VOL. 2 ISSUE 2 · MARCH 2022

CATTLECAL NEWSLETTER

ANNOUNCEMENTS

Welcome to the CattleCal newsletter for March 2022! In this issue we have exciting information on diets for cattle transitioning from grazing to the feedlot, the career and research of UCCE Livestock and natural resources advisor Sheila Barry, and a look at a study examining the effect of excessive fat supplementation in feedlot diets. If you would like to hear more detailed conversations about the articles in this issue, look for our CattleCal podcast on Spotify. Descriptions of this month's episodes and a link to the podcast can be found on page 3. If you have any questions, comments, or would like to submit a question for our Quiz Zinn segment, feel free to contact us. Our contact information can be found on the last page of the newsletter.

This issue:

THIS MONTH IN RESEARCH

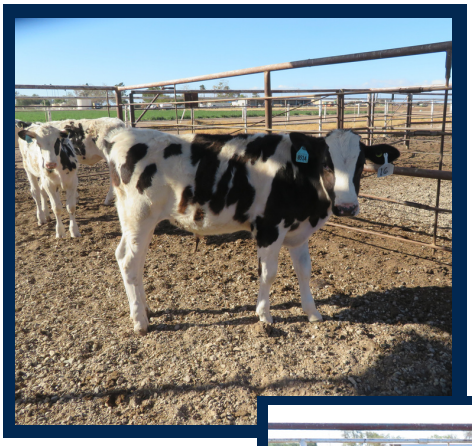
This month we continued our programmed feeding and tannin projects. We weighed the calves and feed on day 28. In February we saw an average minimum temperature of 40° F and an average maximum temperature of 76° F.

DAYS 1-28 PERFORMANCE SUMMARY

	Holstein	Crossbred
Body weight (d 0)	278 lbs	294 lbs
Body weight (d 28)	350 lbs	371 lbs
ADG	2.56 lbs/d	2.72 lbs/d
DMI	9.63 lbs/d	9.33 lbs/d
F:G	3.77	3.42

January 2022

February 2022



CATTLECAL PODCAST MARCH EPISODES

Quiz Zinn - CCP #045

In this episode, we asked Dr. Richard Zinn about ideal diets when moving cattle from pasture to the feedlot.

Career Call - CCP#046

This week Brooke Latack and Pedro Carvalho called Sheila Barry, a UCCE livestock and natural resources advisor in the Bay area to talk with her about how she ended up in her position including working with cattle in Texas, spending a year in Jordan, and ultimately working on conservation practices and how grazing cattle fit into that picture.

Research Call - CCP#047

This week Brooke Latack and Pedro Carvalho speak to Sheila Barry, this time covering her research looking at the interaction of conservation for endangered species and livestock grazing.

Feedlot Research Call - CCP#048

This week, Pedro Carvalho and Brooke Latack discuss research looking at the effect of excessive fat supplementation in feedlot diets.

Listen on Spotify at this link:
https://open.spotify.com/show/6PR02gPnmTSHEgsv09ghjY?si=2zV59nGbSE2mf8DiOqZLhw

Have any questions, comments, or suggestions? Want to send in a Quiz Zinn question? Contact the creators through the below email or through their social media profiles.

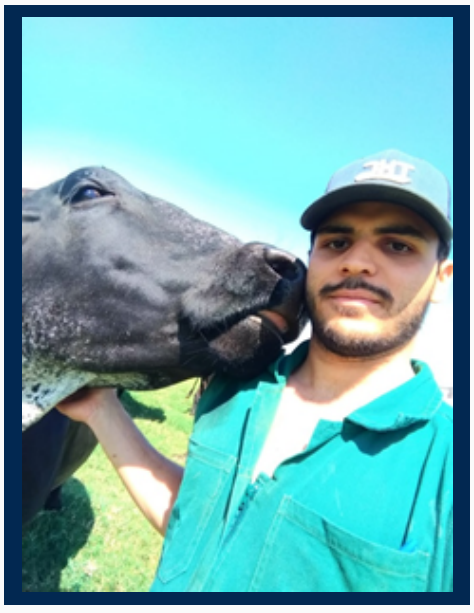
- Email: cattlecalucd@gmail.com
- Website: cattlecal.sf.ucdavis.edu
- Instagram: @cattlecal

2022 INTERN INTRODUCTIONS

In February we welcomed two new interns to UC DREC. The interns will help us with our research and have already done a great job learning the animal management for the research feedlot. We look forward to their time here and hope they learn a lot!

