VOL. 1 ISSUE 1 · MAR 2021

CATTLECAL NEWSLETTER

ANNOUNCEMENTS

Welcome to the CattleCal Newsletter! We will be publishing a new version every month covering updates in our research, announcements, summaries of our new CattleCal podcast episodes, past feedlot research, and much more. We are excited to be sending out more information to you. If you have any questions, comments, or know someone who would like to subscribe to this newsletter, please see the contact information on page 10.

Note: You may have previously subscribed to the Livestock Research Brief. It will still be included as one of the featured sections in this new monthly version under the name "Feedlot Research Brief".

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THIS MONTH IN RESEARCH

Our new group of Holstein calves arrived in early February for us to get started on some new research projects!

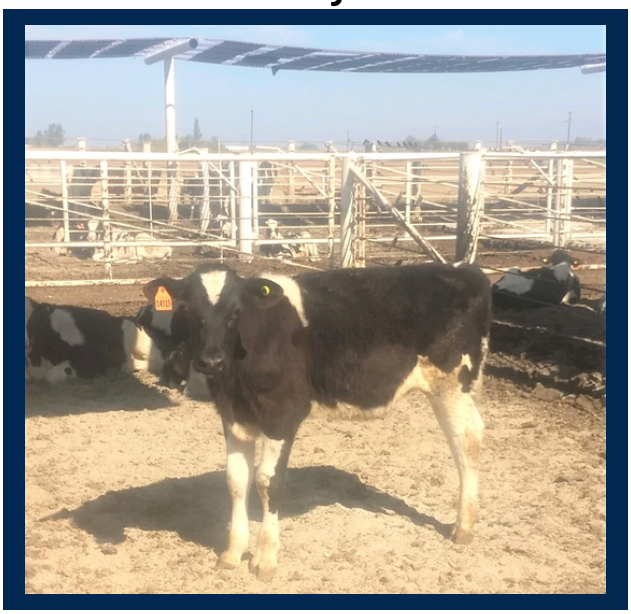
With a total of 220 steers, 100 will be used to look at the impact of metabolizable protein, 105 will be used to look at the impact of an essential oil mixture, and 15 will be extras.

We weighed on arrival and sorted the calves. In early March we recorded their 28 day weight. So far this group has been doing excellent. Below is some additional information on their performance for the first 28 days on feed.

PERFORMANCE SUMMARY

Body weight (d 0)	**298 lbs**
Body weight (d 28)	**392 lbs**
ADG	**3.35 lbs/d**
DMI	**10.00 lbs/d**
F:G	**3.05**

February 2021



March 2021

INTRODUCING CATTLECAL PODCAST

What

The podcast not only talking about cattle, but also the people working in our cattle industry!

Four different series:

1. CareerCal - An interview with someone working in the cattle industry. Why did they decide to work in the industry? How did they end up in their position? Get to know them on a personal level.
2. ResearchCal - With the same interviewee, we talk about a specific project they finished or are currently working on related to cattle. What are they doing? What have they learned? What are some take home messages from the project?
3. FeedlotCal - We present feedlot applied research. We will present this series as a groupings of subtopics. The first six month will cover topics related to protein nutrition in feedlot cattle.
4. Quiz Zinn - We will take questions from our listeners about feedlot nutrion, management, and nutrition and take them to Dr. Richard Zinn, one of the most respected feedlot nutritionists in the world who has been working at UC Davis for over 35 years.

When

One series will be published once a week for a total of four episodes a month. Episodes will be published on Wednesdays.

Where

You can find the CattleCal podcast anywhere you listen to podcasts (Spotify, iTunes, etc). Links will be published in this newsletter monthly. Links can also be found on our website cattlecal.sf.ucdavis.edu.

Who

Dr. Pedro Carvalho is an Assistant CE specialist in Feedlot Management at UC Davis

Brooke Latack is a Livestock Advisor for the University of California Cooperative Extension serving Imperial, Riverside, and San Bernardino Counties

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

HOW TO: ACCESS CATTLECAL PODCAST ON SPOTIFY

If you're new to podcasts or unfamiliar with Spotify, this will help lead you through the steps to access the CattleCal Podcast. It is free to access the CattleCal podcast (and other podcasts) through Spotify. If you prefer to use a different podcast platform (iTunes, etc), the procass may be similar with a few differences. If you are having any difficulties, please reach out and we will be happy to help you (cattlecalucd@gmail.com).

