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CATTLECALL NEWSLETTER

ANNOUNCEMENTS

Welcome to the CattleCall newsletter for September 2024! After a small break, we are back with a lot of updates. In this issue we have exciting information on our 2024 interns, research and activities completed in 2022, the career of Dr. John Wagner,Colorado State University professor emeritus, information on the avian flu in cattle, and a flyer for a small ruminant FAMACHA workshop in November. If you would like to hear more detailed conversations about the articles in this issue, look for our CattleCal podcast on your favorite podcast app. Descriptions of this month's episodes and a link to the podcast can be found on page 18. 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:

MEET EDILANE COSTA MARTINS

This year we are privileged to work with Research Scholar, Edilane Costa Martins, on our current research. Please read below to learn more about Edilane's background.

Originally from Brazil, she holds a Bachelor's degree in animal science from the Federal University of Viçosa, a Master's degree in animal science from the Federal University of the Jequitinhonha e Mucuri Valleys, and a completed Ph.D. in Animal Science from the Federal University of Minas Gerais. She has focused on beef cattle production, nutrition, and greenhouse gas emissions throughout her academic career. Since July 2023, she has been working as a Research Scholar for the AgNext Team at Colorado State University under the supervision of Dr. Pedro Carvalho. Starting in March 2024, she visited the University of California – UC Davis under the supervision of Dr. Richard Zinn and M.S. Brooke Latack in partnership with Dr. Pedro Carvalho from CSU. Brooke Latack in partnership with Dr. Pedro Carvalho from CSU.

MEET OUR 2024 SUMMER INTERNS

This summer, the UCCE Imperial Livestock program had the pleasure of hosting 3 high school interns. The interns learned about cattle health, feeding, management, and issues. In July, each intern presented on a cattle topic of their choice. They did an exceptional job presenting on nuisance flies, behavior differences of crossbred beef x Holstein steers, and misconceptions in the cattle industry. The interns brought new technological methods to engaging the crowd and tactfully answered questions about difficult topics. We had a great summer working with these three capable students and look forward to future intern cohorts! You can read more background on the 2024 interns below.

Anahi Gonzalez is a recent graduate from Southwest Highschool. She plans on pursuing a Veterinary degree; this includes obtaining her bachelor's in Biology at IVC and Chico State University. She finds joy in being involved in extracurricular activities, meeting new people, hanging out with her friends, and catching up with family. She has been involved in the agriculture industry mainly in the FFA organization representing her chapter her senior year as their Sentinel. She found lots of enjoyment within the chapter as she participated in competitions, conferences, and planning as well as attending chapter events. She hopes to earn from this internship to enhance her skills sets and experiences later in life for her future goals.

Madison Nix will graduate from Imperial High School in 2026. She is an active member in her school's FFA program and has always had a passion for working with livestock. Madison currently raises sheep for her 4H project but also enjoyed her previous years of raising feeder calves. After high school she plans on further perusing her passion for agriculture and attending Cal Poly Pomona to study Animal Science.

Kyle Self is an incoming junior at Holtville High School. There, he is an active member and officer of his school's FFA program. In FFA, he enjoys showing livestock (specifically cattle), competing in various public speaking and career development activities, and serving his chapter. Through Kyle's short time in FFA he has found a passion for agriculture and youth leadership. This passion has sparked his aspirations to attend Cal Poly SLO and major in ag education. After university, Kyle plans on becoming a high school ag teacher.

RESEARCH UPDATE

We have had a lot of questions from producers on how crossbred beef x dairy Holstein steers perform compared to Holsteins in the feedlot, and how they would handle the heat. Our goal is to talk about the first study we conducted that was recently published comparing the purebred Holsteins versus the beef on dairy Angus cross.

Study Design

The bulk of this study was really centered around the purebred Holstein steers versus the Angus-Holstein crosses in the feedlot. There was another component to it where we also were comparing supplementation of Monensin, Tannin, and the combination of Monensin and Tannin to these cattle. We had 80 purebred Holsteins and 80 Angus-Holstein crosses split them into 40 pens (4 animals/pen with the same breed in each pen). Holsteins were with Holsteins, Angus crosses were with Angus crosses. The cattle were fed from February to December.

