



**COLORADO STATE UNIVERSITY  
EXTENSION**



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## **The Chicken and the Egg(s)**

By Kara Harders, CSU Extension/NRCS

As the long days of summer come to a close it is natural to look forward to the bounty produced in local gardens, fields, greenhouses, and more. However, the bounty of “farm fresh eggs” is generally slowing down. Those accustomed to the delicious home-grown eggs may already be lamenting the grocery store eggs in their near future. There are a few reasons chickens may slow egg production this time of year.

The common factor to blame for a decrease in egg production in the fall and winter is a lack of sunlight. Chickens need about 14 hours of daylight to maintain egg production. You can “trick” chickens into thinking the days are longer by adding a light source to the coop. A low wattage light will do the job, a single 25 to 40 watt bulb on a timer that turns the lights on before sunset and off at about 10 pm should solve the problem. **Continued on page 2**

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## Chicken and Egg from page 1

Be careful while installing a light source, be sure the light is securely mounted out of reach of the chickens and the cords are safely concealed. Also, keep an eye on dust build up on the bulb, you may need to carefully dust it every now and again.

A less identified issue is the change in nutritional needs. Chickens that have been out to free-range all spring/summer/fall will be finding far less to eat as the bugs and plants they were munching on disappear. It makes sense that their bodies start to save the energy and nutrients needed to make eggs! As omnivores, chickens do a pretty decent job of foraging for the nutrients they need. However, when winter comes and they become dependent on the nutrients in the feeders, it is critical to have the correct nutritional blend available. It would be nearly impossible to meet the complex nutritional needs of an omnivore with only the leftovers from your household table. Chicken feed blends have been specially crafted to meet all the requirements of chickens. Similar to giving a child too much candy and spoiling their dinner, it is important that you limit “treats” to 15% or less of their diet. When chickens are not getting everything they need, they slow egg production or can start eating eggs to get the nutrients back.

Some will want to blame the lack of eggs on the cold. There are arguments for and against providing heat for chickens in the winter, and the answer depends on your situation. Chickens tend to huddle when temperatures drop and they become cold. A larger flock can provide much more body heat for the group and tolerate colder weather considerably better than a flock of just a few birds. Even still, it is more important to provide the chickens with a living space which is free of drafts, excess humidity, contains unfrozen water, and is well insulated. When heat lamps are used there is always a risk of the birds knocking the heat source, pecking the cord, or in some way causing a fire. Allowing chickens to slowly adapt to the cold through fall and winter is almost always the best way to deal with the cold. If you believe temperature will be a risk for your birds, consider ways to better insulate the coop, remove drafts, also consider the breed of birds you choose – a Buff Orpington

would do much better in cold mountain temps than a Pearl White Leghorn will. And while yes, cold chickens may lay a few less eggs, the risk of heating a backyard coop for egg production does not out-weigh the reward.



Finally, have you considered age? Hens begin laying at about 6 months old and can continue for five to ten years, but peak production happens in the first two years. It is entirely possible that your hens are entering the part of their life when they lay fewer eggs. At this point you need to decide what these birds are to you, are they livestock? Pets? A bit of both? An individual who is raising chickens solely for egg production couldn't justify keeping hens around who are laying 50% less than another could. However, many of us enjoy seeing the birds we raised from chicks waddle around, eating bugs, popping out a couple eggs a week, and living out their lives. Deciding how to solve this issue is about deciding what you want from your flock!

### References

- Fryar, J. (2014, May 2). Too cold for chickens? Authorities say heat lamps aren't needed, are a danger. *Times Call* [Longmont].
- Jacob, J. P., Wilson, H. R., Miles, R. D., Butcher, G. D., & Mather, F. B. (2018, June 1). *PS-35/PS029: Factors affecting egg production in backyard chicken flocks* (PS-35). Retrieved from University of Florida IFAS website: <http://edis.ifas.ufl.edu/ps029>
- Zadina, C., & Scheideler, S. (2004). *Proper light management for your home laying flock*(NF609). Retrieved from University of Nebraska Lincoln website: [https://www.hort.purdue.edu/tristate\\_organic/poultry\\_2007/Light%20Management.pdf](https://www.hort.purdue.edu/tristate_organic/poultry_2007/Light%20Management.pdf)

## Preserve Smart App and Website

Now is not only the season for enjoying fresh, Colorado-grown produce, but also for preserving extra for the winter months!

