

Transcript Brad White (0:03) Welcome to BCI Cattle Chat. I'm Brad White. Happy to have you with us. Happy to have our crew here in the studio. Morning, Dustin. Good morning. Brian. Good morning. Bob. Hello, Brian (0:11) everybody. Brad White (0:11) And we have two guests today. Dr. Jason Warner is the cow-calf extension specialist here at Kansas State. Morning, Jason. Brian (0:18) Morning. Thank you. Brad White (0:19) And Maddie Banke is working on her PhD here at the Beef Cattle Institute. Morning, Maddie. Maddie Banke (0:23) Good morning, Dr. White. Brad White (0:25) So we're happy to have them here because we're going to talk about a couple different things. We're going to talk about some of Maddie's heat stress research, and I know Jason has an interest in it. in the heat stress area and management as well. We're also going to talk about your cow-calf scorecard, right? We're coming into baseball season. You've got to keep score at home. When do you write the backwards K on there? That's always confused me, Bob. But Jason's going to give us some pointers for the cow-calf herd. And Dustin's got a great listener question that came in relative to, how do I do marketing and management when I have a small cow-calf herd? Before we get into those topics, guys, I wanted to ask you a question, it's a little bit per... So I need you to probably prepare mentally for that. And it is, if you're going out and you're going to get fancy coffee, you cannot get a black coffee because they're out of black coffee. And so you're going to get a fancy coffee, and I'm buying. What are you ordering? Dustin (1:20) What's this? Brad White (1:21) It's Americano. I only recently learned that that is the same as black coffee. I've had that, because I had that exact experience. They were like, we're out of black coffee. And I'm like, I don't know, I'm lost. What would you get besides black coffee or Americano? Dustin (1:38) I'd do a mocha. Brad White (1:39) I like chocolate. It's basically a shot of espresso, I mean it's Americano with just a little bit of chocolate. A little bit of chocolate, alright, a mocha. I'm trying to learn from me. Brian (1:49) This is fine. I've got several. I've got one sitting right here, but I'm not going to promote any specific brands. Kind of any variation of vanilla latte. There's cinnamon roll variations. There's other stuff. Brad White (2:04) Does it take you a while to order your? Brian (2:09) Nope. Jason? Dr. Jason Warner (2:11) I'm going to dust it a white chocolate mocha. Brian (2:13) White chocolate mocha. Ooh, I think I know. I have no idea. I have never had anything except black coffee. Dustin (2:19) I drink a lot of black coffee, and I don't know what a mocha is. I don't know what a latte is. I don't know any of these things. Dr. Jason Warner (2:27) I don't even know what a mocha is either, but I kind of like it, so that's why I was going to order it. Dustin (2:30) I have no idea. Addie? Maddie Banke (2:33) See, I'm not a big coffee fan, but I'd get an energy drink and you gotta doctor it up with some good sweet flavors, so. Brad White (2:40) Alright, see, and see, she went way off and got something totally different. Dustin (2:45) So, yeah, if they don't have coffee, I'll just, give me a Coke. Brad White (2:48) I don't think that's an energy drink. Close enough. We'll count it. I'll get you a black coffee. Dustin (2:53) What about you? Brad White (2:54) I always go with the Americano. It's the only thing, or I walk away. Dustin (2:59) I'll take a Coke. Brad White (3:03) Bob and I could go together. Dustin (3:05) Yeah, we're pretty, we're up there, uptown, uptown guys. Brad White (3:08) So as we come into summer, when we won't be having hot coffee, we may move to iced coffee, heat stress is always a challenge in cattle's thermal neutral zone. zone is actually less than ours. They're very comfortable at cool temperatures, much less comfortable when it gets hot. Maddie, some of the research that you have done was sparked by producer questions relative to what are some of the effective heat mitigation techniques, specifically in cattle-fed and feed yard scenarios, and how effective are