We also had four dietary treatments:

1. Control with no additives
2. 30 grams of Monensin per kilogram dry matter
3. 1.5 gram of Tannin per kilogram of dry matter
4. A combination of the same concentrations of Monensin and Tannin

Performance and carcass data were collected.

Was there any interaction between breed and feed additives?

There were no interactions.

Was there any treatment effect on growth performance or carcass characteristics when comparing feed additive treatments?

We saw a couple of small differences, and this was really just Monensin compared to no additive. During the initial 112 days, we saw an increase in body weight and gain efficiency when supplementing Monensin. During the month of July, we saw a lower minimum daily rumen temperature when supplementing Monensin. That was the only difference we saw between feed additive treatments.

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How do the beef x dairy crosses compare to the Holsteins?

Looking at performance in the feedlot over the entire feeding period, we did see that crossbred Angus-Holsteins had a lower dry matter intake but had similar average daily gains to purebred Holstein steers. That decreased dry matter intake led to an improved feed efficiency for those Angus-Holstein crosses. We also converted the energy use when we calculated performance. Angus-Holstein crosses were better at converting the energy to gain. So those are the things that we observed.

Looking at specific periods over the time of feeding, during the first 112 days, the Angus-Holstein steers had greater average daily gain. However, from day 112 to day 224, we saw the purebred Holstein steers had a higher rate of gain compared to the crossbred Angus-Holstein steers. This is due to the extreme heat the cattle experienced from days 112-224 (summer months). Through the study, Angus-Holstein crosses had a higher rumen temperature. The minimum and average rumen temperature for Angus-Holstein crosses were both higher during the month of June compared to the Holsteins. That showed us that the Holsteins really were able to manage the summer heat better, and because of that, they were able to maintain a little more gain during that period than the crosses. Which is not something shocking, right? Those animals have black hides, so they absorbed the heat more than the Holsteins who were often spotted. While these differences were observed during the summer months, the Angus-Holstein crosses were able to rebound when heat abated, ultimately still performing better than the purebred Holstein steers overall.

For carcass characteristics, we saw an increase in carcass weight, increase in dressing percentage, increase in back fat and kidney pelvic heart fat, increase in marbling, and an increase in rib eye area for Angus-Holstein steers compared to purebred Holstein steers.
Angus-Holstein steers had a 25 pound heavier carcasses. Even though the Holsteins marbled well, it's not that the Holsteins were not doing well in the marbling, but the crosses were putting more fat in the carcass. So, they increased marbling, they increased back fat more than 30 percent, which is really interesting.

It wasn't like the Holsteins were doing poorly. The Holsteins did well. The crosses really did just improve what was already existing with those Holsteins. The literature says that when you compare Holsteins versus purebred beef, the Holsteins are going to consume about 10% more feed, and they also have 10% greater maintenance requirement than the purebred beef.

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RESEARCH UPDATE

It seems like the crossbred steers are right in the middle for intake and for energy requirements. That was very interesting to see that in this study.

What about liver abscesses?

For this study, we didn't see much of a difference in morbidity, liver abscess, or even liver scars. We typically, in our studies, have a relatively low liver abscess percentage, and during this study, we didn't see a difference between the two groups. Overall, the average for liver abscesses was less than 5%. It is a little different than what other researchers have reported in different parts of the country. Potentially the fact that those animals were fed 12% forage in their diet, so 12% hay, could be one of the reasons for that. Feedlot cattle are often fed more hay, more forage, than other places in the country. The majority of the forage used in this study was Sudan grass hay, so there was some greater particle size.

Take home message

The Angus crosses were facing more challenges in the summertime. However, overall, they gained more, they were more efficient, had improved performance in the feedlot, and had improved carcass characteristics compared to purebred Holsteins. There was no major effect of tannin on steer performance.

