



ANIMAL HEALTH PIE MEETING RECAP



Siskiyou County CattleWomen with delicious Pies served at the Annual Animal Health “Pie” Meeting.

We had a wonderful turnout with a record attendance Monday, February 13th for our Annual Siskiyou County Animal Health meeting in Montague, California. Thank you to our sponsors, the Siskiyou County Cattlemen, CattleWomen and the California Beef Cattle Improvement Association. The speaker lineup is clearly to be credited for this year’s success. Dr. Tina Saitone, Livestock and Rangeland Economics Specialists with UC Davis, gave an economic outlook of the beef industry, which is timely as we transition into a new political administration and away from the historical drought. Local producers, Tara and Chet Porterfield, Greg Hanna, and Greg Kuck, along with Veterinarian, Amy Fousek discussed vaccine protocols and marketing correlations as part of an open rancher to rancher discussion panel aimed at encouraging information sharing and improved heard health techniques. My favorite part of the evening was hearing from five of our local 4-H and FFA members. Callahan Zediker and Emily Smith from Big Springs 4-H gave us some insight on Brucellosis while Jackson Duchi and Jackson Wood of Gazelle 4-H covered the topic of new born calf care. Our local FFA representative was Kara Lipke, Yreka FFA, who went into some detail on signs and symptoms of pneumonia. All of the kids did a great job not only presenting their topic and sharing their knowledge but by showing their passion for the agriculture industry and I commend them for being leaders of our next generation.



LtoR: Stan Sears, Montague, Dan Drake, Greg Kuck, current County Cattlemen’s President, Montague.

In This Issue

**Pie meeting recap:
Livestock and climate
change**

**Calving Ease Versus
Birth Weight**

Bur buttercup toxicity

**Opportunities and
Events**

University of California
Cooperative Extension
Livestock and Natural
Resources

1655 South Main Street
Yreka, CA 96097

530-842-2711

ckrivers@ucanr.edu

cesiskiyou.ucanr.edu

The presentations were recorded. Contact me for the link. 530-842-2711 or ckrivers@ucanr.edu.

LIVESTOCK AND CLIMATE CHANGE

Carissa K. Rivers, UCCE Advisor, Siskiyou

Our key presenter was Frank Mitloehner, Professor and Air Quality Specialist with Cooperative Extension in the Department of Animal Science at the University of California, Davis. Dr. Mitloehner is an expert in agricultural air quality, livestock housing and husbandry. His research focus is understanding and mitigating air emissions from livestock operations, including the potential effect of these emissions on the health and safety of farm workers and neighboring communities. Dr. Mitloehner has also served the agricultural community in numerous capacities both nationally and internationally as chair of a global United Nations Food and Agriculture Organization (FAO) partnership project to benchmark the environmental footprint of livestock production. He has served as a workgroup member on the President’s Council of Advisors on Science and Technology (PCAST) and as a member on the National Academies of Science Institute of Medicine (IOM) committee on “A Framework for Assessing the Health, Environmental, and Social Effects of the Food System”.

Dr. Mitloehner truly makes an impression on the ranching community with his presentation on greenhouse gasses (GHG) and the facts and fictions of livestock and climate change. He presents scientific information in a down to earth manner with unwavering passion for his research and the Agriculture industry that everyone, including children, can relate to.

The topic of greenhouse gases as they pertain to climate change generally strikes the agriculture industry with a negative blow, but Dr. Mitloehner has done instrumental work that convinces producers that what we are doing as an industry is not wrong, but is worth sharing proudly.

From 1970 to 2015 the U.S. beef cattle population decreased from 140 million to 90 million head, a decrease of 36% while production is the same at 24 million tons annually (Mitloehner, F. 2016).

Livestock’s Contributions to Climate Change: Facts and Fiction). This paints a much more accurate picture than that portrayed by anti-animal agriculture advocates who claim that the livestock industry is responsible for large greenhouse gas (GHG) contributions—comparable to all

transportation sectors such as cars, trucks, planes, trains and more, which just is not comparable when all production steps are factored in (Mitloehner, F. 2016).

The livestock industry needs to tell our story, and we need to tell it with science. Leading scientists throughout the U.S. have measured the actual impacts of livestock production on GHG emissions in the U.S., finding that nationally livestock production is responsible for just 4.2% of all GHG emissions. Figure 1 helps put this number into perspective for overall U.S. emissions. Figure 2 breaks down livestock emissions by species in the U.S (Mitloehner, F. 2016).

