Volume 3, Issue 2 Summer 2014

THE ROUNDUP

University of California Cooperative Extension

Livestock, Range, and Natural Resources Newsletter

Kern, Tulare, and Kings Counties

Sustainable…biodiversity…conservation. Buzzwords. They mean something different to each individual and can insight hopefulness, excitement, anxiety, discomfort, and even neutrality. The trouble with buzzwords and any frequently used word, is the word can become overused, and lose its meaning.

In the case of sustainable, I went back to the dictionary, because I was curious. I flipped through the pages until I found "sus" and then located sustainable. My dictionary has a copyright of 1999, and the number two definition under sustainable, is "designating of, or characterized by a practice that sustains a given condition, as economic growth or a human population, without destroying or depleting natural resources, polluting the environment, etc.". The example given is "sustainable agriculture".

We here at UC Cooperative Extension are celebrating 100 years of science and service in the state of California. In the process of helping to plan the Kern County Centennial dinner I have had the pleasure of learning a bit about when some families living in Kern County today settled here. I knew there were families that had been in the area a long time, but I was still amazed to learn of families that go back over 140 years or more! There are many families that have been ranching in Kern County a long time, and they are still here. I just think that's so darn cool I can hardly put it in words. It should go without saying that these families know a little something about being sustainable.

True sustainability is really more than Webster's definition though. True sustainability is so much more than just not "depleting natural resources", and one important part of being truly sustainable is maintaining the ranch as an economically viable unit. In support of this, look for economic themes in future issues!

As always, feel free to contact Julie with questions or for more information on anything found in this newsletter.

Julie Finzel
1031 S. Mt. Vernon Ave.
Bakersfield, CA 93307
661-868-6219
jafinzel@ucanr.edu

Livestock Health Considerations During Drought

During a drought when water and feed are scarce, livestock become more susceptible to certain health conditions that are otherwise not generally a concern. First, water quality can have an impact on livestock health. Poor drinking water quality can be a result of a number of issues and most often affects surface water drinking sources such as ponds and streams. Many of the concerns with water quality occur as the water source dries up and potentially harmful substances in the water become more and more concentrated. Total dissolved solids (TDS) are: all organic and inorganic substances in water that can pass through a 2 micron filter. TDS includes sulfates, nitrates, and nitrites. Elevated sulfate concentrations are reported to decrease copper absorption and cause animals to reduce feed and water intake, causing a decrease in production. Elevated nitrate and nitrite concentrations can cause sickness and sudden death and screening tests are quick and inexpensive to purchase.

When conditions are hot and dry, blue-green algae may appear in water sources. Some blue-green algae can produce toxins that affect the liver and nervous system. Livestock may suffer from weakness, staggering, photosensitization or sudden death and access to water with algal blooms should be limited until the water has been tested. There are many types of algae that grow in water, however, in California, blue-green algae toxins are the most commonly reported to cause poisonings.

There are further health issues that can result from poor feed quality during a drought. Dry grass is deficient in three main nutrients: energy, protein, and Vitamin A. Deficiencies in selenium and copper are often a concern year-round, whether there is a drought or not, but deficiencies can be exacerbated during a drought. Livestock can also become deficient in Vitamin E when fed inferior quality hay or straw.

Energy and protein are the base nutrients for growth and performance, without adequate amounts of both cattle will lose body condition. Vitamin A is critical for eye function, healthy skin, bone development, and immune function. Vitamin A is a fat soluble vitamin that can be stored in the liver, as such, cattle do not require immediate supplementation when feed sources become deficient in Vitamin A. Signs of Vitamin A deficiency include night blindness, dry eye, retarded growth rates, reproductive failures including reduced conception rates, abortions, and still-born calves, and reduced immune function. Signs of copper deficiency include reduced production, diarrhea, decreased immune function, broken bones, and reproductive failure. The actions of Vitamin E in the body are complimentary to Selenium, so if an animal is deficient in either Vitamin E or Selenium the symptoms are similar and can include reduced production, reduced immune

New UC Project–Ranch to Rail

Sponsored by: UC Davis Department of Animal Science, UC Cooperative Extension and California Beef Cattle Improvement Association

Overview of the Program

The UC Davis Animal Science Department, UC Cooperative Extension and California Beef Cattle Improvement Association have developed an educational program that will improve California beef cattle producers understanding of the feeding and carcass attributes as well as the health of their cattle. The program will engage individual producers with the results anonymously extended to producers across the state.

