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Spring Cleaning Includes Reducing Fire Hazards Around Your Home

By Ben Pfohl, Colorado State Forest Service

For residents of Colorado, this past winter provided numerous reminders that wildfires can occur any time of the year. The Colorado State Forest Service (CSFS) wants to remind homeowners living in the wildland-urban interface to prepare for wildfires before they arrive. With spring upon us, residents are starting to do their spring cleaning chores and this should be an opportunity to improve your defensible space and reduce the fire hazard around your home. Defensible space is the area around homes or other structures that has been modified to re-

duce fire hazard. Addressing defensible space not only reduces the risk of home loss, but also improves safety for residents if they have to evacuate and for emergency crews responding to a wildfire.

Fire hazard mitigation is a job that never ends and requires maintenance throughout the year. The winter winds have redeposited needles and leaves in gutters and around decks that were cleaned last fall.

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Spring Cleaning to Reduce Wildfire continued from page 1

This spring you are encouraged to take steps to reduce the hazards on your property that include:

- ◆ Remove all flammable vegetation within at least 15 feet of any part of a home or other structure, including decks.
- ◆ Reduce the density of standing trees within 100-200 feet of all structures.
- ◆ Prune off tree branches to a height of at least 10 feet from the ground.
- ◆ Keep grasses and weeds surrounding the home mowed to a height of less than six inches.
- ◆ Stack firewood and locate propane tanks at least 30 feet from structures.
- ◆ Clear pine needles and leaves from gutters and decks, and trim overhanging branches.

The CSFS offers numerous resources to help private landowners create defensible space. CSFS online resources include free publications about defensible space, FireWise design and construction, Community Wildfire Protection Plans and the Firewise Communities/USA® program.

For comprehensive guidance on protecting homes and communities from wildfire, visit www.csfs.colostate.edu/wildfire-mitigation or call a local CSFS district office.

[Watch this short video](#) on how you can protect your home from wildfire.



Grape Phylloxera in Colorado

By Bob Hammon, Tri River Area Extension Agent

Grape phylloxera, is threat to 'vinifera' wine grapes wherever they are grown. They were confirmed from Mesa County in November 2016. Since then phylloxera has been found in eight vineyards in Mesa and Delta Counties, and it is probably present in many others. There is no long term management option for this pest other than replanting susceptible grape varieties onto resistant rootstocks. Grape growers are going to have to take phylloxera into account when developing long term management plans for vineyards.

Grape phylloxera are small aphid-like insects that feed exclusively on grapes. They are native to the eastern and southeastern United States, where they co-evolved with American grape species such as *Vitis riparia* and *Vitis labrusca*. North American grape species are generally resistant to phylloxera, but European *V. vinifera* varieties are susceptible.

Grape phylloxera has two feeding forms, one on roots and the other on foliage. Root infesting forms distort root growth, causing galls on feeder roots and affecting water transport within the plant. Underground phylloxera infestations are often misdiagnosed as water or irrigation issues, freeze damage, root rots or other production problems.

Aerial phylloxera forms cause very visible and distinct galls on the underside of leaves. This foliar damage is not as destructive as that caused by below ground feeding forms, and is also relatively easily controlled with insecticides. The aerial galling forms of phylloxera do not typically develop on vinifera grape varieties. They are seen on some cold hardy hybrid varieties that have limited vinifera genetic background. Some geographic regions do not support aerial forms. Aerial forms have not been observed in western Colorado vineyards, but have been observed in one Front Range vineyard and in some native eastern Colorado grapes.

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The root infesting form of grape phylloxera (left) are best seen under 40x or higher magnification. The aerial feeding form (right) produces a distinctive leaf gall.

Grape Phylloxera from page 2

Most reproduction of phylloxera is asexual, with the female aphids laying unfertilized eggs. Each female can produce 200 or more eggs, which can lead to rapid population increases. There are probably at least three generations per year under Colorado conditions. Eggs hatch into crawlers that are the only mobile form in the life cycle. Crawlers are present continuously from spring until fall. They move within underground parts of plants, between roots and foliage, between plants, and between vineyards. Crawlers move with people, wildlife, soil, equipment, and wind currents.

There is no simple management strategy for grape phylloxera that applies to all grape growers. The highest risk vineyards are self-rooted vinifera varieties. These include most well-known wine grape varieties such as Chardonnay, Riesling, Pinot Noir, Syrah, and many, many more. Signs of phylloxera infestation in vinifera grapes include decrease in vine vigor, premature leaf drop, chlorosis or plant death.