Please see next two pages for data tables

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RESEARCH UPDATE

	Holstein	Angus-Holstein
Feedlot growth performance		
Final weight (lbs)	1346	1364
Average daily gain (lbs/d)	3.23	3.28
Dry matter intake (lbs/d) ‡	17.7	17.1
Gain to feed ratio‡	0.182	0.192
Health		
Liver abscess (%)	5.0	2.5
Pinkeye (%)	12.5	23.3
Morbidity (%)	6.3	7.5

‡ Denotes statistical differences ($P \leq 0.05$) between breeds

RESEARCH UPDATE

	Holstein	Angus-Holstein
Carcass characteristics		
Hot carcass weight (lbs) ‡	825	850
Dressing percentage‡	61.4	62.3
KPH, % ‡	3.22	3.43
Back fat thickness (in) ‡	0.22	0.35
Ribeye area (in2) ‡	12.3	13.5
Marbling score‡	4.5	5.4
Calculated yield grade	2.89	2.99

‡ Denotes statistical differences ($P \leq 0.05$) between breeds

CAREER CALL WITH JOHN WAGNER

We speak to Dr. John Wagner, Professor Emeritus at Colorado State University about his background growing up on a farm in Michigan, working in closely with beef producers, and being a leader in feedlot research.

Where are you from and what do you do for a living?
I currently reside in Pierce, Colorado, and we're in the process of moving to southeast Colorado, a little community called Wiley, which is near Lamar. It's not the end of the world, but you sure can see it from there. I'm going to switch phases here from professional to grandpa, and it's going to be a lot easier being closer to them. They live down there, and so that's promoting the move is to get near those grandkids so we can spoil them decent.

Where are you grow up?
I'm a native of Michigan. Our family farm was about 40 miles north of Detroit in the southern thumb area. We raised cattle and corn and hay and have some experience with some hogs and sheep as well. It was a small farm, family farm, and it fostered a real love of livestock in me at the time. It probably was the stimulus for me pursuing the career that I have.

When and how did you decide that you're going to pursue this career in agriculture?
Well, it's kind of interesting because I think I'm not alone in this, but I originally went to Michigan State University thinking that, well, I entered the pre-vet track and thinking that I was going to become a veterinarian someday. I got there and was exposed through my animal science courses to all the things that the animal sciences industry offers in terms of careers, everything from sales and technical services to research and education and all this kind of stuff. I was less interested in the clinical side of, you know, treating sick animals and that. I told myself that I was happier with managing animals properly to prevent them from needing a veterinarian as far as that goes. So, that's where I think that all happened. I saw this wide variety of opportunities there beyond or aside from veterinary medicine and pursued those. I was really interested in research and that sort of thing.

Why did you choose to attend Michigan State?
Being a native of Michigan, Michigan State was the original land-grant institution, so that was always high on the radar. There was an opportunity to participate in small college athletics, but I decided my athletic career was over early and it was time to get to the real world and do that. So, Michigan State was the choice. It was quite an experience moving from Muttonville, Michigan to East Lansing. Holy cow, did this cowboy get his eyes open.

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CAREER CALL WITH JOHN WAGNER

You mentioned that when you were growing up, you had experience with multiple species. Were cattle always what you wanted to work with?
Yeah, I was exposed to others, but cattle was where my interest was. We started out in the dairy business years and years ago. One of my earliest memories of the farm as a young kid, probably five/six years old, holding flashlights while the neighbors all milked cows during a power outage. We left the dairy business when the requirements for class A milk changed and had to go to pipeline milkers and all that stuff. We were back in the days when you used cans and you put the milk cans into a water-based cooler and this sort of thing.