Cattle Acquisition and Protocol

The UC Davis feedlot will purchase 10-15 steers from two cooperating producers every month. Over a 12 month period 24 producers will have the opportunity to participate. All interested producers will preferably be recommended by UC Farm Advisors, and scheduled several months in advance. The cattle participating in the program need to represent a producer's breeding program, be weaned a minimum of 30 days, and have backgrounding and vaccination information available. The producers will deliver the cattle to the UC Davis Feedlot. Acquired steers will weigh between 800 and 900 pounds and will be *Bos taurus*. No Holsteins, Brahma-cross or Mexican type cattle will be considered. Producers will be asked to fill out a background information sheet, including a vaccination history of the cattle. Cattle will be purchased based upon the average price received for similar weight cattle sold the previous week. Upon arriving at the feedlot, cattle will be immediately weighed, and pay weight will be actual weight across the scale at delivery. UC Davis retains the right of refusal to accept cattle that are unhealthy or do not meet specifications. On the day of delivery, participants will be given a tour of the Department of Animal Science Facilities on the Davis Campus (feedlot, processing plant, etc.).

Deliverables to Cooperating Ranches

Each producer will receive the performance and carcass data associated with their cattle. This data will include average daily gain, feed intake (pen basis), cost of gain, carcass data, and any other pertinent info that is collected regularly by UCD staff. The producer will also have the option to purchase up to two of their animals back, either live or on a carcass basis from the UCD Meat Lab. If a producer chooses to buy back one or two steers, a nonrefundable deposit will be charged prior to slaughter.

Participants in the program are providing an important component of student's education as the animals sold to the UC Davis Feedlot will be used for teaching and research purposes. These cattle will provide an invaluable learning opportunity for students to receive, process, feed and monitor feedlot cattle.

Ranch to Rail, cont…

Educational Opportunities

The data derived from this project will be presented to beef cattle producers across the state at the CCA meeting in 2015, and into the future. Identities of producers/ranches will not be included in educational outreach materials. Producers who participate in the program will receive incentives and recognition for their efforts.

Details

All cattle owned by UC Davis Animal Science will be sold as carcass beef or live. The UC Davis Meat Lab and Los Banos Abattoir are expected to be the primary outlets. Any cattle not needed by the UC Davis Meat Lab will be sold to Los Banos Abattoir on a carcass index basis. For producers buying back one or two of their steers, they will be killed under USDA inspection and must be picked up within 10 days of kill. Cost will be hot carcass weight times the carcass price based on the current USDA Carlot Meat Report. Cattle killed at the Meat Lab will not be cut there, the producer must arrange for the cut and wrap of the carcass at another plant of their choice.

Legals and Legalities

Any participant interested in selling cattle to UCD will need to complete the attached a business information form (contact Julie for form) and provide a signed and dated W-9 form. This information is required to set them up as a vendor so they can be paid. If they are already established in the UC system a letter was sent out in late fall 2013 requesting a W-9 form. If they have not yet provided the form, a W-9 will need to be provided before Purchasing will place the Purchase Order.

The following information is needed:

Full name of company –
Complete Address (both physical & PO Box) –
Remit to address where check will be sent –
Phone number –
Fax number –
Email address –

Payment will be made promptly after sale of cattle.

Research Update

Grazing in Mountain Meadows

Freitas, M.R., L.M. Roche, D. Weixelman, and K.W. Tate. 2014. Montane Meadow Plant Community Response to Livestock Grazing. Environmental Management. Online 1432-1009

This study looked at the effects of grazing on meadow plant communities over a 10 year period by comparing two non-grazed meadows on the Kern plateau to two grazed meadows on the Kern plateau. The Templeton and Whitney allotments received no grazing, while the Monache and Mulkey allotments were grazed in accordance with riparian grazing standards. Twenty-five sites were monitored for species richness, diversity of species, and soil stability. Meadow wetness and precipitation were also monitored in the study.

Results of the study do not indicate that there is any difference in species richness , diversity or soil stability on grazed versus non-grazed sites. Study results indicate that recovery rates of meadow plant communities were no different on non-grazed sites than on grazed sites. The study did find that plant species richness and diversity decreased with increasing meadow site wetness, while soil stability increased with increased meadow site wetness, regardless of grazing regime. This trend is attributed to the competitive nature of grass-like species that tolerate wet meadow conditions well. The findings of the study support the adoption of riparian grazing utilization limits on public grazing lands.