Lester Nolasco

I am a Veterinarian from Honduras graduated from the Universidad Nacional de Agricultura, Honduras. I have worked with cattle throughout my life, which is one of the things that drove me to go to vet school.



Heitor Otávio Martins de Oliveira

I am a Brazilian Technician in Agriculture from IF Goiano Academic of Animal Science (9 period) at UFG – Brazil. I have worked on a dairy farm all my life; My focus at university was in milk production and bovine reproduction.

CAREER CALL WITH SHEILA BARRY

This week we talk to Sheila Barry, University of California Cooperative Extension Livestock and Natural Resources Advisor in the Bay Area, about her career path.

Where are you from and what do you do?
I'm a third generation Californian born in La Jolla near San Diego. However, when I was a child, my family moved to Oak Ridge, TN. I grew up there playing in the woods and started developing a love for the outdoors. In middle school, we moved back to Southern California. For the past 25 years or so, I've lived in Northern California, and as you mentioned, working as a livestock and natural resource advisor for Cooperative Extension and mostly been in the San Francisco Bay area.

How did you start to work in agriculture?
Well, I actually got interested in agriculture and also in beef cattle science when we moved back to California as a freshman in high school. I went to the school counselor because I found out that I was going to be in the same typing class as my older sister. I decided that wasn't a good way to start high school, so I told my high school counselor I wanted to do something sort of sciency, and she suggested vocational agriculture, which is Future Farmers of America. Our school happened to have a school farm that was given to the school by Mission Viejo Ranch, which is still a working ranch. In fact, the only working ranch in Orange County. They had provided land to the school for vocational ag. Looking back, I find it really strange that in a high school of 2000 with less than 20 enrolled in ag that this high school counselor suggested this program at all. It clearly wasn't their flagship program. I ended up raising animals and showing them at fair. I had started with some hogs and had a couple lambs and chickens, and then I eventually had a steer and I bred a sow. We had a meat processing facility on campus and we spent most of our classroom time actually doing cut and wrap. Either with animals from the farm or venison that the instructor and his hunting buddies would bring in. We learned a lot about meat processing. It was in my junior and senior year when we as students had to fight for the future of the farm that I became really invested in agriculture. I was particularly struck by how little adults and the school leaders understood of animal agriculture and what was even happening on this farm and what our capabilities were. We wanted to use the meat processing facility to cut and wrap our animals that we had raised there and sold. He wanted assurance that the animals wouldn't be hurt. Mind you, they word dead animals already (they were they were custom slaughtered), so that wasn't part of what we were doing. He wanted assurance that we wouldn't mess up cuts. The example I remember was somehow to turn a ham into a pork chop. I was struck by how little understanding there was of animal ag. I went on to study agricultural science and management at UC Davis, which is where I realized that I really liked working with cattle. I lived at the university feedlot for one year and also the university dairy. Before I graduated, I decided I really needed to have more hands on experience if I wanted to work in the beef cattle industry. I wanted to do an internship on a ranch and I found an article about women that were ranching on their own. They were widows that had continued the ranching and I thought that would be a good place for me to start.

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CAREER CALL WITH SHEILA BARRY

I called one of them up in Winters, Texas and spent the summer with her. She was all about cattle. It was 24/7 cattle. She fed cattle at the cattle at Abilene Cattle Feeders, she traded cattle, she managed her ranch. She set me up with jobs working cattle. Day work dehorning cattle in corrals made of bedsprings. I worked with hospital crews in a feedyard, stacked hay and moved cattle, applied herbicide and fertilizer to pasture, and then had this really horrible job for a week unloading trucks during milo harvest. That's a really itchy, horrible job. I went on to Graduate School and studied beef cattle science at Texas A&M. This was the 90's. I was in the Master's of ag program. I went into that program because it would involve more internship and the idea was that the program would place you on a ranch. They didn't place me on a ranch. Instead, I got put on an experiment station, which happened to be an excellent experience. I got to do a bunch of cattle work at the experiment station as well as learned about extension. That really launched me into my first job. On my desk was a catalog (this was before the Internet) of all the extension offices in the US. It was like a ready-made list for me to send out my resume. I landed my first job in extension in Colorado as an agricultural agent.

