



**COLORADO STATE UNIVERSITY
EXTENSION**



United States Department of Agriculture
Natural Resources Conservation Service

Winter 2022

Issue 53

sam.extension.colostate.edu

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Feral Swine Found at El Paso County Farm Later Tested Positive for Pseudorabies

By Bill Vogrin, Southeast Region Public Information Officer

Feral swine found at El Paso County later farm test positive for pseudorabies
COLORADO SPRINGS, Colo. – Acting on tips from the public, Colorado Parks and Wildlife officers confiscated feral swine from a farm in El Paso County that later tested positive for pseudorabies, a fatal disease that can be spread to other livestock and domestic animals.

The discovery is prompting CPW and the Colorado Department of Agriculture (CDA) to remind the public that it is illegal to bring invasive species such as feral swine into Colorado.

“This is exactly why we have worked so hard to eliminate free-roaming feral swine from Colorado,” said Travis Black, CPW’s Regional Manager for the Northwest Region based in Grand Junction and an expert on feral pigs. “Roaming wild, feral swine destroy agricultural crops, wildlife habitat and out-compete native species for food.”

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Colorado Sustainable Small Acreage News is published and edited by Kara Harders,
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Feral Swine continued from page 1

“And feral swine kept on farms pose a huge risk to other animals by spreading diseases such as pseudorabies, as in this case.”

On Sept. 3, a team of CPW officers led by Black, who was then Deputy Regional Manager for the Southeast Region based in Colorado Springs, and Area Wildlife Manager Cody Wigner descended on a small farm east of Colorado Springs after reports the homeowner was raising feral swine illegally imported from Texas.

The CPW team found three of the wild pigs in a small barn and euthanized them. Blood samples were sent to a lab for analysis. Test results showed the presence of pseudorabies, a contagious herpes virus that causes reproductive problems including abortion and stillbirths. The disease also causes respiratory problems and

occasional deaths in breeding and finishing hogs. Besides swine, it can spread to cattle, dogs, cats, sheep and goats.

The homeowner cooperated with the CPW investigation and was cited for illegally transporting and possessing the prohibited species. Each is a misdemeanor charge and carries a fine and surcharge amount of \$137 per animal. CPW is working with the U.S. Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS) to trace the pigs back to their original herd in Texas to stop further spread of infected swine.

For 15 years, Colorado has worked to eliminate feral swine, working with a partnership that includes CDA as well as federal agencies including APHIS and the U.S. Forest Service.

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Feral swine are seen in a 2020 file photo. Photo courtesy of Colorado Parks and Wildlife

Marketing Lambs & Goats by the 2022 Ethnic Holiday Calendar

MJ Fisher, County Extension Director, Pueblo County

A new year will soon arrive. Around this time each year, I try to look at the ethnic holiday calendar for that year. As you already know, many holidays are celebrated with a traditional holiday feast. However, it is important to realize that a lot of cultures like to celebrate their holidays with lamb or goat meat as part of the feast. If you are a lamb or goat producer, you may be able to market your product at a premium; if you know when these holidays occur and what is desired for the various ethnic holiday feasts. Here is a sampling of some of the 2022 holidays and what consumers may be looking for. (It is important to realize that the date of some of the holidays change on a yearly basis; so in future years you would need to look up the new date.)

Passover: In the Jewish religion, Passover (also known as Pesach) observes the exodus of the Hebrews from Egypt. The holiday continues for eight days from the 14th of Nisan. A 30 to 55 pound lamb that has been milk fed and is fat is the preferred product for this holiday. In 2022 Passover will be recognized from sunset on April 15th to nightfall on April 23rd.