shades, especially when our pin floor changes to be, we have some yards that are switching to roller compressed concrete on the pen floor. And you did some research last year. Maybe tell us in broad terms, what kind of research project did you do? Maddie Banke (3:52) So we did a randomized controlled trial up in the Pacific Northwest at a feed yard that had roller compacted concrete pen floors. They were putting up shade. It's about 30 square feet per shade per animal in each pen and 100% solar block. And they were interested in the effect of that shade on steer performance after terminal sort. So we... We allocated about 8,000 head of animals into that trial with 12 pens under shade and 12 pens with no shade. Brad White (4:26) And so you mentioned 100% solar block. Sometimes when we talk about shades, there's two considerations. You gave us the square foot per head, and then the solar block is different because if we have a shade cloth, sometimes that doesn't stop all the penetration, but these blocked all the sun. So what did you find in this trial? Maddie Banke (4:44) So we looked at a lot of different measurements in this trial. We looked at performance at the feed yard, we looked at some behavior, animal welfare components, and we also were able to follow these cattle all the way through the packing plant. So we found that we had a better carcass performance coming out of shaded pens, so higher quality grade prime and choice out of shaded pens and less dark cutters. Dark cutters out of shaded pens. We also found a decrease in the amount of railers or animals that got cold earlier than their pen mates. We also found decreased panting behavior in those shaded pens as well as a decrease in water consumption. We found about a 15 percent decrease in water consumption with the inclusion of shade in a pen. And as far as feed delivery goes, we saw no differences in the shaded pens when it started getting hot out. And when you think of cattle going off feed in the heat, the unshaded pens, we saw a decrease when that temperature humidity index increased. However, we did not see the shaded pens going off feed with that increasing temperature. Brad White (6:03) And that makes sense. The water and I would ask you guys have 15 reduction in water consumption is that so Dustin (6:09) surprising to you and is that meaningful yeah I think that's quite a bit meaning that that is meaningful if you think about the number of head in a large feedlot uh 15 reduction on a daily basis you know not all year round but at least during the summer time I think that's a pretty significant difference because water is one of the resources that we're really trying to kind of keep an eye on as we think about livestock production but and I don't disagree with you but you said in the summer but Brian (6:36) I think you know we think about heat stress is kind of these extreme events in the really hot part of the year, I think there's some compensation that happens even at much lower temperatures in summer. So, and again, depending on where you are geographically, Maddy's study was in the Pacific Northwest, which I don't normally think of as a typically hot place, but it is. I think you'd probably see benefits for, I mean, she did hers in the summer, but probably more months of the year than we kind of would suspect. Brad White (7:05) Well, because their cattle are different than us. Yeah. So it's those warm days and I think there's a lot of subclinical heat issues that we maybe don't identify until we get there and your work kind of bore that out because you took panting scores or open mouth breathing and you saw that kind of throughout the period in those cattle that did not have shade even though it wasn't really high temperature humidity index. Brian (7:30) The other thing about your study Maddie. So these cattle were only under shade after a terminal or so the last how many days? Maddie Banke (7:39) Yeah, so terminal sort is right about 60 days from their projected ship date. So we could expect within their last 45 to 90 days they were under shade there. Brian (7:49) Yeah, and I wonder too, I've

heard your research before, I wonder too if we provided shade even earlier in the feeding period are we going to see more cumulative effects of that heat mitigation? Brad White (8:01) So quick question on, you talked about some of the benefits, right, reduction in water consumption, etc. Were there any negative? Maddie Banke (8:08) side thing and where i'm coming about this i'm thinking about benefits and the costs i mean there's you talk we can quantify those benefits but what are the costs associated with with this yeah so the the big cost that we see here with shade is just putting the shade up and that that initial cost of the shade though you know we we saw small differences between the treatment groups they are they are differences and that that is one way to one way of many to pay off those shades And if you think about it... Brad White (8:38) over time you might pay off for that initial input cost with multiple groups of cattle going through if you have a shade that has some permanency to it like these type shades that were pretty solid versus a shade that might break down in a season or two you'd have to pay it off quicker yeah those shades aren't going anywhere yeah and don't forget the water offset too like i don't know if we calculate the water cost but you know with that kind of reduction over time it probably Dr. Jason Warner (9:05) Mattia, one question I had for you. See, there's lots of different ways where these shades can be designed and implemented in yards. Were they permanent or were they retractable, depending on the time of the year? Maddie Banke (9:16) They were permanent, so it's all steel and tin structure. Brad White (9:20) definitely not going anywhere so up year round for many years to come sounds like strapping something into the back of the trailer it's definitely not going anywhere and every time I say that something flies out going down the road but you're required to say that when you strap something into a trailer. So I think that you've got some good information on this one, Maddie. What's next? Maddie Banke (9:42) Yeah, so when you answer one research question, 100 more pop up. So we're looking at more ways to mitigate heat stress at that feed yard. So this summer I'll be heading back up there, and we're going to be looking at another option to mitigate heat stress. By feeding. cattle after terminal sort throughout the evening and the night. So rather than conventionally fed cattle where we think of them getting fed between 5 a.m. and 3 p.m. two to three times a day, we're going to start feeding them after that environmental max temperature is done for the day. So we're going to try to offset that heat load and let them be able to eat throughout the night and not during that peak temperature during the day. Brad White (10:28) Which I think is a fabulous idea because all of us have had have come in, and I think of lunch, right? You come in at lunch in the winter, and you have that big, hot meal. You feel really good. You come in at lunch in mid-July, and you have that big, hot meal, and that's it. You're kind of done. So I think this is a great idea because it'd be, Jason, it'd be four to six hours after we'd expect heat production in the rumen after they eat. Dr. Jason Warner (10:54) That's what we typically see. Yep, yep. So after that time grew in those cattle and just that meal, just due to that mechanical break. breakdown of the different components that are coming into that diet, especially with forage fiber fermentation. That's when we see heat production typically increase there. Brad White (11:10) Yeah, so it would be, that would be nice to have that during the coolest part of the day, which is typically by the time we've reached the middle of the night, so which is where you'd be targeting. So it'd be interesting to see what your research turns up. We'll have to follow up with you for sure. Thanks for sharing, Maddie. Maddie Banke (11:25) Yeah, thank you guys.