1

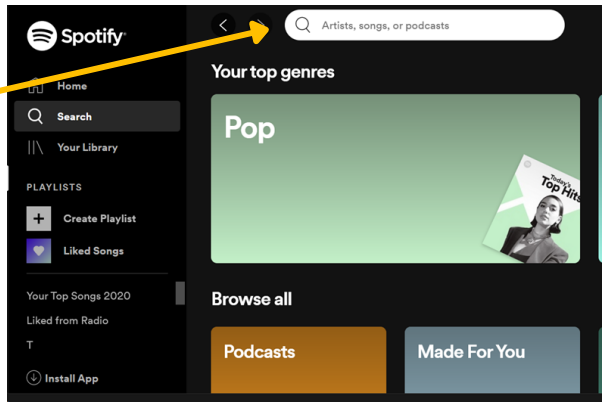
Open Spotify on your phone, computer, or smart TV. If you don't s e Spotify on your phone you will need o go to your app store and download the Spotify app.

2

Sign in to your account. You will have to create an account if you do not already have one.
Reminder: you are able to listen to podcasts on Spotify using the free version.

3

Click the search button. Enter "Cattlecal" in the search bar and press enter. The CattleCal Podcast may come up in the "Top Result" section. If it doesn't, scroll down to "Podcasts", select "See all", and look for the CattleCal logo.

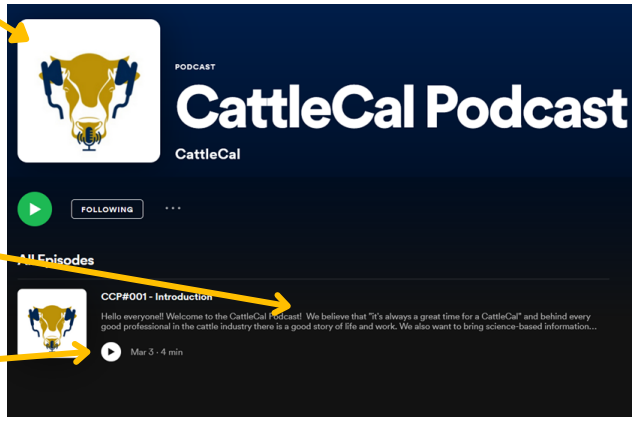


4

Click on the CattleCal Podcast and scroll to the episode you would like to listen to.

To read the episode description and find the associated links, click on the partial description shown.

To listen to the episode, click on the play button.



CAREER CALL WITH BROOKE LATACK

First, tell us who you are, where you're from, and what you do.
I'm Brooke Latack and I'm originally from the southwest corner of Michigan. I moved to the Imperial Valley about three and a half years ago to work for the University of California Cooperative Extension. I work as the University of California Cooperative Extension Livestock Advisor serving Imperial, Riverside, and San Bernardino Counties.

When did you decide you want to work in agriculture and how did you make that decision?
Growing up I loved being around animals, so going to college at Michigan State University I knew I wanted to go into something animal science related. At first I thought about being a veterinarian and going to vet school, but as I dove more into the livestock classes and got more involved with research I realized that I wanted to do more of the research side of animal science. While finishing my undergrad studies I got a job working at the Animal Air Quality Research Facility where we did research projects with poultry, cattle, and pigs and that cemented my love for livestock research.

What led you to decide to go to Michigan State University?
I wanted to stay in state for college, so I was looking for a university with a strong agriculture program, specifically animal science and Michigan State University had that. MSU also has a vet school, so when I initially was considering becoming a vet that was a major pull.

You took a year off to work between finishing undergrad and starting your Master's program. Can you talk a little about that?
After graduating with my BS in Animal Science I ended up working a full year at the same lab I had been working at. It was great because it allowed me to learn more about research and the lab without having to worry so much about classes. By the end of that year I was extremely familiar with the facility and much more confident in my capabilities in research which helped going into graduate school. It also gave my mind a break before diving back into the rigorous requirements of graduate school.

Tell us about your job. What do you do on a daily basis? What are your interactions like with producers?
As a livestock advisor for the University of California Cooperative extension part of my job is applied research, which is research that producers can apply directly to their operations. The other part of my job is extension – getting the information from this research and our resources out to the producers. We have access to resources and researchers that can help clientele solve issues they may be having on their farm.