Easter: This is a Christian holiday memorializing the resurrection of Jesus following his crucifixion. Easter is calculated differently by various cultures so you may hear it referred to as Western Easter, Roman Easter, Greek Easter, or Orthodox Easter. In many years, the various calculations may cause the numerous Easter celebrations to fall on different dates. In 2022 Western Easter and Roman Easter are calculated to April 17th. The Western/

Roman Easter is celebrated with a 30 to 45 pound, fat, milk fed lamb. It can also be celebrated with a goat weighing between 20 and 50 pounds, 30 pounds being optimal. The goat should be fleshy and under 3 months of age. The consumer wants them to have been milk fed and they should have been gaining at least ½ pound per day. April 24, 2022 is when the Greek and Orthodox Easter celebrations will occur. The Greek/Orthodox culture likes similar lambs and goat kids, except slightly heavier. The lamb should be 40 to 55 pounds and goat kids are optimal at 35 pounds.

Ramadan: This is the Islamic month of fasting and is meant to teach the Muslim people patience, modesty, and spirituality. During this period, participants are expected to fast from sunrise to sunset. They may only eat during the night hours. In 2022, the start of Ramadan will be April 2nd and continue through May 1st. Weaned market lambs from 60 to 80 pounds and goats less than 12 months of age (still possessing their milk teeth), weighing between 45 and 120 pounds (60 pounds is optimal), are preferred during this period.

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Photo Courtesy of Mia Cory

“Top Performer” Perennials from the 2021 Colorado State University Flower Trials

By Dr. Jim Klett, Department of Horticulture & Landscape Architecture, Colorado State University

In 2021, Colorado State University continued its three year herbaceous perennial trial and chose eight perennials as the “Top Performers” from 126 that were planted in 2019. To become a CSU ‘Top Performer’ it has to have great survival percentages after two winters and three growing seasons and scored excellent throughout the three growing seasons. A sub-committee of the CSU Annual Trial Garden Advisory Committee evaluated twelve of the top performing perennials in November of 2021 by examining photos of these plants taken every two weeks during the three year growing seasons. A majority favorable vote from the committee is needed for a perennial to become a CSU ‘Top Performer’.

Therefore perennials that get this description have proven to be adaptable for the Front Range of Colorado. The following eight plants have been awarded this category for 2021 after three years of extensive trialing.

A complete report on the perennials in the trial can be viewed at www.flowertrials.colostate.edu under the Perennial Trials menu tab.

Achillea ‘Firefly Sunshine’
(*Achillea x hybrida*) from Walters Gardens, Inc. / Proven Winners®

Vibrant yellow flowers provided a lot of color and with a long-lasting bloom. Dark green foliage also made the flower color stand out. It had superior qualities with a more compact growth habit that did not lodge despite overhead watering and had excellent winter survival. It was also noted that it did not spread around the garden which is a definite plus. (Pictured on right)

Brunnera ALCHEMY™ Silver
(*Brunnera macrophylla*) from Terra Nova Nurseries

This great plant can brighten up a shady area with a constant display of beautiful silver foliage. Plants are vigorous and are covered by a delicate cloud of light blue flowers from about May into June. Leaves are relatively thick and stands up well with strong stems to create a very attractive and uniform growth habit. (Pictured below)



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Soil Health for Small Acreage Landowners

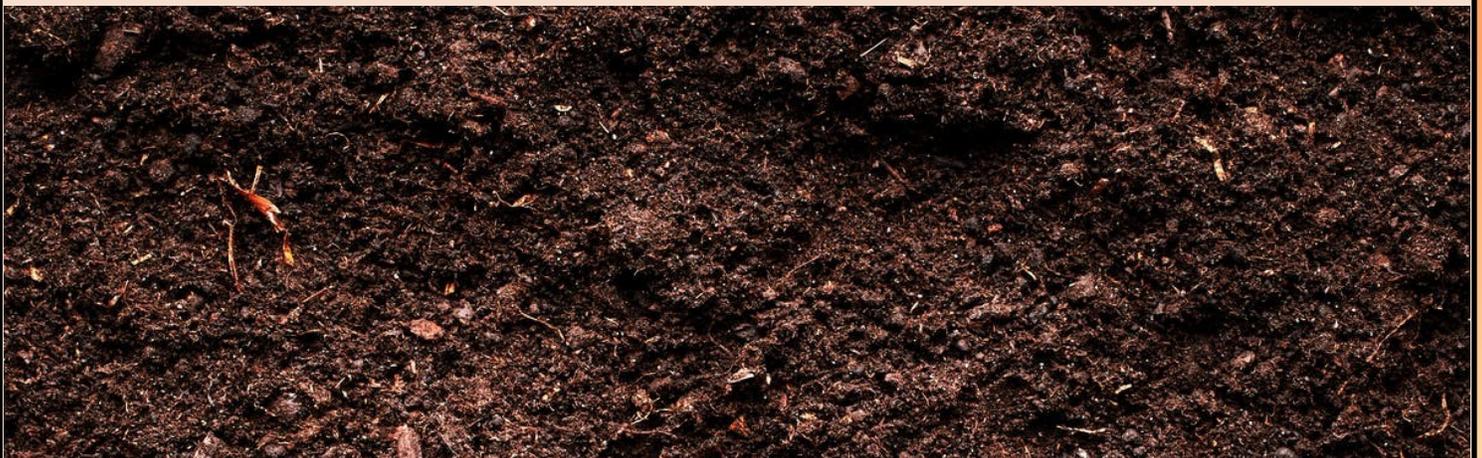
Kat Caswell, Regional SAM Specialist for the Front Range Region

