

THE ROUNDUP

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION
LIVESTOCK, RANGE, AND NATURAL RESOURCES NEWSLETTER
KERN, TULARE, AND KINGS COUNTIES



This issue of the Roundup is focused on what seems to be on everyone's mind...the drought. You will find lots of information regarding livestock and land management during drought, with a few other topics scattered throughout. I have posted a number of informational links related to the drought on my webpage at: <http://cekern.ucanr.edu/Livestock>. I have also included these links in the newsletter for your reference. Please feel free to call, email, or stop-in if you would like any further information.

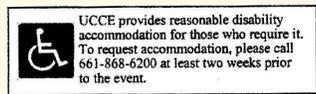
You will find information inside regarding an upcoming livestock symposium I am hosting in Porterville. The symposium is a general informational meeting that covers a variety of topics including livestock health, ranch economics, and an update on the progress of the foothill abortion vaccine. The meeting will feature four speakers from UC Davis: Dr. James Oltjen, Dr. Alison VanEenennaam, Dr. Frank Mitloehner, and Dr. Bret McNabb, DVM. A BBQ tri-tip lunch with a variety of side dishes will be served. Pre-registration is recommended and is available online or via mail. Again, please feel free to call, email, or stop-in if you have any questions or would like more information regarding the upcoming symposium.

Sincerely,

Julie A. Finzel
Livestock and Natural Resources Advisor
Kern, Tulare and Kings Counties
1031 S. Mt. Vernon Ave.,
Bakersfield, CA 93307
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jafinzel@ucanr.edu



University of California
Agriculture and Natural Resources



UCCE provides reasonable disability accommodation for those who require it. To request accommodation, please call 661-868-6200 at least two weeks prior to the event.

TTY Relay Service 800-735-2922

CHECK THE WATER

BY: JIM SULLINS, COUNTY DIRECTOR, TULARE AND KINGS COUNTIES

Water is not always considered a nutrient, however we all know it is essential. Perhaps, more than any other nutrient, the quantity and quality of water can determine the health of your herd. The drought is affecting water supplies on many ranches, springs are drying up or have slowed down, and water tables are dropping. It is important to be sure your herd is getting enough water. Below is a chart for estimating the amount of water you may need to ensure your herd has enough.

Estimated Daily Water Intake of Cattle										
Mean	Cows		Bulls	Growing Cattle ²			Finishing Cattle			
Temp.	Nursing Calves ¹	Bred Dry Cows & Heifers		400LB.	600LB.	800LB.	600LB	800LB.	1000LB.	1200Lb.
F ⁰	GAL	GAL	GAL	GAL	GAL	GAL	GAL	GAL	GAL	GAL
36	11.0	6.0	7.0	3.5	5.0	6.0	5.5	7.0	8.5	9.5
38	11.0	6.0	7.5	4.0	5.0	6.0	6.0	7.0	8.5	9.5
40	11.5	6.0	8.0	4.0	5.5	6.5	6.0	7.5	9.0	10.0
50	12.5	6.5	8.6	4.5	6.0	7.0	6.5	8.0	9.5	10.5
52	13.0	6.5	9.0	4.5	6.0	7.0	6.5	8.0	10.0	10.5
64	15.5	8.0	10.5	5.5	7.0	8.5	8.0	9.5	11.0	12.5
68	16.5	8.5	11.5	5.5	7.5	9.0	8.5	10.0	12.0	14.0
73	17.0	9.0	12.0	6.0	8.0	9.5	9.0	11.0	13.0	14.5
78	17.5	10.0	13.0	6.5	8.5	10.0	9.5	12.0	14.0	16.0
78	17.5	10.0	13.0	6.5	8.5	10.0	9.5	12.0	14.0	16.0
88	16.5	14.0	18.0	9.0	12.0	14.0	14.0	17.0	20.0	22.5
90	16.5	14.5	19.0	9.5	13.0	15.0	14.5	17.5	20.5	23.0

1. Cows nursing calves during first 3 to 4 months after parturition - peak milk production period.
 2. Requirement will be a little less for wintering on range.