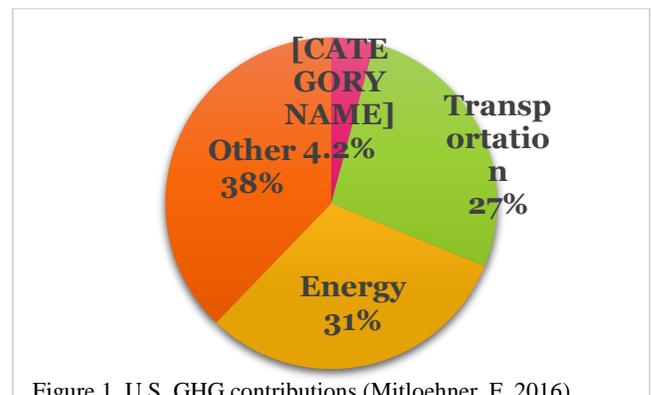


Figure 1. U.S. GHG contributions (Mitloehner, F. 2016)

Species	GHG contribution (% of overall U.S. contribution)
Beef Cattle	2.2%
Dairy Cattle	1.37%
Swine	0.47%
Poultry	0.08%
Sheep	0.03%
Goats	0.01%
Other livestock	0.04%
Total	4.2%

Figure 2. U.S. GHG Livestock contributions

Dr. Mitloehner best puts these numbers into perspective by using the example of “Meatless Mondays” which, unfortunately, we are all familiar with. For example, if all U.S. citizens stopped eating meat one day a week for one year, this would reduce the annual national GHG emissions by only 0.6%. To break that number down even further, if the U.S. did not eat beef for one day a week, for one year, it would only decrease total emissions by 0.3% annually (Mitloehner, F. 2016).

While it is important to continue seeking emission reductions from livestock, putting so much emphasis on livestock is misguided when one considers the contribution from livestock compared with other sources. By targeting the livestock industry, a very small percentage of GHG concerns are being addressed and they are being addressed emotionally rather than with scientific sustenance. Advances in science-based solutions like genetics and management have played a key role in reducing our environmental footprint for over 60 years now and will continue to keep us on the right track in assuring food security both at home and abroad (Mitloehner, F. 2016).

Dr. Mitloehner has a message to help build some industry resiliency, “The livestock sector is committed to continuous improvement of their environmental impact in North America, and to doing its part in transferring knowledge,

technologies and best practices to enhance global environmental livestock impact by region. Now is the time to end the rhetoric and separate facts from fiction and the numerous sectors that contribute emissions and to identify solutions for the global food supply that allow us to reduce our impact on the planet and its resources.”

I think that the take home for each of us should be as Dr. Mitloehner encourages...we need to stop defending what we do. Stop defending Agriculture. We have a lot to be proud of as we continue to improve our production practices. We need to insert ourselves into the conversation, start educating more folks in our day-to-day interactions, and let them know that we are doing our part. Being less reactive and more proactive starts with us.

*Mitloehner, F. 2016. *Livestock's Contributions to Climate Change: Facts and Fiction*. Davis, CA, USA: Department of Animal Science, University of California, Davis. 4p.

ARE WE DRIVING THE LIGHT BIRTHWEIGHT TREND TOO FAR?

Carissa K. Rivers, UCCE Advisor, Siskiyou

I have always been a low birthweight is best believer and I know that I am not alone on this. I ran across an article on the economic impacts that the small birthweight calf trend could be having on profit margins and it got me thinking about how small, is too small?

We know that many factors and combinations of these factors play a role in the weight of a calf at birth, including:

- Age of the dam
- Nutritional balance during gestation
- Body condition score (1-9, 1 emaciated, 9 excessively fat) of the dam
- Dam and sire breed
- Environmental Temperature during gestation
- Gestation length

Birthweight accounts for 55-60% of the variability in calf survival from birth to weaning, meaning that selection for birthweight alone will not improve calving ease as much as selecting for calving ease (Weaber, 2014).

The obvious concerns for large calves is dystocia, creating a risk of losing both the cow and the calf. The most common concerns with small calves



include increased vulnerability to the weather and predators. An indirect concern is that smaller calves can lack vigor, taking longer to get up and nurse. This creates an opportunity for missing out on early colostrum, leaving them susceptible to early health challenges that can stay with them through their entire lives. Too big or too small, dead calves do not weigh much come weaning time.

A crude birthweight estimate is that the calf is born weighing about 7% of the dam's body weight. (Thomas, 2014). For example, if you have a 1,200lb cow, an 84lb calf at birth would be about “normal.” Both heavy and light (compared to normal) newborn calves are more likely to have complications during or shortly after birth.