Soil health, carbon sequestration, and nutrient management has become more regularly discussed in popular media: from news stories about ranchers altering management to prepare for drought to documentaries around regenerative farming. These topics are often more nuanced and complicated than can be conveyed in a documentary or a newsletter article alone. Academic studies in soil science are often focused on production agriculture, ranching, or specific ecosystems. The affect of soil health practices has been more extensively studied in wetter climates than are present in Colorado. Ongoing studies around the state and western US are helping to determine what soil health looks like under drier climatic conditions. Much of the knowledge and experience learned from studies, along with trial and error, can be applied to any size acreage to varying degrees.

One of the first steps to improving soil quality, or soil health, is to understand what soil type and nutrients are in the soil. Soils are classified based on the characteristics of the soil profile. Soils are formed by the interaction of climate, time, and living organisms on a parent material under different topographies. Soils formed from similar parent materials will generally have a similar classification and

thus, similar characteristics. The soil type is described by the ratio of sand, silt, and clay particles. Sand is the largest particle size, while clay is the smallest. The ratio of particle size in the soil describes different characteristics of the soil (like water infiltration) and how it will respond to different management (like increased risk of compaction). Soils can be described by their productivity, the ability of a soil to grow and produce vegetation. Productivity is recorded in the terms of yield of vegetation. Soil quality is the “capacity of a soil to function for specific land uses or within ecosystem boundaries” (Natural Resource Conservation Service). Quality, or soil health, will vary from soil to soil and region to region. Commonly discussed indicators of soil health include soil organic matter, water stable aggregates, low compaction, and high microbial diversity. Soil maps are available for public access and use on the Web Soil Survey. The Natural Resource Conservation Service (NRCS) soil scientists create soil maps based on field evaluation. Exploring your property on Web Soil Survey can provide you with information such as soil type, ecological site description, and vegetation productivity. Web Soil Survey also includes a description of soil health indicators for that soil type. Creating a soils map provides a base-line evaluation and a place to begin planning your soil health improvement.

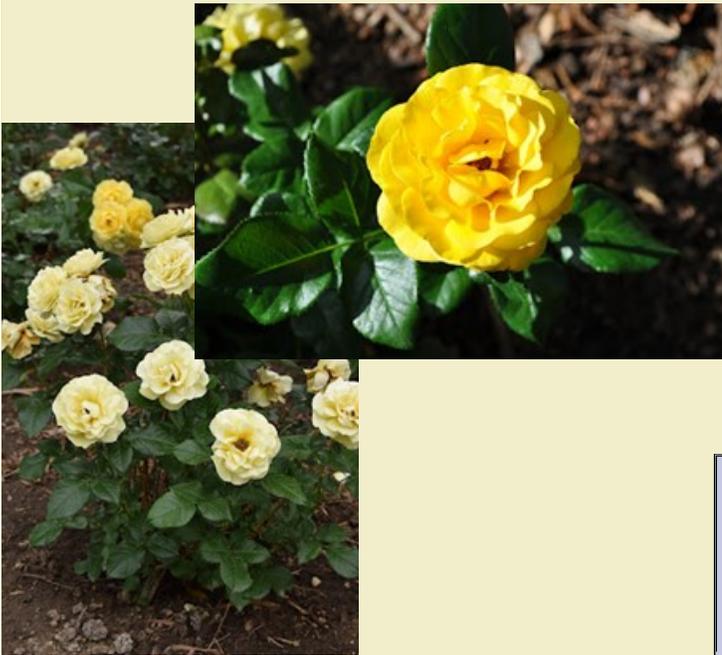
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Top Performer Perennials continued from page 4