Why did you decide to pursue graduate school?
I graduated in 1980. Things were kind of tough in agriculture and basically the jobs available seemed to be, you know, herdsmen position ($9,000 a year and a pickup) and basically I could have done that back home. The most viable options for me then seemed to be, well, I'll go get a master's degree and then see what happens after that. And then once I had the master's degree, I decided, well, I'll just keep going for a PhD and see what happens after that. There wasn't a long-term plan that I'm going to get my PhD and away we go. Just at the time, based on what jobs were open and this sort of thing, I decided to start graduate school. As far as where I went, I left Michigan and went to Oklahoma State. I had to go where the cows were basically. And quite frankly, the reason I picked Oklahoma State is their stipend was greater than Kansas State and greater than a couple other opportunities. I remember exactly that my first check on assistantship was $435.06 a month and made it work.

Were you exposed to research as an undergrad that led you to think about grad school?
Yeah. I worked at the research feedlot at Michigan State, feeding cattle there and so forth. So, that's where I got that exposure. At that time, Werner Bergen was there and my advisor was Dave Hawkins. He was there. John Waller was the extension feedlot specialist at the time. So, I got to know those kind of folks and worked at the research feedlot and that's where I became exposed to a lot of research.

You worked with cows during your PhD, right? Then your first job was back to the feedlot?
Yes.

Tell us a little bit about Oklahoma State and the transition to your first job.
My graduate program for my master's involved liquid supplements for range beef cattle. From there my PhD was on energetics in beef cows. I did some validation of the 1-9 condition scoring system and I did some work looking at maintenance energy requirements for condition score three versus five versus seven cows, this sort of thing.So, my graduate career was largely cow-calf. Working in energetics as a PhD person, that's not a very hard transition, then, to get to energetics in the feedlot. You're still dealing with maintenance requirements and requirements for growth and this sort of thing. I think it was a pretty easy transition for me. The reality was there were a lot more feedlot jobs than there were cow-calf jobs at the time. So, that's how I kind of ended up pursuing that.

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CAREER CALL WITH JOHN WAGNER

Did you want to stay in academia or did there just happen to be in a university position?
Originally, my advisor, Dr. Keith Lusby, was an extension cow-calf position at Oklahoma State. He exposed me to a lot of extension work, producer meetings, on-farm trials, interacting with producers, and I really, really enjoyed that. When I finally had my PhD and was looking for positions, they were primarily academic positions that I was looking for. There were a couple of industry opportunities that I would have fallen back on had the academic side not panned out. But I really wanted to work with producers directly. I, at the time, had decided that there was no way I was going back to the classroom. It's going to be extension and research. I knew what kind of student I was, and I guess I didn't want to deal with myself. But I was not going to go back to the classroom.

After graduate school you had three main positions. Could you discuss those jobs?
The first 11 years I was an extension ruminant nutrition specialist at South Dakota State University. It was an 80% extension, 20% research position, largely with feedlot and backgrounding in cattle. I did some research at an outlying research station. I did research in private feedlots field testing and this sort of thing. And then extension responsibilities throughout the state of South Dakota dealing with ruminant nutrition, beef cattle nutrition, and working closely with producers and county extension personnel.

What was a big challenge that you had an extension at that time? And what was the best thing that you can remember while working as an extension agent?
The best thing by far was the close interactions with producers that we did. On-farm testing and field days and all that kind of stuff. One of the biggest challenges or problems you might say is so many of the phone calls, so many of, in those days, it was written correspondence. So much of that, I didn't have feedback from the producer in regard to whether or not what I advised actually worked. Sometimes I would, but more often than not, you wouldn't know. That was somewhat disappointing, not hearing back. The learning curve might be longer because you don't know what's the feedback of the recommendation to do that. I did make some mistakes that I heard about. Trying to cut and grind frozen potatoes for feeding cattle, that was kind of a mess. There were some of those kind of things, but, working hand in hand with the producers and processing cattle right next to them. One time in particular, I was in implanting, and I pinned my finger to the calf's ear and ripped my finger open. I tied my handkerchief around it and finished the rest of the day. Another time the head gate broke. So I mugged a couple of hundred head of cattle, trying to hold them while somebody else implanted them. In those days, I could handle myself and it worked out. But today, boy, that would kill me.

