



Arizona Range and Livestock News

ARIZONA COOPERATIVE EXTENSION

March 2023

Contact information update needed!



**IMPORTANT
NOTICE**

We will be switching to a new email platform that is provided through the University of Arizona before the next newsletter is distributed. It requires that all contacts have a first name, last name, and email address. We are also updating our postal mailing list.



If you would like to continue to receive this publication, please go to this link:
<https://tinyurl.com/RangeLivestock> or scan the QR code to enter your updated contact information. This includes mailed paper copies!



Arizona Cooperative Extension Update

By Dr. Ethan Orr

Associate Director, Agriculture, Natural Resources, and Economic Development
Arizona Cooperative Extension Service
Associate Specialist, Community Vitality and Economic Development
College of Agriculture and Life Sciences

The Arizona Cooperative Extension is working to support our existing Range and Livestock positions and expand our capacity to deliver on our mission to serve production animal growers.

The Arizona Extension is in the process of hiring 10 new Range and Livestock faculty positions.

Animal Health – Veterinarian (Tucson)
Plant Herbivore / Targeted Grazing (Tucson)
Livestock Biotechnology and Genomics (Tucson)
Production Economist (Tucson)
Public Grazing Camp Verde (V-V)

Range/Grazing – Holbrook
Range/ Grazing – Camp Verde (V-V)
Livestock – Cottonwood
Livestock – Safford
Livestock– Show Low

My goal to increase Extension presence and support and increase our capacity to serve producers around the state and especially in northern and eastern Arizona. Additionally, I want to take advantage on the University facilities in the Verde Valley, including the V-V and the DK Ranch. I want to build teams of range and livestock faculty at the University Experiment Stations to support each other and work as a team to serve you.

I have been listening to industry and community stakeholders and Extension faculty to decide how to invest the money that we receive from the state in order to serve you, and I would appreciate hearing from you. If you have thoughts or questions about the new Extension positions or suggestions regarding how we can more effectively serve our state, please email me at eorr@arizona.edu.

Featured Plant: Cliffrose

Purshia mexicana

Cliffrose is a native perennial evergreen shrub, sometimes becoming tree-like with heights from 3 to 12 feet. The bark is reddish-brown, with the older bark becoming gray and shreddy. Five creamy white petals form the fragrant flowers that occur at the end of twigs, blooming from April to September. The fruit is an achene with a whitish, feathery, persistent style (plume). The small leaves have 3 to 7 lobes and are dark green above and white beneath.



In Arizona, Cliffrose occurs in Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties from 3,000 to 8,000 feet in elevation. It is common on dry slopes, mesas, and hillsides, especially in the pinyon-juniper plant community, and is often found on limy soils. Cliffrose grows best where annual precipitation is between 14-20 inches.

Sometimes called quinine-bush due to the fragrance of the leaves, it is an important browse for cattle, sheep, and deer despite the bitter taste of the foliage. Once established, it is quite drought tolerant.

Native Americans used the plant for a number of medicinal uses (cold remedy, laxative, a wash for wounds), to make arrows, and braided strips of bark were made into clothing, sandals, rope, and mats.

The genus name *Purshia* is named after a Saxon plant collector, Frederick Traugott Pursh (1774-1820) who was the first person to write about the Lewis and Clark plant collections.

Arizona Cattle Operators Workshop Series (AZCOWS)

We are excited to launch our applications for the first class of the Arizona Cattle Operators Workshop Series (AZCOWS). This 7-day workshop series will be spaced over a typical cow/calf production year with participants meeting one day a month at the University of Arizona Experimental Stations V-V Ranch or DK Cracchiolo Ranch near Camp Verde, AZ. The cost to attend will be \$400 dollars which includes all meals and resources you will receive in the course. Space is limited so please get your applications in sooner rather than later to secure your spot! To ensure that participants have enough hands-on learning and one-on-one time with the experts the class will be capped at 35 participants.

More information and Registration is available at: <https://extension.arizona.edu/arizona-cattle-operators-workshop-series-azcows>

Applications are due by May 2, 2023.

Questions? Contact Joslyn Beard: joslynbeard@arizona.edu or 575-571-6689.

THE UNIVERSITY OF ARIZONA
Cooperative Extension
Livestock Extension

AZCOWS
Ranch Practicum

Applications Available March 1, 2023

A SYSTEMS APPROACH TO RANCHING IN ARIZONA

Hands on learning
Each workshop will be held at the University of Arizona Experimental Stations V-V Ranch or DK Cracchiolo Ranch near Camp Verde, AZ. Participants are given a hands-on, educational program designed for the skills and knowledge needed in today's beef industry.

Production Year
Participants will be committed to a 7 day workshop series spaced over a typical cow-calf production year. Workshops do build on each other, so attending the sessions in order is critical.

Learn from fellow ranchers
The course will be taught by the collaboration of University of Arizona Extension specialists and industry leaders. In addition to fostering collegiality and relationships between fellow ranchers.

