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CATTLECAL NEWSLETTER

ANNOUNCEMENTS

Hello! Thank you for reading our April edition of the CattleCal Newsletter. This month we have some interesting information including what we're doing in research, UC research looking at using beef semen in dairy herds, and research looking at supplementing feedlot steers with urea. Be sure to listen to our podcast to get additional information not included in the newsletter. Links and info on the podcast can be found on page 3. If you have any questions or comments, feel free to reach out at the contact info listed on page 12. Thank you.

This issue:

THIS MONTH IN RESEARCH

Below you will find cattle performance data for the 200 steers used in our two research projects. This month the cattle performed exactly as expected. March 2020 saw an average maximum temperature of 77°F, which made for excellent growing conditions.

As the summer heat approaches, we anticipate changes and look forward to how that may affect the performance of the steers.

PERFORMANCE SUMMARY

Body weight (d 28)	375 lbs
Body weight (d 55)	454 lbs
ADG	2.93 lbs/d
DMI	11.38 lbs/d
F:G	3.88

March 2021

April 2021

CATTLECAL PODCAST APRIL EPISODES

Career Call - CCP#005

In this episode, we called Dr. Fernanda Ferreira. Dr. Ferreira is an Assistant Specialist in Cooperative Extension in Population Health & Reproduction at the School of Veterinary Medicine at UC Davis. Fernanda shared with us her amazing story on how she arrived at the job that she has today. An awesome story of life and professionalism that has crossed through different industries and is definitely contributing to the cattle world.

Research Call - CCP#006

In this episode, we called Dr. Fernanda Ferreira again to learn more about the research she is conducting as an Assistant Specialist in Cooperative Extension in Population Health & Reproduction at the School of Veterinary Medicine at UC Davis. We learned more about her work with using beef semen on dairy animals and what that means for the beef industry.

Feedlot Research Call - CCP#007

In this episode, join Pedro Carvalho and Brooke Latack as they discuss a study looking at urea supplementation in beef cattle and it's impact on performance.

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.

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CAREER CALL WITH FERNANDA FERREIRA

First, tell us who you are, where you're from, and what you do.

Originally I'm from Brazil, and I am a veterinarian. Today, I am an assistant cooperative extension specialist at UC Davis at the school of vet med. My field of expertise is dairy herd health and management. I am very interested in the economics of production systems. Not only trying to improve management and improve herd health, but also trying to do that in the most profitable way.

How did you decide to work with cattle, and how did you end up in vet school in Brazil?

I always get a little sentimental talking about that. I grew up in a big city in Brazil, Belo Horizonte, with more than four million people living there. When I was nine years old, due to my father's job, I moved to a very small town in the countryside of the state of Minas Gerais. The town is well known for its dairy products, so it's a dairy region. I spent a few years there, and then from there we moved to another town called Passos (State of Minas Gerais, Brazil), where they have a lot of large dairies and a lot of corn in the region. A lot of swine, too. My best friend's dad was a dairy and swine producer. I had the pleasure of spending a lot of time and a lot of vacations on the dairy, and I fell in love with it. I've always loved animals, of course, and that's when I decided to go to vet school. It's really important [for people to be around agriculture] since we know that in the U.S. only about 2% of the population is involved in agriculture, but everybody eats, so everyone is connected to agriculture. No matter what you eat or what you wear, somehow, you are connected to agriculture. Although everyone is connected to agriculture in a sense, they are completely disconnected in another sense. I think it's really important for us to not only do what we do in our industry but also try to reach out and make people who are not really living agriculture on a daily basis understand and maybe fall in love like I did.

When you were applying to vet school you went back to the big city, right?

Yes. Actually, I went back there to do high school because I wanted to be a vet and my plan was to be accepted in the university at Belo Horizonte, MG. My whole family still lives there, so that was actually when my whole family moved back to Belo Horizonte, MG. I did high school there and never thought about anything else. Right before applying to vet school I was very interested in mathematics and chemistry, so I struggled a little bit because I loved animals and I want to work with agriculture. It was just a little but of internal conflict, but I never thought about any other course. At that time there were not that many vet schools in Brazil, it was in 1998 when I applied, so I was glad I was accepted.