How was the transition going from grad school to that position?
I don't think that was that difficult for me because Dr. Lusby would have me tag along and participate in those extension opportunities right from graduate school on. I think that transition was not that difficult. But the transition that was difficult, you might say, is Dr. Lusby shielded me from the university bureaucracy at Oklahoma State. When I get to South Dakota State on my own, all of a sudden I realized there's all this red tape that you have to go through and you have to answer to the vice president of vice presidents. That was a transition.

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CAREER CALL WITH JOHN WAGNER

Then you moved to a 100% research position, right?
Yeah, from there in 1996, I went to basically 100% research position with, at that time, the cattle feeding division of Continental Grain Company. Continental Grain, if you follow that history, they morphed into ContiBeef. And then ContiBeef ultimately became the Five Rivers cattle feeding organization. I spent nine years managing their research station down in Lamar, Colorado, doing proprietary industry type research.

How was that transition?
The biggest thing there is in a university setting, you had so many dollars to work with, and so then you went out and tried to find a project that would fit those dollars. In an industry setting, you would identify a problem and then generate the dollars to fit that problem.Whereas to me, it felt like in the academic world, it was just backwards from that. You tried to find problems that you could fit within your budget, whereas in the industry setting, if it was important enough to the company, the dollars would appear.

In that position you worked with feedlot research, right? Can you talk about the research facility and the work you were doing?
Yes. The Lamar facility was developed, I think, originally back in 1974 or something like that. And it was developed by Gene Irwin, a veterinarian, Gene Irwin and associates. I think they were out of Arizona. It was at the far east end of Colorado Beef in Lamar, Colorado. There were 168, nine-head pens there. We were able to simultaneously do three to four large scale trials. In the nine years, there were over 100 studies done that I was involved with there. Everything from some of the very first work with Optaflex and those beta agonist things to some of the first work with many of the implants that are currently used today. Some things that just flatly didn't work out. It was interesting from that standpoint. The tough thing about it was that I would go to these academic meetings and people were talking about this novel approach they were trying and it was something I had done five years ago. You really couldn't say much about it because it was all proprietary.

After that position, where did you end up?
The past 17 year I have been with Colorado State University. The first few years of that, from 2005 to 2012, I was stationed down there in Lamar. We operated that facility as the Southeast Colorado Research Center doing research for the Five Rivers organization on a contract basis. After 2012, we had a really tough go economy-wise in 2011/2012. We decided that it was time to shut that facility.I was transferred up here to campus for the last 12 years of my career.

That's when you started teaching classes, right? How was that?
Oh, yeah. One of the things that struck me early on, I would see a lot of brand new PhDs trying to teach everything they learned in grad school to an undergraduate student. And based on the experiences that I had with extension and research and interactions with producers and real-world problems out there, I decided that rather than try and teach everything and they remember 20% of everything, I'd rather have them remember 80% of what I tried to teach them. I tried to pare things down to what I thought was the really important stuff.

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CAREER CALL WITH JOHN WAGNER

Things like, “You've got to get this right if you're going to operate a feedlot.” It was more like an economics class than it was an animal science class because, man, the whole thing boils down to break evens. You've got to know your cost of gain and you have to be able to calculate your breakeven purchase price. That's the thing that I really hammered home on. Some of that economic stuff and realizing that ultimately, if they get into a feedlot situation, particularly a large feedlot situation, they're going to hire veterinary consultants. They're going to hire nutritional consultants. They're going to hire engineers, this sort of thing. Students need to know that stuff so they knew when a consultant was giving them a lot of crap, which some do. What I tried to do was I really tried to avoid teaching the students everything that I learned throughout my entire career. I tried to pare it down to what was really important.