What is your favorite and least favorite part of your job?
My favorite part of my job is interacting with the people. Hearing their stories, learning their histories, understanding their operation is wonderful. I love seeing the how passionate people are about the industry and the high-quality products they produce. The easy answer to my least favorite is COVID making it difficult to get the interaction I enjoy so much.

CAREER CALL WITH BROOKE LATACK

What is the one thing that was the most unexpected part of your job?
The one thing I didn't expect was the passionate responses to issues. I may get phone calls where people may not be happy or may be under a great deal of stress. Being able to talk with them and help them find a solution is very rewarding, but something I've had to learn through the experience. It wasn't something I anticipated happening right out of grad school.

Who has helped guide you through school and your career?
Yes, there have been many people that have been huge in mentoring me. My graduate advisor was key to helping me get to where I am. She allowed me to try new things and grow as a researcher. I appreciate her guidance a great deal. When I came to this position, so many specialists, advisors, and professors came forward to help. The support system is something I most appreciate about my job.

What's your favorite food?
I like many different kinds of food, but I really enjoy cheese. I started getting into making it. I'm still very new to it, but it's been fun.

What do you like to listen to?
I don't have a specific type of music I like to listen to. I tend to choose music with heavier beats since it seems to help me think and be productive.

What is something you would like to go back and tell your younger self?
One thing I could have benefitted from earlier would be to get involved earlier and step out of my comfort zone more often. I didn't get involved until later in my undergraduate studies and I think I could have learned a lot more if I had stepped up earlier.

Do you have something like a book, movie, or podcast that you would recommend our listeners try?
When I started graduate school I was able to get more into systems thinking, which is basically taking a step back and seeing how all of the parts of a system act and influence each other. I was able to go to a conference in the Netherlands to really dive into this way of thinking and it really helped how I approach problems now. One of the first books I was recommended when I was just getting into systems dynamics was a book called Thinking in Systems. It's a really great book with many examples and it really helped me grasp this way of thinking better.

How can people get in touch with you and follow you?
My email is an easy way to contact me: bclatack@ucanr.edu
I'm also on Instagram @brookelatack

RESEARCH CALL WITH BROOKE LATACK

Can you tell us about this project and how you came up with the idea to do it?
During graduate school I worked for the Animal Air Quality Research Facility, which did a lot of work measuring air emissions from livestock. This included the manure they were producing. So, when I was developing my project I wanted to integrate the systems dynamics that we talked about last week into a model. I decided to look at nutrient losses from manure not only on the swine operation side, but also on the crop use of manure as a fertilizer side. There are many great models and tools that do this already, so what made my project unique was the integration of feedback throughout the system and the ability to do multiple iterations to look long term at the effect of using the swine manure on a field and nutrient losses.

You mentioned that you integrated multiple steps that showed the nutrient losses from manure. Can you go through the steps you included and what that might do to nutrient availability?
In the model we included everything from feeding the animals to applying the manure on a field. So, the animal will use a certain amount of nutrients and whatever they don't use will get excreted as manure. The producer will have to store that manure. At this point many things can impact nutrient loss such as length of storage, method of storage, covered vs non-covered, etc. The model also included the nutrient loss impacts of actually spreading the manure. Method of spreading (injecting, surface broadcast, etc), temperature at time of spreading, and soil type will all affect nutrient loss and availability for the crops. Finally, the model took into account the type of crop being grown and the quantity of those nutrients that plant would use. Then adding the ability to iterate year by year gives an outlook on the behavior of the system over time.

When looking at manure storage methods, is there one method that is preferable?
The best method of storage and management is definitely depend on the operator and resources available. Some systems just won't work in certain areas or under certain conditions, so each producer has to find the best fit for their operation.

What was the most difficult part of creating this model?
Finding a platform to support all aspects of the model was difficult. I wanted something that would have a simple interface to make it easy for users, the ability to create feedback throughout the model and communication between parts of the system, the ability to have year by year iterations, and to be able to easily go in and fix equations as new data and information is found. There were many programs that gave some of these aspects, but not all. The program I settled on allowed for all of this, but the problem was that it was not an easily accessible software for everyone, so it still was not perfect.

