



COLLEGE OF AGRICULTURE
AND LIFE SCIENCES
COOPERATIVE EXTENSION

Featured Plant: Russian Wildrye

Psathyrostachys juncea

Kade Willardson



Description

Russian wildrye is a nonnative, cool season, perennial bunch grass. It is resistant to cold and drought and is long lived. In some areas, its life span is estimated to be approximately 25 years. The stems of Russian wildrye are around 1.3 to 3.7 feet tall and leafless. The inflorescence is a terminal spike, and are approximately 1.2 to 4.3 inches long. The leaves are at the basal part of the plant, and they are 3 to 11 inches long. The root system of Russian wildrye can establish a depth of 8 to 10 feet, and 75% of the roots are within the top 6 inches.

Occurrence

Russian wildrye can be found all across the state of Arizona. And in many other states as well. It is native to Russia and China. Russian wildrye has been used in the intermountain regions and the Northern Great Plains for rangeland improvements since the 1950s. It has also been successfully used on the Arizona Strip when making range improvements. In general, it usually only occurs where it has been planted. Even though this grass can be hard to establish and slow to spread, the extensive root growth makes this grass very competitive for water and nutrients.

Forage Value

Once it has been established, Russian wildrye can be one of the best sources of forage on semiarid rangelands. The leaves on this grass have a longer growing season than most dryland grasses. And they have an ability to cure on the stem. This will allow for a longer grazing season.

Grazing Management

It can be grazed from early spring to winter. But it is best to graze it light in the spring, and then again in late summer and fall when other grasses are not as productive or low in quality. Grazing Russian wildrye in the late summer and fall have been recommended to get high gains for beef cattle.

Authorship and Citation: Taylor, Jane E. 2005. *Psathyrostachys juncea*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <https://www.feis-crs.org/feis/> [2017, March 28]

Picture Citation: <http://stevensonintermountainseed.com/shop/psathyrostachys>

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<http://uacals.org/3xp>

Livestock Forage Disaster Program

Andrew Brischke

As we eagerly anticipate the monsoon season, we are also likely experiencing some degree of anxiety over whether we get any rainy weather at all. We all hope for a wet and productive summer monsoon season, but in Arizona we actually have more drought years than wet years due to a skew in precipitation averages. Trending towards drought often results in lower than average forage production available for grazing. The Livestock Forage Disaster Program (LFP) is a USDA Farm Service Agency program through the 2014 Farm Bill designed to provide compensation to eligible livestock producers who have suffered grazing losses due to drought conditions during the normal grazing period.

To be eligible for the LFP you must be a livestock producer who owns or leases grazing land or pastureland physically located in a county rated by the US Drought Monitor, and be during the normal grazing period. Assistance rates for the FLP are as follows:

Drought Rating	D0	D1	D2	D3	D3	D4	D4
	Abnormally Dry	Moderate Drought	Severe Drought	Extreme Drought	Extreme Drought	Exceptional Drought	Exceptional Drought
Amount of time during normal grazing period	N/A	N/A	At least 8 consecutive weeks	At any time	At least 4 weeks	At any time	4 weeks (not necessarily consecutive)
Assistance Payment	N/A	N/A	Equal to 1 monthly payment	Equal to 3 monthly payments	Equal to 4 monthly payments	Equal to 4 monthly payments	Equal to 5 monthly payments

Adapted from 2014 Farm Bill Fact Sheet: Livestock Forage Disaster Program. April, 2017.

A map of the US Drought Monitor may be found at: <http://droughtmonitor.unl.edu/>

Eligible Livestock types under the FLP include: alpacas, beef cattle, buffalo, beefalo, dairy cattle, deer, elk, emus, equine, goats, llamas, reindeer or sheep that have or would have been grazing eligible grazing land or pastureland. Again, this must be during the normal grazing season physically located anywhere in the county where there is a qualifying drought rating.