California Ranch Stewardship Survey

The Rangeland Watershed Laboratory at UC Davis, headed by Ken Tate, was responsible for the study summarized above and is also involved in many other statewide projects. One of these projects is the California Ranch Stewardship Project, which I have detailed previously in this newsletter (see *The Roundup*, Fall 2013 issue). As a precursor to this project, a survey was sent out to California ranchers. The results of this mail survey have been summarized and posted online. They can be accessed at: http://rangelandwatersheds.ucdavis.edu/main/projects/ranchersurvey.html

I would like to highlight a few of the statistics from the California rancher survey here. All percentages are calculated as a percent of the 490 survey respondents. The mean represents the average, the median represents the "middle number" in a string of numbers (2, 3, ***4***, 4, 5…4 is the median, 3.6 is the mean). In some cases the median is more representative of a population than the mean because it is not as greatly influenced by extremes.

- 63% - Agreed that the ranching lifestyle is more important than economic return
- 97% - Try to conserve natural resources where possible
- 68% - If confronted with a situation where economic viability and environmental protection were at odds, it would be more important to protect economic viability
- 57% - Currently participate or plan to participate in USDA NRCS programs

Livestock Health During Drought, cont...

function, heart damage, and stiff gaits. If you suspect your livestock are deficient in any of the above nutrients, it is important to determine which nutrients are deficient in their feed and supplement appropriately.

Another concern during drought is an increased risk of plant poisonings. When feed is scarce, livestock are more likely to consume plants they wouldn't normally eat, simply due to hunger. In some cases these plants may be poisonous. Also, drought can cause nitrate accumulating plants like ragweeds, pigweeds, and docks, to accumulate toxic levels of nitrate. In ruminants, nitrate is converted to the toxic nitrite in the rumen. Symptoms include sudden death, drowsiness, weakness, muscle tremors, staggering, and recumbency.

This article provides a broad overview of livestock health issues that may occur during a drought. Be sure to consult with your veterinarian if you suspect your livestock may be suffering from any of the above conditions. For more information on the topics covered here, please contact Julie at 661-868-6219.

Research Update, cont...

- 49% - Concerned about government regulations and environmental policy
- 30% - Interested in more information on how to graze to change plant species composition (look for more information on this topic in future newsletters)
- Respondents rated livestock production on a priority scale of 1 – 10 (1 being top priority), as a 1.7 and forage production as a 2.7
- Government investment in conservation has helped ranchers – 36% Agree; 33% Disagree; 31% Neutral
- Government incentives will be the best way in the future to improve voluntary conservation on actively ranched lands – 35% Agree; 36% Disagree; 29% Neutral
- 99% - Utilize reactive drought strategies that include: reducing herd size; purchasing feed; weaning early; renting additional pasture; and government assistance programs
- 64% - Use proactive drought strategies that include: conservative stocking rates; incorporate pasture rest into grazing system; operation runs cow/calf and stockers; grassbanking/forage stockpiling; using 1-3 month weather predictions to adjust stocking rate; and add other types of livestock for flexibility
- 62 – Median respondent age
- 71% - 3rd generation ranchers
- 19% 1st generation ranchers
- 288 – Mean number of cow/calf pairs per operation
- 145 – Median number of cow/calf pairs per operation
- Ranchers identified industry organizations and other cattlemen as their most trusted source of information

Ask the Advisor

Bovine Artificial Insemination Clinic

Recently I received a question about where to find a class in California that teaches how to palpate for pregnancy in cattle. The answer is that a class like that is not offered anywhere in California because in California pregnancy is an official diagnosis that is only legally made by a vet. There is however a class offered annually by the UC Davis School of Veterinary Medicine that teaches artificial insemination (AI) of cattle. The class is offered during spring quarter of each year and the cost last year was $350. It is a three day class that includes daily hands-on practice with cows, an AI textbook, lunch for each day, and AI certification. The class is very popular and registration tends to fill up quickly. If you are interested in taking the class, an announcement is usually published in the Department of Animal Science winter newsletter or you can contact Julie to get more information. 661-868-6219 or jafinzel@ucanr.edu.

Feed Quality of Kleingrass Hay

Kleingrass is a member of the *Panicum* genus and is a warm season grass. It is grown in the Imperial Valley as a hay crop, mostly for export. It is a fairly palatable grass, but the nutrient analysis is highly dependent on the timing of harvest, soil fertility, irrigation, and more. Therefore, it is recommended that the quality of the hay be tested in order to determine the actual nutrient analysis. Kleingrass is not recommend for horses as it can cause photosensitivity, or sensitivity to light. According to the few nutrient analyses I was able to find, nutritionally, Kleingrass, is a good quality grass hay. It does tend to be quite high in Potassium, but otherwise meets the basic needs of a dry cow well.