**Eupatorium Euphoria™ Ruby
(Eupatorium purpureum 'FLOREUPRE1'PP31,668)
from Darwin Perennials®**

Shorter and more compact than the species, this is a nice medium size plant for the modern landscape. This was a unanimous choice for the “Top Performer” award with dependable light ruby/lilac-colored flowers that combines well with dark leaves and stems. It was noted to be an excellent pollinator plant. (Pictured on Right)



**Rosa Sunbeam Veranda®
(Rosa x 'Korfloci52' PP23,314) from Star® Roses
and Plants**

Glossy, dark green foliage made the bright yellow flower color even more stunning. Blooming started in June and lasted well into September. The compact size makes this a great choice for smaller gardens spaces. Plants had excellent winter hardiness. (Pictured on Left)

**Perovskia CrazyBlue
(Perovskia atriplicifolia 'CrazyBlue' PP #25,639)
from Darwin Perennials®**

Plants were noted to have superior flowering and growth habit. The flowers have a long lasting bloom period and the violet-blue flowers last longer than other Perovskia. Uniform plants had interlacing branching and sturdy stems that kept it from lodging and maintained an attractive appearance all season. It is a mid-sized plant about 3-4 feet in height. (Pictured on Right)



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Top Performer Perennials continued from page 6

Rosa Cherry Frost™

(Rosa x 'Overedclimb'PP31,286) from Star® Roses and Plants

Abundant bright red flowers and good disease resistance make this a good climbing rose for Colorado. Clusters of small flowers kept repeating throughout the growing season in flushes for long lasting color. It had excellent winter survival. (Pictured Below)



Sedum Prima Angelina

(Sedum rupestre) from Darwin Perennials®

Great neon yellow foliage makes this an excellent foliage plant in the summer and it also is quite showy in the winter with a nice shade of red. The spreading growth habit is very uniform and a great choice with rock gardens or combined with other Sedums for additional color contrast. Prima Angelina is superior to the straight Angelina with better branching and growth habit while also being less brittle. (Pictured above)

**Veronica Moody Blues® Mauve Improved
(Veronica spicata) from Darwin Perennials®**

Impressive vibrant, mauve colored blooms covered the plants at peak and repeated later in the season. Well branched plants were compact and very uniform with 100% winter survival. It has the added bonus of being a good bloomer the first year in the garden. (Pictured on Right)



CSU Ecologists Launch Study on Droughts, Deluges and Carbon Cycles in Grasslands

By Anne Manning, CSU SOURCE

When we think of climate change, we often think of bone-dry, drought-stricken landscapes. But scientists say our changing climate also portends wild swings in extreme weather, including multiyear droughts punctuated by persistent, torrential rainfall events called deluges.

These pendulum swings will surely have new impacts on old ecosystems, and Colorado State University ecologists are setting out to determine just what those impacts will be.

A nearly \$1 million grant from the U.S. Department of Energy is funding a team led by Melinda Smith, professor in the Department of Biology and the Graduate Degree Program in Ecology, on a study that combines field experiments and computer modeling to assess how co-occurring droughts and

deluges will impact carbon cycling across the vast grasslands of the continental U.S.

Smith's laboratory will be the 280,000-square-kilometer (174,000-square-mile) semi-arid short-grass steppe located at the western edge of the U.S. Great Plains, starting about 30 miles east of Fort Collins. Smith's team will work within the Central Plains Experimental Range, a 15,500-acre area managed by the U.S. Department of Agriculture's Agricultural Research Service.