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CAREER CALL WITH FERNANDA FERREIRA

After school, how did you decide to work with cattle?

When I started I always liked horses. My dad had a horse at a farm that belongs to one of his good friends. So I thought maybe horses. I'll try to understand what the horse world is like. I didn't like it at all and said nope, horses are just to have fun and enjoy on weekends. I did a little bit of internships (six months or less) with small animals, since we had many small animals in our house, but I was always interested in production. So, then, I got an internship with dairy, which I really liked. I also did an internship with swine and I felt in love. After that, when I was finishing up school, I did an internship with poultry and I really felt in love with it. Brazil is the largest producer and exporter of poultry in the world and how the industry was organized, everything was measured, they had the objectives, everything was fast, and I just loved all that. When I was in my fourth year I talked to a professor who was a poultry science professor and he said he had a research project that I could lead. That's when I started doing research and loved it.

At some point, my career path took a turn from poultry and swine to dairy. I did my master's with poultry. Before finishing up, I applied for a position with Cargill and they hired me. I learned so much. It was like a new world was opening in front of me. I was working as a technical manager providing technical support to people in the field and clients. Being the technical people we tend to go into farms thinking we know all of this, but the farmers know a lot, too. Some of the problems we see are things we have never even seen or thought about. After working for Cargill for three years, I was invited to work for one of the largest food companies in Brazil. They produced poultry and swine and I was responsible for the nutrition management of poultry and swine operations. It was a lot of work, but I also learned a lot. That's where I learned how important economics is since every single decision is so important. It was also when I was exposed to practical epidemiology. At the same time I had my own consulting company with a friend. After that I started working for the Brazilian Agriculture and Research Corporation (Embrapa). And that was when I started working with dairy.

How did you end up in the U.S.?

In 2014 I decided that it was time for me to get a Ph.D. I wanted to do more research on economics. And I only really learned that there was a field dedicated to the economics of farm management when I was at Embrapa. So, I came to do my Ph.D. in Florida (Fernanda did her Ph.D. at University of Florida under the advice of Dr. Albert De Vries).

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CAREER CALL WITH FERNANDA FERREIRA

What are you doing in your current job and what are you learning?

We have a couple of different projects. All of them are applied research projects. The way I define my projects are based on my interest, but also, and maybe more important, they are based on the needs of my clientele. We have one project (using beef semen in dairy cows, discussed in the CattleCal CCP#006) that came after a conversation where it was brought up that there is interest in knowing what is happening in California, so who is breeding with what. There was a lot of opportunity to look at the economic impacts of this issue. We have another project that also started with just a conversation. We discussed how important mastitis and mastitis management is and how critical it is to responsibly manage the issue. We created some economic tools for farmers to use for them to analyze the impact of management decisions on their specific farm. I am also interested in math so I want to see how we can use data generated by precision devises to make decisions on the farm. We have one project looking at activity and rumination and trying to predict if a cow at drylot is at high or low risk for mastitis if they do not test for somatic cell count.

After finishing school, was there any big challenges you experienced when starting your position and were there any resources that were particularly helpful?

There were many challenges. One of the biggest one was to feel confident walking on to a farm and help the farmer solve the problem. When facing real-world problems it showed I didn't know everything, but I felt a pressure to know everything. It caused a lot of insecurity and anxiety. I calmed down and realized that we don't need to know everything. It's helpful to know that any help is just a phone call away from us. Build relationships and reach out to people. It's the best way to feel confident.

What is your favorite and least favorite part of your job?

Even though I love math, the least favorite is dealing with grant budgets. It's really challgening to manage funding from different sources, that have different requirements, different levels of flexibility. But, it's part of our job. My favorite part is that in academia we have a lot of freedom. Freedom to discuss with producers, to really bother other people's idea, to go to other people in the industry and understand their perspective and opportunities. I feel like my head is like a soup pot with a lot of ingredients and we need to come up with a meal at the end and I enjoy the process.