Livestock Symposium Summary

On February 27th the first annual Southern San Joaquin Livestock Symposium was held in Porterville, California at the Veterans Memorial Building on West Olive Avenue. The event was a great success with more than 60 people in attendance. Four speakers drove in from Davis for the Symposium. They were Dr. Alison VanEenennaam, Dr. James Oltjen, Dr. Frank Mitloehner, and Dr. Bret McNabb. Thank you so much to our speakers for making the trip from Davis to share information about their research and areas of expertise.

At the beginning of the meeting I got up and gave a short review of some tax options to consider when selling livestock due to drought. The information covered is a summary provided by NCBA and can be accessed on their website at: http://www.beefusa.org/uDocs/ncbataxdocument.pdf

Our first speaker, Dr. VanEenennaam, shared a great deal of information on Genetically Modified Organisms, or GMO's. Some of her main points included:

- GMO, or genetically modified organisms, also known as genetically engineered or GE, is the practice of manipulating the DNA of organisms
- Science shows the safety of GE feed and food
- GE crops have helped lower production costs, reduced the use of pesticides, and improved yields. Also, fewer pest problems are seen in GE crops.
- There is no difference in milk, meat, or eggs from animals fed GE feed, and no way to detect if GE feed was consumed
- Labeling of food containing ingredients derived from GE crops would not be trivial in regards to cost or tracking required, but pales in comparison to tracking products from animals that have, or have not, eaten GE feed

Dr. James Oltjen was the second speaker and he shared strategies for maintaining financial viability during the drought. Some of his main points included:

- A review of nutritional requirements for cattle
- Potential management actions that are options in response to drought
- The importance of weighing ranch goals and objectives when making management decisions in response to drought
- A review of a course he offers called "Back in the Black" that leads ranchers through the ranch budgeting process. If you are interested in attending this course, please contact Julie Finzel at: 661-868-6219.

The third speaker of the day was Dr. Frank Mitloehner who answered the question, "is growing demand for animal protein fueling climate change?"

- In short, the answer to that question is no. If every American were to participate in "meatless Monday" there would be a 0.2% reduction in greenhouse gas emissions.

Symposium Summary, cont…

- Efficiency is key to reducing the carbon footprint of agriculture. For example 5 Mexican cows produce as much milk as one American cow and it takes 20 Indian cows to produce as much milk as one American cow.
- USA has the lowest carbon footprint for livestock, of any nation for livestock in the world

Representatives from the USDA's Natural Resource Conservation Service and Farm Services Agency were also on hand to talk about drought assistance programs. For more information contact your local USDA Service Center. If you need the contact information for your local USDA service center please contact Julie Finzel at 661-868-6219.

Our final speaker was Dr. Bret McNabb, a veterinarian at UC Davis. Bret was kind enough to give two talks, the first provided good background information on the development of the foothill abortion vaccine and also an update on the status of the vaccine. His final talk covered how vaccines are an important part of the overall herd health management plan. Some highlights from Bret's talk include:

- The foothill abortion vaccine is in its final safety and efficacy trial stages, however a number of roadblocks remain before it can be commercially available, these include, a production facility that can produce the volume of vaccine needed for commercial production and establishing a solid market for the vaccine
- In his vaccine talk, Dr. McNabb started by saying, "If it's not broken, don't try to fix it." In other words if your current vaccine and herd health program is meeting your goals and your cattle are healthy, there probably isn't a reason to change
- There is no standard vaccination program, rather each ranch must have their own program tailored to their specific needs and management objectives
- Dr. McNabb covered the different types of vaccines, including killed, modified live, and recombinant DNA vaccines and their mode of action

For more information, or if you would like access to any of the powerpoint presentations given at the symposium please contact Julie at: 661-868-6219 or via email at: jafinzel@ucanr.edu.

Thank You to Our Sponsors!

Rural Ag Insurance Services Inc.
Veterinary Services, Inc.
Western Milling, LLC
Merial, Ltd.

THE ROUNDUP

UC CE University of California
Agriculture and Natural Resources | Cooperative Extension

In This Issue...

Current Resident or:

Phone: (661) 868-6200
Fax: (661) 868-6208

University of California
Cooperative Extension
1031 S. Mt. Vernon Ave.
Bakersfield, CA 93307