## Make Grazing Simple Again:

## Dr. Rick Funston

## Season 1, Episode 38

[Intro music]

**Kiernan Brandt:**

Welcome to Cattle HQ, a podcast from industry experts and progressive producers discussing cutting edge info about the cow calf sector to keep cattlemen and women in the know and positively affect their bottom line.

**Taylor Grussing:**

Welcome to the Cattle HQ podcast brought to you by SDSU Extension. My name is Taylor Grussing, cow/calf field specialist based in the Mitchell, South Dakota regional office, and I'll be your host for today's session. So today we're going to be visiting with Dr. Rick Funston, Professor and Extension Reproductive Specialist with the University of Nebraska Extension. He is based out of the West Central Research and Extension Center in North Platte, Nebraska. I had the privilege of traveling down there a few weeks ago to attend the Applied Reproductive Strategies in Beef Cattle symposium, and so we had a bunch of different professors across the country and people involved in the beef reproductive task force attend that meeting to talk about some very applied reproductive topics in the cow/calf realm, and Dr. Funston kicked off that meeting. Kind of gave us a great introduction to Nebraska and as well as a lot of the research that he has done there. So welcome to the podcast, Dr. Funston.

**Dr. Rick Funston:**

Thank you.

**Taylor Grussing:**

Like I said, we are gearing up for harvest up here in central South Dakota, as I'm sure the combines are rolling down there in Nebraska as well. So today I wanted to visit with you about grazing corn stocks. This is one of the things up here, at least in the Dakotas, that I know could be utilized more in certain years but I think people are kind of catching on on how to utilize those, even if they don't have cattle. So before we get started on that topic, do you want to give yourself a little bit better introduction of your research and then going into what might be some of the benefits of either grazing corn stocks in the Dakotas or the upper Midwest?

**Dr. Rick Funston:**

Yes. I work in traditional training, was in reproductive physiology, and do a lot of work with some different things on synchronization systems and trying to improve pregnancy rates to both artificial insemination and natural service and also, while trying to keep production costs down. The place to really focus on is the ones that are the biggest part of beef production and number one is feed. So a lot of the focus on research in the sandhills and across the beef systems work has been to try to decrease the amount of harvested forages that are needed in the production system and a couple resources are either grazing year-round with winter range or a combination of grazing native range or sometimes seeded forages but then, the cheapest feed resource that we have, and likely you have, is corn residue. I think that it has been successfully grazed for, oh gosh, a number of years. It's a tradition down here. Our harvest is somewhat behind. I think some of it's due to precipitation and later planting date in some cases. The silage, a lot of that has been harvested, but that residue is really taken to make silage, so that's not an option to graze but once we get, I think some high-moisture corn, I know it is, last week, I was down with a couple international groups to a feedlot south here and there’s some high-moisture corn coming out anyway. So those fields will be available to graze shortly anyway. Also, we’re…

**Taylor Grussing:**

Right. Up here, we've been doing some earlage as well.

**Dr. Rick Funston:**

Yes. Also, do work in the area of heifer development and management practices to improve re-breeding of that first calf heifer. All of these feed resources can play into, I guess, many aspects of beef systems research and overall reproduction and longevity of the female.

**Taylor Grussing:**

So when we talk about starting to graze corn stalks, and if we jump into that heifer development realm, what are some of the benefits of getting that heifer out there, whether it's pre-weaning beside her mama, or just right away like after weaning?

**Dr. Rick Funston:**

Well, if the grazing corn residue is going to be part of your system and they're going to be asked to utilize that beyond a replacement female, the sooner we can expose them to that environment, the better. I guess just backing up a minute, we've done work with grazing winter range or corn residue with both cows and heifers and there is a huge behavioral component, and that's the only explanation I have for it, because cows that have been exposed to corn residue and know what it is, that feed resource is higher quality than winter range. We see the opposite occur when a heifer is exposed first to corn residue, they did not perform as well. Even though the quality is greater, they are naive to that feed resource. So back to your comment, I think it's important to have that heifer not just be alone by herself or within that age class on a field. So either have her on with the mother or with some animal that's previously grazed corn residue. We've done work putting heifer calves either just by themselves on corn residue or with like a bred heifer that had previous experience with corn residue. We find that if they're with some animal, there's a learned behavior with grazing and it's very hard to study, I guess, but we have a lot of data that show cattle learn from each other and animals that have had previous experience with corn residue.

