University of California
Agriculture and Natural Resources

Livestock Lines

Stanislaus & San Joaquin Counties

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Did You Know?

The US is the #1 beef producer in the world, but direct GHG emissions from cattle are 2x lower than Brazil (#2 beef producer in the world).

Theresa

By Theresa Becchetti
Livestock & Natural Resources Advisor

Livestock's Impact on Greenhouse Gases

by Sheila Barry and Theresa Becchetti

WITH EARTH DAY right around the corner, I thought I would include a discussion about greenhouse gas and livestock production. There has been much discussion lately on the topic, with different perspectives.

Livestock's Long Shadow was released in 2006 and stated that livestock produced more greenhouse gases than transportation worldwide which shocked and outraged many involved in livestock production, University of California's Air Quality Specialist, Dr. Frank Mitloehner included. His research, starting with dairy cattle, had been showing a much smaller percent of greenhouse gases coming from cattle, and while most, jokingly, refer to it as "cow farts," it is more correct to refer to it as "cow belching." Yes, ruminant animals (cattle, sheep, goats, deer, bison, elk, etc.) have a fermentation vat for their digestive system, which allows them to consume low quality forages and create a nutritional product for us (meat and milk), but methane is produced in the process and "belched" to release that gas from a cow's digestive tract. However, it is much smaller than what Livestock's Long Shadow calculated. Dr. Mitloehner also faulted the report for comparing the entire production cycle for livestock with only tail pipe emissions for transportation, ignoring the emissions associated with the production of vehicles. The author did acknowledge his flaws, but Livestock's Long Shadow still has a shadow over animal production thirteen years later. Here are some facts, stemming from Dr. Mitloehner's research, to help put things in perspective.

In California, 8% of the state's greenhouse gas emissions are from all of agriculture, with 80% of emissions from transportation, electricity, and industry. Out of the 8%, 4% is from all of livestock production. Other researchers calculated the impact of the entire US population becoming vegan and what that would mean to our greenhouse gas emission. The percent – 2.6%. Another way to look at it as Dr. Mitloehner puts it, if we become vegan for a year, the savings on greenhouse gases would be equivalent to one one-way trip from SFO to London. Our producers are very efficient in the United States and California and have continually made improvements in pounds of production per animal, improved breeding, improved health, etc. The US produces more beef than any other country, all while producing less greenhouse gas.

Only looking at emissions also takes a very simplistic view of the big picture. Livestock production, especially in California, provide a vital role in many ecosystem services. Cattle grazing on rangelands can help sequester carbon on grazed lands; manure is often used in organic farming as the main fertilizer. Another vital role livestock play is in upcycling by-products from other ag sectors such as almond hulls, tomato pumice, rice bran, cottonseed, and distiller's grain. Many of the by-products from the Impossible Burger find their way into animal agriculture as feed such as soybean hulls. In addition, cattle grazing—the number one land use in California—not only reduces fuel loads and can minimize greenhouse gas emissions from catastrophic wildfires, but also supports habitat for many of California's threatened and endangered species such as California Tiger Salamander. The research shows that it is too simplistic to suggest that reducing meat consumption is a climate smart strategy.

We should all contribute to reducing our environmental impact on the planet by making climate friendly choices but being smart about climate smart strategies means applying research-based knowledge to understand where our choices make a real difference.

In these pages...

University of California
Agriculture and Natural Resources | Cooperative Extension

Goal:

The goal of this course is to provide ranchers and land managers a solid foundation of science-based information in rangeland ecology and livestock management principles combined with hands-on skills that enhance sustainability and economic viability.

This comprehensive course will improve the understanding of mechanisms driving changes and in turn promote proactive and adaptive management.

Topics Will Include:

- Rangeland vegetation and plant ID
- Grazing management
- Herd health and disease prevention
- Rangeland monitoring and assessment
- Rangeland stewardship and ecosystem services
- Rangeland soil characteristics and soil health
- Drought management
- Animal and foraging behavior
- Low stress animal handling and facilities design
- Weed management

Wednesday, May 1, 2019
8:00 am - 5:00 pm
Thursday, May 2, 2019
8:00 am - 4:00 pm

UCCE Merced Conference Room
2145 Wardrobe Ave.
Merced, CA 95341

Registration is Required
Cost is $95 per person

($150 for TWO persons from same ranch)

Registration includes lunches, light refreshments, and training material

Register on line and pay by credit card http://cemariposa.ucanr.edu

Register by mail (use attached form)

Attendees may request meeting accommodations by contacting our office at (209) 966-2417 at least 48 hours prior to events.

For More information (including lodging) call or email Debbie, UCCE Mariposa at 209-966-2417 dswass@ucanr.edu or Dr. Fadzayi Mashiri, Livestock and Natural Resource Advisor for Mariposa & Merced fmashiri@ucanr.edu

Rangeland and Livestock Management 101

Mail Registration Form and Fee to:

UCCE Mariposa, 5009 Fairgrounds Road, Mariposa, CA 95338

Name:_____Phone:_____

Address:_____Email:_____

City:_____State:_____Zip:_____

Agency / Ranch:_____

Add Me to Your Mailing List: Yes_____No_____Vegetarian Meal Preferred: Yes_____No____

2-Day Course Fee: $95 per person ($150 for two persons from one ranch)

Now Available Register & Pay Online @ http://cemariposa.ucanr.edu

Register by: Friday, April 26, 2019 / Detach & Return to UCCE Office

Attendees may request meeting accommodations by contacting our office at (209) 966-2417 at least 48 hours prior to events.

May 1, 2019

	Day I	Presenter
8:15 – 8:45	**Registration**	
8:45- 9:00	**Welcome and Introductions**	Fadzayi Mashiri
9.00 – 9.45	Plant communities	Rebecca Ozeran
9:45 – 10:30	Plant physiology	Devii Rao
10:30 – 10:45	**Break**	
10:45 – 11:30	Grazing Management	Stephanie Larson
11:30 – 12:15	Drought Management	Matthew Shapero
12:15 – 1:00 PM	**Lunch**	
1:00 – 1:45 PM	Animal Health	Jennifer Taylor
1:45 – 2:00 PM	**Travel to field/break**	
2:00 – 4:00 PM	Rangeland Monitoring and Assessment Plant communities Plant ID and monitoring	Theresa Becchetti Rebecca Ozeran Devii Rao

May 2, 2019

Time	Day 2	Presenter
8:15 – 9:00	Weed management	Lynn Sosnoskie
9.00 – 9.45	Animal Behavior	Fadzayi Mashiri
9:45 – 10:30	Ecosystem services	Stephanie Larson
10:30 – 10:45	**Break**	
10:45 – 11:30	Animal Handling	Kent Reeves
11:30 – 12:15	Soil Ecology and Health (class)	Toby O'geen
12:15 – 1:00 PM	**Bagged Lunch**	**Eat and travel to field site**
1:00 – 1:45 PM	Soil Ecology and Health	Toby O'geen
1:45 – 2:25 PM	Animal handling	Kent Reeves
2:25 – 3:00 PM	Weed ID	Lynn Sosnoskie

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Look What's Inside:

- **Livestock's Impact on Greenhouse Gases**
- **Rangeland and Livestock Management 101**

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To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.