FOR MORE INFORMATION CONTACT : Dr. Joslyn Beard
joslynbeard@arizona.edu
575-571-6689

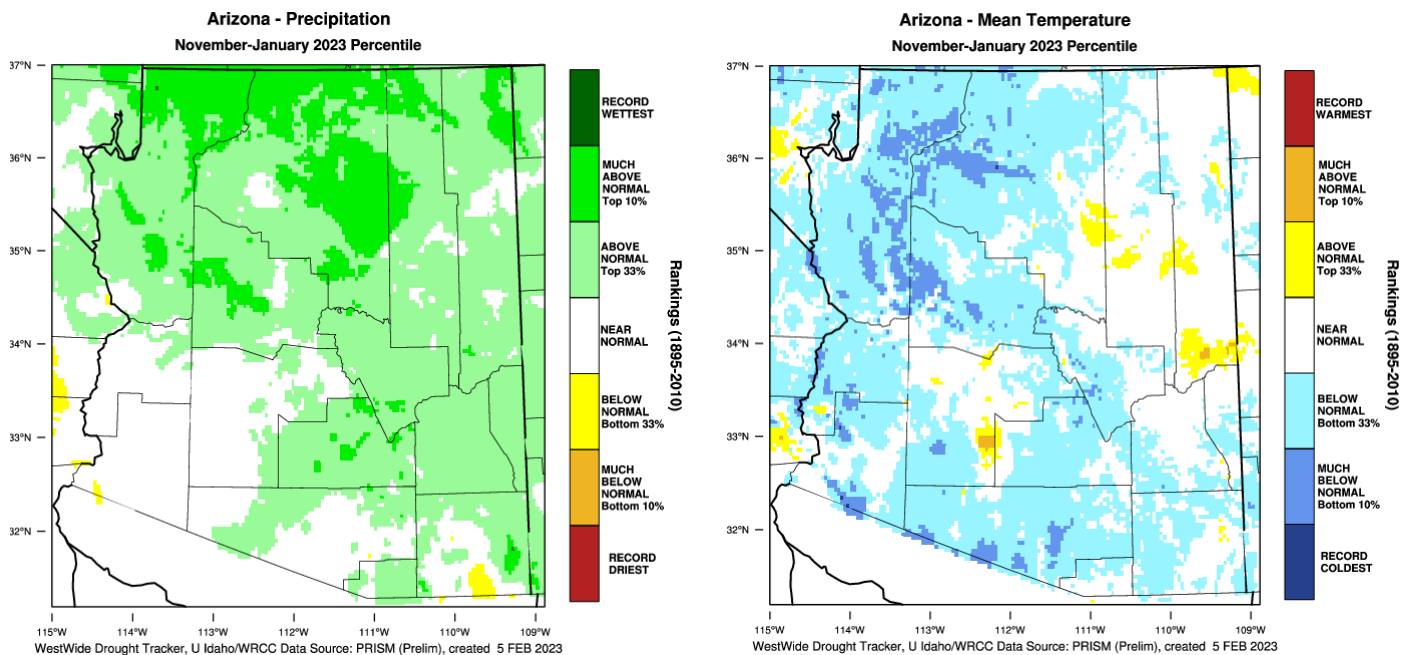




Arizona Seasonal Climate Summary: Winter 2022-23

Feb 9, 2023 - The outlook for a dry winter based on a stubborn La Nina event hanging around, fortunately, did not pan out across Arizona over the past several months. Relatively cool and dry conditions in November were expected given the dry outlook, but conditions turned much wetter in December. A series of strong winter storms plowed through the western U.S. throughout the month, including several 'atmospheric rivers' that brought heavy rain and snow to California. A couple of these storms pushed far enough south to impact Arizona including an unusual event in early December that brought flooding to central Arizona. A plume of unusually warm and moist subtropical air crossed into Arizona and brought an extended heavy rain event to parts of central and eastern Arizona where precipitation totals topped 2-3 inches.

The winter storm events continued through the rest of December and into January, but were much colder bringing substantial high elevation snow to much of the Southwest. By the end of January, snow pack was near record levels at several monitoring sites in central and eastern Arizona. Precipitation amounts for January were impressive with more than half the state observing much-above-average precipitation (top 10% of all January precipitation amounts). Overall, the active weather pattern kept temperatures below-average through the November-January period and precipitation amounts above-average. Short-term drought conditions continued to improve with the ongoing above-average precipitation over the past several months. Almost half of Arizona is drought free on the latest update of the U.S. Drought Monitor with only small areas of moderate drought hanging on over far western parts of the state.



August-October precipitation and temperature rankings from the WestWide Drought Tracker

(<http://www.wrcc.dri.edu/wwdt/>)



More information available at :
<http://cals.arizona.edu/climate>
<http://www.climas.arizona.edu>

Questions /comments? Contact Mike Crimmins, crimmins@email.arizona.edu



Current Soil Moisture Conditions

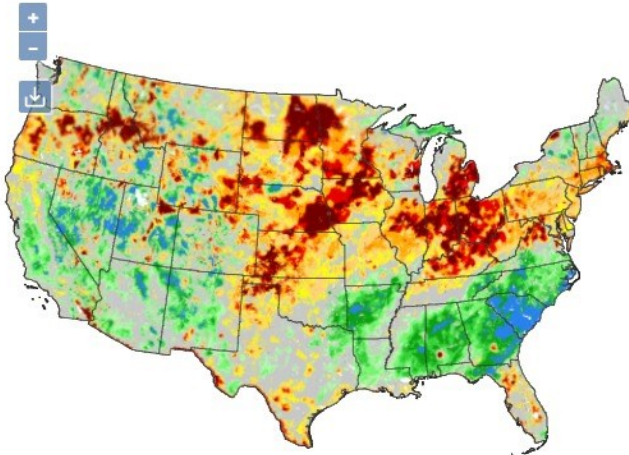
0-100 cm Soil Moisture Percentile 20 cm Soil Moisture Percentile