Throughout your career, as a mentor and mentee, what did you look for in a mentor?
Well, one of the things that I look for is whether or not an advisor or mentor was book smart or boots on the ground kind of approach. Whether or not they actually had to get dirty and accomplish some of these things on their own versus somebody that's just simply book smart. One of the things that I really worry about from an animal science perspective is, back in the day when I was in school, 80% of us came from farm and ranch backgrounds. We had been run over by cattle. We had been thrown off our horses. We had faced a lot of those experiences. Today, it seems that 20% of the students come from farm and ranch backgrounds and 80% do not. Not that that's bad, but that requires a little bit different approach. When I went to school, I already knew how to back up a trailer, build an H-brace, a fence, fix a water tank, and all that kind of stuff. Today, I think we have to design our programs so that we do some of this hands-on learning thing where we allow students the opportunity to drive a tractor. We allow them an opportunity to back a gooseneck trailer and those kind of things. That is one of the things that I worry about, whether or not we're still actually teaching them those kind of hands-on practical things.

What is your favorite food?
My favorite food right now, I'd have to say chile rellenos. I can't make them. I like crispy rellenos and fairly hot chile. Nnot burned down the forest hot, but certainly hotter than most milds.

What type of music do you typically listen to?
Yeah, I'm a 70s and 80s rock and roll kind of person. George Thorogood, The Destroyers. I really like Bad to the Bone, that kind of thing. Get a Haircut. They rank right up there and anything similar.

What is something you know today that you would like to go back and tell your younger self?
I spent many years with some pretty significant health issues. I didn't take time to really take care of myself.It was always, “Well, I got to go write another report. I got to do this. I got a cattle to process. I have studies to do,” and so on and so forth. I really should have taken time earlier to fix some of those health concerns. The last 3-4 years, I have straightened that out, and I'm feeling so much better.

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CAREER CALL WITH JOHN WAGNER

I think back and if I felt like I do now back then, maybe I could have accomplished that much more. So, the bottom line is that the career is important, but when it boils right down to it, you got to take care of yourself and your family and that sort of thing first. I wish I had done a better job of that, taking care of those health concerns early on. I think it would have made me a much better professional, a much better person in general.

From the professional side, one of the things that I think a student needs to do now that is really what's going to be important going ahead professionally is statistic and computer skills. I'm not talking about social media and all this kind of stuff. Spreadsheets and databases and these kind of things. I can't see the cloud, but I know it's there and it stores a bunch of stuff and a better understanding of how that thing works, that would have been desirable as well.

What is your CattleCal top tip?

Yeah, one of the things that's kind of interesting is if I didn't pursue a career in animal sciences, animal husbandry, I suppose I'd be teaching history at a small college and coaching offensive line. I really enjoy history and particularly the history of cattle feeding industry and all this kind of stuff. What people need to realize is that we've been custom feeding cattle since immediately after the Revolutionary War. Cattle grazing corn in Ohio and then walking to New York City to the market. That kind of history goes way, way, way back. This custom feeding thing got it's start very early and is not a product of the large feedlots in the 70s or whatever. The whole history of the cattle business is fascinating. There's a book. I think it's called Cattle Empire. That is an interesting read. Johnny Matsushima has written some cattle history books that are available online. Those are some great readings as well. A work of fiction that I think all animal science type people ought to read is The Jungle by Upton Sinclair. That's an interesting expose on the packing industry back then. It really set the stage for a lot of what goes on today as far as meat inspection and USDA grading and all that kind of stuff. I think that's an interesting read as well.

How can people contact you if they have questions or want to reach out?

I retired in good standing. Professor Emeritus now. My email address is john.wagner@colostate.edu. I think as long as I behave myself, I can keep that. Please reach out to me at that particular address and I'd be happy to entertain any questions that you might have.

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HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) H5N1 DETECTED IN CALIFORNIA DAIRIES

DR. GABY MAIER, DVM, PHD, DACVPM
ASSOCIATE PROFESSOR OF COOPERATIVE EXTENSION -BEEF CATTLE HEALTH

Highly Pathogenic Avian Influenza (HPAI) H5N1 Detected in California Dairies

What happened?