Vinifera varieties on resistant rootstocks and most cold hardy hybrids are tolerant to phylloxera feed-

ing. This means that phylloxera will feed and reproduce on the roots, but not damage the plants. If you do not have self-rooted vinifera varieties, the damage potential from phylloxera is minimal. Concerns with symptomless host plants arise when they provide a source of aphids to infest nearby susceptible varieties.

The best method for determining if a vineyard is infested with phylloxera is by

inspection of root segments under a dissecting microscope. Carefully dig live pencil diameter roots from around the base of vines, keeping as many intact feeder roots as possible. It is important to sample live plants. It is best to use 40x or greater magnification to see the aphids at their feeding site.

Growers with healthy, uninfested self-rooted vinifera in known phylloxera infested areas need to observe strict sanitation and limit movement of people, equipment and supplies between vineyards to prevent introduction of crawlers. Plant materials used to establish new plantings should be hot water treated to prevent introduction of phylloxera from infested nurseries. New planting of vinifera varieties should be on resistant rootstocks.

There are chemical controls available to commercial growers, but they are expensive and not 100% effective. Insecticides, when they work, are nothing more than a temporary delay to the inevitable: Phylloxera will eventually kill susceptible grape varieties. Grape phylloxera will change the way we grow grapes in Colorado. Plan for it and you can succeed.

Spiffy Online Solar Calculator Released

By Cary Weiner, CSU Extension Energy Specialist

With solar installations and solar financing options continuing to grow in the state, CSU Extension has developed an online calculator that provides costs and benefits for those considering taking the leap.

The calculator goes beyond existing estimators by allowing for rooftop or ground mount arrays, loan interest rates, monthly lease payments, utility incentives, maintenance, and other realistic inputs to be analyzed. The calculator also provides numerous default values to allow for simpler use as desired. Results include costs, savings, payback, return-on-investment, a 20-year cash flow statement, and an optional comparison of purchasing versus leasing a system.

Whether you're considering solar, are a solar installer looking for a trusted third party analysis for your customers, or are just curious, check out the spiffy new calculator here:

<http://solarcalc.colostate.edu>



Solar Electric (PV) Calculator

This calculator can be used to figure out the size, costs, and benefits of a grid-tied solar PV system for the home or business. It can be used for both owning and leasing a system.

[Get Started](#)

Uncovering the Mystery of Cover Crops

By Jennifer Cook, Small Acreage Management Coordinator, NRCS/CSU Extension

Cover crops are becoming more and more popular these days, touted for their role in improving soil health.

A cover crop is a crop grown for the protection and enrichment of soil. Cover crops can be harvested or grazed, but usually are terminated by tilling, grazing, roller/crimper, herbicide, or winter kill.

Benefits of cover crops include increasing soil organic matter and soil nutrients, increasing water holding capacity of soils, reducing compaction, reducing soil erosion, managing weeds, pests, and diseases, and improving biodiversity.

Farmers and gardeners in Colorado are experimenting with many cover crop species, however Colorado's semi-arid climate and short growing season makes it more challenging than in other parts of the US. Generally a cover crop mix is developed for your specific soil health goals. For example,

an organic vegetable farmer wants to increase nitrogen and reduce weeds in his fields. He chooses nitrogen-fixing legumes, such as field pea or cowpea, to add nitrogen to the soil, and small grains, such as winter wheat, to smother out the weeds.

By utilizing the appropriate species, planting at the proper time, and managing these cover crops, you can achieve a host of goals on your land. Using cover crops is an investment into the long-term health of the soil. It takes planning and a desire to try something new in order

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to get your cover crops planted in an already busy season. Some fabulous tools have been developed to help us create cover crop mixes and understand when to plant them.

