

VOL. 2 ISSUE 3 · APRIL 2022

# CATTLECAL NEWSLETTER

## ANNOUNCEMENTS

Welcome to the CattleCal newsletter for April 2022! In this issue we have exciting information on using almond hulls in feedlot diets, the career and research of UC Farm Smart manager Stacey Amparano, and a look at a study examining the effect method of fat supplementation on feeding values on the performance of feedlot cattle. 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.



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# THIS MONTH IN RESEARCH

In March we continued our two projects. Cattle are performing slightly better than expected. For March, average temperature was 64.8° F, average maximum temperature was 82.5° F, and average minimum temperature was 46.7° F.

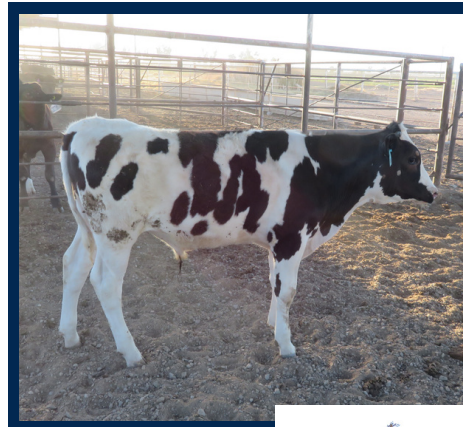
## DAYS 28-56 PERFORMANCE SUMMARY

	Holstein	Crossbred
Body weight (d 28)	350 lbs	371 lbs
Body weight (d 56)	460 lbs	467 lbs
ADG	3.44 lbs/d	3.57 lbs/d
DMI	12.8 lbs/d	12.3 lbs/d
F:G	3.77	3.48

February 2022



March 2022





# CATTLECAL PODCAST

## APRIL EPISODES

### Quiz Zinn - CCP#049

In this episode, we asked Dr. Richard Zinn about adding almond hulls into a feedlot diet.

### Career Call - CCP#050

This week Brooke Latack and Pedro Carvalho called Stacey Amparano, Farm Smart Manager at the UC Desert Research and Extension Center, to discuss her background in literature and training restaurant employees and how she ended up as an agriculture educator.

### Research Call - CCP#051

This week Brooke Latack and Pedro Carvalho speak to Stacey Amparano to talk about the past, present, and future of the Farm Smart program at the UC Desert Research and Extension Center and the impact it has on the community.

### Feedlot Research Call - CCP#052

This week, Pedro Carvalho and Brooke Latack discuss research looking at the effect of method of fat supplementation on growth performance of feedlot steers.

#### **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](mailto:cattlecalucd@gmail.com)
- Website: [cattlecal.sf.ucdavis.edu](http://cattlecal.sf.ucdavis.edu)
- Instagram: @cattlecal



# QUIZ ZINN



## Can you discuss using almond hulls in a feedlot diet?

### History

This used to be an important issue. Years ago almond hulls were a very common feed in our feedlot diets, particularly down here in the Imperial Valley desert southwest. As you know, the almond industry located up in the Central Valley. There's a cost to hauling this stuff down here. Initially it was just considered a waste so they were looking for some way to get rid of it. Once more studies had been conducted on the feeding value of almond hulls then the dairy industry picked it up. It became a very common feed in our dairy industry in the dairy shed, particularly up in Merced and in the Central Valley that.

### Adding hulls to the diet

Almond hulls is a very palatable feed. Cattle readily accept it in the diet. One of the things that's really nice about the almond hulls is that cattle tend to spend a little bit more time eating their feed when there's almond hulls in their diet. This is advantageous, especially with our high energy finishing diets. Another advantage of almond hulls, like cotton seed hulls, is that you can feed a lot of it without affecting energy intake. The level of almond hull supplementation in the diet is not a concern. Typical levels would be 5-12% hulls in the diet.