NASA's Short-term Prediction and Transition Center – Land Information System (SPoRT-LIS) provides high-resolution (about 3-km) gridded soil moisture products in real-time to support regional and local modeling and improve situational awareness. The 0-100 cm soil moisture percentile data has shown to be a utility for drought monitoring. The near-surface (0-10 cm) layer responds quickly to heavy precipitation and rapidly drying events. In deeper layers, soil moisture evolves more slowly and has demonstrated greater utility overall for drought monitoring purposes since drought evolves typically on timescales of weeks to years. [Learn more.](#)

0-100 cm Soil Moisture Percentile



*Currently, data are only available for the contiguous U.S.
Source(s): NASA



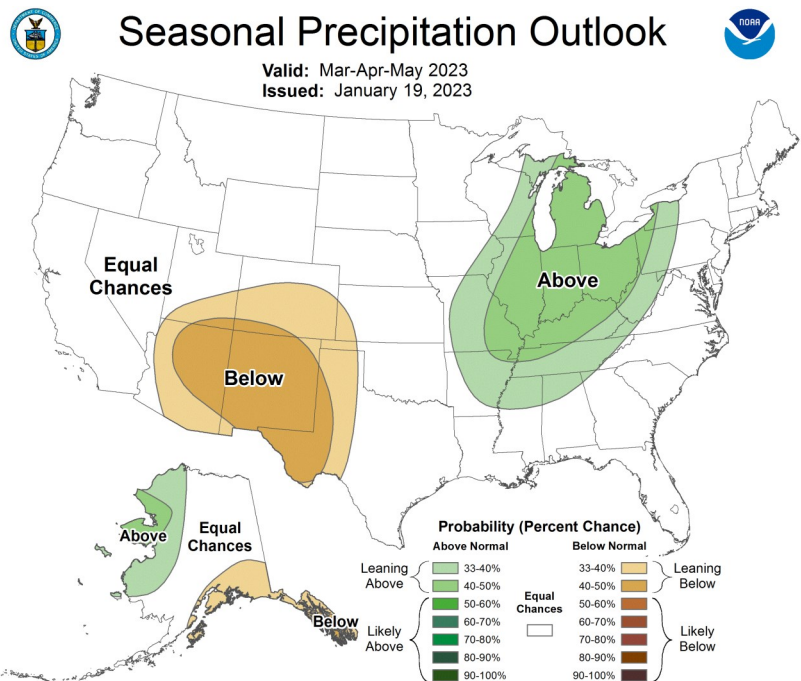
Updates Daily - 02/13/23

[Learn more about these data](#)

The National Integrated Drought Information System (NIDIS) is a multi-agency effort to provide useful, real-time drought monitoring information for the whole U.S. NIDIS has developed a new website called Drought.Gov as a clearinghouse to multiple types of drought information from monitoring indices to planning guidance documents. There are several handy dashboard pages that provide interactive

maps of current conditions and historical times of past conditions (see Data and Maps, Current Conditions). Other tools include access to hard to find datasets like recent soil moisture conditions as shown above. The 0-100cm Soil Moisture Percentile map shows modeled soil moisture values across the continental U.S. on a daily basis. The percentile rank is based on a modeled historical time series and gives an indication of how unusual current soil moisture conditions are relative to that record. Values above the 50th percentile unusually wet conditions while values below that threshold indicate dry conditions. More tools and resources are available at the site <https://www.drought.gov/>.

The March through May seasonal precipitation outlook issued by the NOAA Climate Prediction Center in mid-January depicts increased chances of below average total precipitation for this three month period across all of the Southwest. This outlook indicates that there is an increased chance that the total precipitation over the March-April period will be below the 1991-2020 average for these months. The shift in odds covers much of New Mexico which has observed drier than average conditions this past winter, but is lower over much of Arizona indicating lower confidence. The outlook is based on lingering La Nina conditions, but this event is weakening quickly and hasn't brought drier than average conditions to Arizona this past winter anyway. This leads to overall lower than average confidence in this outlook. Temperatures are expected to be above-average if drier than average conditions do develop this spring. Stay tuned to updates here https://www.cpc.ncep.noaa.gov/products/predictions/long_range/



Here's the beef: Basics for selecting a bull.

Posted on October 1, 2019 by kaitlyn.arnold

Bulls provide the biggest proportion of calf crop genetics, so it is important to select a herd sire that can produce desired offspring.

Basics to consider in selecting a bull include breed type, parentage (pedigree), physical appearance, performance records and genetics. Each one of these factors was discussed by Joe Paschal of Texas A&M AgriLife Extension during the 2018 Texas A&M Beef Cattle Short Course. The information in this article is taken from Paschal's presentation, unless otherwise noted.

There are more than 60 different breeds of beef cattle in the United States, so choosing a breed of a bull can be a daunting task. Fortunately, most of the breeds in Texas fit one of five groups: British, continental beef, continental dual purpose, Brahman or American. The breed selection process is simplified first by choosing a group that can meet ranch production and marketing objectives and then selecting a breed within the chosen group.

When using physical appearance as bull selection criteria, one of the first things to evaluate is structural correctness. Without structural correctness, a bull will not perform nor last as long as expected. A bull should have a well-structured shoulder with his front legs at a right angle (90 degrees) from an imaginary line drawn from the top of the shoulder through the point of the shoulder to the elbow. You want a 120-degree angle from the elbow through the back of the pastern with the front hooves slightly turned outward about 20 degrees. On a structurally sound bull, the two front legs are parallel to each other.

Hindquarter structural correctness includes a slight slope from the hooks to the pins with an imaginary vertical line from the hook through the stifle. A right angle should exist from the hook through the pins to the stifle and a 120-degree angle from the stifle to the hock and down the

pastern. Like the forequarters, the hind legs should be parallel and the hooves slightly turned outward about 20 degrees. If you don't remember all these angles, watch the bull walk on a level surface. Structurally correct cattle will place each hind hoof in the track of the corresponding front hoof.