"If you look across the globe, these kinds of dry grassland ecosystems have a big impact on carbon cycling – much more than previously thought," said Smith, an expert in such ecosystems as the short-grass steppe of Colorado and the tallgrass prairie of Kansas. While forests have typically received the most attention regarding their importance in carbon cycling, grasslands that cover 40% of the Earth's surface need to be better understood in these terms, Smith said.

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Researchers led by Melinda Smith in the Department of Biology will use 80-foot cold-frame shelters like this to recreate drought and deluge conditions in the grasslands east of Fort Collins.

Soil Health Continued from page 5

A soil test can also determine the texture of your soils. Basic soil testing will provide you with information on the soil pH, organic matter, salinity, nitrogen (N), phosphorus (P), and potassium (K) levels. Soils in Colorado tend to be basic, having a pH greater than 7. When soils are too acidic or too basic, plant growth will be reduced. Organic matter (OM) is the percentage of the soil composed of plant and animal tissue that are in various stages of decomposition. A higher OM in the soil is often associated with increased water infiltration and is an indicator of soil health. The nutrients N, P, and K are macronutrients and required for plant growth. When nutrient levels are too low, an additional source of nutrients will be needed. If nutrient levels are too high, there is the risk of nutrient loss and pollution into nearby areas. Having a soil test for your property can help you to determine what management steps you can take improve soil quality, or if you need any at all.

A growing number of soil testing labs are offering soil health tests. The Haney Test, one of the most popular tests of soil health, includes a suite of individual measurements that are combined to determine a total “soil health score”. Comprehensive tests like this can be helpful in determining if there

is an individual factor that is limiting soil quality. While soil health tests offer a bevy of good information, they may include more details than is needed by the average small acreage owner.

To improve soil health, there are 4 basic principles from the NRCS to keep in mind:

1. Keep the soil covered
2. Increase diversity
3. Minimize soil disturbance
4. Keep a plant/root in the ground year round

Keeping the soil covered will reduce erosion both from the wind and the rain. Soil armor can come in different forms such as the residue of a cover crop, or stubble after wheat harvest. Increasing both the plant and animal diversity on the soil will help to increase the below ground microbial biodiversity. Plant diversity can be something as simple as seeding a pasture with multiple species or rotating what plants are in your garden. Grazing can be a wonderful tool for soil health, but it is important to have a plan to prevent overgrazing. Compost and composted manure application can increase OM but should be done to meet the nutrient needs of the soil and prevent over application. Minimizing soil disturbance, such as tillage, helps to build more stable soil structure and increase habitat for living organisms. Keeping a plant or root in the soil year-round assists in increasing most soil health indicators. Perennial pastures are a great way to achieve this. If you are working towards seeding a pasture, but want to increase your soil health first, a cover crop is good option for introducing more diversity to the soil. Cover crops can also provide cover for the soil after a crop or vegetable harvest.

Soil health can be practiced by every landowner or manager, but much like our own health, it will look different from area to area. If you are looking to improve your soil quality, first determine what resources you already have in your soil. From there, select practices that work with your lifestyle and soil health goals. Even if your pasture doesn't look like it follows all the principles of soil health, you might be achieving more goals than you think. Evaluate your land with a critical eye: a smooth brome grass pasture that is well grazed can be just as healthy as a multi-species pasture with greater plant diversity. Lastly, be patient with your soils. Just like us, soils can take time to grow healthier.



Marketing Lambs & Goats continued from page 3

Eid al Fitr: Eid al Fitr is the breaking of Ramadan and the fasting period. It is celebrated with a feast of lamb or goat similar to those preferred during Ramadan. In 2022, the Eid al Fitr celebration is from sundown on May 2nd to sundown on May 3rd due to the Islamic calendar being a lunar calendar and its days beginning at sunset. The date is based on the first day following the new moon.