1. Identify your soil health goals (reduce soil compaction, reduce target weed species, improve nitrogen, improve soil tilth, etc)
2. Use the [ARS Cover Crop Chart](https://www.ars.usda.gov/ARSUserFiles/30640500/CCC/CCC%202016_1.22.16_final.pdf) to determine what species would work best to meet your goals. You can plant one species or create a mix. https://www.ars.usda.gov/ARSUserFiles/30640500/CCC/CCC%202016_1.22.16_final.pdf

- [Green Cover Seed](#)
[Johnny's Select Seed](#)
[Pawnee Buttes Seed Company](#)
[Southwest Seed](#)
[Arkansas Valley Seed](#)

[illegible]

FFP	MLRA	Median	Low	High
<91	48B	52	37	84
	48A	83	37	138
91 - 120	34A	104	84	111
	51	106	95	119

FFP	MLRA	Median	Low	High
121 - 180	36	128	108	143
	49	136	107	149
	67B-N	140	130	154
	34B	150	125	189
	72	152	151	156
	69	153	147	166
	67B-S	154	130	164

HEALTHY FAMILIES AND FLOCKS

Live poultry, such as chickens, ducks, geese, and turkeys, often carry harmful germs such as *Salmonella*. While it usually doesn't make the birds sick, *Salmonella* can cause serious illness when it is passed to people.

HANDWASHING PROTECTS YOU FROM GERMS



- Always wash your hands with soap and water right after touching live poultry or anything in the area where they live and roam.
- Adults should supervise hand washing for young children.
- Use hand sanitizer if soap and water are not readily available.

HANDLE BIRDS SAFELY



- Children younger than 5 years, adults older than 65 years, and people with weakened immune systems should not handle or touch chicks, ducklings, or other live poultry.
- Do not bring chicks, ducklings and other live poultry to schools, childcare centers, or nursing homes.
- Do not snuggle or kiss the birds, touch your mouth, or eat or drink around live poultry.

SAFELY CLEAN COOPS

- Clean any equipment used to care for live poultry outside, such as cages or feed or water containers.
- Set aside a pair of shoes to wear while taking care of poultry and keep those shoes outside of the house.



POULTRY BELONG OUTSIDE

- Do not let live poultry inside the house, especially in kitchens.
- Do not let live poultry in areas where food or drink is prepared, served, or stored.



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Have a Backyard Flock? Don't Wing it.
Visit www.cdc.gov/features/salmonellapoultry
for more information

CS274178A

Big Gun Irrigation Can Increase Hay Production

By John Miller, Irrigation Water Management Specialist, Delta Conservation District

When Debbie Gray was considering side rolls on her long irregularly shaped fields, she was told that her trees would have to go. “I like having trees in my field because they make shelter and dry spots for the cattle during calving,” she says. Still determined to make the switch to sprinklers, Debbie chose to install a big gun irrigation system. Her switch to these large impact sprinklers has increased her hay production by around 30% per cutting.

Big gun sprinklers come in a variety of types and sizes, and are best described as water cannons with impact heads that rotate from a similar mechanism as their smaller cousin, the lawn sprinkler. Sime Irrigation produces a gear driven big gun that rotates without the impact. This design causes a smoother motion and more uniform application, though these benefits come with a higher price tag.



Big gun irrigation system by Sime Irrigation.

Debbie uses Nelson 100 Series Big Guns and runs them in a medium pressure range, giving her a 200' diameter circle at each set. Running big guns at a higher pressure allows for a larger diameter circle and lower pressure

means smaller circles. The larger the circle the fewer sets needed to irrigate a particular field. Alternatively, big guns can be used in solid set situation with

the guns hard mounted to an underground piping system. Another common use for these sprinklers is to mount them on the end of a center pivot system to extend its reach or get water into dry corners.

Debbie moves her guns once a day and usually runs between 6 and 11 of them at a time, spread across multiple fields. Each sprinkler is mounted on a set of five-foot diameter metal wheels to make it easy to roll around in the field. Moving the sprinklers takes her one to three hours depending on the number to be moved. “It’s not really more time consuming than when I had open ditches and furrows,” she says. In the beginning, it was a bit more tedious since she had to pull the long hoses connecting each gun to its pipe line riser when moving a sprinkler to its new position. This problem was alleviated by cutting most of the drag hoses in half to reduce the amount of weight she has to pull at each set. Debbie has also learned to position the guns more intelligently, so when it comes time to move one, she can wrap the drag hose around her arm and pull the whole thing while sitting on her ATV.

Several manufacturers provide the option of “traveling” big guns. These sprinklers are usually



Big gun travelling system.

attached by their drag hose to a motor powered reel. The irrigator then pulls the gun out in a straight line from the reel and starts the water. The reel will slowly roll up the drag hose, pulling the sprinkler across the field at a steady rate. This traveling sprinkler design increases the area that is being

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Big Gun Irrigation from page 7

irrigated by each big gun and reduces the labor involved for the irrigator. Traveling systems increase the uniformity of water distribution because the irrigator doesn't have to worry about precise sprinkler overlap. Some larger traveling gun reels can reach over a half mile, but these machines need more pressure to run.