During grad school or now, can you share something fun that happened.

When I started working with poultry there was a city in the middle of the mountains through windy roads. This area produces a lot of eggs and looks like you are in Germany since there were many immigrants from what is now Germany that settled there. Many people who lived there were blonde and blue-eyed. One day I was on one of the farms doing necropsies. A daughter of the producer came to me and touched my hair and was amazed at how dark it was. She was curious to touch my hair because it was so dark. It was really cute and very unexpected.

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CAREER CALL WITH FERNANDA FERREIRA

What's your favorite food?
Brazilian food, of course. More specifically we have a meal in my state (Minas Gerais) that is chicken with okra and that is my favorite meal.

What do you like to listen to?
I like everything – it depends on my mood. I really like Brazilian country music. My husband is American, but now he loves it, too, since I listen to it so much. I like jazz a lot, especially when I need to concentrate.

What is something you would like to go back and tell your younger self?
I had an anxiety because I was so insecure about what I knew before. I wish I was calm enough to realize that what we need to solve a problem is out there, we just need to go find the pieces, the information and people, to out them together. That would save me a lot of sleepless nights. It's okay to not know, say you don't know, and then make a plan to figure it out.

How can people get in touch with you and follow you?
Instagram: @thedairyoffice and @fernandacarolinaferreira
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RESEARCH CALL WITH FERNANDA FERREIRA

What is the project and how did you develop the project?
We call this project "Understanding the use of beef semen in dairy herds." It's a very broad topic. This project started because of a request from Agritech Analytics, which is a Dairy Records Processing Center in California. They had noticed that breeding with beef semen on dairies has been increasing and wondered which beef breeds are being used, which cows are receiving the beef semen, and if there any difference across the state. Due to my work during my Ph.D., I am comfortable working with large data sets, so this project started using that data to describe the use of beef semen in dairy herds in California over the last few years.

The first thing we did was dig into the data set to understand when the increase in beef semen use started and what were the market conditions then. We looked at who is receiving the semen, what are the breedings, and are there any characteristics of the dairies using more or less beef semen. We were able to document that by looking at the DHI dataset. Then, we decided to look at the perspectives of dairy farmers across California on using beef semen on dairy herds and thoughts on the future. We mailed a survey at the beginning of 2020. We then had the opportunity to have descussions with a veterinarian who works for a large Jersey dairy in Texas. He was curious about whether it was economically feasible to use angus in embryos in Jersey cows. We adapted a previously developed economic tool to address this issue. The last part of the project was to understand how the initial life managment of the cross-bred calves would affect the performance of the animals. This project focused on the pre-weaning period, but there is an opportunity to follow it through to slaughter.

In this situation, it would be, the feedlot industry being impacted by the dairy industry, right?
Yes. We believe there are opportunities for gain for both the dairy farmer to profit and the beef chain to be happy with the product they are supplied. They need to work close to maximize this economic opportunity.

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RESEARCH CALL WITH FERNANDA FERREIRA

What are the biggest challenges that you found during this project?
From the data side, making sure the farmers are recording the breedings is the most important issue. Some dairy farmers do not record when they use beef semen because it may not be as important to their operation. This is an issue because one of the more important factors dairy producers use when selecting beef semen is conception rate since days open is expensive. We have to have the insemination records to make sure we have good beef bulls to be used on the dairy cows.

For the field side, we know that dairy heifers receive the better management, which is well documented. We know this management affects future performance. We believe this also applies to crossbred calves. It's a challenge because we need to make sure there is a shift in management to ensure that the crossbred calves are being managed well even if they are not staying on the dairy farm. There is potentially also an opportunity for dairy farmers to capture more value due to good management.

What are the most common beef breeds being used for semen?
By far the most common breed is Angus, in both Jersey and Holstein dairies. In Holstein, a few dairies use Wagyu, selling them as a special meat. In Jersey dairies, there is more variability, seeing Charolais, Limousin, and other breeds being used in an attempt to find the best crossbred cattle that will fit the needs of the beef industry.