RESEARCH CALL WITH BROOKE LATACK

You included some feeding management options in the model, right?
Yes, we included the option for use of feed additives. The feed additives will affect nutrient retention, which will ultimately affect nutrient composition of the manure. This will play a part in how producers manage spreading manure on their crops, so it was important that it be included.

It would be great to integrate a similar model in the cattle industry.
Yes, that would be useful and really helpful to understanding the impact of cattle production on many of our crops.

I'm going to switch gears a little bit, but staying on the topic of manure. You wrote an article with Rebecca Ozeran (UCCE Livestock and Natural Resources Advisor) about the response to the leafy green outbreaks that happened a few years ago. Can you explain a little about the article?
Hasty responses to foodborne illness outbreaks impact California growers. 2020. California Agriculture. Volume 74, Number 1.
Link to article: http://calag.ucanr.edu/archive/?type=pdf&article=ca.2020a0007

This article developed after several outbreaks were traced back to Romaine lettuce a few years ago. One outbreak was traced back to Yuma, AZ which is right next to the Imperial Valley. Though the exact cause of the contamination was not identified, there were conversations about whether it could have come from the surrounding feedlot. Since E. coli is found all over in nature it's difficult to traceback to the true cause unless the traceback happens extremely rapidly which can be very difficult. Many responses and reactions weren't based entirely on available science but were mostly extrapolation of what data does exist. This led to a conversation between Rebecca and myself about what gaps in science there are in these issues and how we, as advisors, can help in making the food system safer. We wanted to outline how complicated this whole system is and the difficulties both the livestock and produce industries encountered in an effort to make the food system safer. There are many scientists doing great research on food safety, so as extension advisors we can really help getting that information out to the critical people.

How can people contact you?
Email: bclatack@ucanr.edu
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FEEDLOT RESEARCH BRIEF

Protein and amino acid requirements of calf-fed Holstein steers during the early feeding phase

Introduction

Meeting the dietary protein and specific amino acid requirements of calf-fed Holstein steers in the feedlot is critical to the growth performance of the steers. Factorial equations estimating requirements have been developed, but identifying the true requirements for calf-fed Holstein steers during critical growth periods is important. This study aimed to evaluate the protein and amino acid requirements of calf fed Holstein steers during the early feeding phase.

Methods

144 Holstein steers (164 kg) were sorted to 24 pens (6 steers/pen) at the UC Desert Research and Extension Center. Diets are shown in Table 1. All diets included supplemental vitamin A. Feed was restricted to allow 1.43 kg/d weight gain. Four treatments were fed:

1. 0% blood meal – 12.5% crude protein (DM basis)
2. 1.5% blood meal – 13.7% crude protein (DM basis)
3. 3% blood meal – 14.8% crude protein (DM basis)
4. 4.5% blood meal – 16% crude protein (DM basis)

Results

- Increase in dietary crude protein concentration did not affect animal performance, indicating the 1984 NRC equation overestimated protein requirements for calf-fed Holsteins.
- Predicted vs observed weight gain was similar, showing the net energy equations developed by Lofgren and Garret along with tabular NRC (1984) net energy values of the diets were accurate for calf fed Holstein steers.
- Blood meal supplementation led to increased passage of histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, and valine to the small intestine.

Item	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Alfalfa	5.00	4.93	4.85	4.78
Sudangrass hay	10.00	9.85	9.71	9.57
Steam-flaked corn	17.00	16.75	16.50	16.27
Steam-flaked wheat	52.16	51.39	50.64	49.91
Blood meal	0	1.48	2.91	4.31
Limestone	1.46	1.44	1.42	1.40
Dicalcium phosphate	0.40	0.39	0.39	0.38
Urea	0.58	0.57	0.56	0.56
TM salt	0.40	0.39	0.39	0.38
Yellow grease	5.00	4.93	4.85	4.78
Cane molasses	8.00	7.88	7.77	7.66

Implications

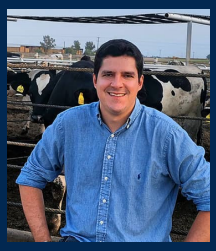
Crude protein intake of 695 g/d was adequate for calf-fed Holstein steers from 163 to 267 kg BW gaining 1.43 kg/d.

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.

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

Creator contact:



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