Table prepared by Paul Q. Guyer, University of Nebraska

Generally minimum water requirement is based on what is needed for body growth, fetal growth, or lactation plus what is lost by excretion or physiological evaporation. There are additional factors that can influence actual need and water intake including feed moisture, type of feed, body condition, and overall health. The data provided in the table above is based on observational research, under a variety of conditions, and should provide reasonable guidelines for estimating water requirements under most conditions.

As water becomes scarce, water quality can be an increasing concern and ranchers should be more aware of problems that may be encountered. If water is stagnant, bacteria counts may increase beyond safe levels. Coliform bacteria usually are the greatest risk; livestock health can be impacted by counts greater than 5,000 coliform/100 milliliters of water. Water can also become unhealthy when Total Dissolved Solids (TDS) increases. TDS is a measure of the organic and inorganic matter that accumulates in the water. The organics may include bacteria, leaves, manure, or algae and the inorganics could be salts of calcium, magnesium, sulfate, iron, and copper. These are the ingre-



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CHECK THE WATER, CONT...

dients that make up the scale you see in your water pipes. A TDS level of less than 3,000 milligrams/liter is considered safe; between 3,000 and 5000 mg/l may reduce performance; 5000 to 7000 mg/l is not recommended for pregnant or lactating; and above 7000 mg/l is not recommended for any livestock.

Salinity can also affect livestock performance and health, and under drought conditions salinity can be a greater problem. See recommendations below. Your local UC Cooperative Extension office can

Salinity Mg/Liter	Recommendation
Less than 1000 to 2,999	Safe
3,000 to 4,999	May cause diarrhea when first consumed
5,000 to 6,999	May cause problems with pregnant or lactating cows
7,000 to 10,000	Dangerous, especially pregnant or lactating cows
over 10,000	Toxic not suitable for livestock

STATEWIDE GRAZING REGULATORY ACTION PROJECT

The Statewide Grazing Regulatory Action Project (GRAP) is a project being initiated by the State Water Resources Control Board (SWRCB). Very little information has been released regarding the project, but the basic premise, as stated on the website, is to “develop an approach that efficiently addresses water quality impairments associated with grazing operations – an approach that will help to streamline the process of addressing impairments, conserve valuable resources, and give implementing parties the clarity and consistency they deserve.”

The GRAP includes representatives from all 8 regional boards, but is being led by region 6, the Lahontan Regional Water Quality Control Board. Public and stakeholder listening sessions are currently being organized. Stakeholder groups have been identified as public lands: state, federal, municipalities, and others; tribal; livestock industry interests: farm bureau, cattlemen’s, ranchers, and others; environmental groups; and other interested parties. You can read (a little) more at:

http://www.waterboards.ca.gov/water_issues/programs/nps/grap.shtml

Contacts listed on the webpage are:

Cindy Wise, Lahontan Regional Water Quality Control Board
cwise@waterboards.ca.gov (530) 542-5408

Steve Fagundes, State Water Resources Control Board
sfagundes@waterboards.ca.gov (916) 341-5487



KERN RANGE BLOG

Some of you may know that I created a blog, accessible through my website, as another way of providing timely, quality information to all of you. The focus of my blog is any current topic affecting livestock and range management. I cover a variety of topics in my blog and I try to post something monthly, though I'm not always able to achieve that goal. I know all of you are very busy and that some of you don't have easy access to the internet, so I wanted to share some of my blog posts with all of you, here in my newsletter. For those of you familiar with blogs, you know that some blog posts can be quite lengthy, however, my blog posts do not follow this model. I try to keep them short and to the point. One of the ways I achieve this goal is by including links to online information, usually articles in newspapers or other publications. In some cases I have posted links to electronic files that I have uploaded to the website. If you find a topic of interest as you read through my posts below, and you would like the information mailed to you, please let me know and I will provide you with a copy of the article in which you are interested. Otherwise, if you have access to the internet, you can access my blog directly at: <http://ucanr.edu/blogs/KernRangeBlog/index.cfm> to follow any of the links you find printed below. You can also subscribe to my blog and receive emails whenever I post something new.