Eligible Producers under the FLP must own, cash or share lease, or be a contract grower of covered livestock during the 60 calendar days before the beginning date of a qualifying drought or fire. Producers must also provide grazing that is physically located in the county affected by a qualifying drought rating or rangeland managed by a federal agency for which the otherwise eligible livestock producer is prohibited by the federal agency from grazing the normally permitted livestock because of a qualifying fire.

FLP payments will be calculated by the FSA for an eligible livestock producer for grazing losses because of a qualifying drought equal to one, three, four or five times the LFP monthly rate. The LFP monthly rate for drought is equal to 60% of the lesser of either the monthly feed cost for all covered livestock owned or leased by the producer; or calculated by using the normal carrying capacity of the eligible grazing land of the eligible livestock producer. Total LFP payments will not exceed five monthly payments for the same livestock in a calendar year. Other payment limitations apply.

Enrollment for the LFP requires the producer to provide a completed application for payment and required supporting documentation to their FSA office within 30 calendar days after the end of the calendar year in which the grazing loss occurred. The producer should include a copy of the grower contract if the producer is a contract grower and any other supporting documents required for determining eligibility. Supporting documents must include: evidence of loss, current physical location of livestock in inventory, evidence that grazing land or pastureland is owned or leased and evidence that if the loss of grazing was due to a fire that the producer was prohibited by the federal agency from grazing the normal permitted livestock on the managed rangeland due to a fire.

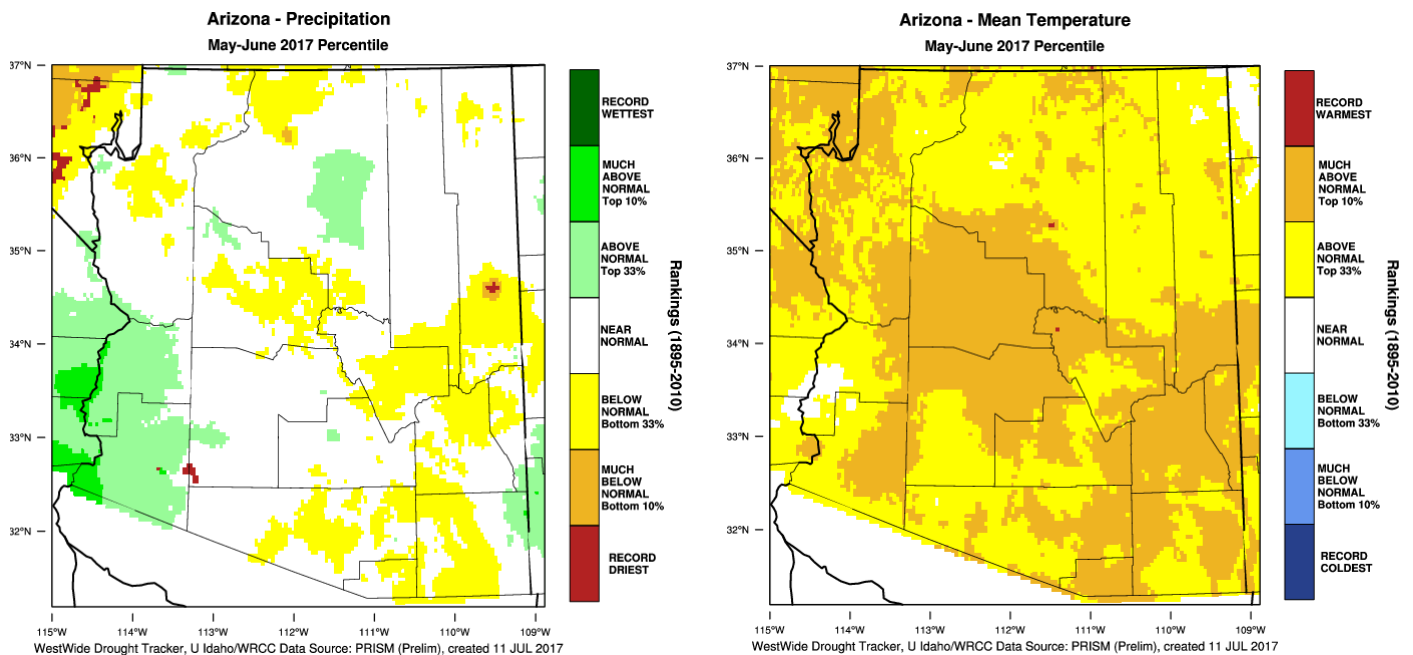
To find more specific information on the FLP including eligibility, payments, enrollment, and payment rates visit: <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/livestock-forage/index>. For more information on other disaster assistance programs, visit <http://disaster.fsa.usda.gov> or contact your local FSA office