It takes 0.5 cubic feet per second to provide enough water for six of the guns at Debbie's ranch. She has irrigated this ground in the Leroux Creek area for over thirty years, and with her short water season, she struggles to get a second cutting each year. This year she is on track for a decent second cutting, and says the hay is "thicker because of the sprinklers. The guns definitely make my limited water go much farther. I would do it again," she says.

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Non-Structural Carbohydrates in Horses and the Role of Forages

Non-structural carbohydrates (NSC) are becoming increasingly important in equine nutrition. NSC is particularly high in grasses in the spring and fall in Colorado and Montana. Horses that suffer from colic, obesity, laminitis, Insulin Resistance, Equine Metabolic Syndrome, Polysaccharide Storage Myopathy, or Cushing's disease are particularly affected by high NSCs.

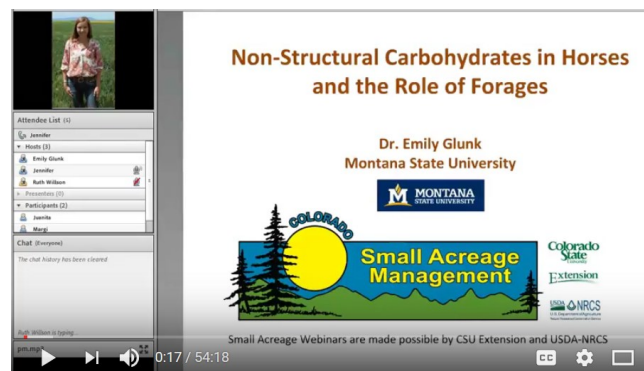
NSC includes sugars and starches, and is a very important group of nutrients for horses because these are the carbohydrates that can be broken down by enzymes and absorbed from the small intestine into the blood stream as glucose, and stored as glycogen in the muscles and in the liver. Ideally, NSCs get absorbed entirely in the small intestine before they reach the cecum and large intestine, where they can be problematic for horses because the large intestines are not designed to digest NSCs.

Tips to Reduce NSCs in your horse's diet:

- Slowly introduce your horse onto pasture.
- Reduce pasture time in spring and fall. Summer pasture has lower NSC than spring and fall.
- Feed low NSC forages, such as teff hay, and avoid grain.
- Use slow feed hay nets to increase time of consumption. Use net with the smallest holes.
- Use a grazing muzzle while on pasture to decrease intake.
- Test pasture and forages.



To learn more about this topic, watch [Non-Structural Carbohydrates in Horses and the Role of Forages](#) a recorded webinar which discusses why NSC's are important, what the major sources are, and how we can control intake.



New Resources for Colorado Small Acreages

Dryland Pasture Condition Assessment & Guidelines for Colorado Small Acreages

This guide will help pasture managers assess pasture condition and offer suggestions for improvements. Key strategies, such as determining carrying capacity, implementing rotational grazing, using indicator grasses to monitor when to start and stop grazing, and keeping grazing records, will help improve pasture health and production. The guide is available for download at www.ext.colostate.edu/sam/grazing-guide.pdf



Residential Rainwater Harvesting in Colorado - Webinar Recorded

Colorado residents can now legally collect up to 110 gallons of rain for outdoor use. This recorded webinar discusses the history of Colorado water rights and why the state is just now allowing residents to harvest rain water. Presenters talk about the what, where and how-to of installing a rain barrel on your site and how to properly integrate it into your landscape. The webinar is presented by Deryn Davidson and Jennifer Tucker, CSU Extension.

[Watch the webinar](https://www.youtube.com/watch?v=OaZQOw4kOUQ&feature=youtu.be) <https://www.youtube.com/watch?v=OaZQOw4kOUQ&feature=youtu.be>



Colorado Small Acreage Services Database

The source for landowners to find contractors, equipment, and services

[http://
sam.ext.colostate.edu](http://sam.ext.colostate.edu)



Need help with weed control?

Have a small pasture seeding project?

Search the site today to find a local contractor!



This is a free service brought to you by USDA-NRCS, CSU Extension, and your local conservation district

For a list of upcoming events in your area visit CSU Extension Small Acreage

Management website

www.ext.colostate.edu/sam/

Do you have a question about managing your small acreage?

Contact CSU Extension /NRCS Small Acreage Coordinators:

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