, the most common species include the black blister beetle and spotted blister beetle (widespread throughout the state) and the three-striped blister beetle (more localized in the southeastern Arkansas Valley). Blister beetles get their common name from the production of cantharidin, a highly toxic compound capable of causing blisters when consumed.

Adult blister beetles lay their eggs in the soil along with grasshopper “egg beds”. Newly hatched blister beetles (known as triungulin) burrow into the soil and undergo several changes. They eventually start feeding on subterranean grasshopper egg pods and bee eggs. Adult blister beetles emerge from the soil from May through September, but peak season vary by species. After emergence, blister beetles are attracted to alfalfa. Adult blister beetles feed on pollen and nectar and are often associated with yellow-flowering plants like goldenrod and rabbitbrush.

Blister beetle toxicity:

Blister beetles produce cantharidin, which is a toxic compound that irritates gastrointestinal and urinary tracts of animals and may lead to death. Symptoms of poisoning include blisters on the tongue and mouth, colic diarrhea, blood and intestinal lining discharge in stool and problems with urination. Treatment for cantharidin poisoning often includes the administration of fluids and pain relievers. Always contact your veterinarian if your animals display symptoms of poisoning.

Prevention

Blister beetle larva feed exclusively on grasshopper and bee egg pods they are often associated with grasshopper outbreaks, while adult beetles are attracted to alfalfa and yellow flowering plants during bloom. Weed infestations can increase the risk of blister beetle presence in the field. First cutting hay and later cuttings of hay often escape contamination because they are produced before and after peak beetle activity.

In some places using harvesting equipment without hay conditioners has been successful at reducing cantharidin contamination. Cantharidin is released by the blister beetles when they are killed and crushed by equipment. Harvesting without conditioners allows for beetles to escape the crop before harvesting, however this method does not ensure that the hay will not be contaminated. Pesticides applied against beetles are also not completely reliable as beetles may colonize hay fields at any moment during the growing season.

More information available at:

[Blister Beetles in Forage Crops – 5.525](#)

HPAI Update:

New outbreaks have been identified in Weld County. There are new quarantine orders in parts of Weld County to limit the movement of birds in and out of the area. If you reside and/or own birds in Weld county, make sure to visit the [CDA website](#) to check if your property is within a quarantine region. IF you are a commercial or backyard poultry owner in the quarantine area, please report the status of your flock using [this online form](#).

The following map displays the reported cases of HPAI in different counties of the state.

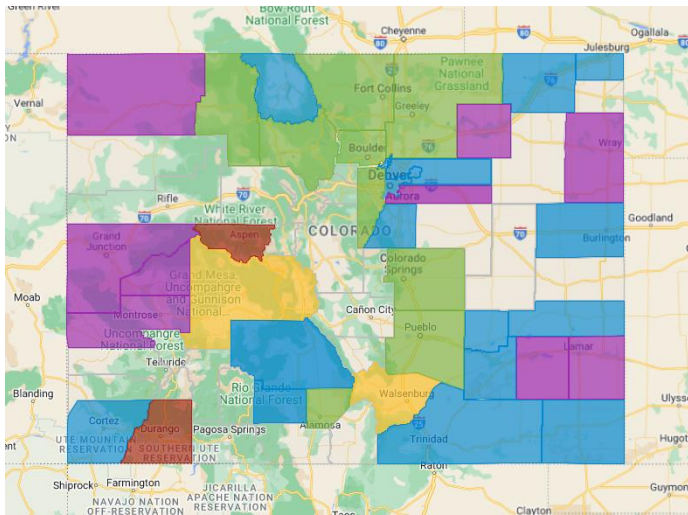


FIGURE 5. HPAI COUNTY MAP 2024

Color coding legend:

- Blue: positive wild bird cases*
- Red: positive domestic bird cases*
- Purple: positive cases in both domestic and wild birds.*
- Yellow: positive mammal cases*
- Green: positive cases in mammal and domestic or wild birds.*



With county fairs coming up these months, make sure to follow three simple principles to keep your birds safe:

Don't bring disease to the fair...Bring only healthy animals and clean equipment.

Don't get disease at the fair....Don't mix your animals or equipment with others. Wash your hands often.

Don't bring disease home from the fair...Keep your show animals away from your home animals for 30 days after returning from the fair.

EVENTS AND ANNOUNCEMENTS

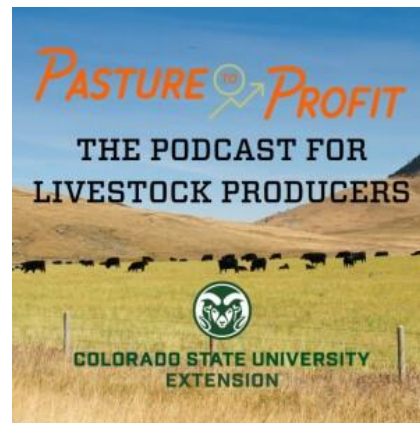
2024 SURVEY OF THE MOST COMMON AND TROUBLESOME WEEDS IN AQUATIC AND NON-CROP AREAS

The Western Society of Weed Science is requesting your participation in the National and Regional Weed

Science Society (WSWS) survey of the most common and troublesome weeds in aquatic and non-crop areas in the U.S. And Canada.