The California Department of Food and Agriculture (CDFA) announced in a press release on August 30th, 2024 that highly pathogenic avian influenza (HPAI) was detected in three dairies in the Central Valley. The outbreak of this flu virus in dairy cattle was first reported in the Texas panhandle in the spring of this year after several dairy herds had cows become sick with an unidentified illness. The affected cows were lethargic, had a fever, some had clear nasal discharge, diarrhea or dry feces, dropped in feed consumption and milk production, and most remarkably shed thick, colostrum-like milk. Most of the affected cows recovered after a couple of weeks, but their milk production did not reach the same levels as before they became ill. Veterinarians were unable to determine the cause of these outbreaks for some time, but dead birds on the dairies and cats with neurological signs finally raised the suspicion for avian flu. Cats and other mammals often become neurological when infected with HPAI and cats on dairies become infected when drinking raw milk. Samples collected from affected cows indeed came back positive for HPAI and since then, dairy herds in multiple states across the U.S. have tested positive for the virus. For a current and historical overview of affected states go to the United States Department of Agriculture (USDA) dashboard. As of September 3rd, 2024, a total of 14 states have diagnosed cases in 197 herds.

How did this virus get into dairy cattle?

It is now believed that the virus spilled over from birds to dairy cattle in a single event, i.e. one cow was infected in Texas through bird droppings or a dead bird, and the virus has since spread from cow to cow only. Flu viruses change often, which is why we need a new flu vaccine in people every year. When a host such as a bird gets infected with two types of flu viruses at the same time, the viruses can reassort their genetic material. By random chance events, the newly assorted virus is now capable of infecting a new host, in this case cattle.

How has the virus spread between cattle so quickly?

HPAI is shed in large numbers in the milk, even before cows show clinical signs of disease. It is very likely that the virus spreads between cows on a dairy through milking machines. The virus is also shed in small amounts in urine, nasal secretions, and saliva. In a study where dairy heifers were experimentally exposed to the virus via an inhalation mask, heifers only had a temporary increase in nasal discharge without any other clinical signs. However, the same researchers infected the udder of lactating cows experimentally through the teat canal and were able to reproduce the same disease symptoms seen on the affected dairies: abnormal milk, decreased feed intake, watery diarrhea or dry feces, a significant drop in milk production and clear nasal discharge. A preliminary version of this study is available online. Even though there are quarantines and movement restrictions in place for herds where HPAI is found, the rapid spread of the disease shows how interconnected the cattle industry is and how fast and far pathogens can travel. The virus has also been spread from cows to domestic poultry, which are susceptible to HPAI. When HPAI is found in domestic poultry, the typical outcome is that all birds are euthanized. For all these reasons, biosecurity is of utmost importance to curb the spread of HPAI among cattle and poultry.

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HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) H5N1 DETECTED IN CALIFORNIA DAIRIES

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ASSOCIATE PROFESSOR OF COOPERATIVE EXTENSION -BEEF CATTLE HEALTH

Is there a risk to people?
So far, only a few cases of avian influenza have been reported in dairy workers, none in California yet, and all have had mild symptoms and have recovered. Humans luckily do not appear to be the main target species of this type of avian flu virus even when directly exposed to infected cows, but personal protective equipment (PPE) is highly recommended for those working on dairies. Human safety is paramount, and the USDA offers financial support for affected premises to purchase PPE, such as gloves, goggles, and masks for farm workers. Early on, it was also determined that pasteurization inactivates HPAI virus, so the milk supply stays safe. The USDA is also confident that the meat supply is safe and will be adding H5N1 monitoring in dairy cows at slaughter to its program later in September. It is, however, not recommended for people to consume raw milk as milk appears to be the main vehicle for transmission and may not be safe to drink.