Arizona Seasonal Climate Summary: Late Spring 2017

July 13, 2017 - Very warm and dry early spring conditions in March and April yielded to a much cooler and wetter late spring period through much of May. An active jet stream pattern across the western U.S. brought several deep, cold low pressure systems and accompanying precipitation (and even snow across high elevations) across Arizona several times during the month. Northern Arizona benefitted most in terms of precipitation from these storm systems with areas like Williams, Flagstaff and Payson observing 0.5"-1" in total for May. Much of southern Arizona missed out on the precipitation associated with these storm systems observing only cooler temperatures and windy conditions. May is typically a dry month for Arizona, so the bar is very low for average conditions. Overall, the dry conditions in southern Arizona were close to the long-term average while the wetter conditions across northern Arizona were slightly above average.

Summer came on strong in June with a rapid warmup early in the month as the subtropical ridge of high pressure built north across the Southwest. This led to a record heatwave that baked Arizona for well over a week later in the month. Some early monsoon moisture worked its way in from the east and brought light precipitation to higher elevation areas along the Mogollon Rim, but very little in terms of typical monsoon precipitation. Overall the May-June period was above average in terms of temperature due to the record warm June and a mixed bag of slightly above and below average precipitation across the state in this typically very dry period.



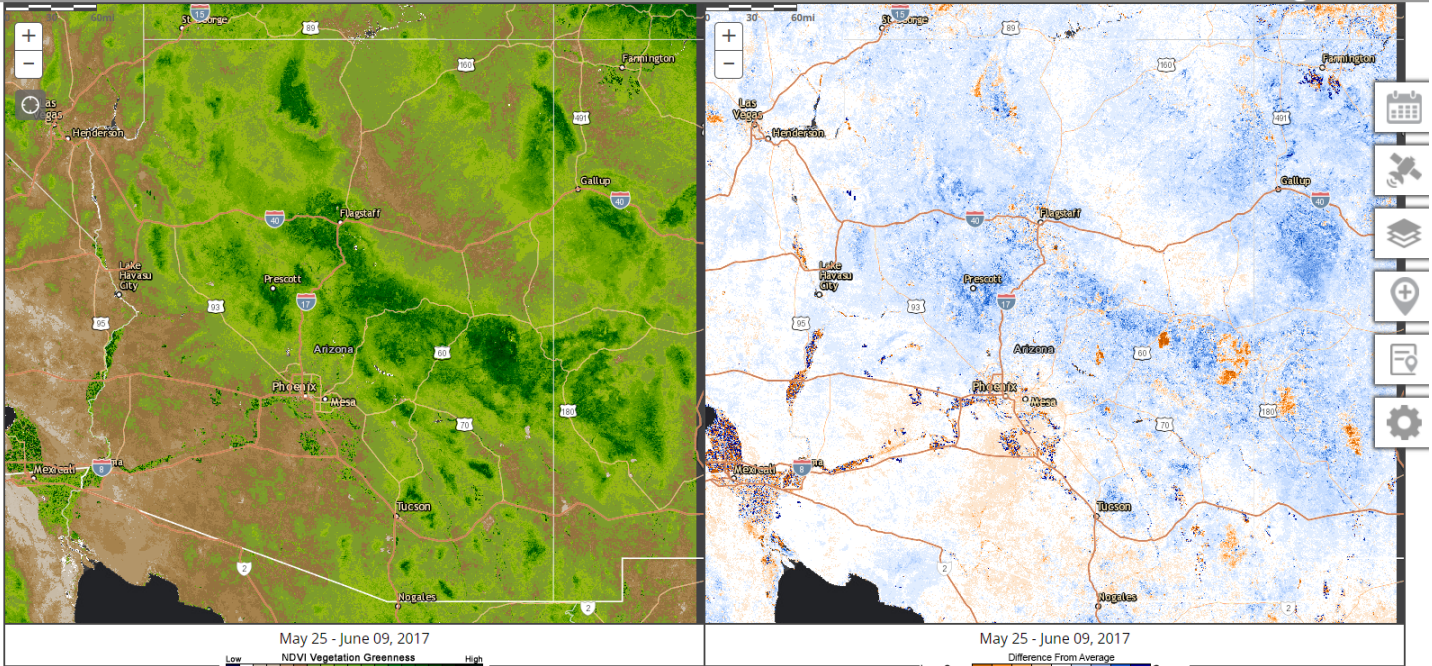
May-June precipitation and temperature rankings from the WestWide Drought Tracker