[CSU Extension's new PRESERVE SMART app/website](#) will be sure to answer any questions about fresh food preservation.

PRESERVE SMART includes:

- All information available in the existing CSU Extension food preservation fact sheets in a mobile-friendly, organized manner by fruit/vegetable type.
- Tools for helping users determine and enter the elevation of their kitchen, showing proper altitude adjustments for various recipes.
- Links to a site that enables the user to determine when a fruit or vegetable is in season in Colorado.
- Help for the user to determine (while at the market) the quantity of fruit or vegetable needed (along with other ingredients and supplies) for preservation quantity.

## New Colorado Ag Apprenticeship Bill



Governor Hickenlooper recently signed into law a bill that will provide opportunities for beginning and young farmers to gain mentorship, and access to land and equipment in Colorado. New legislation (SB18-042) will create an Agriculture Workforce Development Program that will reimburse qualified agricultural businesses up to 50% of the cost of hiring a farm or ranch apprentice.

# PRESERVE SMART

The screenshot shows the app's main interface. At the top, the title "PRESERVE SMART" is displayed in white text on a dark green background. Below the title, there are two main sections: "Choose a Fruit" and "Choose a Vegetable". Each section features a grid of images of various produce. In the "Choose a Fruit" section, there are images of peaches, raspberries, blueberries, pears, and strawberries. A white hand cursor is pointing at the strawberries. In the "Choose a Vegetable" section, there are images of green beans, tomatoes, corn, and green peas. A white hand cursor is pointing at the green peas. At the bottom of the app interface, there is a white input field with the text "Enter Your Elevation".

Confidently preserve food at your elevation with guidance from Colorado State University Extension

Enter Your Elevation

**REDUCING**  
INTERACTIONS BETWEEN

**BIGHORN &  
DOMESTIC  
SHEEP**



- If you see bighorns near your sheep, contact Colorado Parks and Wildlife **immediately**.
- Always keeping your personal safety a priority, try to increase the separation of bighorn sheep from your domestic sheep to prevent direct contact or commingling.
- Be extra vigilant if you have bighorn sheep near your flock. Consider using more livestock protection dogs and increase flock monitoring to prevent direct contact or commingling.
- Be accountable for your domestic sheep and gather any strays.
- If you see stray domestic sheep, note the location and ear tag or paint brand if present, and contact their owner immediately. You can also contact the Colorado Wool Growers Association or the Colorado Department of Agriculture to assist in locating the owners.



**Colorado Parks and Wildlife**

**NW Colorado**  
(970) 255-6100  
711 Independent Avenue  
Grand Junction, CO  
81505

**NE Colorado**  
(303) 291-7227  
6060 Broadway  
Denver, CO  
80216

**SW Colorado**  
(970) 247-0855  
415 Turner Drive  
Durango, CO  
81303

**SE Colorado**  
(719) 227-5200  
4255 Sinton Road  
Colorado Springs, CO  
80907

*Colorado Wool Growers*



**Colorado Wool Growers Association**

PO Box 292  
Delta, CO 81416  
(970) 874-1433



**COLORADO**  
Department of Agriculture

**Colorado Department of Agriculture**

305 Interlocken Parkway  
Broomfield, CO 80021  
(303) 869-9130

# MINIMIZE CONTACT

Colorado is rich with agricultural and wildlife resources. Colorado is one of the top lamb and wool producing states in the nation and also has the largest population of Rocky Mountain bighorn sheep in the United States.

As with any species, close or direct contact can make it easier to transfer pathogens (bacteria, viruses, or parasites) that can cause disease.

Many factors impact herd health such as stress, predation, nutrition, weather, and population density. Respiratory disease, which is caused by various pathogens, can also be a limiting factor in herd viability and population growth for domestic sheep and bighorn sheep herds.