Eid al Adha: This is the Islamic festival of sacrifice. It commemorates Abraham's willingness to sacrifice his son. It is a three-day celebration. It will be celebrated by many from sunset on July 9, 2022 to sunset on July 10th, 2022 due to the Islamic calendar being a lunar calendar and its days beginning at sunset. Lambs and goats marketed for this holiday should not be castrated and the tails of lambs should not be docked. A lamb of 60 to 80 pounds is preferred but heavier lambs may also be utilized. Yearling goats with one set of adult teeth are preferred on the caprine side but 60 to 100 pound kids may also be marketable. **Muharram:** Muharram is the Islamic New Year and will be July 29, 2022 thru August 28, 2022. Celebration of the holiday will begin at sunset on July 29, 2022.

Rosh Hashanah: This holiday marks the Jewish New Year and will begin with sunset on September 25, 2022 and run through nightfall on September 27, 2022. The forequarters from a weaned lamb, 60 to 110 pounds in size, are preferred for Rosh Hashanah.

Navadurgara (also known as Navratra, Navratri, Dashara, & Dassai): This is a ten day/nine night long Hindu holiday that honors the goddess Durga. The final four days of the celebration include elaborate family feasts for which goats are slaughtered. The demand is for weaned, market kids and yearling wethers. It is unacceptable to use a female goat for this holiday feast. In 2022, it will occur September 26th through October 4th.

Mawlid al-Nabi: The prophet Muhammad was the founder of the Islam faith and this holiday celebrates his birthday. It will occur on October 7, 2022. The holiday begins on the sunset of the previous day due to the Islamic calendar being a lunar calendar and its days beginning at sunset.

Chanukah/Hanukkah: This is the Jewish festival of rededication and is celebrated for eight days from December 18, 2022 thru December 26, 2022.

Christmas: This Christian holiday, celebrating the birth of Jesus, annually falls on December 25th. It can be difficult to market for this holiday because the preference is for young milk fed kids and lambs. This requires October births, May breedings, to hit this out of season market.

There are several other special markets for goat that do not have the religious ties of the previously mentioned holidays. Much of the Hispanic culture enjoys goat meat for barbeques. Two popular items are 15 to 30 pound, suckling kids for cabrito and large weaned market kids for seco de chivo. This is especially popular at Cinco de Mayo celebrations. (May 5th)

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Photo Courtesy of Mia Cory

Carbon Cycles in Grasslands continued from page 8

Understanding carbon

The carbon cycle is one of Earth's most fundamental processes that sustains all life; carbon constantly transfers between different reservoirs – from the atmosphere, to the oceans, to photosynthesis of plants and the capture of carbon in fertile soil. Excess burning of fossil fuels, agricultural practices and other human activities have introduced major perturbations to this delicate carbon balance.

For over a decade, Smith and colleagues have worked in grasslands doing experiments that mimic drought and other conditions to determine how such natural carbon processes play out across different ecosystems. They have long hypothesized that while dry conditions generally stifle soil carbon sequestration, periodic deluges of rain create “hot moments” in time and “hot spots” in the landscape, where carbon cycling happens in rapid bursts. Such events could lead to an overall increase in the health of the land, under conditions that would otherwise lead to devastatingly low fertility and productivity.

“These deluges may actually rescue the system from drought,” Smith said.

Building on this knowledge base, the team is now for the first time trying to understand the consequences of droughts and deluges, through landscape-level observations as well as computer modeling. Their aim is to capture weather events that aren't reflected well in existing earth system models.

Imposing drought and deluge conditions

Smith's fieldwork involves the construction of five 25-meter (80-foot) cold-frame shelters that are covered in roofing material and allow the team to control precipitation while imposing drought and deluge conditions on the grasses and native plant species underneath. They expect to have the shelters in place next spring and will collect data over the following three years.

The research team will also simulate extreme drought, deluge and combined effects using a DOE earth system model. Their goal is to compare their experimental observations, which include the information from their shelters as well as remotely sensed observations, with the model's simulations. Their efforts should fill crucial gaps in models that do not currently include drought-deluge patterns afforded by climate change.