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

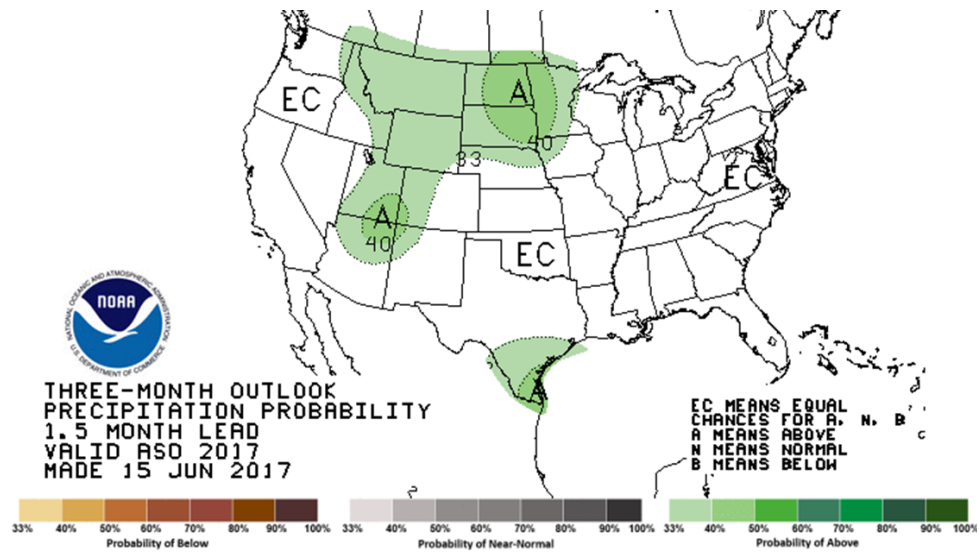
Questions /comments? Contact Mike Crimmins, crimmins@email.arizona.edu





Satellite imagery of vegetation condition (Normalized Difference Vegetation Index-NDVI or 'greenness') collected over a period of several days in late May and early June indicate that much of northern Arizona was observing conditions 'greener' than average or more vegetation biomass for this time of year (blue colors in map on right). This was most likely due to the cooler and wetter conditions in May promoting and sustaining the growth of spring vegetation in these areas. Lower desert areas in southern Arizona show conditions that are 'less green' than average (orange in map on left) consistent with the drier May conditions in these areas. Dark orange areas in the map on left are burn scar areas where vegetation has been dramatically reduced due to wildfires. More up to date and historical remote sensing imagery is available at <https://droughtview.arizona.edu/>.