Let's think about this, if your 1200 pound cow can comfortably have an 84 pound calf, then maybe that means less than 60 pounds is too small, and more than 100 pounds is too risky? In an informal survey of a room full of producers at the Angus University Workshop in November 2016 in Indianapolis Indiana, 56% of the attendees said that a calf over 90lbs was too big, 33% said a calf over 100lbs is too big and 6% said over 110lbs is too big. Only 6% of the attendees said that over 80lbs was too big. On the other end of the spectrum about half of attendees agree that less than 50lbs is too light with 10% of that saying less than 40lbs.

Something to take into consideration is the capability of your females. Can they handle calving 7% of their body weight easily, if not, it may be time to incorporate pelvic measurements into your replacement heifer program, or focus on calving ease genetics.

In the case of replacement heifers we need to think of calving ease as both a trait of a calf (how easy it is born or direct calving ease, CED) as well as a trait of the cow (how easy the cow gives birth or maternal calving ease, CEM). Calving ease is the economically relevant trait associated with dystocia. Economically relevant traits (ERTs) are those that directly generate revenue or incur costs in beef production systems (Weaber, 2014).

Production Traits				Maternal Traits	
CED	BW	WW	YW	CEM	Milk
+6	+1.1	+47	+84	+8	+24

Example EPD's based on 2017 Angus Association bull averages.

Without getting too deep into EPD's, the genetic correlation between calving ease direct (CED, prediction of the average difference in ease with which a sire's calves will be born when he is bred to first-calf heifers) and weaning weight (WW) is not as antagonistic as that between birth weight (BW) and WW. Therefore, placing more selection pressure on CED rather than BW is a more effective tool for achieving desirable growth traits (Reiman, Miranda, 2016).

Genetics have the greatest influence on birthweight and calving ease, which is why genetic selection is so important. With today's science and genetic tools, we have greatly diminished the occurrence of dystocia. In fact, we are at a point where cattle can have genetics for low birthweight and calving ease

Comerford, John. Regulating birthweight in Beef Cattle. Pennsylvania State Extension. 2009.

Reiman, Miranda. Smaller Isn't Always Better. Angus Beef Bulletin. 2016.

Thomas, Heather Smith. Factors Effecting Birthweight in Calves. Progressive Cattleman. 2014.

Weaber, Bob. Use Calving Ease EPD's to Select Sires for Replacement Heifers. Drovers. 2014.

while still having superior growth potential (Comerford, 2009).

The old story of lighter calves at birth tend to wean lighter and conversely, the heavier calves at birth are the heavier calves come weaning and yearling time just isn't as true anymore.

However, how small is too small when you factor in the vulnerability risk of small calves at birth for example? I think this is a question each producer needs to think about based on your own herd, environment, economic, and production objectives.

Focusing on CED rather than actual birth weights, cow/calf producers can see improvements in their bottom line. An overall decrease in dystocia occurrences, a decrease in calf loss prior to weaning, and an increase in replacement heifer stayability (prediction of the period of time that a bull's daughters will remain in the herd) are a few of the benefits to reap by selecting for calving ease. It could be like having your cake and eating it too.

I am not urging anyone to start breeding for heavier calves. I am only bringing to light that we need to be thinking about how far we want the low birthweight trend to go in our own herds. What fits your operation and overall objectives? Just breeding for small calves because the industry has pushed it may not be the right fit for you. If your cows are capable of safely producing more pounds, then why not let them realize their full potential? After all, we are in the business of selling pounds?

There are reasons to select for low birthweights. For example, the industry is saying to breed for low birthweights, so a seedstock producer will breed to satisfy his customers. Other examples may include the time commitment of an off-ranch, or geographical distance from your calvy cows. In these cases, breeding for small calves is a safe bet for peace of mind.

There is no 'one size fits all' production model for any two producers, but there are tools and experience that can help to develop a successful management plan. The bottom line is that we need to be focusing on calving ease more, rather than actual birthweight, which may be creating an opportunity for profit loss.

HIGH OCCURRENCE OF BUR BUTTERCUP

Carissa K. Rivers, UCCE Advisor, Siskiyou
Steve B. Orloff, UCCE Farm Advisor, Siskiyou

The weather pattern this year in the Intermountain Region of Northern California has been radically different from what we have seen the previous 4 years. In most years, high pressure usually moves in periodically sending Pacific cold fronts farther north and giving us periods of warm dry weather. However, this winter and so far this spring high pressure has not dominated and we have been continually bombarded by cold fronts.

The frequent rains this winter and spring has resulted in changes in the weed spectrum. One weed we have seen a lot more of in this area is bur buttercup. Bur buttercup (*Ranunculus testiculatus*) has been widespread this spring and in some cases dense populations have been observed. Bur buttercup germinates early, prefers high moisture and cool temperatures and can be seen as early as February and into April or May in this environment.