### Quality of product

Years ago when we talked about almond hulls, we were literally talking about the almond hull. When you think of the almond fruit itself, you have the fruit part, which is kind of like an apple, on the outside and that's the almond hull. And then you have the shell and the nut inside the shell. Back when it was more common, in the almond industry more of the hull was being used and the shell and the nut was being sold more in the shell form. We had the proportion of almond hulls was very high. In fact, you could almost have pure almond hulls. That material has a much higher energy value than the shell, which has practically no energy value. When we talk about almond hulls, what we need to think about is what we call commercial almond hulls. Commercial almond hulls will have maybe 20 to 40% shells. You have to pay close attention to the fiber content. In the case of almond hulls, instead of neutral detergent fiber we're interested in is acid detergent fiber. The net energy value of almond hulls is very, very closely associated with the acid detergent fiber content, which can vary. Pure almond hulls might be 20-22% acid detergent fiber. Commercial almond hulls that have a proportion of shell might be 28-30% acid detergent fiber. For those who might want to consider almond hulls as a feed ingredient, the net energy for maintenance value of almond hulls would be  $[1.85 - 0.03 \times \text{acid detergent fiber content}]$ . That will give you a very good estimate of its actual energy value. Let's say on classic commercial almond hulls it have an energy for maintenance value of about 1.1-1.12 Mcal/kg. To translate that, we would say that would be a very poor quality grass type feed. Its energy value is going to be on the low side of things. If you have pure almond hulls it would go way up.

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# QUIZ ZINN



Suddenly you could have something that has a value maybe greater than that of sudangrass. The important thing to remember in terms of almond hulls as a feed ingredient in the diet is that the cattle will eat it. A lot of it. And it's not going to limit feed intake. Almond hulls are fairly high in sugars. That's kind of an interesting characteristic of the of the hull itself. the cattle like it, it's actually very palatable.

## **Cost**

Normally it doesn't price into the diet, but that's something that you have to look at based on its net energy value.

## **Do you have to process almond hulls before you feed?**

You do not have to process the almond hulls. That's a really big advantage. In monogastric animals, where they might also feed almond hulls, they would need to grind it. For feedlot or dairy, you do not need to grind the almond hulls.

## **Do you have to do any special when storing the almond hulls on farm?**

No special storage is necessary.



# CAREER CALL WITH STACEY AMPARANO



***This month we talk to Stacey Amparano, Farm Smart manager at the UC Desert Research and Extension Center, about her career that led her to be an agriculture educator.***

## **Where are you from and what do you do?**

I am the farm smart program manager here at the University of California Desert Research and Extension Center. My proper title within the university is community education specialist. There are community education specialists throughout California, but what's special is that there are only 9 UC research and extension centers in California and a few of those have educators like myself. The Farm Smart program is unique to Imperial County. I have personally been here for going on seven years this year. I thoroughly enjoy my job.

## **How did you decide you wanted to work in agriculture?**

Growing up, I did not have ambitions to be in the ag industry, but I did grow up around ag. I grew up here in Imperial County - in El Centro. I have many family members still involved in agriculture. They're farmers here in the Imperial Valley. My family has been raising sheep for 30 years now. They are sheep that we raise for 4H and FFA members for the local County Fair. When I was younger, I was involved in FFA and 4H. I enjoyed what I did in those programs, but I was never shown the different opportunities in agriculture. I was always shown that we raise sheep or you work directly with field work and there was no in between. With that perception of agriculture, growing up I wanted to be a teacher. I actually wanted to be an English teacher. After I graduated high school I immediately went to college. I went to UC Santa Cruz. I went for four years, got a degree in literature and a minor in education, and still had that idea that I wanted to go into teaching. After I graduated college I actually took some time off with my sister. We worked in restaurants and we took a month long road trip around the US to explore United States. Within the restaurant industry, we both became trainers. We opened new restaurants, trained staff and continued that love of teaching, but in a very unconventional way. I moved back to the Imperial Valley and was looking for work here and the farm smart position became available. It was that teaching aspect that I wanted to do, but also involved my background in agriculture, which I told myself I would never be involved in. It just worked out that those two blended very well together. Being in this position and looking back, I really wish I had someone or something that would have shown me there were more opportunities in agriculture beyond what I saw just my family doing.

