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THE ROUNDUP

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



Greetings!

I hope this newsletter finds everyone well and prospering!

The 2nd annual Southern San Joaquin Livestock Symposium was held on February 26, 2015 in Porterville. A number of timely and interesting topics were covered including a talk on selenium supplementation by Farm Advisor Josh Davy, an update from Dr. Pat Blanchard at the CAHFS lab in Tulare, a review of deworming by Merial vet Dr. Tony Moravec, and more! Participants enjoyed a delicious trip lunch and great company!

Symposium presentations can be accessed via Julie's webpage at: <http://cekern.ucanr.edu/livestock>. For more information on symposium proceedings or if you have suggestions for next year please contact Julie.

As always, if you have questions or would like more information on anything discussed in this newsletter, contact Julie!

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PARASITE IMPACT AND CONTROL

As we enter this summer still entrenched in one of the worst droughts California has ever experienced, parasite control in your cattle is critical for the health, reproductive efficiency, and well-being of your herd. Cattle are working hard to maximize available forage, and in order to do so they have to graze close to the ground and use the same grazing areas repeatedly. These are perfect conditions for parasite build-up in cattle. Below is an article written by Dr. John Maas in April 2009. Please remember, some of the product information may be outdated due to the introduction of new deworming products since 2009. It is important to discuss all deworming decisions with your vet.

How do parasites damage cattle?

There are many different types of parasites and they all inflict damage in their own unique way. There are intestinal parasites that “steal” nutrients from their host’s intestinal tract. There are lung-worms that damage the respiratory tract of cattle. Liver flukes damage the liver tissue and gut of cattle and make them susceptible to the fatal bacterial disease known as Redwater. Another problem liver flukes are associated with is decreased fertility. Studies have shown decreased pregnancy rates in replacement heifers and increased age to puberty in heifers infected with liver flukes. Thus, flukes can cause losses in a number of ways: 1) direct damage to the liver, with weight loss and diarrhea; 2) death loss due to Redwater secondary to liver damage of migrating flukes; and 3) decreased reproductive performance. Lice and other external parasites suck blood from the cattle and cause skin irritation. Another damaging aspect of parasite infestation is their effect on the immune system. Parasites decrease the immune response of cattle. This has two important results: 1) the parasitized cattle do not have as much resistance to infection; 2) they do not respond as well to vaccines. In short, parasites cost you money in terms of decreased production and decreased health.

When is the best time to deworm?

The simple answer is whenever the cattle are going onto “new” pasture or range. “New” means the cattle have not grazed there during the last 4 to 12 months. The parasite eggs do not remain infective for the long, extended periods of time (particularly over summer or over winter – too hot or too cold for the eggs to survive). Therefore, if the cattle are going onto “new” pasture and you deworm them (kill “all” the existing parasites) the cattle will not be contaminating the new fields with parasite eggs. For many producers this translates into the fall and spring of the year. The bottom line is to deworm when the cattle are worked in the spring and the fall just prior to the time they are put into “clean” pasture or range. This year you may also want to consider a summer deworming, particularly if you utilize irrigated pastures in the summer. The build-up of worms and other parasites has been exceptionally bad the last 2 years, so an additional treatment may be warranted. Remember, if you deworm the cattle and simply put them back on the pastures they have been on for the last several weeks, the cattle will quickly become re-infested.

Do dewormers kill all the different types of parasites?



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PARASITES, CONT...

The simple answer is “no” for most of the products. However, there are broad-spectrum products that do a very good job on many groups of parasites. The ivermectins (Ivomec®, Cydectin®, Decotomax®, etc.) kill a large number of parasite species; other products (Levamisole®, Safeguard®, etc.) are more focused on internal parasites.

What about liver flukes?

Currently, there are only two drugs that are effective against liver flukes in cattle. Both work best against adult flukes, but there is some effect on the migrating juvenile flukes. Clorsulon is effective only against liver flukes and it is sold as Curatrem® or in combination with ivermectin as Ivomec Plus®. Thus, Curatrem® can be used to kill the flukes only, or Ivomec Plus® can be used to kill the flukes plus the internal parasites (worms) and external parasites (sucking lice). Additionally, albendazole (Valbazen®), which is an oral preparation, has activity against flukes and internal parasites.

What about the generic ivermectin products?