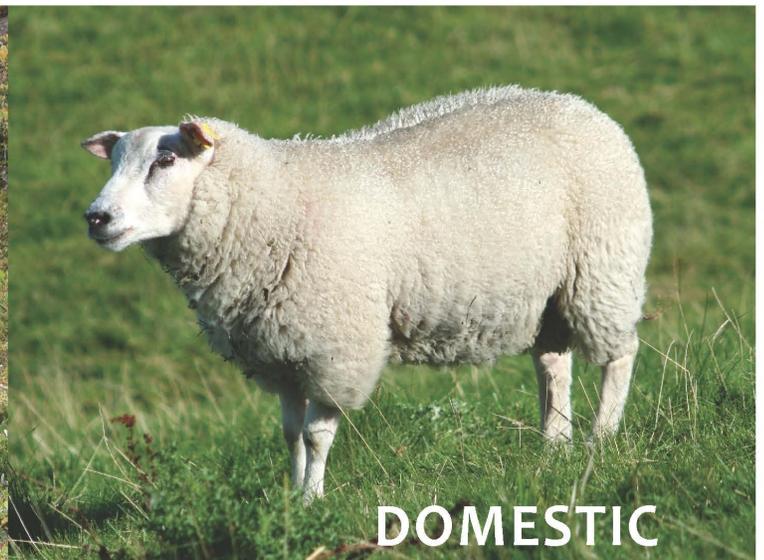
Studies that force bighorn sheep and domestic sheep to share the same small enclosure have shown that pneumonia-associated pathogens can transfer between the species. These pathogens increase the probability of respiratory disease outbreaks in bighorn sheep.

While those studies are not indicative of actual grazing conditions, **minimizing contact between bighorn sheep and domestic sheep is a responsible course of action to take.**

Proactive management will help sustain the domestic sheep industry in Colorado while also maintaining healthy bighorn sheep populations.



**BIGHORN**



**DOMESTIC**

## Business Planning with AgPlan

By Jeramy McNeely, CSU Extension Fremont County and Kara Harders, CSU Extension/NRCS

Depending on your business you may be coming into a slow time, as many of us do heading into fall and winter. Reflecting back on the year so far and thinking about what to do in the future is a yearly occurrence. Figuring out how all of that factors into the business plan isn't always the most fun part of the process.

A while back I found this beauty of an Excel spreadsheet called AgPlan Financials. If you have gone in for a loan lately, you know that banks are getting stingier about loaning money. They want to see all your records and especially that line item that has always eluded my portfolio called "cash flow".

The AgPlan spreadsheet is very comprehensive and allows you to do asset entry, inventory, liabilities, loans, balance sheets, and cash flows. It even has spreadsheets for proposed loans, projected inventories, and final income and cash flows.

It will take you a little time to fill out, and it is as tedious as doing a loan application. But it should put you ahead of the next person coming to get a loan who hasn't done their homework.

If you want to check it out without the hassle of making your own account, you can follow this [link](#). All you need to do is download it, enable editing, and you're on your way! If you think you might want to customize it more to your business, you can head over to their website which is also free

(<https://agplan.umn.edu>), and make an account for yourself.

AgPlan is designed to provide customized assistance to different types of rural businesses. When setting up a personal plan, you'll be able to select your business type from the following choices:

- Ag - Commodity
- Ag - Value-Added
- Organic Transition
- Personal Plan
- Small Business

Each business type offered has an outline designed specifically for that particular type of business, tips or questions that help you develop each section of the plan, sample business plans, and links to additional resources for each section of the plan.

I hope it is something that works well for you and gets you on the right path to securing that next loan to help build your enterprise!



## Feeding Cull Pumpkins to Sheep & Goats

By Jennifer Tucker, Boulder County Extension



After the last jack-o-lantern is blown out on Halloween, many Coloradans struggle with what to do with the carved pumpkin, or the mound of pumpkins set out for fall decoration. Sheep and goats (and other livestock too) can provide an excellent disposal option for all those pumpkins!

Pumpkins can be readily added into the diet of most farm animals successfully. In addition to being high in nutrients, pumpkins are typically relished by most farm animals. Colorado's temperature swings and night time freezing temperatures help break down the hard rind of uncarved pumpkins, making them easier to eat for most animals. For sheep and goats, it is often advisable to toss the pumpkins onto the hard surface, so they crack, allowing small ruminants to tear into them easily.