**Taylor Grussing:**

Do you think that's because the corn residue is spread out differently by the combine versus like winter range and selecting different species or it's just like just simply unfamiliar that they haven't seen it before that they don't know what pieces and parts to eat as well?

**Dr. Rick Funston:**

Yes, I think the second is probably more the familiarity with they’ve never seen corn residue or know what to graze the - and corn stock grazing is kind of a misleading term because if we're making them actually graze the stocks, we're greatly overgrazing that resource. The real nutritional value is in the husks and leaves and of course, the corn, which is less than, with harvest efficiency and things, there's a lot less corn out there, but grazing corn residue isn't about the corn that's left in the field, it's about the husk and leaf.

**Taylor Grussing:**

Right. Right. One of the benefits of getting the cattle out there, if the great thing or, excuse me, the harvest efficiency isn't superb, is they can reduce that volunteer corn that might pop up the next year that you may see in some fields, but long term, we're looking for the husks and the leaves to be harvested first and foremost.

**Dr. Rick Funston:**

Right. The corn actually can be kind of weird. It can be a detriment if there's too much just shell corn that you have a risk of acidosis.

**Taylor Grussing:**

Yes.

**Dr. Rick Funston:**

So you have to be very careful about - and usually that happens because of overfilling the grain cart or spilling of corn. It's not just you don't get piles of corn behind the combine.

**Taylor Grussing:**

Right. Right. So along those lines, what are some things that you advise producers to go scout or look at before they even get cattle out there on the corn residue?

**Dr. Rick Funston:**

I mean, yes, many cases, I guess a higher percent than not, we use electric fence to fence the fields because there are not permanent fences. So I think it's important, as we're doing that, to make sure and get a good overview of the field and make sure there's not big piles of corn or to get them cleaned up or that is definitely something that's very palatable and they will overeat on it and we can lose cattle pretty quickly.

**Taylor Grussing:**

Right. Do you guys see a big difference down there with water access to these fields or does there seem to be maybe more access to water in some of these crop fields with cropping - people doing both crops and livestock now?

**Dr. Rick Funston:**

That's certainly a limitation is water availability. A lot of our corn is irrigated, so there is water for the irrigation well. So many people will water off the pivot point all the way to putting in a well somewhere on a pivot corner or something adjacent to the field. I mean, it's laborious, but hauling water is not unheard of either.

**Taylor Grussing:**

Right. Yes. We used to do that for a long time and at that point, it seemed like maybe we were grazing. It could be this year's going to be fairly warm this week, at least, but as it cools down, those water needs to decrease. So whether it's hauling at least 10 gallons of head per day, 20 gallons, as it warms up, or it's not crazy amounts, but depends on how many cattle you have out there and how efficiently you can get that done but it would be another way to utilize some of those corners or fields that maybe don't have access to water, but someone could look at hauling water for a week or so before it got too cold to utilize that corn residue.

**Dr. Rick Funston:**

The grazing corn residue, there's some corn grazing calculators, I believe, on some of our website or other universities, but the stocking density or stocking rate is really dependent on yield. So I guess a general rule of thumb, on, I believe, 200-bushel corn, think is enough for one animal unit for 45 days.

**Taylor Grussing:**

Okay.

**Dr. Rick Funston:**

I guess the other - we have done work with supplementation on corn residue and, oftentimes, it's a protein supplement, whatever is most economical, but a lot of times, it becomes something with distillers, grains and a pellet, a cake, if you will, along with the protein source and vitamins and minerals. We don't really see a benefit on a mature non-suckled cow grazing corn residue when they're stocked at the appropriate stocking rate. So as long as it's not overgrazed, we have not seen much benefit of supplementation on either body condition or body weight change. Now on the younger females, and again, it's probably due to familiarity with that resource to some extent, as well as intake, we do see a benefit of supplementation and we at least need to supplement somewhere between 1/3 and 1/2 pound equivalent of crude protein.

**Taylor Grussing:**

That's from day one when you start grazing or just after they get out there for a little while?

**Dr. Rick Funston:**

Yes. I don't know exact timing, but probably the sooner the better, because we don't want to be fighting an uphill battle with weather and availability of corn residue. I mean, the supplementation, at least in the - from a protein standpoint, doesn't have to be every day, but the equivalent. So for feeding, targeting half a pound of protein, we could feed a pound every other day or some equivalent every third day frequency. A lot of times, when at least when it's going to get colder, we got to be there to check water anyway. So that shouldn't be as big an issue, but when it's conditions like now and if we're grazing, it's supposed to be upper 80 degrees today, we certainly - water shouldn't be an issue as long as it's available.