Assaults on Agriculture Need to Stop

Posted: December 18, 2013

In a recent article printed in the Houston Chronicle Steve Forbes, president of Forbes Media, proclaimed simply that "Agriculture is a Big Deal" and that the "Assaults Need to Stop". Forbes hailed the technological advances that have led to a green revolution in farming as key to feeding the US and the world. Forbes also noted that American agriculture is very important to the US economy. Follow the link below to learn more.

<http://www.agrimarketing.com/s/86116>

Sensible Environmentalism...from a Self-titled Greenpeace Dropout

Posted: November 27, 2013

A recent editor blog from BEEF magazine focused on the views of a self-titled Greenpeace dropout. Follow the link below to read about Patrick Moore's refreshingly practical outlook on "Sensible Environmentalism".

<http://beefmagazine.com/blog/3-lessons-greenpeace-dropout>

Tax Breaks for Ranchers Forced to Destock Due to Drought

Posted: July 30, 2013

As made available from the National Cattlemen's Beef Association, here is a summary of potential tax breaks for the producer to avoid paying capital gains when forced to destock large numbers of livestock due to drought.

<http://www.beefusa.org/CMDocs/BeefUSA/Issues/NCBA%20Tax%20Document.pdf>

Blogging About a Blog!

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KERN RANGE BLOG, CONT...

Posted: July 25, 2013

The California Beef Council has been showcasing Beef Checkoff dollars at work in the CCA magazine. In the May 2013 issue (I'm a little behind in my reading!), a blog called "The Beef Factor" was highlighted. Registered dietician Katy Tenner posts at <http://calibeeff.blogspot.com> on a multitude of subjects and she also posts lots of recipes and ideas for cooking with beef. Check it out! Katy's done a great job with the blog.

Americans Believe Food Production Heading in Right Direction

Posted: January 15, 2013

At the link below you will find an article published in the Western Farm Press that summarizes the findings of a newly published survey that asked Americans about their perceptions regarding food and its production in America today.

<http://westernfarmpress.com/management/majority-americans-believe-food-production-headed-right-direction>

Genetically Engineered Organisms

Posted: October 5, 2012

Genetically Engineered (GE) organisms, commonly known as Genetically Modified Organisms (GMO), are a hot topic in society today. Below I have provided two peer-reviewed, objective articles, discussing the safety of GE foods. If you would like copies of these articles please let me know or visit my blog online.

Animal Welfare in Slaughter Facilities

Posted: October 5, 2012

The American Meat Institute (AMI) has released a video which explains why it is essential for cattle to be treated humanely during unloading and movement through processing operations; for example, agitated cattle produce adrenalin which results in tougher meat; bruised sections must be cut away as waste - The video emphasizes that animals are stunned making them unconscious prior to slaughter; however, following stunning, it is normal to see some uncoordinated movement, especially of the unrestrained rear leg, pictures of which are prominent in undercover videos. The video advises that the consumers are generally not permitted access to processing plants because visitors could unintentionally introduce contamination; given the machinery and knives that are used in the plants visitors could become injured; employees could be distracted by the presence of visitors; and visitors can cause animals to become agitated and frightened. The AMI has dubbed this project "The Glass Walls Project", which includes tours of beef, pork, and turkey packing plants and is available online. All tours are narrated and hosted by Temple Grandin.

<http://animalhandling.org/ht/d/sp/i/80622/pid/80622>



KILLER OAK TREES

A reprint of a UCD Vet View publication from January 2008

By Dr. John Maas

Oak trees respond to extremely dry conditions by producing prodigious amounts of acorns. This is a natural response of the oak trees to drought. The problem with acorns is that they can be toxic to cattle.