Please feel free to complete multiple surveys for different aquatic and non-crop areas within your state/province. [Please use this link to access the survey.](#)

PASTURE TO PROFIT PODCAST



Listen to Pasture to Profit Podcast! Hosted by CSU Extension Livestock Specialists, this podcast focuses on various topics about beef cattle production.

Podcasts are short "coffee shop" conversations on current livestock issues, production practices and the occasional visits with experts in different fields of the livestock industry. [Click here to listen.](#)

HONEY BEES 101 WORKSHOP

Learn about honeybees, bee husbandry, common pitfalls, resources, share time with others interested in honey bees with Rocky Mountain Bee Supply.



When: Monday August 12, 6-8 pm

Where: Douglas County Fairgrounds, Event Center at 500 Fairgrounds Rd, Castle Rock.

[Register here.](#) For questions contact: heather@douglasconserves.org or (303)- 218-2622

HAY IS FOR HORSES WORKSHOP

Learn about ruminant and equine nutrition, hay selection and explore different hay samples and lab results to select the best hay for your animals.

When: August 9, 2024, 9:00 AM to 11:00 AM

Where: Agriculture Heritage Center (8348 Ute HWY, Longmont, CO)

[Sign-up here](#)

Hay is for Horses (and other livestock): Hay Selection and Feeding Tips
FRIDAY, AUGUST 9, 2024
AGRICULTURE HERITAGE CENTER
8348 UTE HWY, LONGMONT, CO
9:00 AM to 11:00 AM
 Attend
 Equine Nutrition, Hay Selection and Feeding
 Dr. Devan Catalano, CSU Equine Extension Specialist
 or
 Ruminant Nutrition, Hay Selection and Feeding
 Lyndsay Gonzalez, SAM Coordinator
 and
 Explore real samples of various types and qualities of hay with corresponding forage analyses

QUESTIONS OR COMMENTS
 Lyndsay Gonzalez: lgonzalez@bouldercounty.gov 303-678-6107
 Karla Melgar: kmelgar@colostate.edu 531-218-9463

To sign up [Click Here](#) or scan the QR Code

GREEN SCHOOL COURSE INFORMATION

Registration open Aug 19 – Oct. 30, 2024
 Classes will run November 2024 – March 2025

['24-'25 Full Course Schedule](#)

['24-'25 Course Syllabus](#)

[Join our interested list](#)

FOOD SAFETY TRAINING FOR

Cottage Foods Producers

Cottage Foods Safety Statewide Online Training
 Event lasts 3 hours 30 minutes

Wed, Aug 7 • 1:00 PM MDT

Wed, Oct 9 • 1:00 PM MDT

Wed, Nov 13 • 1:00 PM MST

From \$50.00

Click [here](#) for registration and more information.

NOCO FRUIT AND VEGETABLE FARM HOP

Join Larimer County Extension on this tour to local farms in Weld and Larimer County. Learn about farming & participate in fun veggie/fruit/soil trivia on the bus between stops. This will be a full day of touring farms across Northern Colorado starting at the Larimer County Extension office. Participants will load the CSU Charter Bus to tour Poudre Vallet Community Farm's Flores del Sol Property, Folks Farm, Adam's Apple Orchard, Fagerberg onion farm and end up back at the Extension office.

When: August 17th 2024

Time: 8:30 am- 3:30 pm

Where: meet at Larimer County Extension Office (1525 Blue Spruce Dr, Fort Collins, CO)

Do you want to share gardening knowledge with others?

Do you want to learn more about plants, soils, insects, etc.?

Do you want to meet other garden enthusiasts?

Are you available to attend training sessions?

Are you willing to become an ongoing volunteer?

Master Gardeners enhance Colorado communities through outreach, education and environmental stewardship!

GROW WITH US! JOIN THE GREEN SCHOOL

Registration fee: Early bird admission (from July 1- July 25th) or \$55 Regular admission. \$25 for students. Registration includes breakfast and lunch.

Registration and full agenda available [here](#).

Valley Roots Farm Tours 2024

Join Valley Roots Food Hub on their farm tours and get to know local farms in the South, West and North San Luis Valley.

When: July 27th, September 21st, August 12th. 9-5 am.

Where: 5401 Terry Street, Mosca, CO

Registration fee: \$35.

For more information and registration [click here](#).