**Taylor Grussing:**

[Laughter] Right. So along those lines of you mentioned stocking the corn residue appropriately, what are some things that folks can use the calculator to kind of figure out how many they should put out there for how many days? Like you said, it's yield-dependent. What are some things they can look at when they are doing the daily checks or checking the water that they can use to determine, “Oh, I got like a week left or I need to move these cows or heifers pretty soon”?

**Dr. Rick Funston:**

I suppose there's some behavioral things that tell of cattle are content and grazing well. They also think they're - I don't know, scientifically how valid it is, but I think some people say they have a rule of thumb that when they - after they quit passing corn to move them within a couple weeks, but I guess I prefer to have an idea on what the bushel yield was and go by that grazing calculator.

**Taylor Grussing:**

Right. I think it's always a good idea to know your body condition score…

**Dr. Rick Funston:**

Yes.

**Taylor Grussing:**

…going out before we start grazing corn residue, right? So if we know we're going to need to be adding some condition during this mid-gestation to late gestation time period, we don't want to be pushing those cows too hard anyways, or those heifers, for example. So making sure to keep an eye on, yes, if the husks and leaves are pretty much cleaned up, the corn isn't passing through them anymore, a couple things to get to be looking at moving on to the next thing, but I have had some people tell me that they almost swath-graze corn stocks and make them eat more of, not necessarily the stocks, but maybe eat a little bit more in one pass then letting them have free choice across the whole field where they can eat the corn first and then they can all go get the husks and the leaves. So in that regard, that might be utilizing the corn residue more efficiently, but not necessarily a benefit to adding weight, if that is your goal, and have a little bit more labor involved with moving those on a more regular basis as well.

**Dr. Rick Funston:**

Yes, and then you may put yourself in a situation, and it may be well economical for the added supplement that's required, and there's also some, I don't know, I'm not real familiar on the machines, but I know I've seen there's some combines that have equipment that will break down the corn stocks more and they will eat them better.

**Taylor Grussing:**

Right.

**Dr. Rick Funston:**

If we're forcing them to eat that lower quality part of the plant, we may need to come in and supplement with some protein where we give them free choice to the field. Like I said, if their selectivity isn’t changed, I guess, by either changing the form of the corn stocks so they are more palatable or swath grazing, as you say, we're forcing them to eat more of the plant, then supplementation might be more important.

**Taylor Grussing:**

I believe I've seen some research done on this, but what is your experience with the different palatability of varieties of corn hybrids out there? We know technology has greatly changed the type of seed that we can put in the ground and yields are pushing 170s and 200s on some dry land acres around here. So I can only imagine on irrigated ground, what kind of yields you're getting, but do we see any kickback in the corn residue when we plant different corn hybrids?

**Dr. Rick Funston:**

Yes. I can't [[recite]](https://recordings.civi.com/cgi-bin/player.php?file=PC-00002-CattleHQ-Ep74.mp3&starttime=1208&duration=20) that research right off the top of my head, but you hear a lot of people say that the corn residue isn't what it once was. Well, there isn't as much down corn, that's for sure. Then they talk about the Bt varieties. Well, I think essentially all corn is some Bt variety and like that makes a more rigid stock and less eardrop and down corn. So yes, it isn't what it once was, but the research we have with our current common varieties of corn, it's of higher quality as measured in body condition and body weight gain of the animal than native dormant winter range.

**Taylor Grussing:**

So along those lines of if we can get the same condition or, excuse me, better condition on grazing corn residue, how do we get more access to two more acres in the countryside? I think one of those ways would be to, whether it's rent the corn residue from the crop farmers or be able to pay them for that, what are some of the values that you like to go off of when you start looking at custom grazing corn residue?

**Dr. Rick Funston:**

Yes. I mean, some of the farmers are reluctant to because they say that it affects their yield the next year. Well, that doesn't - I mean, not when it's stocked appropriately. If it's greatly overgrazed and compacted or something, potentially some adverse effects, but the research from Nebraska would show I think the corn and then a rotation of soybeans actually is a benefit of grazing to that subsequent soybean yield. I guess it has to be worthwhile to the farmer if they're renting it out. I think there are some custom rates by region the economists have done. Traditionally, it’s either by the day per head or it's just a total per acre rental rate. The risk of the per acre rental rate, it puts it all on the person renting because you pay for whether you can use it or not. A lot of people, I know some pretty big ranches, that rent a lot of pivots and they may not graze some of them every year, either due to snow cover or not needing them, but they say in the long run, they don't want to lose that and it's better to have that tied up and pay for it even if they don't use it or all of the acres in a particular year. I don't know what the rent is going to be this year. I mean, it could run from, I don't know, $0.50 to $1.00 a day or I think it's probably an up - it used to be like $10.00 an acre but I think it's double that probably today.