There are a number of ivermectin products that have been FDA-approved for several years and the patents have expired. Thus, there are generic ivermectin products that are now available commercially. Unfortunately, the chemical composition of these generic products does not have to be identical to the original patented products. Thus, often the effectiveness of the generic products is not identical to the original. It is my opinion (Dr. Maas), that some of the generics do not possess the same biologic potency as the original formulations and may not be as effective. Before using any generic dewormer for cattle, you should discuss this choice with your veterinarian.

Are the pour-on products better than the injectable products?

Not necessarily. If lice control is a major consideration for your treatment program the pour-ons have advantages. However, if fluke control is important than the oral Curatrem® or Valbazen® products or Ivomec Plus® injectable will need to be used. Be sure to visit with your veterinarian regarding the best dewormer products and the best times to use them on your herd. Remember, the best timing and products may be different for your herd than for your neighbor’s herd. Seek some good advice and do what is best for your operation. Be sure to read and follow all the label directions including withdrawal times and safety precautions.

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RUSTICI RANGELAND SCIENCE SYMPOSIUM, WATER QUALITY AND THE GRAP

I recently attended the Rustici Rangeland Science Symposium, hosted by Dr. Ken Tate's Rangeland Watershed Research Lab at UC Davis. The two day symposium featured a carefully constructed agenda that led attendees through a thorough review of water quality research and current issues.

All of the powerpoints are posted and available for viewing on Dr. Tate's webpage at: http://rangelandwatersheds.ucdavis.edu/main/symposium_RSS_2015.html. Every speaker was interesting and the topics were timely, but if I had to pick a few talks to recommend you take some time to read I would recommend the following:

- Microbial Water Quality – Rob Atwill
- Nutrient Dynamics – Randy Dahlgren
- Water Quality Conditions on National Forest Lands – Leslie Roche
- Current Status of Water Quality Policy – Patty Kouyoumdjian
- Public Lands Grazing Perspectives from Ranchers – Brenda Richards
- Establishing a Vision – Noelle Cremers


One thing I'd like to note about attending the symposium in person is that it provides the opportunity to interact and speak with a number of people who you may not otherwise have much access to or interaction with. Also, the question and answer sessions are sometimes just as interesting as the presentations themselves. For example, one person asked Dr. Rob Atwill why it's no longer safe to drink the water from mountain streams. His response, to paraphrase, was that the science presented at the symposium showed how safe the water really is and, further, that it's really hard to quantify why people may be more likely to get sick from drinking the water out of mountain streams today versus 50 years ago. He suggested that one cause may be our "uber-clean" society today that prevents us from being exposed to many of the pathogens naturally present in low amounts in mountain streams and that the problem may not in fact be the streams, but that we as a population have created a lower immunity in ourselves.

The issue of water quality in California and the Grazing Regulator Action Project (GRAP) remain in the forefront of many people's minds as the water quality board has not issued a clear update on whether they intend to proceed with GRAP or not. The water quality boards have updated the GRAP webpage with information from the listening sessions and more. The GRAP webpage is: http://www.waterboards.ca.gov/water_issues/programs/nps/grap.shtml

Ken Tate's and Leslie Roche's webpage are great sources of information on water quality and Leslie has created a two page policy brief summarizing the issues currently at hand, the policy brief can be accessed via her webpage at: <http://leslie-roche.weebly.com/>. As always, if anything in this newsletter is of interest to you, but you are unable to access it via the web, please contact Julie and she will get you a paper copy.



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RUSTICI, WATER QUALITY, AND THE GRAP, CONT...

The water quality short course is still under-going peer review and has not yet been released for implementation and use throughout the state. If you are interested in participating in a water quality short course please contact Julie.



UPDATE ON THE US FISH AND WILDLIFE SERVICE CALIFORNIA FOOTHILLS LEGACY AREA

In late 2014, it was announced that the US Fish and Wildlife Service would not pursue the California Foothills Legacy Area proposal. Reasons cited included lack of local support as well as objections raised by Members of Congress who represent the affected area.



2014 SURVEY RESULTS

In early 2014 I distributed a survey in conjunction with NRCS to find out your informational needs and interests. Not long after I sent out that survey, I gave birth to my daughter and I am still trying to catch up from maternity leave! I am almost caught up though, and reporting to you on the results of the survey will get me one step closer.

I sent the survey to over 700 recipients and I received 39 responses. Now, on paper that sounds pretty bad, but when compared with the average response to surveys, that's really pretty average.