Do all oak trees contain toxic materials?

There are more than 50 common species of oak trees in California and all contain some levels of the chemicals that can cause problems in cattle. The buds, young leaves, and fresh acorns have the highest level of toxins. There is considerable variation in the concentration of toxins in the plant tissues, dependent on 1) the species of oak trees, 2) the season of the year, and 3) the climate of the year in question. The chemical toxins, known as tannins and phenols, are naturally contained in the plant material.

How do the toxins affect cattle?

The oak toxins (tannins and phenols) attack the proteins the contact. Thus the gastrointestinal tract, including the mouth, esophagus, rumen, and intestines, is damaged by direct contact with oak toxins. This results in ulcers, bleeding, and perforation in some cases. So, if the cattle live long enough, bloody or dark diarrhea is seen. Also, in the rumen, some of the tannins are converted to other chemicals, like gallic acid and pyrogallols, that are absorbed into the blood stream and travel to the kidneys where they cause severe damage. Younger cattle (less than 400 pounds) are usually more severely affected than older cattle.

What do affected cattle look like?

Symptoms usually appear shortly after cattle eat 50% or more of their diet as oak (leaves, buds, acorns). Some animals may simply be found dead. A day or two after eating oak leaves or buds, bloody or dark diarrhea may be noticed. As kidney failure progresses, fluid may accumulate around the anus or vulva. Throughout the course of clinical disease, the cattle appear weak and listless, and have no appetite.

What are the most important risk factors that can lead to oak toxicity?

The presence of large numbers of acorns when forage is scarce is one of the main risks. Wind, hail, or snowstorms can cause large numbers of acorns or limbs with leaves and buds to drop so that cattle can gain easy access to these potentially toxic materials. California outbreaks have been worse in the late winter and early spring when oak buds and small leaves are present in large numbers and a wet snowstorm occurs. The wet snow breaks branches and limbs which fall to the ground. The snow also covers the available grass and this leaves the cattle very hungry. This leads to consumption of these very toxic buds and young leaves because it is the only feed available. Likewise, in a drought year with a large acorn crop and very little grass forage available, the

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KILLER OAK TREES, CONT...

consumption of acorns has been very high in some herds.

What is acorn calf-syndrome?

Acorn calf syndrome is completely different from the problems seen due to oak toxicity from ingestion of acorns, leaves, and/or buds. Acorn calves are congenitally malformed calves. The syndrome is associated with poor feed conditions during the second trimester of pregnancy, about the 3rd through the 7th month of pregnancy. The exact cause is not known but seems to occur more often following falls with large numbers of acorns. These calves have very short legs, abnormal hooves, and misshapen heads (either short noses or long narrow heads). The acorn calves look like dwarfs in most instances. Occasionally, more than 10% of the calves in a herd can be acorn calves.

How do you treat cattle with oak toxicity?

Successful treatment of affected animals usually requires fluid therapy, antibiotics, and supportive care. Your veterinarian should be consulted and a treatment protocol set up to increase the odds of success and to provide the most relief for the cattle. The antibiotics help prevent secondary pneumonia and abscessation of the bowel. Fluid therapy will be necessary for many cattle to survive and must be planned with your veterinarian. Ready access to water and good quality grass hay will be very important parts of providing adequate nursing care.

How can oak toxicity be prevented?

Oak toxicity can be prevented by supplementing the cattle with hay or other supplemental feed when forage conditions are poor and acorns are abundant. Likewise, when late snowstorms cover the grass and knock down oak limbs with large amounts of buds and young leaves, be sure to start hay supplementation immediately. DO NOT wait until cattle get sick or die. If cattle are in conditions where toxicity is a longer term possibility, the use of calcium hydroxide in a supplement can prevent sickness. The addition of 10% calcium hydroxide (hydrated lime) to a supplement will still be palatable to cattle. Then if the cattle will consume about two pounds of this supplement per day, it will prevent many cases of oak toxicity. This supplemental calcium hydroxide has to be consumed before exposure to be effective.