Bulls should look masculine and be thickest through the middle of their hindquarters when viewed from the rear. A strong, wide, flat back is an indicator of good muscling. Bulls with wide shoulders are not necessarily muscular, but circumference of the upper forearm is a good indicator of muscling.

Reproductive evaluation, which includes a breeding soundness examination, is used to help measure the potential sexual performance of a bull. Request results of a recent breeding soundness examination from the seller when buying a bull and conduct breeding soundness examinations on herd bulls annually before breeding season. If bulls cannot pass breeding soundness exams, cull them from the herd because they will not settle their share of the cows. It is best to have breeding soundness exams done by veterinarians.

"The basic breeding soundness exam consists of physical evaluation of the animal, examination of reproductive organs, measurement of scrotal size and evaluation of semen. Physical evaluations include structure, feet, eyes, mouth, gait and body condition," said Clay Mathis of King Ranch Institute for Ranch Management. "Faults in conformation and injuries can result in the bull becoming lame soon after the breeding season begins. Structure soundness of feet and legs is of paramount importance if the bull is to travel and mount females in heat."

"Poor vision makes a bull dangerous to handle and he usually is dominated by other bulls to the point his breeding effectiveness is reduced. Vision

is an important factor in detecting cow riding activity because they use it to find females in heat. Both eyes should have an absence of injuries, disease, cancer growths and pink eye scars. Examine older bulls for lost and severely worn teeth,” Mathis said.

“Lump jaw (Actinomycosis) is a chronic bone and soft tissue infection that is not responsive to treatment. Cull bulls with lump jaw as soon as it is detected. Body condition of 5 to 6 generally is recommended for range bulls entering the breeding season.”

“Following the physical evaluation, a complete rectal exam of vesicular glands, ampullae and prostate is conducted to determine if there is inflammation, adhesions, or fibrosis. The penis and sheath are examined for any sores, lacerations, abscesses, scar tissue, hair rings, warts or adhesions. When erect, the penis should extend from the sheath in a straight line with the body of the bull,” Mathis said.

Scrotal size correlates well with daily sperm production and is a highly repeatable measure. On yearlings, scrotal circumference should exceed 34 centimeters. Bulls with larger testicles produce more semen, sire sons with larger testicles, generally reach puberty at an earlier age and sire earlier maturing heifers.

“If the bull scores satisfactory on the general physical exam and the complete exam of internal and external reproductive organs, a semen sample is collected and evaluated under a microscope for concentration, motility and morphology. Concentration, expressed as number of normal sperm cells present in each cubic centimeter of ejaculate, and volume, number of ccs of ejaculate, are important measurements in determining semen quality. Together, these values represent total sperm delivery which is an indicator of the bull’s serving capacity,” Mathis said.

Measuring motility of individual sperm cells is important for determining breeding soundness of

bulls. Ideally, the ejaculate sample should contain more than 90 percent vigorous, progressively motile sperm cells. Morphology, or the shape of the sperm cells, is also an important semen characteristic. A small sample of semen is stained on a microscope slide and at least 100 cells are graded for normal shape. Sperm cells with droplets, bent or coiled tails, malformed heads or other defects are less apt to fertilize an egg.

“A bull can rank high in a breeding soundness exam, but if he lacks libido (sex drive), the animal will not have the ambition to settle a large number of cows. There is no practical way to estimate a bull’s potential mating ability except to observe him servicing cows,” Mathis said. “Assessment of libido and mating ability is important to help detect physical abnormalities that would prevent a bull with good semen from settling cows.”

Parentage, performance records and genetics

Performance evaluation of the individual, his progeny and relatives is also a basic herd sire selection criterion.

All meaningful performance records are adjusted for sex, calf age and dam age if there is maternal influence. It is important to compare bulls and females within contemporary groups. A contemporary group is cattle of the same breed composition and sex, similar in age and raised under the same management conditions. Cattle of a contemporary group have had an equal opportunity to perform. Performance records should account for genetic change due to selection and be comparable across herds and years. Traits included in performance records are shown in Table 2.

Expected progeny differences (EPD) and accuracy (ACC) values are refined forms of performance records. An EPD is the estimate of how future progeny are expected to perform in each of the traits listed in Table 2. It is expressed as either a plus or minus number and has an accuracy value that increases with additional records. As more records are added, the EPD is a more reliable

predictor of the animal's genetic potential. It is possible to calculate EPDs on animals that have not had progeny if they have relatives with an EPD. Performance records are submitted by individual seed stock producers to their respective breed associations who calculate EPDs.

Genetic markers are used to develop genomic enhanced EPDs (GE EPD).

Genes responsible for different traits have specific locations on chromosomes and these locations are known as markers.

There are a number of commercial markers

available for color, carcass merit, pregnancy and various production traits.

Genomic enhanced EPDs combine all available information from genetic markers with EPDs to improve their accuracy, especially on young bulls with few or no progeny.

In summary, select bulls using EPDs to improve traits that are of economic value to your operation. Select bulls that have a good health program and have passed a breeding soundness examination. Remember that selection goals should be stationary targets. Do not continue selecting for traits unless you know they have economic value.