The CSU team includes Anping Chen, assistant professor in the Department of Biology, who will assist in the modeling and remote sensing aspects of the project. Other collaborators: Assistant Professor Daniela Cusack in the Warner College of Natural Resources, who will bring expertise of below-ground processes including root growth and dynamics in grasslands; Professor Alan Knapp who is also an expert in grassland ecosystems, and former CSU Ph.D. student Andrew Felton, now at Chapman University, who will help with remote sensing. The team will also partner with David Hoover at the U.S. Department of Agriculture-Agricultural Research Service for help with eco-hydrology, sensor networks and carbon fluxes in the soil.

The Department of Biology is in the College of Natural Sciences.

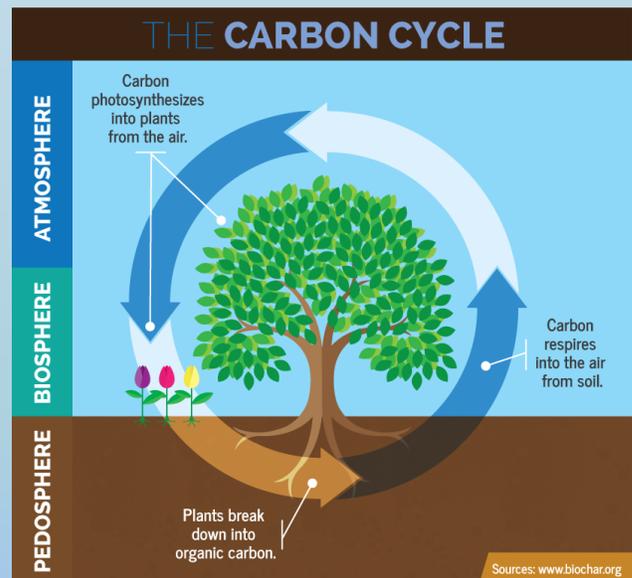


Photo from Wikimedia Commons

Feral Swine continued from page 2

The partnership formed in the early 2000s as a task force to manage invasive feral swine, which are incredibly hardy animals and can survive, even thrive, in almost any habitat. In addition, high reproductive rates allow the swine to establish new populations very effectively.

The wild pigs are targeted because they root up crops and pastures causing billions in damage nationwide each year. Feral swine also spread disease to livestock, wildlife and humans. Ground-nesting birds and other wildlife are easy prey for feral swine. And the swine put native wildlife at risk by competing for resources and destroying habitats and ecosystems.

The Colorado feral swine task force continues to monitor for reintroductions to ensure the state remains free of this invasive species and the damage it can inflict.

How to help keep Colorado free of feral swine:

Spread the word that in Colorado it's illegal to possess, transport or release feral swine, wild swine species or hybrids.

Report sightings of feral swine or transportation activities to USDA Wildlife Services at 1-866-4-USA-WIS (1-866-487-3297) or Colorado Parks and Wildlife at 303-297-1192.

For more information about the National Feral Swine Damage Management Program, visit: <https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/operational-activities/feral-swine>



Marketing Lambs & Goats continued from page 10

The Chinese culture can be a strong market for 60 to 80 pound market goats. This is especially true in the colder months.

The 4th of July is another good opportunity to market goats. Once again, the smaller weight kids for small celebrations, while yearling bucks, wethers, and does are good for large barbeques.

The month of August is filled with a variety of Caribbean holidays for which goat meat is desired. Some of these include Carnival, Carifest, and the Jamaican Independence Day. The optimal goats for this group of consumers are young, 60 to 80 pound bucks in their prime. However, economics may drive some consumers to purchase older goats of either sex.

I hope that this helps you better understand some of the niche marketing opportunities that exist for lamb and goat producers. And please remember that many of the holidays discussed here have moving dates from year to year. Therefore, it is important that you check each year to see when those holidays are, if you plan to market to those cultural groups.

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Check out our Dryland Pasture Assessment to see how your pasture measures up!

<https://sam.extension.colostate.edu/wp-content/uploads/sites/2/2018/07/GrazingGuide.pdf>

Do you have a question about managing your small acreage?

Contact CSU Extension /NRCS Small Acreage Coordinator(s):

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