When feeding pumpkins to livestock, consider introducing them slowly, as

any diet change can cause gastrointestinal upset. Keep in mind that pumpkins have a higher water content than dry forage, so animals may drink less water while eating pumpkins. The protein content can be surprisingly high on pumpkins, but again, due to the high water content, consumption may be limited. Another consideration when feeding pumpkins is the higher phosphorus level. Pumpkins are also high in fiber, and can act as a partial forage replacement. Nutritionally, pumpkins are high in vitamins A and E. Care must be taken, especially with castrated males, as the Calcium: Phosphorus is an important balance. Many supplement with alfalfa hay to increase the calcium ratio in the diet.

There is some ongoing research in small ruminants in relation to pumpkins. In addition to utilizing them as a nutritional source, there is some theories that pumpkin seeds may act as a natural dewormer in small ruminants. While results are not yet in, it is an interesting anecdote.


# Extension

## Goat And Sheep Ultrasound Day



### Sunday November 11<sup>th</sup>

Adams County Fairgrounds  
Brighton, CO

**Find out IF your Ewes and Does are Bred, HOW MANY they are having and WHEN they are having them!**

**Please Call and get on the schedule, and get instructions**

**Jennifer Tucker-Adams County Extension (303)637-8157**

## Multispecies Grazing

The new publication, "[Multispecies Grazing: A Primer on Diversity](#)," discusses the financial, animal-health, and pasture-health benefits that can be attained by grazing multiple livestock species on the same ground.

Written by NCAT Agriculture Specialist Lee Rinehart, it delves into the details of grazing planning for species with different grazing dynamics, and explores the practical implications of fencing and handling livestock with different requirements.

The publication also addresses how grazing different livestock species can affect predator-management strategies. The publication touches on stocking poultry and pigs on pasture, as well as cattle, sheep, and goats.

Download the publication for FREE at <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=244>.



### ATTRA Sustainable Agriculture

A program of the National Center for Appropriate Technology • 1-800-346-9140 • [www.attra.ncat.org](http://www.attra.ncat.org)

## Multispecies Grazing: A Primer on Diversity

By Lee Rinehart, NCAT Agriculture Specialist  
Published September 2018 @ NCAT  
IP570

This publication discusses the principles and practices of grazing multiple species of livestock on pastures. Here, you'll find a discourse on the benefits of multispecies grazing on productivity and profitability, including its positive impacts on pasture diversity and health. Also covered are grazing dynamics (how diverse animal species use grazing resources), the types and kinds of fencing and working facilities needed by various animals, and how to deal with predators, mineral supplementation, and parasites. Finally, it covers vegetation management and how to make stocking-rate decisions. References and further resources are included.

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Cattle and sheep are natural complementary grazers. Photo: Linda Coffey, NCAT

#### Introduction

*"The sacred is unique, wholesome, interconnected..."*  
—Suzanne Karreman

Suzanne Karreman spoke about diversity as she flipped through pictures of her farm. She was giving a talk with her husband Hue at the 2018 Grassworks Conference in Wisconsin Dells, Wisconsin. As multispecies grazers, they extend the concept of diversity to all walks of their life together, and with their community, on the farm. Diversity, for Suzanne, is the antithesis of the separateness and scarcity that define our market-driven world, with its focus on economies of scale and cheap products. Instead, she speaks of a sacred economy... one that binds people together

and integrates local ecologies with all aspects of human life. All life is unique, wholesome, and integrated. Thus, extending this concept to the pastures she manages is a natural farm application of her life philosophy.

Resilient farms are based on diversity of life, and while much of the focus of agricultural sustainability of late has been on diversity of crops, forages, and soil microbial populations, not much has been said about the diversity of grazing species. "The presence of multiple species of large herbivores is the typical condition of grassland and savanna ecosystems," says John Walker, a range ecologist who wrote on the subject over two

ATTRA ([www.attra.ncat.org](http://www.attra.ncat.org)) is a program of the National Center for Appropriate Technology (NCAT). The program is funded through a cooperative agreement with the United States Department of Agriculture's Rural Business-Cooperative Service. Visit the NCAT website ([www.ncat.org](http://www.ncat.org)) for more information on our other sustainable agriculture and energy projects.