Virtual Fence

The University of Arizona is studying rangeland applications, animal welfare, and economics of virtual fencing on two cow-calf herds on the Santa Rita Experimental Range, near Green Valley, AZ. Virtual fence collars, also known as 'invisible fence' or 'geo-fence' collars, use an electronic device worn around the livestock's neck (e.g. collar) to contain animals within an area. Virtual fences work differently than traditional fences, virtual fences rely on training the animals to respond to auditory and electrical cues similar to how you might train a dog. Virtual fences are created in a mobile app or web browser, which sends a programmed signal to the virtual fence collars through a cellular or radio network. Unlike a traditional barbed wire fence, creating a new virtual fence takes very little effort. Typically, a virtual fence can be created and uploaded to the virtual fences collars in under an hour.

The goals of the University of Arizona's virtual fence project are to 1. Determine the how effective virtual fencing is as an animal management tool and understand the effects of virtual fencing on animal welfare, 2. Evaluate virtual fencing as a technology to improve rangeland condition and sustainability, and 3. Determine if virtual fencing technology is economically feasible for producers in Arizona and the Southwestern U.S.

Initial findings from the University of Arizona's virtual fence study show some promising results. Nearly all cattle in one of the study herds were successfully 'passively captured' over a 4-day period and moved to the next pasture in the grazing rotation during the Summer of 2022. Passive capture is using a virtual fence boundary to slowly button up a pasture to move the cattle from one pasture to another, as if you were gathering on horseback. At the end of a grazing rotation, a gate was opened for the next pasture and virtual fences were placed behind cattle, preventing their return to the previous pasture.

Cattle were able to move freely to the next pasture in the rotation, but prevented from returning. From the results virtual fence technology may help reduce labor and labor costs related to moving cattle between pastures, by performing a virtual 'round-up' over a 4-day period. Additionally, virtual fences were >90% effective at keeping cattle out a riparian area, area where forage is near a body of water such as a creek or stream, on the Santa Rita Experimental Range. While more research needs to be done on the effectiveness of virtual fencing for riparian enclosures across different seasons and in different vegetation types, virtual fence technology does seem like a promising solution to help mitigate effects to sensitive riparian areas

while negating the cost of installing barbed-wire fencing along riparian areas.

For more information, please contact Dr. George Ruyle gruyle@cals.arizona.edu Dr. Aaron Lien alien@arizona.edu or Dr. Joslyn Beard joslynbeard@arizona.edu

Spring Toxic Plants

Ashley Hall

After a wet winter, rangelands across the state are beginning to green up and there are several toxic plants germinating!

Poisonous, or toxic, plants contain compounds that may cause death, reproductive problems, birth defects, neurological, digestive, or physiological disorders in livestock. These toxins in vegetation are often called secondary compounds and are made by plants in response to grazing, microbes, other plants (allelopathy), or environmental stresses. Poisonous plants are grouped according to their primary type of poison. The more common types of poisons include:

1. Alkaloids
2. Glycosides
3. Organic acids
4. Resins
5. Phytotoxins
6. Minerals
7. Miscellaneous unknown poisons

This article is a summary of the publication Poisonous Plants on Arizona Rangelands and will focus on cool-season annual toxic plants germinating now and throughout the spring. Additional plant photos, interactive distribution map, and information about each species will be linked throughout the text. The full publication can be accessed here:

<https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1828-2020.pdf>



Photo 1. Freckled milk vetch Max Licher, SEINet

Locoweeds

Locoweed (*Astragalus* and *Oxytropis* species) has been reported to be the most widespread poisonous plant problem in the western United States. Fungal endophytes produce swainsonine, an indolizidine alkaloid. There are nearly 100 different species in Arizona but not all are poisonous. If the species of locoweed is poisonous, all plant parts are toxic in all stages of growth, even when dry.

Symptoms include stiff or clumsy gait, low head carriage, salivation, seizures, apparent blindness, increasing incoordination, weakness, and death. Cattle, sheep, and horses are all susceptible to locoweed poisoning. Locoweeds can also have a negative impact to female reproduction (reduced ovarian function, delayed estrus,

delayed placentation, etc.) and offspring that go to full term are often born small, weak, with skeletal deformities or can have a high death rate.

The most common poisonous locoweeds in Arizona are:

- [Freckled Milk Vetch](#) – Photo 1 (*Astragalus lentiginosus*)
- [Woolly Locoweed](#) (*Astragalus mollissimus*)
- [Wooton's Locoweed](#) (*Astragalus wootonii*)
- [Ashen Milk Vetch](#) (*Astragalus tephrodes*)
- [Sheep Milk Vetch](#) (*Astragalus nothoxys*)

Mustards

There are two common, cool-season species in the mustard family, London rocket (*Sisymbrium irio*) and tansy mustard (*Descurainia pinnata*), that can accumulate poisonous levels of Nitrites. Many plants naturally accumulate nitrates within their tissues but when levels surpass 1.5% nitrates dry weight, plants are more likely to be lethal to livestock (Panter et al., 2011). When nitrites are absorbed into the bloodstream, they bind with hemoglobin, which prevents animals from being able to uptake oxygen and eventually suffocates them.

Symptoms of nitrate poisoning include blue membranes, excessive urination and salivation, difficulty breathing and brown blood color.



Photo 2. London rocket Max Licher, SEINet

Horses and pigs are less likely than ruminants to be poisoned by plants high in nitrate because they cannot easily convert nitrate to nitrite in the digestive systems (Knight and Walter, 2001). Cattle are more frequently poisoned than other animals. Nitrates can cause abortions in cattle even at low, non-lethal amounts. Death is relatively rapid once enough plant material with high nitrate content is consumed, but symptoms can be treated with methylene blue.

[London rocket](#) (photo 2) is a common agriculture weed and can accidentally be harvested a baled with hay.