MSU RELEASES APP FOR BEEF PRODUCERS

The Mississippi State University Extension Service released a free app on December 2nd for cattle producers. The app provides insight into growth and overall performance by calculating a variety of factors that impact livestock management decisions including expected calving dates, adjusted weaning weights, average daily gain and required gain to reach a projected endpoint. Currently the app is only available for use with Apple devices. The app can be downloaded by searching for MSUES Cattle Calculator in the Apple app store or by visiting:

<http://tinyurl.com/msues-cattle-calculator>

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MANAGING CATTLE DURING DROUGHT: DESTOCKING AND EARLY WEANING

By Morgan Doran, County Director and Livestock and Natural Resources Advisor, Solano County

Destocking

For some producers, drought response actions started last winter and spring by culling cows more aggressively and selling calves earlier than in normal years. Those practices probably need to continue this year, and most likely, be implemented even more aggressively. Every producer has their own cow culling criteria that are used every year, but this year producers may have to go beyond the normal criteria in order to further reduce their herd size. Cow culling should be based on productivity and a common practice is to cull non-productive cows. If a cow is open, it's off to the auction, but sometimes, they may be given a second chance. And what about the low producing cows? This is a time when you can't afford to feed cows that are not producing at an adequate level. Giving cows a second chance and keeping those cows that wean smaller calves are practices that compromise the health and productivity of your higher producing cows, your entire herd, and your ability to survive this drought.

A study conducted at the UC Sierra Foothill Research and Extension Center showed that some production parameters, especially weaning weight of calves, decline when beef cows reach 10 years of age (Renquist et al., 2006). Pregnancy rate declined dramatically in 10-year old cows primarily because they were unable to maintain sufficient body condition at the time of breeding. The results of this study provide a baseline cow-age culling criteria. The drought situation will likely require more aggressive culling criteria, such as culling cows over 8 years of age, culling all open cows, and keeping fewer, if any, replacement heifers. Even further destocking decisions may be necessary. Luckily cattle prices remain strong, which provides another good incentive to cull aggressively and retain few replacement heifers.

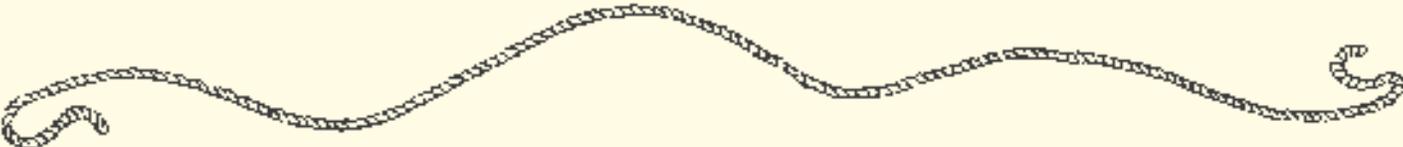
Keeping good health and performance records for your herd helps you make better and more objective decisions in general, and during a drought, this information is especially useful when making severe culling decisions.

Early Weaning

Weaning calves earlier than normal is another effective strategy to survive a drought. Early weaning is usually defined as weaning calves between 80 and 120 days of age, and while calves can be weaned earlier than 80 days, they require intensive management and this strategy may not work for all operations. Cows experience their highest nutritional demand when lactating. Under the current drought conditions, producers with fall-calving herds have likely been feeding supplemental hay and protein in order to maintain adequate body condition, which is especially important at breeding time. The multiple nutrient demands of lactating to raise a calf and sustaining body condition of fall-calving cows for breeding can be challenging under normal conditions, but is even more difficult during years like this. The sooner a calf is weaned, the sooner the cow can dedicate energy to restoring her body condition instead of milk production.



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MANAGING CATTLE DURING DROUGHT, CONT...