The topics identified that are of most concern and interest for all of you are: nutrition, vaccination, deworming, salt/mineral supplements, feed supplements, fences, water troughs, herding, control of weedy plants, poisonous plants, water quality, marketing, drought, regulations, and individual animal ID. Topics that did not rate highly included oak management, oak regeneration, and drought insurance.

I've said it before in this newsletter and I'll say it again, my job is to listen and respond to you. Look for information on these topics in upcoming newsletters and informational meetings.



UCCE AND THE CALIFORNIA BEEF COUNCIL HOST EDUCATIONAL EVENT FOR DIETICIANS AT UC DAVIS

Below is an excerpt from an article originally published in the Northern Area Dietetic Association's newsletter, The Fresh Scoop, and was subsequently republished in the California Beef Council's Roundup newsletter.

On Saturday, November 16, 2014, UC Cooperative Extension in conjunction with the California Beef Council hosted an educational event for dieticians. Ten dieticians attended and were treated to presentations by James Winstead, Director of Nutrition for the California Beef Council and Dr. Frank Mitloehner, a UCCE specialist based out of UC Davis who specializes in air quality research.

James presented facts about beef nutrition including:

- On average, American adults consume 1.7 oz of beef per day
- Nearly two thirds (65%) of all beef sold in U.S. supermarkets is lean beef
- "Lean" beef is defined as having less than 10 grams total fat, less than 4.5 grams saturated fat, and less than 95 milligrams of cholesterol per 3.5 oz. serving
- Due to changes in breeding, feeding practices, and butchery, between 1963 and 2010, saturated fat in U.S. beef dropped by 36%

Dr. Mitloehner shared information regarding the sustainability of beef production, including:

- Some of the data used to support the fallacy that cows have a greater impact than cars originates from an outdated study from 1938
- According to the EPA, the number one contributor of greenhouse gas emissions is energy use, which means that...what you drive has more impact than what you eat and that meatless Mondays have little to no impact on reducing greenhouse gas emission.
- Of all greenhouse gas emissions in the U.S., beef production accounts for just 1.4%
- U.S. beef and dairy production have the lowest environmental impact in the world because of the research, science, and technology invested in these industries to help make them sustainable
- In regards to dairy cows, the more milk a cow produces, the less environmental impact it has. Basically, each cow produces a certain amount of methane (within some normal range), but cows that produce more milk will produce less methane per gallon of milk.
- Dairy cows in the U.S. are five times more productive than those in Mexico, in other words it takes five Mexican cows to produce the same amount of milk as one American cow
- Grassfed cattle are not more sustainable than feedlot cattle (corn-fed cattle) from an air-quality standpoint, for two reasons 1) Grass-fed cattle take longer to reach slaughter weight and 2) grass-fed cattle consume more fiber, which provides more substrate for methane producing bacteria in the gut, which means they produce more methane than feedlot cattle



ASK THE ADVISOR

What are some important items to include in a pasture/grazing lease?

The following is a short informational leaflet put together by Glenn Nader, UC Livestock Farm Advisor, Emeritus

1) Term of the Lease

The number of years the lease is valid for and the time each year the animals enter and leave the ranch.

2) Payment

A. Price

- i. Will vary by region and lease 'amenities'
- ii. Per animal on a monthly basis (\$16 to 25/ animal unit).
- iii. Flat fee for the grazing of the property for a set season.

B. Payment schedule

- i. 50% when the cows come on and 50% before they leave.
- ii. Payment at the end of the grazing season.

3) Dates

On and off dates when the cattle can arrive and must leave should be stated.

4) Area to be Grazed

The areas that will be provided for grazing should be defined by name or by legal description.

5) Maintenance

Fences, corrals and all other improvements will be maintained in the same condition as the start of the lease.

6) Responsibilities of Operation

The lease should describe who will irrigate the pasture and how it is done, who pays for the water costs, who applies and pays for the fertilizer, who provides and checks livestock water, who will provide salt, move cattle from pasture to pasture, receive and ship cattle, check and doctor sick animals, if full care is provided by the landowner, then an acceptable death loss will be described and compensation if that amount is exceeded.

7) Insurance

The lessee will provide liability insurance naming the landowner on the policy.

8) Liens

Both parties will declare any liens that are held on the property or the cattle.

9) Other Land Uses

Hunting, fishing, horseback riding, hiking and other uses of the ranch should be defined as to which party holds the rights to that use.

10) Use of Other Facilities

The allowed use of any barns, houses or other improvements on the ranch should be identified.