**Taylor Grussing:**

Yes, we've seen prices go up in our region over the last couple of years. Fifty cents used to be pretty standard, but now it just kind of depends with how many acres are there and what it's worth, but anywhere from probably $0.75 cents to $1.25 per head per day, kind of considering the livestock owner if they are going to have to haul water or if there's any existing fences, things like that. The crop owner will maybe stay on that lower end of that $0.75 cents to $1.00, but if it has good fence all the way around it and has access to a water tank, then that's when we're seeing, I think, some of those higher values. I would agree, most folks up our way are paying per head per day just because of that risk associated with the weather uncertainty rather than renting all those acres and never getting to them but everything is kind of up in the air until the snow flies, more or less, and then they can play it by ear if they need to get on those acres fast or if they look at raking them and bailing off the residue instead of grazing it is another option that some folks will end up doing but maybe not as common as grazing. If we look back at focusing on heifers, again, what are some of the longevity benefits? I know we talked about supplementing on winter range compared to corn stocks. What are some long-term effects on their reproduction if we look at trying to keep heifers grazing or develop them on grazing resources versus putting them in a dry lot?

**Dr. Rick Funston:**

I think, again, to expose those females to the environment, they're going to be expected to produce on from having their first calf on cheap corn, which we've had this last year and the year before. We tend to lock animals up and develop them in an environment that they may only ever see during that initial period until they become pregnant and then go to grass. I think having them exposed to whatever resource it is, whether it's winter grass or corn residue or some combination early in life, coupled with a trainer, whether it's a mother or another animal that's been developed on corn residue. I don't have a mature cow herd here, so in our research where we've developed heifers either on corn residue or winter grass. We use a bred heifer to graze with them. A heifer calf in and of itself can be a bit, I don't know if I want to say problematic, but they don't stay in very well. They don't know what an electric fence is. If we can put them with an animal that they bond to, I think there's a lot of behavioral benefits there as well as teaching them to graze corn residue, whether it's with the mother or something else that's had experience.

**Taylor Grussing:**

Teach them to graze as well as to learn what an electric fence is, right?

**Dr. Rick Funston:**

Yes. Right.

**Taylor Grussing:**

[Laughter] For the development of those bred heifers, what kind of supplement do you need to be looking at in late gestation for those before they get close to calving?

**Dr. Rick Funston:**

Yes. You know, interestingly, it's kind of the same thing, targeting that a third of a pound of protein to half a pound of protein. The work before we had supplement like distillers, high-end bypass protein, a lot of that work said we needed half a pound of protein equivalent to something that had higher rumen degradability. We haven't really done the titration studies or comparative studies with high bypass versus high rumen degradable protein, but just from the research and animal performance, it appears to me we can get by with less total crude protein with something that's higher in bypass protein like distiller’s grains but again, our cake or pellets are usually about 32% protein with the majority coming from distillers.

**Taylor Grussing:**

What other options are out there now in terms of a protein supplement that would be accessible for cattlemen to utilize?

**Dr. Rick Funston:**

Yes. I don't know. We can never forget about high-quality forage like alfalfa hay. That always been a very good supplement and cost effective. I mean, we need the price per unit of protein. These pellets, they likely is easy to put in a mineral vitamin pack plus Rumensin to make sure, and you know you're not going to get that with the alfalfa hay, so you're going to have to feed some type of free choice mineral perhaps. Even though cost per unit of protein could be lower with alfalfa hay we sure got to figure in the other things that we are having this supplement that might already be in that pellet. Then, I mean, there's other protein sources. I don't know. I mean, soybean meal gets kind of cost prohibitive because of competition with the non-ruminant species. We have some sunflower meal. I know the Dakotas have some sunflowers. That tends to be fairly cheap or less expensive. Yes. Corn gluten feed, there's pellets of that I've used. We don't dry - I don't believe any of that, in Nebraska. There are only two plants that have that byproduct but it's also a high-quality protein and energy source.

**Taylor Grussing:**

Yes. I think this year with the price of commodities being maybe a little bit lower, if we take them to town, some folks might look at feeding some of those alternative sources, too. Just keeping in mind that like corn, for example, in itself doesn't have as much protein per unit compared to the distillers that come from corn but obviously are much more highly concentrated. So having that in mind, as people look at starting to supplement maybe some of these grains that they have sitting around, but we've got to make sure they're in the right form that the cattle can utilize enough of them safely as well.