[Tansy mustard](#) (photo 3) does not typically bloom every year but will likely be found during April to August. It is dangerous if eaten in large amounts during the blooming period, as the plant matures and goes to seed it loses its toxicity.



Photo 3. Tansy mustard Max Licher, SEINet

Fiddleneck (*Amsinckia intermedia*)

The seeds of [fiddleneck](#) (photo 4) are especially toxic and contain pyrrolizidine alkaloids which affects cattle, horses, and pigs. Eating this plant can cause liver disease and secondary photosensitization. This plant may also accumulate toxic levels of nitrates if rapidly growing.

Symptoms can be more pronounced in horses and begin with the refusal of grain, jaundice and oral ulcers. Later on, animals become sluggish/sleepy, emaciated and may have distended abdomens due to fluid accumulation.



Photo 4. Fiddleneck Max Licher, SEINet



Photo 5. Cocklebur Max Licher, SEINet

Cocklebur (*Xanthium strumarium*)

Seeds of [cocklebur](#) (photo 5) contain diterpene glycosides but are rarely eaten due to their spines. After germination, toxins become distributed to seedlings and remain through the early growth stage. The concentration drops quickly as the first true leaves develop. A toxic dose of seedlings is 0.75–1.5% of the animal's body weight. Poisoning is apparent within 12–48 hours. After onset of symptoms, death can occur within a few hours to several days

Symptoms include weakness, depression, an unsteady gait, rapid/labored breathing, weak and rapid pulse, below-normal body temperature, nausea, and vomiting.

Arizona Livestock Incident Response Team

Arizona Livestock Incident Response Team (ALIRT) is designed to diagnosis numerous unexplained animal deaths likely caused by disease or plant poisoning. The goal is to provide trained first responders to gather data and information for timely diagnosis in order to reduce further livestock losses and help mitigate economic effects and impacts on surviving animals.

If an unexpected or undetermined animal health, behavior, or death is suspected, contact your veterinarian, Arizona State Veterinarians office, or local county Cooperative Extension Agent. ALIRT Telephone Numbers: Office of the Arizona State Veterinarian 1-888-742-5334 option 5 or Arizona Veterinary Diagnostic Laboratory 1-520-621-2356. Additional contact information can be found at <https://extension.arizona.edu/alirt-incident-reporting>.

Additional Resources

Allison, C.D, Turner, J.L, and Wenzel, J.C (2016). *Poisonous Plants of New Mexico Rangelands*. New Mexico State University Cooperative Extension Circular 678. <https://pubs.nmsu.edu/circulars/CR636/index.html> and <https://pubs.nmsu.edu/circulars/CR678/#:~:text=Oleander%20and%20dogbane%20are%20the,taste%2C%20and%20are%20foaming%20com pounds>.

Locoweed Information <https://extension.arizona.edu/locoweed-information-guide>

Hall, A.L. and Gornish, E. (2021). "Poisonous Plans on Arizona Rangelands" <https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1828-2020.pdf>

James, L. F., Gardner, D. R., Lee, S. T., Panter, K. E., Pfister, J. A., Ralphs, M. H., & Stegelmeier, B. L. (2005). *Important Poisonous Plants on Rangelands*. *Rangelands*, 27(5), 3-9.

Knight, A.P. and Walter, R.G (2001). *A Guide to Plant Poisoning of Animals in North America*. Teton NewMedia.

Panter, K.E., Ralphs, M.H., Pfister, J.A., D.R. Gardner, D.R., Stegelmeier, B.L., Lee, S.T., Welch, K.D., Green, B.T., Davis, T.Z., and Cook, D. (2011). *Plants Poisonous to Livestock in the Western States*. U.S. Department of Agriculture, Agriculture Bulletin No. 415. Available online at <https://www.ars.usda.gov/is/np/PoisonousPlants/PoisonousPlants.pdf>

Monitoring Minute:

Sampling Vegetation Attributes Interagency Technical Reference

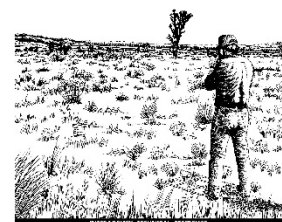
The Interagency Technical Reference for Sampling Vegetation Attributes was written as a joint effort at the national level by the Cooperative Extension Service, the U.S. Department of Agriculture's Forest Service and Natural Resource Conservation Service, and the U.S. Department of the Interior Bureau of Land Management. The intent of this technical reference is "to provide the basis for consistent, uniform, and standard vegetation attribute sampling that is economical, repeatable, statistically reliable, and technically adequate. While this guide is not all-inclusive, it does include the primary sampling methods used across the West. An omission of a particular sampling method does not mean that the method is not valid in specific locations; it simply means that it is not widely used or recognized throughout the western states."

The guide includes definitions of inventory vs monitoring and discusses the need to identify the appropriate sampling techniques by considering the following for a monitoring program:

- life form (grass, forb, shrub, or tree),
- distribution patterns of individuals of a species,
- distribution patterns between species (community mosaic pattern),
- efficiency of data collection from an economic standpoint,
- and accuracy and precision of the data.

The document clearly outlines various study designs, attributes that can be measured, and different methods that can be used. The appendices include monitoring forms with examples and illustrations with monitoring frame designs. The technical reference can be found on the Cooperative Extension Rangeland Monitoring website at: <https://extension.arizona.edu/rangeland-monitoring> under Monitoring Guides and Tools.