## **What are your favorite parts of your job that you enjoy the most?**

I definitely enjoy that interaction with the public and with students, especially when students have that AHA! moment. This could be with younger kids when we talk and have a whole program about what plants need to grow and where a carrot comes from. We can talk about that you're going to go out to the field and you're going to pick a carrot from the ground. But it's not until we actually get them to the field with their hands on that plant and picking it up and they look at you and say "I just found a carrot."

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# CAREER CALL WITH STACEY AMPARANO



It goes into those older middle and high school students, as well, in showing them the different opportunities in agriculture. Showing them technology that's involved. Just having that AHA! moment where they realize they can get an agriculture degree in Yuma and I can work in the ag industry beyond just working in the fields like my parents or grandparents may have. There are so many more opportunities for them in agriculture. It's just showing them that they may be interested in math, but you can work in math and ag. Just having that AHA! moment for those high school and middle school students is just so rewarding.

## **Since you work in educating both adults and youth, what are some of the biggest challenges you experience in trying to keep them engaged?**

Something we pride ourselves on at Farm Smart is that we're very hands on. We get students engaged by giving them hands on activities to do. I could sit there and lecture and tell them all the great things about agriculture and technology that we have and all the great research that the university is doing. It's not until we get them to get into the field and we put them on the transplanter to let them do the transplant, we get them into the labs with researchers to see and do hands on work with the researchers to analyze their specimens or whatever they're collecting from fields, or taking them to see the cattle with both of you and be up close to those cattle that we see a change. It's amazing. Just the reaction that even high school students have to being around animals. We get that response from middle school and elementary schools when they see the animals. So having that hands on component really engages the students. That's something that really was a struggle for us with COVID and everything being shut down. It was asking how we get these students engaged and have that immersive experience while being virtually separated and social distanced. Something I did through COVID and my virtual programming is partnered with a local FFA chapter (El Centro FFA) and I put them in charge and tasked with reaching out to speakers and engaging with those speakers. They led the career talks and asked questions. They were the ones in charge of promoting their program. They were like, "OK, my friends better come and I better not have an empty room I'm talking to." It gave them that control of the program and instilled some of those leadership responsibilities.

## **Is there anything you learned while teaching in the restaurant industry that you use now in your position?**

Something that I've always felt whenever I'm teaching any age, especially adults, is if I don't believe in it, if I'm not having fun, if I'm not engaged, then they're not going to have fun or believe it or be engaged. When I'm teaching in front of adults, I really believe in what I'm teaching. I enjoy what I'm teaching and I show that I'm having fun and it's an enjoyable topic and then that helps those learners.

## **What is something that in your job that is challenging or maybe not the most fun aspect of your position?**

As I mentioned, I really enjoy being in front of the students and engaging with the public and teaching. The not so fun part of my job is the behind the scenes, the grant writing and budgeting, and some of the more stuck in front of a computer work, but it's essential to the work that we do.

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# CAREER CALL WITH STACEY AMPARANO



Our program is not funded completely by the university. We do have a portion of our salaries and of course facilities that we use that the university provides, but beyond that, we do have to depend on our grants that we receive and our community donations. Farms Smart really prides itself that it is a community funded program. We get a very large donation from our Imperial Irrigation District, something that they've been doing for close to 20 years now. We also get donations from our Farm Bureau, our Farm Credit West, Imperial Valley Vegetable Growers Association, and community folks, as well, that will donate money. All of that money that we receive is put into providing these opportunities for students to learn about agriculture and natural resources and the opportunities available within that sector.

## **Can you tell us about your mentors and advice you would give students about finding mentors?**

A mentor is something I highly recommend. Personally, I was only the second person in my family to go to college. My older sister, who was the first, was my mentor. It was almost the blind leading the blind, sometimes. Looking back, I really wish that where I went to school I would have sought out someone closer to me in school or in the field that I wanted to work in. It was very hard. I was the first person to graduate in my family. But it's very hard navigating that world alone when you didn't have Internet, but you had to sign up for classes and you had to research. Look it up book and figure out by yourself what classes to take. Something else I recommend is internships. Any internships that are available, I highly recommend. That's going to help you explore the field you're interested in, and it may help you realize that that's not something you want to do. It helps you explore what's the right fit for you. If I would have participated more in internships, I could have explored agriculture education. I love education. I love agriculture. Putting those together would have been a better fit earlier.