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IMPORTANT FACTS TO KNOW ABOUT THE HERBICIDE: GLYPHOSATE

By Brad Hanson and Glenn Nader

Not all glyphosate herbicides are equal

Producers need to compare price and application rates of glyphosate herbicides based on the acid equivalent per gallon. Various glyphosate products have different formulations (e.g. “salts”) which affects the concentration of glyphosate acid in the formulated material. Since it is actually the acid form of glyphosate that binds to the plant enzyme and stops amino acid formation and kills the plant, glyphosate rates are often expressed as lbs “acid equivalent” per acre rather than lbs “active ingredient”.

Table 1. Glyphosate Product Comparisons¹

Trade Name	Formulated Salt ^a	Concentration ^b lb ae/gal
Roundup Original	IPA	3
Roundup Original Max	K	4.5
Roundup Weather Max	K	4.5
Touchdown	DA	3
Touchdown Total	K	4.5
Touchdown Hi Tech	K	5
Durango	IPA	4
Glyphomax XRT	IPA	4
Most Generics	IPA	3

¹Glyphosate is generally formulated as one of the following salt molecules: IPA = isopropylamine; K = potassium; DA = diammonium; or TMS = trimethylsulfonium.

^b The concentration of glyphosate salts can be expressed in terms of either pound of glyphosate salt (ai) per gallon or pound of glyphosate acid (ae) per gallon. Because the various salts have different weights, comparing glyphosate on an acid equivalence (ae) basis provides a better comparison of the herbicidal component of the different salts.

Should I Add Adjuvants?

There are three primary types of adjuvants that are sometimes used with glyphosate herbicides: surfactants, water conditioners, and buffering agents. Most glyphosate formulations contain an adequate concentration of surfactants, except if applying it to weeds with dense hairs or thick cuticles on their leaves or to woody plants.

Water conditioning agents such as ammonium sulfate fertilizers are commonly used to increase glyphosate efficacy in two ways. First, one of the major causes of a reduction in effectiveness of glyphosate is from mixing it in “hard” water high in sodium, potassium, calcium or iron. These positively charged ions bind to the negatively-charged glyphosate molecule (think of two magnets with opposite polarity) in the spray tank and this new molecule cannot be absorbed by the plant. One of the most effective and inexpensive methods of reduc-



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ASK, CONT...

11) Proper Grazing Levels

The pasture grazing management should be defined to describe the acceptable level of grazing. This can be such things as stocking rate, end of season stubble height, or riparian protection.

Some long-term grazing leases are recorded on the ranch deed to protect the lessee if a transfer of the property occurs.

This list is not intended to be legal advice, it is only intended as a checklist to consider for a rental agreement. All legal agreements should be reviewed by legal counsel prior to signature.



GLYPHOSATE, CONT...

ing this problem is to add dry ammonium sulfate (AMS) fertilizer with formulation numbers on the bag of (21-0-0-24) at .085 to .17 lb per gallon of water before adding the glyphosate. The ammonium in the AMS also helps with glyphosate absorption through the leaf and increases transport to the roots in some weeds which can increase efficacy.

Plant and Environment Conditions

Plants that are covered in dust or are under significant environmental stress (water, heat, cold, physical damage) do not absorb or transport glyphosate effectively to growing points. For optimal weed control with glyphosate, weeds should be actively growing and free of dust at the time of application. Consider applying when nighttime frosts are not occurring and the daytime temperature is above 60 degrees. Excess leaf moisture from a heavy dew or rainfall too close to the application can also reduce glyphosate performance due to herbicide runoff. Although it is not well understood, it seems that when light intensity is higher at the time of application performance is often greater.

Timing of Application

Annual weeds (plants that grow from seed each year) are best controlled when they are small; however, glyphosate only kills emerged growing plants, not seeds or newly germinated seedlings so time application(s) accordingly. Young annuals have relatively smaller root systems then and require less glyphosate to kill the plant. In contrast to annuals, perennials (plants that grow each year from the same roots and have a larger root structure than annuals), like scotch broom, are best controlled later in the season when the plant is in the bud stage immediately prior to flowering. This is when perennial plants are moving sugars, along with the more glyphosate, to their larger root system for winter storage and glyphosate performance is typically much better.

Adapted from University of California Statewide Integrated Pest Management Program publication.

For a complete copy of the report go to <http://www.ipm.ucdavis.edu/PDF/PUBS/miller-glyphosatestewardship.pdf>



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