The August-September-October seasonal precipitation outlook issued by the NOAA Climate Prediction Center in mid-June depicts an increased chance of above-average seasonal total precipitation for a portion of northern Arizona and equal chances of below, normal and above normal precipitation for the rest of Arizona. This above-average precipitation forecast for northern Arizona relies on seasonal climate forecast models which are known to struggle in predicting monsoon season precipitation patterns across the Southwest. This is most likely a low confidence forecast and should be taken with a grain



of salt. Precipitation extremes driven by monsoon thunderstorms and decaying tropical storms make this a very difficult season in which to make confident precipitation outlooks. Historically one and sometimes two decaying tropical storms meandering across the Southwest in September or October can produce precipitation amounts that make up most of the seasonal total. Regardless of the lower confidence seasonal precipitation outlook, the temperature outlook indicates a strong chance of observing above-average seasonal temperatures due to long-term trends and the expectation that they will continue.

Arizona Section Society for Range Management Update

James Heitholt
AZSRM President

I am pleased to introduce the Arizona Section for the Society for Range Management (AZSRM) and describe what we do. Our parent society is the Society of Range Management (SRM). SRM is an international scientific and conservation organization whose members are concerned with studying, conserving, and managing and sustaining the rangeland resource. SRM allows for state sections to be established for the purposes of bringing local perspective among its members and increase cooperation on matters relating to society objectives. The state sections accomplish this by holding regular meetings and tours. These regular meetings and tours allow our members to observe local range and range related situations that are of concern and interest. The AZSRM typically hosts an annual Summer Meeting and Tour, an annual Winter Symposium style Meetings and 1-2 field tours that occur in the spring and fall.

AZSRM is excited about this year's theme of "The Year of Native Range" for our upcoming annual meetings and ranch tours. This is an exciting opportunity to showcase management on some of our largest and diverse landscapes in Arizona. This year's annual summer meeting will be hosted by the Hualapai Tribe in Hualapai, Arizona on August 9-11. Planning of the fall tour is also

underway that will showcase management of rangelands on White Mountain Apache Tribal lands on August 25. The winter meeting's place and date have yet to be determined, but will carry out the theme of "The Year of Native Range." For more information about our upcoming meetings please visit either the section's website at <http://azrangelands.org/>, or the parent society's section webpage at <http://rangelands.org/srm-sections/>.

AZSRM is also active in outreach education for the youth of Arizona by sponsoring the Natural Resources Conservation Workshop for Arizona Youth (NRCWAY). This is a hands on workshop that allows for the campers (youth grades 8-12) to learn about water, soils, plants and other natural resources. NRCWAY is held at the James 4-H Camp on Mingus Mountain on the Prescott National Forest and will take place July 17-21. The AZSRM has been a long standing partner of this workshop and we are excited to see it go for its 53rd year! More information can be obtained about NRCWAY on our section website listed above. If you would like to know more about becoming a member or would like to know more about the AZSRM please feel free to contact me at jheitholt@fs.fed.us

Precipitation Monitoring Part 1: Best Practices Guide

Ashley Hall

"Did it rain in that pasture? Do forage conditions reflect lack of precipitation or grazing management?" As a rancher how often have you asked yourself these questions? For years most ranchers have been collecting precipitation data at their headquarters or a few corrals, but with the spatial variability of rain in the southwest it can be difficult to interpolate the actual amount of precipitation across a large landscape. Knowing how many gauges you need and where to place them can be a daunting question. This article aims to resolve some of those questions and help you develop a precipitation monitoring plan.

The number of gauges will depend on management goals/decision such as, grazing rotation, geography, and

anticipating impacts to water sources. Keeping in mind time and resources related to checking gauges is also an important factor. For example, if a grazing rotation goes through 3 pastures you would first determine how many gauges would adequately capture variability in each pasture. Throughout the year you could frequently read gauges in the current pasture and the next pasture that will be utilized in order to anticipate forage conditions where your cattle are and where they are going. Here are other considerations for rain gauge placement:

- Collect data at ranch headquarters or ranger station – collecting frequent observations can provide a good reference point to compare to gauges at more remote locations.