Which parameters are dairy producers using when deciding which semen works best for them?
The most common response in the survey was that the dairy producers were breeding with whatever semen the calf ranch was telling them to use. The second most common was price. They would use the least expensive semen they could find. Other common concerns were calving ease, reproductive success, and making a product that the beef industry would want.

An important point is that the majority of dairy producers are using sexed semen on their heifers and sometimes on their first and second lactating cows. The proportion of all other breedings using beef semen varies. Producers with very good reproductive performance have a greater opportunity to capture economic value out of these strategies. In the current market, these opportunities are warranted.

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RESEARCH CALL WITH FERNANDA FERREIRA

Is there any specific reason for why the use of beef semen is increasing?

Yes, there are a number of factors that affect this. Some of the factors are:

1.Increased reproductive performance of dairy cows.

2.Very low market prices for dairy bull calves and heifers.

3.Raising a heifer to first calving is expensive. The heifer is not worth the amount it costs to be raised.

These factors along with the beef industry demand has made using beef semen more popular than before.

Take home message about the dairy-beef crossbred calves?

Economic feasibility of using more or less beef semen is actually a combination of the heifer market price, the premium received for the crossbred calf, and the price of semen. Now is a good time to use beef semen, but producers should constantly be evaluating these market conditions. We are more than happy to help producers do that analysis. It's a very good profit center for dairy producers.

FEEDLOT RESEARCH BRIEF

Influence of urea supplementation on performance of calf-fed Holstein steers fed a fat-supplemented, high-energy diet

Introduction

- Urea can be fed to feedlot cattle as a form of non protein nitrogen.
- At the time of this paper, recommendations for inclusion of urea in feedlot diets were very general or not supported by empirical evidence.
- Previous studies have shown a negative effect of including urea in high energy diets supplementing fat.
- The objective of this study to evaluate the effects of the level of urea supplementation on growth performance of calf-fed Holstein steers in the feedlot fed a fat-supplemented high energy diet.

Methods

32 Holstein steers (356 ±1.1 kg) were sorted by weight into 4 pens (8 steers/pen). Four treatments were fed over four 35-d feeding periods.

Treatments:

1. 0% urea - soybean meal used as N supplement
2. 0.8% urea, DM basis
3. 1.2% urea, DM basis
4. 1.6% urea, DM basis

Results

- There was a low impact of urea supplementation on DMI and diet NE.
- There was an increase in ADG and decrease in feed efficiency as urea supplementation increased.
- Since urea has an energy value of 0, and urea replaced steam-flaked corn in the diet, it was expected that increasing urea level would decrease NE of the diet.
    - However, observed vs expected diet NE increased linearly with increased urea inclusion.

Diets

Item	Soybean meal control	Urea level .8%	1.2%	1.6%
Ingredients, % (DM basis)				
Sudangrass hay	5.00	5.00	5.00	5.00
Alfalfa hay	5.00	5.00	5.00	5.00
Steam-flaked corn	73.44	78.14	77.74	77.34
Soybean meal	5.50			
Urea		.80	1.20	1.60
Cane molasses	5.00	5.00	5.00	5.00
Tallow	4.00	4.00	4.00	4.00
Limestone	1.56	1.56	1.56	1.56
TM salt[b]	.50	.50	.50	.50
Nutrient composition (DM basis)				
NE, Mcal/kg[c]				
Maintenance	2.34	2.31	2.30	2.29
Gain	1.64	1.62	1.61	1.60
Crude protein, %	11.3	10.6	11.7	12.8

Implications

Growth performance of calf-fed Holstein steers in the feedlot fed a high energy diet supplemented with fat may be improved by urea supplementation.

Urea can be used effectively as the sole source of supplemental N in fat supplemented, high energy diets for feedlot cattle.

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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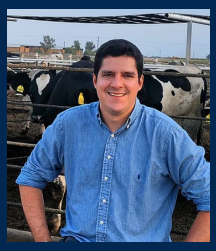

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