How important was the internship to your career?
Absolutely crucial. It's still experience I draw back on. Even though some of those experiences were really short, I had an affinity for it and also just a really strong memory of it. It still provides some sort of base of my understanding of the industry, of how people work, of what needs to be done, and of some of the challenges in doing that sort of work. It also gave a connection with the people who now are my clientele, because those were the people that I was interning with. It was incredibly valuable.

How important were the mentors through your experiences to your growth and development?
She was incredibly valuable even to my future. She introduced me to professors at Texas A&M who she was connected with through the industry. Even going on to grad school, that connection was important. What strikes me about mentoring is that it seems so formal. I never defined it as that. Clearly that's what she was, as well as others. We need those experiences, but I don't think it has to be something that you make a formal arrangement about. Sometimes it's after the fact that you identify those people. I would also say that it was a two-way street. She was in a very small town in Texas, had recently become a widow, and was in a place where she needed some connection to a world outside where she was. As a young adult, it was an incredible experience for me.

How did you end up coming back to California from Colorado?
I started in extension in Colorado as an ag advisor. I was covering things that I didn't have a lot of background in. They grew corn and alfalfa as well as feeding cattle. I wasn't there very long, but it was a great introduction to extension. I really wanted to come back to California. I had my first job in California in the northern Sacramento Valley. I was the livestock advisor in Glenn, Tehama, and Colusa counties for about six years. Ever since then, I have been in the Bay Area because that's where my husband ended up being in in high tech, so it made a lot of sense. I just want to share how unique of an opportunity it is to be a livestock advisor in the San Francisco Bay area.

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CAREER CALL WITH SHEILA BARRY

I would believe that many people do not even think that we have livestock, and in fact I know this even within our own organization. I had applied at one point for the job and they took the job away because the county director in Alameda County at the time didn't believe there were any more livestock in the county and therefore there was no longer a need. It couldn't be further from the truth. The area's farmland has largely been developed. The valley of the heart's delight, a valley that was rich with stone fruits that has been completely replaced by the Silicon Valley. The rangeland and the foothills surrounding the valley are largely intact and managed as they've been for the past hundred plus years with extensive livestock grazing, primarily beef cattle. The big change is in ownership. Much of it now is public land. That is great. It's not federal public land. When people think of public land, they think of Forest Service and Bureau of Land Management. But in the Bay Area, it's a lot of other jurisdictions, from cities to county to regional districts to water districts. There are over 30 different public agencies that are managing open space land and using grazing. It provides a real unique opportunity of working with these landowners and really thinking about how we keep rangelands working, sustainable, and working for conservation, because that's really their focus. Their focus isn't on beef cattle production, but on a plethora of conservation values that include habitat, watershed, and now fire fuels management. A focus of my work has been looking at what is the relationship between grazing and habitat specifically for endangered species. We have around 90 federal listed species in the Bay Area.

What are your interactions with producers? Who do you typically work with?

I define my primary clientele group as the large landowners and secondary the ranchers. The ranchers I wouldn't say are completely traditional because ranching in the Bay Area takes someone who's tolerant and who can put up with hassle factor of being here. Many of them have multiple leases. They're leashing from various public agencies with different objectives. They also might be leasing private land, and they may have some of their own land. This would be true of our farmers in the area, too. Being this close to an urban area, you have to be able to be adaptable and tolerant and willing to spend time explaining things. Even, maybe regrouping your animals. One of the tests for a public agency might be you're gathering cattle and a group of hikers come through and scatter your cattle. What do you do? There's loss, too, that they are susceptible to. Some is compensated, for some is not. It surely happens in many places in the state, but I think more frequently in an area like the Bay Area where you have such close proximity to urban areas where you have dogs that might chase cattle or in some cases wildlife, like Mountain Lions, attack. Cutting the fence is a is a common thing to happen or keeping gates open or closing gates that should be open. Ranchers are often really discouraged when cows let down calves and somebody from the public believes that the calf has been abandoned and then attempts to rescue the calf. That's a really hard one because it's so unnecessary and frankly puts the person in danger.