- Place rain gauges at locations you drive by often – this allows for more frequent readings to help interpret local conditions.
- Don't forget about topography- higher elevations typically receive more rainfall than lower elevations, placing gauges at the highest and lowest point of your allotment can provide information on the range of precipitation.
- No such thing as “too many gauges” – PVC gauges filled with ATV (to prevent evaporation) are inexpensive to build so placing them in locations you won't frequently visit can still provide information on cumulative precipitation.
- At a minimum monitor rain gauges twice a year – after summer and winter rainy seasons.

A key part of developing a precipitation monitoring plan is deciding a way to log and interpret observation in order to assist in management decisions or actions. Checking a gauge more frequently can provide insight to the timing, intensity, and frequency of rainfall events. Having this information can help you interpret why range conditions may not reflect the seasonal total. Plant growth is tied to all three of these factors. If you participate in a vegetation monitoring program, combining precipitation and vegetation monitoring data can help tell the overall story of vegetation changes. Overtime you can eventually make connections between

precipitation data and vegetation data, so that in years when you aren't monitoring vegetation, you can potentially get an idea of what the conditions might look like based on the precipitation data.

When visiting a rain gauge consider collecting additional information about the range or forage conditions. Documenting conditions through photos and recording water tank levels can also assist in interpreting on the ground condition.

Precipitation Monitoring Part Two: My RAINge Log will introduce new app created by University of Arizona faculty that allows you to manage data for multiple rain gauges with reference to historical climate information, precipitation alerts, and summary tools. Part Three: Precipitation Logbook Generator will focus on a printable and online logbook with historical climate information for any rain gauge location within the U.S.

Instruction for building your own rain gauge:

<https://cals.arizona.edu/climate/misc/PVCgauge.pdf> and https://myraingelog.arizona.edu/static/files/gauge_cons truction_guide_wAppB_DRAFT_v1.2.pdf (this is a draft document and will be updated)

This article was adapted from:

https://myraingelog.arizona.edu/static/files/best_practic es_guide_v1.1.pdf

Potential Mineral Deficiencies on Arizona Rangelands

Part 1

Overview

Mineral supplementation can be a significant cost for producers, however Arizona's soils are often deficient in several key nutrients. Deficiencies are commonly associated with conditions such as white muscle disease in calves or an increase in uterine prolapses, but subclinical deficiencies can also cause performance issues such as poor reproduction, decreased calf weights, or reduced response to vaccinations.

Minerals are classified in one of two groups: Macro and Micro (aka trace). Macro and Micro do not necessarily mean “most” and “least” important, rather macro minerals are required in much higher amounts than micro minerals, but a deficiency in a micro mineral can have just as large of an impact as a deficiency in a macro mineral.

The National Research Council (NRC) has established requirements for six macrominerals (calcium, phosphorous, sodium, chlorine, magnesium, and potassium) and seven microminerals (iron, manganese, copper, zinc, selenium, cobalt, iodine, chromium, molybdenum, and nickel). Of these, salt (sodium and chlorine), phosphorous, iron, copper, zinc, and selenium are of the most importance to cattle in Arizona

This three-part series will focus on the macro and micro minerals of importance to Arizona and discuss the role each plays in cattle health, their interactions with each other, and potential impacts of deficiency or toxicity. This article will focus on Salt supplementation, part two will discuss calcium and phosphorous, and part three will discuss the importance of four trace minerals: iron, copper, zinc, and selenium.

Sodium and Chlorine (aka...SALT!)

Salt supplementation supplies two macronutrients necessary for cattle health: Sodium (Na) and Chlorine (Cl). These minerals are important for regulating water retention in the body and proper function of nerves and muscles. Chlorine is generally not found to be deficient as cattle consuming salt regularly are consuming more than adequate levels of chlorine. Despite common anecdotal evidence, scientific studies have shown that cattle do not have “nutritional wisdom”, that is, they do not seek out select minerals they may be deficient in, with the exception of salt. Salt is included in most mineral mixes to encourage consumption, or in other supplements (such as protein licks) to limit consumption. Cattle will consume 0.005 to 0.010% of their body weight in salt daily (about 1-2 ounces for a 1200-pound cow). Overconsumption of salt is generally not a problem as long as there is an adequate water supply. Unlike other minerals which may be stored in the body, cattle have little ability to store salt so a constant supply is necessary. Cattle will utilize more salt when forage is young and fresh, and less when eating more mature forage. Cattle who lack salt supplement will often be seen engaging in pica-like behaviors such as licking holes in certain areas of the ground, chewing fence posts, etc.