## **What is your favorite food?**

My go to comfort food is a toss-up between chilaquiles and enchiladas which is probably kind of influenced by the area that we live in.

## **What is the type of song that you like?**

It used to be oldies. Any kind of oldies channels. Now that I have a 3 year old, I know we get a lot of Cocomelon and "If You're Happy and You Know It," so that's what plays in my radio most often times.

## **What are some of the challenges you experience working in agriculture full time and having a young child?**

I have two challenges and opportunities. The challenge of having a child when you're full time working parent in any field, and when you're a manager of a program too, is setting up your program while you're away. But, also, when you come back you have other responsibilities, and you learn that your family comes first. I love farm smart, but my family always does come first. On top of having a child, I have a child with special needs, which comes with a lot more doctor appointments, a lot of therapies (speech therapies, occupational therapy, and physical therapy).

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# CAREER CALL WITH STACEY AMPARANO



It's just finding that balance of still running a successful program, but also putting your family first and their needs first. I have been very, very fortunate to have a coworker, Stephanie Collins, who recently retired last week, who really helped me through that time. I don't think I could have stayed as sane as I did without her being here because she was such a staple of Farm Smart. She knew the program so well that she was able to maintain it while I was on maternity leave. I definitely could not have gone through it without her. I will go on to opportunities now. After having a child and seeing his needs, especially as a child with special needs, I saw what was lacking in our Valley as far as resources and activities for children like mine as far as a child with Down syndrome, child with autism, or a child that has special needs. It has been my goal to work on providing more programs for that demographic of children and adults in our community. It's still a lot of work to go, but it's helped me build partnerships with different organizations that offer those programs and seeing how they can be incorporated here at Farm Smart. Everyone needs to be introduced to where your food comes from because that's the foundation of making healthy food choices. Especially with children and adults Down syndrome. Obesity is an issue because of not making those right choices. Every person needs to have that experience at Farm Smart of learning where our food comes from.

## **What is something you know now that you would like to tell your younger self?**

I really enjoyed the path I took. I graduated and got my B.A. and went on and had some wonderful traveling experiences. I think continuing with school sooner, if you are interested in doing anything beyond a bachelors, doing that sooner than later because it is hard to go back to school. I mean you've probably heard of so many times. It's really hard to go back to school once you have a family and you're responsible for more than just yourself. It's hard to take that time to finish any schooling that you want to do. If I could go back, that would be something I would consider more after graduating from college.

## **What is your CattleCal Top Tip?**

I always recommend if you have never visited Farm Smart, definitely give us a call and come out and visit us. Even if you're an adult, we enjoy learners of all ages. We have our field trip programs for kids. We also have our winter farm tours for adults. We really like to have everyone out to the farm.

## **How can people follow your work or contact you about one of your programs?**

**Website:** [www.drec.ucanr.edu](http://www.drec.ucanr.edu)

**Facebook and Instagram:** @ucfarmsmart

**Email:** [scwills@ucanr.edu](mailto:scwills@ucanr.edu)



# RESEARCH CALL WITH STACEY AMPARANO



***We speak to Stacey Amparano, Farm Smart Manager at the UC Desert Research and Extension Center about the past present and future of the Farm Smart program.***

**Could you just tell us about the history of how Farm Smart started and what it was meant to do?**

Farm Smart was started in 2001 through a grant. It was started as an after-school program. It was a grant through NSF and one of the local school districts. They actually partnered together with the University to deliver this outreach program that was created to teach kids about agricultural and natural resources and the career opportunities within that and S.T.E.M. It was teaching those science concepts through agriculture. Farm Smart is going on its 21st year. We just celebrated 20 years last fall. It's really driven by teaching youth and adults about where their food comes from. Teaching them about Imperial Valley agriculture and natural resources and the importance of that agricultural and natural resources. Also teaching them about nutrition and eating healthy through those concepts of where their food comes from. We'll ask elementary students where their food comes from? And we still get the answers of "The grocery store." Someone asked where marshmallows came from? Another student said it grows on plant. It's just that that misconception and they don't know any difference. This program is really there to help them explore where their food comes from beyond the grocery store.