What are your favorite parts of your job?

I like the opportunity to be outdoors and to work with ranchers and land managers. The people who have a real feeling for the land, a love for the land, and a love for their animals. It just makes it the best job.

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CAREER CALL WITH SHEILA BARRY

What are some things or resources you recommend to someone who might be starting a position in extension or ag?
Experience working with the producers is really key. Being in a place of listening and showing up. I will say that I feel like in my career I've gotten a lot of credit and it's often for being present. It really helps show that you are engaged and from it you learn. Begin to show up at producer meetings or other opportunities to support producers. Maybe it's working cattle. We have ranchers in our area who are very keen to help the public, students, and others know about their operation and how they work cattle, how they care for their animals. They are frequently asking me who I can bring to their roundup. They realize the value of that and. If you want to be engaged, it's the way to do it.

You just finished you PhD. What was it like going back to graduate school after having a career?
Well, it was something I swore that I would never do. I had no interest in going on to school. It seemed like a lot of work. A few things aligned that made sense for me to pursue a PhD at Berkeley in Environmental Science/Policy Management in range science. One was a professor there, Dr. Lynn Huntsinger, who works in social science and pastoralism. Rangelands is sort of her focus and I was very interested in the sort of work that she was doing and saw that as an opportunity to learn more. I saw a need for there to be more social science.
I was realizing that in my area of looking at the ecology of grazing and endangered species, it's hard research to ever be definitive about anything in terms of a hardcore science answer on ecology. Even if we did have the answer, it's not clear that it would always matter because of other social and economic factors. I saw there to be a need for us to also have a better understanding of the social/ecological system. I didn't feel like I had the research skills to engage in this type of research. I realized in going to Berkeley that it was a type of research that I actually do a lot and I really like. And that includes participatory observation, for example, as a research method and also surveys and interview. One of these methods alone is often not enough to really get at what knowledge there is and what research question you're trying to answer. Doing mixed methods is a really clear strategy for doing social science research. Starting the program at Berkeley really provided some new avenues for me to learn about doing social science research and to really connect with folks even at UC Berkeley. I feel like it took me in some good new directions for supporting my clientele and really supporting this question of how we keep rangelands working and supporting conservation. I kind of had it easy in that there was a lot of overlap between what I do and what worked and what I was studying and my ability to apply it. It made it easier on both accounts, but it was it was a heck of a lot of work. I still had to write things that you wouldn't normally. I had a lot of really good opportunities, including taking a class in environmental journalism, which was excellent to learn to be a better writer.

Since you were balancing your career being an advisor with completing your PhD program, did that make your PhD program longer than it would typically take?
When I started the program, my assumption was that a typical PhD program takes four years. They told me on the first day that the normative times like 8 to 10 or something in social science.

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I wasn't expecting that. That's because generally there's a lot of upfront effort in knowing who the people are that you're going be working with, maybe even learning a language. I got to truncate some of that because I already had connection with my people. Yes, it was extra work. But I will say that COVID also was a bit of a reset in terms of how people were spending time. I was able to utilize that to my advantage a bit to finish sooner than I might have otherwise.

What is your favorite food?
Well, it's meat. Yesterday I was asked what my favorite fruit or vegetable is and I said lamb. I really like lamb. I didn't grow up eating lamb, maybe because my parents come from that generation where they were served mutton and had a distaste for it. I was an exchange student in the Middle East in Jordan for a year and ate a lot of lamb and developed a love for lamb.

What was your experience like living in Jordan?
I took a year off after high school before I started at UC Davis. I really wanted to learn a language. I hadn't done very good in Spanish. I said send me any place that doesn't speak English. I went to Amman, Jordan, and spent most of my time learning Arabic. I had an excellent host family who I am still very close to. They were Palestinian Muslims living in Jordan. An all-girl school is where I got put. I spent a lot of my time in the elementary school with much younger girls learning the language. It was a really good experience, and I was really thankful for it. One thing that led to, though unfortunately I didn't get to complete the project but because of COVID, was a project with the foreign ag service working in Amman, Jordan doing rangeland management training with the Ministry of Agriculture. That was really a great opportunity and I look for opportunities like that in the future. That was my first ever professional connection with my past in terms of being an exchange student.