Cows that are nursing their first or second calf have an even greater nutritional demand because their bodies are still growing, which requires energy and protein levels above that of mature cows. If early weaning your entire calf crop is difficult to implement, consider a partial or step-wise implementation strategy starting with your youngest cows.

Weaning is stressful on calves, and early weaning can be more severe, but there are some steps you can take to minimize additional stresses and create a smoother transition and a better rebound. Early weaned calves will require a high quality diet or diet supplement in order to sustain an adequate growth rate. About two weeks prior to early weaning, introduce calves to the post-weaning supplemental diet so that they can gradually shift to the new diet. This will help improve diet consumption once weaning has occurred and also help sustain growth rates. Creep feeding calves is one option if you have the equipment to restrict feed access by cows. Providing the post-weaning diet to cow/calf pairs is another option and may encourage more rapid consumption of the diet by the calves as they observe and learn from their moms. If possible, try limiting early weaning to only those calves that are readily eating forage and other feeds, otherwise calves may require milk replacement or suffer a long-term setback in growth and development. Before and after early weaning, limit other stresses on the calves by avoiding vaccinations, branding, castration, and other activities that can be postponed until a later time when calves have recovered from weaning stresses.

Destocking and early weaning are strategies that focus your limited resources, mainly feed and forage, on the breeding stock you wish to maintain based on strictly selected traits and performance criteria. Having a drought management plan in place ahead of time that guides decisions during a drought will help you implement these strategies while minimizing negative impacts on your long-term ranch goals. Destocking decisions made in haste can have devastating consequences, requiring several years to correct. And don't forget that destocking can have tax implications that should be factored into the overall equation.

Renquist, B.J., J.W. Oltjen, R.D. Sainz and C.C. Calvert. 2006. Effects of age on body condition and production parameters of multiparous beef cows. *Journal of Animal Science*. 84(7):1890-1895



UC SANTA BARBARA WILD PIG IMPACT SURVEY

UC Santa Barbara researchers have initiated a study that seeks to quantify damages and impacts from wild pigs in California. Wild pigs in California are widespread and live largely on private land; these two factors make them challenging to study and they also make it difficult to determine amount and scale of damages and impacts caused by wild pigs. That means we need your help! Researchers at UCSB have put together a relatively brief and completely anonymous survey that should take about 10-15 minutes to fill out. If you are not able to access the survey online please contact me and I will provide a paper copy via mail. Thanks in advance for your participation! The survey is available at: <https://survey.insightify.com/4eb-3c4-661-5e2>



RECAP OF DROUGHT WEBINAR

On January 29, Jim Sullins and I hosted a drought webinar in two locations. One was held at the Veterinary Medicine Teaching and Research Center in Tulare, and the second was held at the UCCE office in Kern County. The webinar was streamed from the UC Sierra Foothill Research and Extension Center in Browns Valley, CA where UC Cooperative Extension Advisors and Specialists, including Glenn Nader and Roger Ingram, gathered together with a number of other knowledgeable individuals to share their in depth knowledge of livestock management during drought, making difficult culling decisions, drought economics, irrigated pasture management and more. The speaker list also included a local rancher, Wally Roney, who weathered the 1976-77 drought and was able to stay in the cow business.

Overall the webinar was a great success, with lots of useful information presented. All of the powerpoint presentations files are available online, as well as a number of useful handouts and other informational articles and publications. The director of the research station, Jeremy James, has also promised to post edited video footage of each presentation. To access information pertaining to the drought webinar visit:

[http://ucanr.edu/sites/sfrec/Extension and Outreach Programs and Materials/Drought Workshop/](http://ucanr.edu/sites/sfrec/Extension_and_Outreach_Programs_and_Materials/Drought_Workshop/)

For more information you can also contact Julie at 661-868-6219 or at jafinzel@ucanr.edu.