**What is the most common question that you get from kids?**

We get lots of questions. One of the things I see when we're doing the field trip programs is a lot of confusion even on where seeds come from. They know where fruits seeds come from, because that's easy to see for them. They see the fruit, they eat it, and they see the orange seed or the apple seeds inside the fruit. But if you ask them where vegetable seeds come from, the answer will be the little seed packet in the store. Well, how do they get those seeds in there? And it's a lost concept. Completely blank. They have no idea.

**What is the Farm Smart currently doing?**

For a very long time, the program has been fieldtrips. There are four themes a year which includes the dairy program that we call "Alfalfa is ice cream in the making." It shows that path of something like alfalfa to ice cream. Kids make those connections of something they love to the crops that are grown here in the Valley. They make ice cream and we make butter as well. Another program we have is called "Fall Festival". We talk about seasons and the importance of seasons in agriculture and some fall foods, including corn, and how corn plays a role in our diet and how many different foods have corn in it. Each program includes trying foods and includes going out to the field, either to see the cattle, harvest vegetables, or go through a corn maze. In our fall festival, we go through a corn maze at the end. We also have a "Vegetable Adventures" program which talks about what plants need to grow and we let them harvest produce from our garden. We end the year with our spring program, which is "Insects: The good, the bad, and the buggy." We talk about good insects and bad insects. We taste honey, talk about insect anatomy, and then we go out to the garden and usually harvest something like to zucchini. This year we will be harvesting watermelons.

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# RESEARCH CALL WITH STACEY AMPARANO



That give opportunities to do other things that like older students like maybe testing the sweetness of watermelon using the refractometers. That's our field trip program. Then we would do a winter program that's really geared towards adults, teaching them about Imperial Valley agriculture and natural resources. It had a strong following from our snowbirds since our winters are so beautiful and the weather is so nice. We do have a lot of visitors from the East Coast, Canada, and even other countries. They are staying here in the Valley or Yuma and they were very excited to visit our farm every year to take that tour. Now, since I've started, the program really has evolved to not just those field trips and the winter tour. We've added in different programs to reach different demographics. One of the things we've added is our farm preschool festival. That's a partnership that we have with First 5 Imperial. It's a grant that we received to deliver programs to 0-5 year olds. It's a one-day festival that brings in resources, has many hands on activities, and then we let the students go out and harvest vegetables with their family. We give them recipes on how they can use those vegetables in the kitchen. We also do a lot of career outreach working with high school students and middle school, doing programs here on site and giving tours, and going to career days just to expose students to the opportunities in agriculture and natural resources that we have here in the Imperial Valley and in California. We really like to show students that there's much more to the Imperial Valley. Some students have this misconception that there's nothing here. But there are so many different opportunities.

## **How many students visit the research center every year?**

Here on site (before COVID) we will see anywhere from 7,000-10,000 kids a year. And these are from across the Imperial Valley. We have students that can come from Seeley, Winter Haven, Niland, and we actually have students that come from Mexicali, Yuma, and San Diego as well. They'll make the trip just to come to a Farm Smart field trip.

## **Are there any age restrictions on who can visit?**

So we don't have restrictions. Our field trip programs are geared towards that kindergarten through 4th grade level, but we welcome and we can create any program for any age. We have toddler programs, like the farm to preschool festival for 0-5. We have those farm tours in the winter for adults. We're starting to incorporate more of those farm tours for the middle school and high school age. We welcome any age to come to the farm and show them what we're doing out here.