What happens now in California?
The staff at the Animal Health branch at CDFA had been preparing for the moment when HPAI would be detected in a California dairy herd. Factsheets and regulations are posted on a dedicated website. Lactating dairy cattle moving interstate from California require a Certificate of Veterinary Inspection and a negative HPAI test within seven days of movement. All dairies are urged to increase their biosecurity including cleaning and disinfection of vehicles to transport cattle, restriction of worker movement between dairies and poultry facilities, limiting visitor access to premises, wild bird deterrence, etc. All lactating cattle shown at fairs must have a negative PCR test for the virus from a milk sample within seven days before arriving at the fair. Enhanced biosecurity for dairy cattle at fairs has also been outlined in a factsheet.

Is there a vaccine? There is no vaccine for cattle yet, but several pharmaceutical companies are working on the development of such vaccines. The USDA is also conducting research into a vaccine. If or when a vaccine for cattle will become available is still unknown today, but the flurry of activity is a promising sign.

What do beef ranchers need to consider?
No beef cattle have been found to be infected with HPAI to date. Spread within a beef herd would likely be limited because cows aren't being milked. However, beef cows are likely not immune to the virus. Therefore, biosecurity should also be on ranchers' minds, especially for those who have contact with dairy cattle or domestic poultry. You do not want to become a fomite. The biosecurity training provided by the Beef Quality Assurance program is a good starting point to learn how to prevent spread between cattle or between cattle and poultry. Chapter 3 in the BQA manual is full of good information. For example, a trailer that is used to transport cattle from multiple herds should be thoroughly cleaned and disinfected between loads. Changing clothes and washing boots between visiting different herds should also be practiced. Limiting visitors to the ranch and keeping a visitor log is also encouraged.

Continued next page

HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) H5N1 DETECTED IN CALIFORNIA DAIRIES

DR. GABY MAIER, DVM, PHD, DACVPM
ASSOCIATE PROFESSOR OF COOPERATIVE EXTENSION -BEEF CATTLE HEALTH

The avian influenza outbreak in California dairy cattle is a stark reminder of the unpredictable nature of viral diseases and their ability to cross species barriers. It is important to follow the science, listen to guidance from experts, understand that sometimes things change, and we need to adapt with the change. We have successfully overcome Covid19 – we will also get through avian flu in dairy cows. Keep checking the CDFA website to stay informed on the development of this new cattle disease.

CATTLECAL PODCAST 2024 AUGUST/SEPTEMBER EPISODES

Research Update - CCP#084

In this episode we give the listeners some updates and talk about one of our most recent publications: "Influence of low-level tannin supplementation on comparative growth performance of Holstein and Angus × Holstein cross calf-fed concentrate-based finishing diets for 328 d".

Career Call - CCP#085

In the current career call, Brooke Latack and I called Dr. John Wagner. Doctor Wagner talked about his amazing career in extension, industry/research, and teaching. He is definitely an encyclopedia about beef cattle nutrition and management!! And an amazing person!!! We extremely happy to announce that we will be recording more podcasts with him in the new series "What would Wagner do?". But before, let's dive into his career and amazing things that we can learn from him.

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

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JOIN UCCE IMPERIAL COUNTY FOR A

SOUTHERN CALIFORNIA SMALL RUMINANT FAMACHA WORKSHOP

Are you concerned about the management of internal parasites in your small ruminant herd? Are you concerned about dewormers not working like they used to? Join us for a workshop on FAMACHA and internal parasite management for sheep and goats.

Dr. Rosie Busch, Sheep and Goat Herd Health and Production Specialist at UC Davis, will cover internal parasites of small ruminants, teach hands on FAMACHA techniques, and offer FAMACHA certification.

DATE, TIME, & PLACE:

NOVEMBER 15

6-8 PM

Imperial High school
517 W Barioni blvd
Imperial, CA 92251

Free unless you want FAMACHA certification. For those who want certification, the cost is $15/person

Please register at

https://ucanr.edu/socalfamacha

Questions? Reach out to Brooke Latack at 269-313-2579 or bclatack@ucanr.edu

Accommodation requests related to a disability should be made by November 1, 2024 to Brooke Latack (269-313-2579 or bclatack@ucanr.edu).

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CONTACT

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