Development

Bur buttercup is a winter annual, emerges, flowers and sets seed early in the spring when temperatures hit around 45-50 degrees. It can be found in varying soil types, has a very shallow root system and stays low to the ground at only 2-3 inches tall. Each blossom generally has five bright yellow pedals that are very small, measuring less than ¼ inch long. When the plants reach maturity, each blossom turns into ½- ¾ inch long bur. Bur buttercup can create a dense, carpet-like cover that can span over large areas and despite its appearance, it can be a concern because of its high toxicity.

Toxicity

Bur buttercup is highly toxic to cattle, sheep and horses and can affect humans by irritating skin and causing blisters. The plant contains ranunculin, which turns into a toxic compound protoanemonin when the plant is crushed by chewing, for example. This toxin is not a threat in baled hay and the plant is so small it is not likely to be present in hay.

Usually it is not a problem in pastures because livestock generally avoid the plant due to its pungent taste and because the poison causes blisters in the mouth. However, when forced to eat it because there is a lack of other more palatable forage, bur buttercup can be a problem.



Bur buttercup in Shasta Valley April 12, 2017

There are little data indicating the consumption rate needed to affect livestock. One experiment showed that sheep died after exposure exceeded 1.1% of their body weight. How this relates to toxicity levels in cattle is unknown. However, assuming similar toxicity in cattle, if you have an 800 lb. heifer, for example, the animal would need to consume about 9 pounds of the green plant. Fortunately, this is not easily done because other range plants are more prevalent and palatable. We don't know how much of an issue bur buttercup may be with cattle grazing in infested rangeland or pasture in the intermountain area this year, but exercise caution if you see significant amounts of this weed in your fields without much other more palatable plants.

Clinical Symptoms of toxicity in livestock

Anorexia	Weakness
Diarrhea	Labored breathing
Struggle to stand	Death

In lactating cows there is a drop in milk production, and the milk is bitter and red-tinted. Sheep may collapse suddenly; pigs may show paralysis but only minor involvement of the digestive system (*USDA, NRCS factsheet). If bred cattle ingest the toxin in the spring, it can cause abortions and mummified fetuses (Puschner, PhD; DVM, UC Davis Molecular Biosciences)

Control – Do so before it flowers and sets seed.

- **Reseeding** it is susceptible to competing forage species.
- **Mechanical** –hoeing, digging, hand pulling (using appropriate protective wear).
- **Chemical** – Herbicide application.

CURRENT AND UPCOMING EVENTS

- **TARGETED RIPARIAN WEED MANAGEMENT WORKSHOP JUNE 7TH:** We will start at the Minors Inn, Yreka, in the morning with presentations on targeted grazing, targeted herbicide application, applied management strategies and riparian weed management objectives. Lunch will be provided, followed by two site visits demonstrating targeted strategies in the Shasta Valley. Look for an agenda and further details in your mailbox soon! *Hosted by UCCE and UC Davis.*
- **DONATION HEIFER PROJECT:** Applications were due April 12th. A panel will be reviewing applications and selecting heifer recipients in May.
- **CATTLEMEN'S SCHOLARSHIPS:**
 - **NEW SCHOLARSHIP OPPORTUNITY:** The Siskiyou County Cattlemen are offering two new Agricultural scholarships for graduating students. One will be awarded to Butte Valley High School and the other to Tulelake High School. Applications are due to the Extension office 1655 S. Main Street, Yreka 96097 or emailed to ckrivers@ucanr.edu by **May 15th**.
 - **CONTINUING EDUCATION SCHOLARSHIP:** Siskiyou County Cattlemen's Association will be accepting continuing education scholarship applications until **May 15th**. This scholarship is for college students majoring in Agriculture. For more information and an application, please contact the extension office at (530) 842-2711 or ckrivers@ucanr.edu.

Sincerely,

Carissa Koopmann Rivers



Livestock and Natural Resources Advisor
Siskiyou County



Siskiyou Stockman is a newsletter published by the Farm Advisor's office containing research, news, information, and meeting notices related to the areas of livestock production, irrigated pasture, range, and natural resource management.

The University of California prohibits discrimination or harassment of any person in any of its programs or activities. (Complete nondiscrimination policy statement can be found at <http://ucanr.org/sites/anrstaff/files/107734.doc>) Inquiries regarding the University's equal employment opportunity policies may be directed to John Sims, Affirmative Action Contact, University of California, Davis, Agriculture and Natural Resources, 2801 2nd Street, Davis, CA 95618, (530) 750-1397.

Cooperative Extension
University of California
1655 South Main Street
Yreka, CA 96097

NON-PROFIT
STANDARD MAIL
PERMIT #3
YREKA, CA 96097

Current Resident or