SAMPLING VEGETATION ATTRIBUTES



2023 Producer Updates

MEDICALLY IMPORTANT ANTIMICROBIALS FOR FOOD-PRODUCING ANIMALS MOVING TO PRESCRIPTION (RX) ONLY EFFECTIVE JUNE 2023

- Any products that contain: Oxytetracycline, Penicillin, Sulfa-based antibiotics, Tylosin, Cephapirin and Cephaperin Benzathine, Lincomycin, Gentamicin
- What should you do? Establish a relationship with a Veterinarian or talk to your existing veterinarian to ensure you have a valid vet-client patient relationship. This will facilitate obtaining prescriptions for these medications when needed from your veterinarian.
- Beef Quality Assurance certifications now require proof of a valid vet-client patient relationship.

Legal Definition of a Veterinary Client-Patient Relationship (from AZ revised statute 32-2201)

"Veterinarian client patient relationship" means all of the following:

- a. The veterinarian has assumed the responsibility for making medical judgments regarding the animal's health and need for medical treatment and the client, owner or caretaker has agreed to follow the veterinarian's instructions.
- b. The veterinarian has sufficient knowledge of the animal to initiate at least a general or preliminary diagnosis of the animal's medical condition. Sufficient knowledge is obtained when the veterinarian has recently seen and is personally acquainted with the keeping and caring of the animal as a result of examining the animal, when the veterinarian makes medically appropriate and timely visits to the premises where the animal is kept or when a veterinarian affiliated with the practice has reviewed the medical record of such examinations or visits.
- c. The veterinarian is readily available for a follow-up evaluation, or the veterinarian has arranged for either of the following:
 - i. Emergency coverage.
 - ii. Continuing care and treatment by another veterinarian who has access to the animal's medical records.

ANIMAL ELECTRONIC ID (RFID) REQUIREMENT PROPOSED BY APHIS

- The United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) is proposing to amend animal disease traceability regulations and require electronic identification for interstate movement of certain cattle and bison. The goal is to increase traceability in the advent of a disease outbreak, such as foot and mouth.
- Animals must have a visual and electronic (RFID) tag when they leave your ranch.
- You do NOT need to purchase an RFID reader unless you intend to use the RFID tag for your own record keeping, you can continue to use visual ID tags.
- You need to have a premise ID (<https://agriculture.az.gov/animals/state-veterinarians-office/national-premise-az-flock-ids>) to obtain these tags. The Az Dept of Ag will assign one to you. There are currently a limited number of RFID tags available at no charge through the Arizona department of agriculture.

FMD VACCINE BANK

- "Foot-and-mouth" disease outbreaks across the globe continue to result in disruptions to commerce and depopulated livestock; the need for bold action is immediate and evident. Every continent except Antarctica, Australia and North America currently has FMD outbreaks.
- The government has recently increased its budget to increase the amount of the US reserve of FMD vaccine.
- There has not been an FMD outbreak in the USA since 1929. But given the amount of international travel and our porous borders more precautionary measures are needed.

TESTING FOR BOVINE VIRAL DIARRHEA (BVD) PERSISTENTLY INFECTED ANIMALS

- BVD can infect pregnant cattle causing them to abort their calf. If they do not abort, the calf may be born as a “BVD-PI” calf.
- BVD-PI calves appear normal, but are shedding the virus and infecting other animals. Testing is the only way to find and eliminate these animals from your operation.
- Testing uses a small ear notch or blood sample, and can be submitted to a lab or tested at the farm using a BVD-PI Snap Test.
- If you don’t currently test, talk to your veterinarian about implementing testing as a part of your overall herd health plan.

MINERAL AND PROTEIN SUPPLEMENTATION

- Arizona forages have been shown to be deficient in several important minerals consistently around the state, including Copper, Zinc, and Selenium which have effects on reproduction, immune function, and growth.
- Supplementation is an easy way to ensure your cattle have what they need to produce healthy, heavy calves. Preferably use a loose mineral for cattle, and contact your local extension office, animal health representative, or veterinarian to ensure your cattle are getting what they need.
- Protein is typically a limiting factor in Arizona forages, cattle are unable to effectively utilize mature, poor quality forage once the protein drops below approximately 6.25%. A protein supplement (22% or more CP) is recommended to help cattle utilize forages effectively. Some producers target the winter season (Nov – March), and some see benefit in providing it all year.

Local contacts for more information:

Barbara Jackson

bsj@animalhealthexpress.com

800-533-8115 ext. 210

animalhealthexpress.com

Ashley Wright

awright134@arizona.edu

520-766-3605

extension.arizona.edu/cochise

Kansas State beef cattle experts offer tips on ways to reduce parasite loads in young animals

Oct. 26, 2021

MANHATTAN, Kan. — Do the terms worms and life cycles bring back memories of biology class? Well in the case of beef cattle, understanding the life cycle of worms – otherwise known as internal parasites -- is key to reducing health impacts in calves, say the experts at Kansas State University’s Beef Cattle Institute.

Joining in a discussion on a recent Cattle Chat podcast were parasitologists Jeba Chelladurai and Brian Herrin, who serve on faculty with the Department of Diagnostic Medicine and Pathobiology in K-State’s College of Veterinary Medicine.

“Parasites live in the gut of cattle,” said Brad White, veterinarian and BCI director. “They lay eggs while living in the cattle and then leave the body as feces that ends up in the pasture. Once in the pasture the larvae climb on the leaves and then can be consumed again by the grazer.”

White said the number of internal parasites being carried in the body of the beef animal will influence the overall health and weight gain of that infected animal.

“Cattle with a heavy parasite load fail to thrive and appear very thin,” said veterinarian Bob Larson.

Herrin said there are good treatment options for internal parasites on the market but the key is knowing which animals to treat and when.