The recommended product for salt supplementation will vary depending on your ranch and your mineral program. Salt is likely a large component of your mineral mix, and further supplementation is not necessary. If you are providing only salt, many products are available including salt blocks, loose salt, or salt with an added one or two minerals such as magnesium salt (for preventing grass tetany) or selenium salt (important in selenium deficient areas).

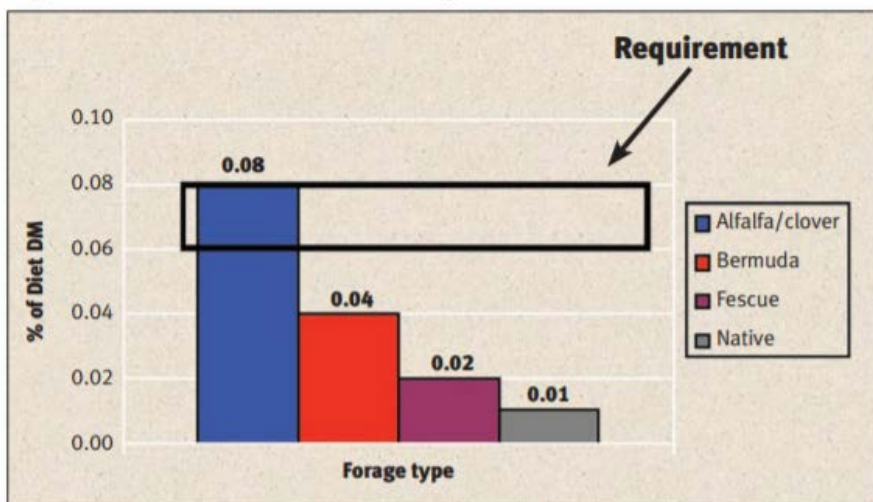
Stay tuned in our next issue for a discussion on phosphorous and calcium, two macrominerals important for cattle health!

Further Reading/Resources:

http://www.azcattlemensassoc.org/CMDocs/ArizonaCG/Foundation%20Articles/December%202013_25-27.pdf

http://www.feedingandfeedstuffs.info/articles/traditional_feeding/supplements/0208_saltanessentialelement.pdf

Fig. 1: Sodium content of different forages



Source: David Lalman, Oklahoma State University.



August

- 9-11 **AZ Society for Range Management Summer Meeting** – Hualapai Nation, contact iric.burden@az.usda.gov for more information
- 15 **Graham County Rancher Round Table** – Graham County Extension Office, 2100 S Bowie Ave, Solomon - contact Ashley Wright awright134@email.arizona.edu for more information.
- 16 **Managing Risk in Livestock Production** – Douglas, AZ. 9am-1pm – Lunch included, contact awright134@email.arizona.edu for more information or to register.
- 19 **Greenlee County Cattlegrowers** – Double Circles Ranch
- 22 **Ranching Economics/Plant ID & Physiology** – Flagstaff, for more information contact Andrew Brischke brischke@cals.arizona.edu
- 23 **UA/BLM Ranching Economics/Travel Management Workshop** – Kingman, for more information contact Andrew Brischke brischke@cals.arizona.edu
- 25 **AZ Society for Range Management Fall Tour** – White Mountain Apache, for more information contact jheitholt@fs.fed.us
- 26 **MLA/FB Annual Picnic** – Hualapai Mountain

September

- 7 **MLB/FB Meeting** – Kingman

November

- 2 **Range Beef Cattle Workshop** – Santa Rita Ranch

December

- 2017 Census of Agriculture** – Statewide, Look for your 2017 Census of Agriculture Form



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