[www.attra.ncat.org](http://www.attra.ncat.org)

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## Small Acreage Q & A—Ask SAM

Hi SAM,

*We have a dryland pasture and wildlife area on our property, located at about 5,500 feet elevation. Overall, we have had minimal success getting native plants to grow on the site. Our idea is to have some good ground cover to provide habitat for wildlife and be able to allow our neighbors animals to graze on it once a year in order to maintain the vegetation. We have tried some of the dryland pasture mixes you can find at the local coop and other stores, these have not been successful. However, we see other nearby land in the area are thriving with a variety of native plants. I'm wondering if you have any recommendations for seeding grasses. Species mix? Composition? Seeding rate? Timing of plantings?*

Thanks!

Jack

Hi Jack,

I need some more information about where your property is located before a specific seed species list can be made. However, I might suggest we discuss some of the native grasses that are available from local, reputable seed vendors (your local Extension or Conservation District may sell grass seed). Observing the species that are thriving in the area could be a good start to formulating a custom seed mix for your property.

Depending on several factors, it could be beneficial to consider planting a cover crop, either with the desirable native species, or a growing season before. This can achieve multiple objectives including: shade out weeds, reduce erosion, add organic matter to the soil, the residue will protect the new seedlings and hold moisture at the soil surface. Seeding during the dormant season, typically between November 15 and April 15, will take advantage of any winter and early spring moisture we receive to help establish the seedlings. I would recommend using a no-till seed drill if possible, you can contact your local conservation district or

search the Small Acreage Services Database (<http://sam.ext.colostate.edu/>) to see if one is available nearby. Typically we recommend a seeding rate of 10-14 lbs per acre depending on the species you choose. We can work out a specific mix once we have gathered some more information about your property, your management objectives and resource concerns.

Below I have included several resources for you, please take a look and let us know what we can do to help. Thank you for your conscious effort to be a sustainable steward of your land.

Your Friend in Conservation,  
SAM

Small Acreage Management - Forage Guide  
<http://sam.extension.colostate.edu/wp-content/uploads/sites/2/2016/07/forage-guide.pdf>

Grass Seeding Plan for Colorado Small Acreages  
<http://sam.extension.colostate.edu/wp-content/uploads/sites/2/2016/07/seeding-plan.pdf>

Dryland Pasture Condition Assessment & Guidelines for Colorado Small Acreages  
<https://sam.extension.colostate.edu/wp-content/uploads/sites/2/2018/07/GrazingGuide.pdf>

**Follow @Colorado Stewardship  
on  
Instagram and Facebook**

**Upcoming focus -  
Celebrating abundance on the farm!**



## **New– Online Land Stewardship Program!**

The CSU Extension Land Stewardship Program is designed to help land owners or managers gain a better understanding of the available natural resources, how to cultivate them sustainably, and build an effective long-term land management plan. This program has been specifically developed for the Colorado- arid west soil and climatic conditions, providing the learner with more localized land strategies.

This program gives the small acreage farmer a comprehensive guide to avoid some of the most common pitfalls. Over two years in the making, this convenient, self-paced program isolates key aspects of land ownership and allows learners to understand the fundamentals of SWAPA (soil, water, animals, plants, air) while developing smart goals for their small acreage property.

Try one or all of these self-paced non-credit badge courses developed by the CO Small Acreage Team:

- ⇒ Stewardship Planning –Inventory Resources
- ⇒ The Basics—Soils
- ⇒ The Basics—Water
- ⇒ Management of Invasive and Noxious Weeds
- ⇒ Colorado Wildlife Management
- ⇒ Emergency Preparedness
- ⇒ Management of Forage Plants

**More info at [www.csu-landstewardship.com](http://www.csu-landstewardship.com)**

## 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!  
**Contractors**—Advertise your services here!

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

### Do you have a question about managing your small acreage?

Contact CSU Extension /NRCS Small Acreage Coordinators:

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