“We have high quality dewormers but we want to make sure we are using them appropriately,” he said.

Not all cattle in the pasture carry the same parasite load, according to Chelladurai.

“Twenty percent of the animals in the pasture will carry 80% of the parasite load, so in a herd of 100 calves, producers can expect 20 will have most of the burden,” she said.

She added that calves, because of their developing immunity, are more significantly impacted by internal parasites than mature cattle.

“For calves, parasites are a big deal because their immunity hasn’t developed enough to fight off the parasites,” Chelladurai said.

Without doing a fecal egg count, it is hard to know which of the calves is carrying the parasite load, and therefore treating the calves as a group may be the most practical option Herrin said.

“With the majority of the operations, treating calves within the first three months is good and then follow that up one more time again within the year to keep the worm burden low so it doesn’t overwhelm the calves’ systems,” Herrin said.

Stocking rate on the pasture is another factor to watch, according to the experts.

“The more cattle in the pasture, the higher the likelihood that an animal will acquire an infection because of more eggs that are deposited in the pasture,” Chelladurai said.

Along with stocking rate, management can also influence the risk for internal parasites. Herrin said cattle that eat out of bunks or in a dry lot are less likely to be impacted by parasites than those that eat off the ground or graze in the pasture.

If producers follow a rotational grazing scheme, the timing of the rotation is critical, say the parasitologists.

“There needs to be a structured system because once the eggs pass into the feces, they take a few weeks to develop and if we have the timing wrong, infectious larvae might be peaking at the time when the cattle are put back on the pasture,” Herrin said.

White added that parasites don’t thrive in very cold temperatures or extremely hot weather so the timing of the treatment may be dictated by the climate of the region where the cattle live.

He said: “So when the weather is most miserable for people during the year, it will also have a detrimental impact on parasites.”

NOW ACCEPTING APPLICATIONS

LIVESTOCK OPERATOR FIRE AND FLOOD ASSISTANCE PROGRAM (LOFFAP)

Arizona Department of Agriculture
1110 W. Washington Street, Suite 450
Phoenix, AZ 85007

The application period is now open for the LOFFAP2023-3 Grant Cycle. Instructions for completing grant applications can be found in the [LOFFAP Grant Manual & Application Package](#). The Grant Manual and all application forms are available on the AZDA's website at <https://agriculture.az.gov/about-us/divisions/agricultural-consultation-training/livestock-operator-fire-and-flood-assistance>.

Early Review Deadline: 11:59:59 p.m. (MST) Friday, March 24, 2023

Final Application Deadline: 11:59:59 p.m. (MST) Friday, March 31, 2023

Applicants must submit their application package electronically online at:

<https://tinyurl.com/LOFFAP2023-3>.

For additional information, please email or call Ashley Estes, Program Coordinator at aestes@azda.gov or (602) 542-0972.

Ethan Orr, DBH MPA

Associate Director, Agriculture, Natural Resources and Economic Development - Arizona Cooperative Extension
Associate Professor, Economic and Community Development
Interim Director, Santa Cruz County Cooperative Extension

Southeastern Regional Range Livestock Workshop

March 31st in Willcox, AZ

Join us for a day of discussing all things rangelands and range livestock with our wonderful industry sponsors! We'll have presentations on rangeland management strategies for brush control and toxic plant identification, as well as discussing vaccination and nutrition strategies of livestock. BQCA Certification available.



Register at: <https://www.eventbrite.com/e/2023-se-regional-range-livestock-workshop-registration-565529302367> or scan the QR Code.

Cooperative Extension
2023
**AZ WEANING
MANAGEMENT
SURVEY**
HTTPS://ARIZONA.GO1.QUALTRICS.COM/JFE.FORM.SV.D7QEANE8IEC7XJJO
SCAN ME!
**ENTER FOR A CHANCE TO WIN A STIHL CHAINSAW FROM
SAFFORD BUILDERS SUPPLY!**
SAFFORD BUILDERS SUPPLY
75
YEARS
SINCE 1938
QUESTIONS? NATE.BRAWLEY@ARIZONA.EDU 928-965-3188

University of Arizona - Range and Livestock Contacts:

Campus Based:

Mike Crimmins – Associate Specialist & Associate Professor, Climate Science: crimmins@email.arizona.edu

Elise Gornish – Assistant Specialist, Restoration Ecology: egornish@email.arizona.edu

Larry Howery – Noxious Weeds/Range Management Specialist & Professor: lhowery@cals.arizona.edu

George Ruyle – Range Management Specialist & Professor: gruyle@cals.arizona.edu

Russ Tronstad – Agriculture-Resource Economics Specialist tronstad@cals.arizona.edu

County Based:

Andrew Brischke – Area Assistant Agent, Agriculture & Natural Resources Mohave & Coconino Counties: brischke@cals.arizona.edu

Nate Brawley –Assistant in Extension-Animal Production Systems Graham & Greenlee Counties:: nqbrawley@email.arizona.edu

Ashley Hall – Area Assistant Agent, Agriculture & Natural Resources – Gila & Pinal Counties: AshleyS3@email.arizona.edu

Kim McReynolds – Greenlee County Extension Director & Area Agent, Natural Resources
Cochise, Graham & Greenlee & Counties: kimm@cals.arizona.edu

Anita Thompson – Area Assistant Agent, Livestock & Range – Apache, Navajo, & Northern Greenlee Counties:
anitathompson@arizona.edu

Ashley Wright – Area Assistant Agent, Livestock Cochise, Pima & Santa Cruz Counties: awright134@email.arizona.edu