## **What are some of the biggest challenges you see in the Farm Smart program?**

We pride ourselves on being a hands-on program. We do some classroom instruction that incorporates hands on work. We take the students out to the research plots and our U-pick garden to do hands on picking of the vegetables. They get to ride on the hay wagon through the farm that's pulled by a tractor. I'm very hands on and immersive. Being able to see the research that happening be in in the fields. It's an amazing experience for our students.

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# RESEARCH CALL WITH STACEY AMPARANO



When COVID shut down everything, that was a big challenge for us. All we knew was this hands on, kids coming to the farm style of outreach. It really made us stop and reflect while we were ourselves going through this traumatic experience of being locked at home with our families and scared for our own families. We had to basically take some time to reflect on how we can still deliver a program and offer an opportunity for students to be engaged in learning about agriculture and natural resources and where their food comes from while we're all locked away. It took a lot of brainstorming and luckily we were able to work from home and work through the summer to really come up with a plan. The university gave lots of resources as far as trainings and connecting us through the extension network to listen in trainings on how to use a camera and zoom. Things that are so second nature now. How do we form new relationships and partnerships with local organizations to increase our outreach. Its strength in numbers. Looking back, it was really hard. It was frustrating. I make plans. And the plans were always changing because the pandemic got bad then it got really good and then it got really bad. It's just that uncertainty was just something different. For 20 years we had done field trips and farm tours and those were suddenly stopped. It's just coming up with that new plan on how to deliver. What really helped us was making those new partnerships within the community. Ones that come to mind were the Imperial Valley Regional Occupational Program, our local FFA organizations, like El Centro FFA. That and local farmers really helped us to continue our programming. Some of the things we did was creating a garden kits. We partnered with our UC CalFresh Healthy Living Program to create created over 800 garden kits for local classrooms in our first year. The CalFresh team would actually deliver zoom lessons to include those garden kits. That was an amazing feat on behalf of of Farm Smart, CalFresh, and some some FFA volunteers that we had. I don't know how we did it, but somehow we were able to do it. We also were able to deliver twice weekly live programming. One day was career exploration with high school students. The next day would be a virtual field trip geared towards elementary school students. Looking back at our demographics, we were reaching people from across the world on our field trips, which was amazing. It was just a whirlwind of live Zooms and that troubleshooting on the spot dealing with Wi-Fi connections and microphones and having one person lead the session and one person filming. It was a lot of fun. We did our Farm to Preschool Festival, which was a very popular one day festival in person, we turned to delivering over 300 kits the first year for Farm to Preschool kits that included \$60 worth of activities and materials for these preschoolers to do. We send those directly out to the migrant head start programs in Calexico, Brawley, and El Centro. A lot of work and a lot of brainstorming, but definitely something we overcame with developing with strong partnerships that we had.

## **Do you see Farm Smart continuing some of the ideas you developed during COVID in the future even as things continue to open up?**

In the fall of 2021, we're already one year into living in this virtual, social distanced world. Things were starting to open up again. Kids were going back to school. We did do twice a week field trips on site. Still a limited capacity and all outdoors, but we still did offer our garden kits. The teachers really enjoyed having those activities for their classroom and CalFresh's delivered lessons to the classroom.

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# RESEARCH CALL WITH STACEY AMPARANO



So that's something we continue to do. At our Farm to preschool festival, in addition to having the on site activities that we had did have to modify from our normal on-site festivals to accommodate keeping people social distanced, but we incorporated our kits that day, too. So they could come on site and pick vegetables but also take home activities to do together.

## **What do you see in the future for Farm Smart?**

Farm smart as a staff of two. One of our farm staff did retire recently, so our biggest future endeavor is to hire on someone in new coming months. That is going to determine where Farm Smart goes. What's special about this program is the passion of the people that lead it is what determines the path that it takes. We'll always be doing outreach to our community, reaching that zero to 100 years old, from youth to adults. As for exactly what we'll be doing, we are going to hire on our new staff and really help develop them as far as what are their passions? What would they like to see in the program and helping them to develop what their passions and visions are for the program and help them develop that. That's kind of the future of Farm Smart. Continue offering services to our community through fun, innovative, hands-on programs.