**Dr. Rick Funston:**

Right. Basically, that process, exactly what you said, it concentrates the nutrients in the corn three times in the distillers’ grains. So we're three times the protein and about the energy value equal to or above corn.

**Taylor Grussing:**

The last thing I want to talk, Shawn. When we talk about grazing corn residue is any kind of the compaction, you mentioned that briefly. If we're stocking it appropriately, we shouldn't have to worry about any yield drag the following year. I believe there are some studies that you guys have done looking at a slight benefit, but like you said, it has to be managed appropriately. In terms of that, when we're working with producers, how do we say, our cows, and maybe illicit this type of compaction versus our tractors or your grain cart that's driving along those fields, is there any kind of comparison we can do there?

**Dr. Rick Funston:**

I mean, we do get trailing effects in the fields and that potentially can be equated to compaction, and with no-till, more no-till practices, the disruption of the surface may not be as invasive or broken up as well, in some cases, with our no-till practices. There are, though, in some cases where there aren't a lot of cattle. The farmers will make it very attractive for people to utilize that corn residue because they need to remove some of that residue, especially as they increase the non-tillage practices, which conserves soil moisture and nutrient availability. So they'll make it cheap enough where we can truck cattle a distance. The cattle are moved quite a distance to get to this cheaper feed resource. If we think about it even at $1.00 a day, what, that's $30.00 a month, that's way less than half of what our summer grazing is.

**Taylor Grussing:**

Right. Yes. Like you said, I think people do haul cattle in a ways. There are folks up here that definitely haul down there to some of those high-quality fields, especially under the pivots that seem to have maybe some more acres there in a closer confined area than they do up here. So they work close with their veterinarians to get the paperwork done, hopefully, whether it's during preg check time or so on to make sure they get the identifications put together so they can ship them down there, and then kind of having that good relationship with the person that is watching them for you to make sure that they are maintaining that body condition, and getting them shipped back at an appropriate time before calving season starts.

**Dr. Rick Funston:**

Absolutely. I mean, we talk about how the next generation is going to afford to get into cattle business, [Laughter] especially with these high prices and high land costs. That service, if you will, has a lot of these younger next generation going to be farmers and ranchers might manage just pivots of corn residue for the farmers by fencing them, checking cattle, water, and probably one of the, I know this is a little off but you mentioned it, calving. People don't want to calve heifers. That this can be, and I've seen it be very lucrative enterprise, which could be accomplished on a - I mean, we calve on corn residue. I drive home, once calving season's go on, I go buy thousands - well, thousands, but hundreds of cows that are out on corn residue with baby calves. They say, “Well, they won't stay in” and I have one hot wire, I rarely see anything out. If they're with their mother there, if they do go wandering, they won't be for far.

**Taylor Grussing:**

Right. Yes, that would be a great secondary podcast here that we could get into is kind of that next generation opportunities but, like you said, those pairs that are out possibly calving in an open winter, right, you might not have to have a whole lot of infrastructure to get something like that started. Obviously, if you're calving early enough in January, February, yes, you need something for shelter and to keep them warm, but ultimately, if we want them to be out grazing and have that comfort, that will also help with keeping them healthy and getting them out on a grazing opportunity right from the get-go.

**Dr. Rick Funston:**

Absolutely, yes.

**Taylor Grussing:**

Great. Well, this has been a great conversation. I do appreciate you joining us today. I think that our producers, like I said, up here and probably right down by you, like you said, with high-moisture corn coming out, it won't be long before the pairs or just the weaned cows are out grazing corn residue and so we want to make sure we get an idea of what's out there based on the bushels that are coming off of that field and then being able to stock that appropriately so cows stay in good condition as we go into calving season, as that's one of the greatest indicators of their breed-back ability come the next breeding season. So with that, this has been Taylor Grussing, cow/calf field specialist with SDSU Extension, hosting Cattle HQ. I hope you guys have a great day and thanks for listening.

**Kiernan Brandt:**

Thank you for tuning into this episode of Cattle HQ. Brought to you by SDSU Extension, headquarters for all things beef. We invite you to visit extension.sdstate.edu for the latest beef information as well as subscribe to the show on Spotify. You will also find show notes and resources from today’s episode, until next time. Remember, success is not a goal, it’s a byproduct.

[Outro music]