How did doing an exchange program help you?
Being adaptable and being in a group of people where you're different. I definitely find myself that way working with ranchers. Commonly I'm maybe the only female there. Just an awareness of being in different situations, how to adapt, how to listen. All of that has value.

What is your favorite music or thing to listen to?
I do sometimes listen to a variety of songs. I like some pop and even some Arabic music sometimes. More recently I've found myself spending time listening to books. I started while I was in school because my eyes would give out at night. For my qualifying exams one of the professors had me read all these books and I was just like, "Oh my gosh. I just don't know how I can read all of these books." I found one online aa an audiobook. So, I started listening to audiobooks.

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CAREER CALL WITH SHEILA BARRY

What is something you would tell your younger self knowing what you know now?
I struggled with what an answer would be. Not that everything was perfect, but I think that's what made it. It's that knowing that there's going what I look at as doors. There's lots of doors and constantly looking for those doors and not being afraid to look for the doors particularly that are open. Don't be afraid to go through them. I feel like that's sort of what has led me. You have to have some focus to have a direction, but on the other hand, being so focused that you missed those doors. I feel like that's what's added value to my life and what I've done is find opportunities.

What is your CattleCal top tip?
I recommend three different books.
1.The Elon Musk biography. It's an audiobook and it's a written book too, of course. It's an interesting story. I just really marvel at how somebody took on two industries that would seem absolutely couldn't be taken on (aerospace and the car market) simultaneously and was successful. It's an excellent story with a lot of food for thought.
2.The Big Fat Surprise by Nina Teicholz. I like that it challenges you to think about research and how research can be. This is true of any research and how research can be used to make certain points and how we might make things that are not really significant of larger significance and sometimes even miss what's even more important. It looks at how fat has become this evil in our diets, but the research isn't there to really support that.
3.Travels of a T-shirt in the Global Economy by Pietra Rivoli. It has made me think about the beef industry. It's written by a professor. She looks at where the cotton came from, how the T shirt got made and then where it ended up in the end. I find it a really fascinating story. I'm interested in systems. It looks at it from a systems approach, but also brings in the people along the way.

How can our listeners follow your work?
Website: https://ucanr.edu/sites/BayAreaRangeland/
Email: sbarry@ucanr.edu

RESEARCH CALL WITH SHEILA BARRY

This week we talk to Sheila Barry about her research covering livestock grazing and it's interaction with conservation management.

Can you tell us a little about the project and how you came up with the idea?

It would be best if I gave an example. Next to the Santa Cruz harbor, there's a small plot that's about 17 acres. It's really in the heart of Santa Cruz. This land has some of the last population of an endangered plant, the Santa Cruz Tar Plant. This plot had been grazed over the years and there were generally hundreds of thousands of this plant in the field. With development in the area it didn't make sense and people were concerned about protecting the area so the livestock were removed. It was still accessed by the public. Over time the population of the plant started to decline to where they were barely seeing any plants at all. The conservation community worked to mow it and rake up the thatch because it was a lot of grass. They realized that that's really hard to do. It's something that they would have to do every year. You don't just do it once and it goes away. They needed to maintain it. They decided that they liked the idea of using grazing. They brought in cattle. It required them to put in some infrastructure. Some fencing. This plot supported just a small number of cattle. They started with just six black angus cows in 2015. What intrigues me about this is the idea that the ranching is what's going to pay for this. They aren't paying this rancher to graze these 17 acres. The idea is that somehow he is going to be able to make money from these animals to be able to put them out there, manage them, and deal with fence cutting initially. People got cut off from the way that they used to access the property. The thought was what the production system was that these ranchers are contributing to and benefiting from in terms of be paid for that enables them to manage grazing for conservation. In this case, maybe he's not grazing them all the time. Those cows aren't going to be there year-round. They will be there seasonable. They have to go somewhere else. What enables him to do that? He, like many of our smaller producers utilizes sale yards, for example. I wanted to look more closely at where do our cattle go in California when they are on range? What enables our ranchers to be able to move cattle from range when they need to, because of lack of feed quality or there isn't enough feed or they need to keep feed for the next season. That was what was behind the idea of why I wanted to study this. I think it has implications as to how we keep ranchers sustainable.