ONLINE DROUGHT RESOURCES AND INFORMATION

My webpage—this is a direct link to my “Links” tab where I have posted all of the sites listed below.
<http://cekern.ucanr.edu/Livestock/info/>

UC Sierra Foothill Research and Extension Center—Drought Webinar Presentations and Handouts
[http://ucanr.edu/sites/sfrec/Extension and Outreach Programs and Materials/Drought Workshop/](http://ucanr.edu/sites/sfrec/Extension_and_Outreach_Programs_and_Materials/Drought_Workshop/)

UC Rangeland Watershed Research lab—has links to many more helpful webpages
<http://rangelandwatersheds.ucdavis.edu/main/drought.html>

USDA, Farm Service Agency Emergency Conservation Program
<https://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=ecp>

USDA, Natural Resources Conservation Service—Go to the ‘Contact Us’ tab at the top right and find your local service center; call for more information.
www.nrcs.usda.gov

UC ANR Publications Catalog—Search drought. There are a number of helpful publications here related to land and livestock management
<http://anrcatalog.ucdavis.edu/>



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1st Annual Southern San Joaquin Livestock Symposium

February 27th, 2014
Porterville Veterans Memorial Building
1900 W. Olive Ave.
Porterville, CA 93257
9 AM – 2 PM

A Big Thank You to our sponsors!

Rural Ag Insurance Services
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Topics will include:

- Safety of GMO Feeds
- General Herd Health Management
- Foothill Abortion Vaccine Update
- Maintaining Financial Viability
- And more!



A BBQ tri-tip lunch will be served. Pre-registration cost is \$12. At the door cost is \$15.

Please register online at: http://ucanr.edu/livestock_1 or by filling out the registration form.

For more information visit: <http://cekern.ucanr.edu/Livestock/> or contact Julie at: 661-868-6219 or at jafinzel@ucanr.edu



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1st Annual Southern San Joaquin Livestock Symposium

9:00 – 9:30	Registration <i>Coffee, tea, and light refreshments provided</i>
10:00 – 10:30	GMO Feed and Animal Health: Fact vs. Fiction <i>Alison VanEenennaam, UC Cooperative Extension Specialist</i>
10:30 – 11:00	Maintaining Financial Viability: Drought or Not? <i>James Oltjen, UC Cooperative Extension Specialist</i>
11:00 – 11:30	Is Growing Demand for Animal Protein Fueling Climate Change? <i>Frank Mitloehner, UC Cooperative Extension Specialist</i>
11:30 – 12:15	BBQ Tri-tip and Deep Pit Pork Lunch
12:15 – 12:30	Tulare County Weed Management Area, 2014 Yellow Starthistle Program <i>Jim Sullins, County Director, UCCE Tulare and Kings Counties</i>
12:30 – 12:45	Natural Resources Conservation Service Cost-Share Programs <i>Mike Higgins, NRCS Rangeland Management Specialist</i>
12:45 – 1:15	Foothill Abortion Vaccine Update <i>Dr. Bret McNabb, UC Davis Veterinarian</i>
1:15 – 1:45	Herd Health Management: Vaccinations and Planning <i>Dr. Bret McNabb, UC Davis Veterinarian</i>
1:45 – 2:00	Audience Feedback and Closing Remarks

Thank You to Our Sponsors!

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1st Annual Southern San Joaquin Livestock Symposium

Registration Form

Thursday
February 27, 2014
Porterville Veterans Memorial Building
1900 W. Olive Ave.
Porterville, CA 93257

Name: _____

Address: _____

Daytime Phone: (_____) _____ Number Attending: _____

Email: _____

Refreshments and lunch will be provided to all participants.

Cost: \$12.00 per person pre-registration; \$15 per person at the door
Registration is available online at: http://ucanr.edu/livestock_1

Or, return this form, with payment, by February 20, 2014

Mail registration to:
Julie Finzel
UCCE Tulare County
4437-B S. Laspina St.
Tulare, CA 93274

Check or money order can be made payable to: UC Regents
Please call: 661-868-6219 with questions

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- ◇ Check the Water
- ◇ Kern Range Blog

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