## **During Stephanie's retirement video we were able to see some the legacy and impact the Farm Smart program has on the community.**

I know we do great work. I can pat myself on the back. We don't do it unless it's fun. We really enjoy what we do, so it makes it a fun environment. With Stephanie's retirement, I created a video and hearing some of the words from the students in that video, I almost cried. Seeing the impact that Stephanie had on them. It was really moving just to hear how something like a three month internship can really change the course of someone's life. Experiencing Farm Smart and working with Farm Smart to change her whole course of what she wants to do in the future is really inspiring to hear.

## **Farm Smart also uses the help of volunteers to increase outreach, right? If someone wanted to volunteer, how could they do that?**

That's another thing that COVID did to us as far as a lot of our volunteers were winter visitors. Our long-time volunteers that came for 15+ years came from Utah. They haven't been here the last two years because of COVID. We have other volunteers that were winter visitors that haven't come down because of COVID. We really did lose a lot of our volunteer base. But if you are interested in volunteering, I would love to have a new volunteer base. You can contact me at my email ([scwills@ucanr.edu](mailto:scwills@ucanr.edu)). I hope to be creating some kind of volunteer network. I'm going to look at what applications are available to recruit volunteers so I can have a good network of volunteers easily manageable through hopefully an app that I can use.





# FEEDLOT RESEARCH BRIEF



## Effect of method of fat supplementation of growth performance of calf-fed Holsteins in the feedlot

### Introduction

- Method of feed preparation can affect the exposure of feed particles in the rumen.
  - Steam-flaking corn disrupts the seed coat and protein matrix surround the starch enhancing ruminal digestion.
  - Coating the steam-flaked corn in fat could potentially reduce ruminal starch breakdown leading to an increase in starch escaping to the small intestine.
- The goal of this study was to identify if methods of fat supplementation (i.e. when the fat is added during feed mixing) affects digestion and animal growth performance.

### Methods

- 72 Holstein steers (~600 lbs) were blocked by weight for a 151 day feeding trial.
- Treatments:
  1. Control - no supplemental fat
  2. 5% supplemental yellow grease - initially mixed with steam-flaked corn before the rest of the feed ingredients were added.
  3. 5% supplemental yellow grease - added as the second-to-last feed ingredient just before molasses.
- Cattle implanted with synovex-s on d1 and revalor on d56.

### Results

- No treatment effect on ADG.
- Addition of supplemental fat decreased DMI and increased feed efficiency and diet NEg compared to control diet with no supplemental fat.
- Method of fat supplementation did not affect growth performance.
- Ruminal digestion
  - No differences in N or starch digestion between treatments.
  - Supplemental fat decreased organic matter and ADF digestion.
- Post ruminal digestion
  - No difference in organic matter, starch, ADF, or lipid digestion.
- Supplemental fat decreased total tract digestion of organic matter and ADF.
- Saturation of corn with fat early in the mixing process slightly decreased digestion of N.
- No affect of method on carcass characteristics.

Item	Control	Supplemental fat	
		On grain (Treatment 2)	On ration (Treatment 3)
Ingredient composition, % (DM basis)			
Alfalfa hay	8.00	8.00	8.00
Sudangrass hay	4.00	4.00	4.00
Steam-flaked corn	80.29	75.29	75.29
Yellow grease			
On grain		5.00	
On ration			5.00
Can molasses	4.00	4.00	4.00
Limestone	1.77	1.77	1.77
Dicalcium phosphate	0.25	0.25	0.25
Urea	1.19	1.19	1.19
Trace mineral salt	0.50	0.50	0.50
Nutrient composition (DM basis)			
NE, Mcal/kg			
Maintenance	2.15	2.33	2.33
Gain	1.47	1.63	1.63
Crude Protein, %	13.00	12.60	12.60
Ether extract, %	3.70	8.40	8.40
Calcium, %	0.80	0.80	0.80
Phosphorus, %	0.37	0.36	0.36

### Implications

Method of fat supplementation does not influence the feeding value of supplemental fat 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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## Where to find the CattleCal podcast:

- Spotify
- iTunes

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