Can you tell us the specific research methods you used and what you found out from your research?

One of the challenges we have is really, which is universal, is how we count cows. How do we count them? When do we count them? Generally we talk about things in a year, but we don't have any that are really finished within a year. We have multiple classes within a year. It's challenging to count them. We also have some problems counting the acres that we graze. It's not like a defined farm field where we know exactly how many acres. Getting at this part of information continues to be a challenge, but that was what I was looking for. How can we look at where we have cattle in the state? We have things like the census report, which I looked at.

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I also got access to data from the bureau of livestock ID from when they are branded and when they are moved out of state or moved to another system (i.e. feedyard, processing plant, etc). If they're just moved within a pasture in California, they're not inspected, so we don't have good data there. I was able to look at that data. It also includes dairy cattle so I had to segregate the dairy cattle from the set. I was able to use that data to get a handle of where beef cattle were in the state, when they were being moved from grazing lands, and where they were being moved to in some cases. That's the crux of the data set. I also included with that some interviews. I went to feeder sales and made notes of who was at the feeder sales, who was selling. I would interview them afterward and ask them why they were selling their feeder cattle at that feeder sale. What was it that drove them to be there that time of year. I also interviewed a couple cattle buyers and did some survey of our smaller producers about why they were either marketing at a livestock auction or selling direct.

Did you learn anything surprising from this research? Anything that jumped out at you?
Putting numbers to ideas that I had. One thing that struck me is that we clearly have beef cattle doing some grazing in every county in the state with the exception of San Francisco, which is mostly a city. The clear seasonal mark of when cattle are moved was something I wasn't expecting to be so clear. We have over 500,000 head of our calf crop (47% of the calf crop) leaving rangelands to go to pastures or feedyards in a 12 week period in the spring with the peak in June. There's another surge in the fall where about 18% of them move. We have these two seasonal blips, but it's a really strong signal and it's really clear when you compare that to dairy, which is just all through the year they are being moved to feedyards or processing facilities.

Are they moving in state or out of state?
It's a little hard to say where they are moving because a lot of them are moving through a sale yard and we don't have records of where they moved other than knowing from being at the sale barns that they are generally going to grass if it's earlier in the 12 week period, but later in that period they are going directly to a feedyard from the sale yard. A lot of them are going directly on feed which is out of state or on grass out of state in some cases. It's a little hard to tell a lot of the time. If the cattle are going Oregon, for example, most of them going to grass.

Were there any major challenges you ran into when you were doing this research?
Lots of that. An example of that would be with the dairy. As you know, we now have dairy cows that are bred to terminal sires (angus, etc). They may have offspring that don't have dairy markings so they show up at the feedyard and they're not going to be labeled as dairy cattle. They're going to be labeled as black and not necessarily dairy. I spent probably a good couple days trying to pull out what I thought were all the black cattle that were dairy sires based on who was putting them in the feedyard. It turned out to be a really challenging task because not all producers that are dairies name themselves a dairy. It's tricky but in the end it was really unsatisfying because I think I only pulled out 3,000 head. I know there must be more. They were somehow getting marked the other way. I don't think I had that level of error in the data.

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The other surprise that I sort of knew but now have the numbers to show it, was how few cattle are direct marketed. That's where a producer is selling directly to a processing facility or directly to a consumer. It's less than 2%. A number of producers participate in that. About 13% will have some retained ownership all the way through. It's only a small number of head. Many producers will keep one or two animals for their own consumption. The implications of this are that right now we have a system that really relies on transportation, sale yards, and feedyards to support our rangelands. That is clear from this data. That's not to say there couldn't be a different system, but it would be completely redoing the system. It's not just going to be a few producers holding a few animals longer. The system is not set up like that and the producers are able to take advantage of and meet their conservation objectives. That was really clear, particularly in the interviews, that producers were really geared toward recognizing that they would move their cattle, including selling their calves, to help them keep feed and meet conservation objectives.

What do you see as the potential of conservation using cattle?

I'm specifically working in California's Mediterranean annual rangelands. There are advantages to grazing in other ecosystems, but the one that I looked at has a large number of endangered species. The reason for this is because these grasslands are dominated by non-native annual plants (grasses and forbs) that came from Europe and do really well under all kinds of management. They just took off in California and frankly do really well under drought, fire, grazing, no grazing, etc. You name it, they do well with it. The role of cattle is controlling them. Often it gets talked about as limiting competition. It's not a really great way to understand it. It's really about trying to control the biomass, controlling the thatch that they produce, controlling the height of the plants. Many of our endemic species may have been in forb lands where the plants are really short and had more bare ground. These annuals are really good at filling up all of the space. Grazing provides a really important role in controlling that biomass for them. In my findings where I looked at US Fish and Wildlife Services documents to see what they said about grazing species in California, I found that 51% of species in California are found in habitats with grazing. Of these, 59% of these have positive benefits from livestock grazing. Most of the threats have to do with it being over grazed. That has to do with how the rule is written. If a plant might be stepped on or an animals burrow might be stepped on, then that's a threat to the species even though that may or may not threaten the entire species. If a habitat is going to be over utilized, then many things will suffer including the endangered species. I want to share a couple quotes from interviews that highlight how ranchers think about conservation.

"I have no directive for conservation. As all cattlemen, I convert grass to beef, so we need to manage grass. I manage it, public and private all the same to keep grass. I graze all grasslands, public and private similarly. If you take care of the land it takes care of you."

Generally you will hear from them a strong ethic in wanting to do good grazing management. Some of them clearly recognize the role with endangered species.

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RESEARCH CALL WITH SHEILA BARRY

"During summer my grazing is compatible with California Red Legged Frog, Fairie Shrimp, and Giant Garder Snake. I do not overgraze. I have no conservation restrictions but I keep it the best I can. According to the NRCS biologist it remains a good habitat for Red Legged Frogs, Tiger Salamanders, and San Joaquin Kit Fox. I sold my cattle later than usual because I had excess feed but there was no impact to conservation. I don't like to graze to the ground."

I would like to mention since that is one thing in my area that drives some of what I feel needs to be out there, there's a huge push to replace the omnivore diet with a plant based diet, especially in the Bay area. Having cultured or synthetic meat and it's being promoted as a solution. It's being promoted by some big names. Bill Gates said in March 2021 that all rich countries should move to 100% synthetic beef to cut greenhouse gas emissions driving climate change. He's suggesting that regulations can be used to shift the demand. Other researchers are really focused on this idea that cattle use too much land. There's this huge disconnect in understanding how this land is being used. It's not like this land that was supporting the Santa Cruz Tar Plant or Tiger Salamanders would be farmed instead. It is being managed for habitat with livestock grazing. To calculate that as a land use then supports claims that it uses too much land is quite misleading but also detrimental to future conservation. That's not to say that all grazing is good grazing and all land should be grazed. In my findings we did find benefits to every species type in California with the exception of Alpine where there was no species benefiting from grazing, though there isn't many endangered species there either. This idea that somehow the system can be replaced and we'll save ourselves in terms of land use would be very detrimental in California specifically to conservation.

What's next in research related to what you have accomplished so far?

Increase the understanding of livestock's role in meeting our conservation needs. This work helps provide some evidence and some data to support what we need to make that happen. As an example of where there's opportunities, in the state there are a couple of places that have had a lot of initiatives toward looking at both resilience, fuels management, and conservation in what is being framed as natural and working lands. I think that statement needs to be reconsidered. There are some lands that are natural and don't have any work on them, but really it's natural working lands that I work on. They're not separate. Working lands often refer to farmlands. That illustrates a continuing lack of understanding which highlights the need for information to be further shared and understood. A lot of the public agencies I work with have a clearly have an understanding of the value that the grazing is providing them in terms of meeting their conservation objectives. It's harder for them to share that up their leadership chain let alone the public that is being barraged with messages that are really counter to that.

Continued next page

RESEARCH CALL WITH SHEILA BARRY

How can people learn more about this work?

The Benefits of Livestock Grazing California's Annual Grasslands - https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8517

Understanding Working Rangelands: A Year in the Life of a Beef Cow - https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8526

Grazing Systems Management: Achieving Management Goals - https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8529

Beef Cattle on California Annual Grasslands: Production Cycle and Economics - https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8687

Cows Need Water, Too: Water Sources, Wetlands, and Riparian Areas - https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8525

Guidelines for Describing Grazing Management & Utilization – https://anrcatalog.ucanr.edu/Details.aspx?itemNo=7225

Caring for Cattle to Provide Safe and Wholesome Meat - https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8530

Ranching Infrastructure: Tools for Healthy Grasslands, Livestock, and Ranchers - https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8561

A guide to Livestock Leases for Annual Rangelands - https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8679

FEEDLOT RESEARCH BRIEF

Effect of excessive fat supplementation on feedlot cattle performance

Introduction

- Supplemental fat has been shown to decrease ADG and feed efficiency in feedlot cattle.
- The majority of cases where decreased performance was observed when supplementing fat was when supplementing at levels greater than 5%.
- It has been suggested that growth performance decline may be more related to total lipid intake rather than the percentage of fat being supplemented.
- This study aimed to evaluate the effect of excessive supplementation of fat on feedlot cattle growth performance, dietary NE, and digestive function.

Methods

- 90 crossbred steers (~539 lbs) were blocked by weight for a 205 day feeding trial.
- Treatments:
  1. 4% supplemental fat
  2. 8% supplemental fat
  3. 12% supplemental fat
- All diets formulated to have the same CP:net energy ratio
- Supplemental fat was tallow soap stock.
- Steers were implanted with Synovex-S on days 49, 105, and 161.

TABLE 1. Composition of experimental diets fed to steers, Trials 1 and 2.

Item	Supplemental fat 4%	8%	12%
Ingredient composition, %[a]			
Sudangrass hay	21.45	21.61	21.77
Steam flaked corn	62.78	55.71	48.69
Cottonseed meal	2.53	5.51	8.35
Tallow soap stock[b]	4.00	8.00	12.00
Limestone	1.28	1.37	1.40
Dicalcium phosphate	.77	.57	.50
Urea	.79	.83	.89
Trace mineral salt[c]	.40	.40	.40
Vitamin A[d]	+	+	+
Lasalocid[e]	+	+	+
Cane molasses	6.00	6.00	6.00
Nutrient composition[f]			
Net energy, Mcal/kg			
Maintenance	2.12	2.24	2.35
Gain	1.46	1.56	1.66
Crude protein, %	11.5	12.2	13.0
Ether extract, %	6.9	10.6	14.2
Calcium, %	.90	.90	.90
Phosphorus, %	.45	.45	.45

Results

- Increasing fat supplementation reduced ADG, feed efficiency, and dietary net energy.
  - More marked reduction at 12% fat supplementation.
- There was a quadratic effect on DMI.
  - Intake was greater for cattle supplemented with 12% compared to 8% supplemental fat.
- Observed/expected NEm decline from 1.00 (4% supplemental fat) to 0.86 (12% supplemental fat).
- NEm for tallow soap stock declined from 5.65 to 2.85 Mcal/kg when increasing supplemental fat from 4% to 12%. (Figure 1)

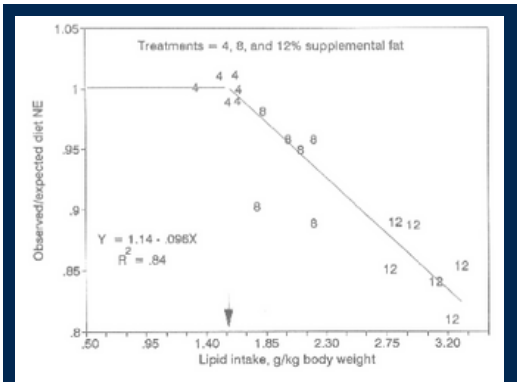

FIGURE 1. Relationship between total lipid intake and observed:expected dietary NE, Trial 1.

Implications

Optimal growth performance for these cattle was observed when cattle were had a fat intake of 1.6 g/kg body weight. Excessive supplemental fat can lead to depressed intestinal lipid digestibility.

CONTACT

Have any questions, comments, or suggestions? Want to send in a Quiz Zinn question? Contact the creators through the below email or through their social media profiles.

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