## Receiving New Calves into the Feedlot Season 1, Episode 69

[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 South Dakota State University Extension. I am Taylor Grussing, cow/calf field specialist based outside of Mitchell, along with co-host Addie Stamps, SDSU Extension Livestock Production and Stewardship Field Specialist. Joining us today, we have two special guests, Dr. Warren Rusche and Dr. Zach Smith, both based out of Brookings, South Dakota. Dr. Rusche is our assistant professor and feedlot specialist with SDSU Extension on campus, who provides nutrition expertise to South Dakotans and neighboring states through various programs, including the recent 2025 Siouxland Feedlot Forum. Then we also have Dr. Smith, who’s an assistant professor at South Dakota State University, working with Dr. Rusche to lead several of their research projects in the region. Welcome to the podcast, guys.

**Zach Smith:**

Hey, Taylor. Thanks for having us.

**Warren Rusche:**

Good afternoon.

**Taylor Grussing:**

To kick things off, I guess I gave you guys a very brief introduction, but let’s let both of you take time to introduce yourself, your background, highlight any of the research you’re currently focusing on or what you’ve been doing in your tenure at SDSU.

**Zach Smith:**

Let Warren go first, and I’ll fill in the holes.

**Warren Rusche:**

All right. I’ve, I guess, spent nearly all of my career working in one way, shape, or form in the South Dakota beef industry, whether that was starting out in county Extension in the 90s, and then transitioned over to working on our family’s operation, where we ran a custom backgrounding yard and then also had a cow/calf herd. About 10, 11 years ago, I came back to South Dakota State first as a cow/calf field specialist and then transitioned to the feedlot role here in the last few years. My interests really revolve around what makes the South Dakota beef industry money, but specifically, in this case of how we use the feeds that we grow here with the cattle that are born here in order to generate more income for the people that live and make South Dakota their home. Some of the research areas we’ve worked on, we’ve done some work on different strategies with silage. I’ve worked with feeding hybrid rye. That was part of my PhD work, and then we’ve followed up with some other studies. More recently, Dr. Smith and I have been working on looking at things like different protein supplement strategies, specifically involving either soybean meal or heat-treated soybeans. Those have been - so, really, I focused mostly on the things that we grow, and then how do we turn those into dollars through cattle. I’ll turn to - let Zach talk about some of his areas that align with that overall theme.

**Zach Smith:**

Yes. Zach Smith. Originally, born in Little Rock, Arkansas. Maumelle to be exact, Addie. Was then moved to Central Florida when I was six, and we spent about nine years in Central Florida. After our time in Florida, we moved to West Texas, back to where my mom grew up. Finished high school in West Texas, went to Texas Tech, and actually came up to SDSU many times during my college career as a - I was on competitive judging teams. Did wool, meat, and livestock. In fact, that’s where Taylor and I first met, was our wool judging days. We’d make trips up here for the international, come stop by when we were on the Royal road trip, and come to campus at the SDSU campus here for my second tenure. We moved here in July of 2018, got started - and then been here ever since. My wife actually works on campus. Our boys are being raised Jack Rabbit fans. I asked them what other teams they like. They’re straight Jack Rabbits. For my academic interests, really, I would say - so Warren was pretty - he was specific on what we’re working on. I would say our - the feedlot research group, which - it’s twofold, it’s Zach, Warren, and other collaborators, but Dr. Rusche handles a lot of our outreach. He’s very involved with designing studies and coming up with new ideas. I’m the one that handles the numbers side of our business. Not the economic numbers, but the research data. I would really say - if I had to say, a 30,000-foot view of what we do is really management and nutrition interventions or strategies from the time a calf is weaned until - all the way till we get to the end product that a consumer would purchase and buy. That’s a pretty broad facet of beef production.

In South Dakota, that looks different than what it does in other parts of the U.S. It’s all confinement-based cattle production. Cattle being fed harvested forages, and confinement from about 500 pounds till we ship them, somewhere between 1,500 and 1,800 pounds. So, a pretty broad space. Personally, I’ve always been interested in growth-enhancing technologies, whether that be steroidal implants or beta-adrenergic agonists, but I’ve had to learn a lot about farming and farmer feeder business from Dr. Rusche. We have, I guess I’d say, complementary skill sets in the way we try to attack and solve problems, which, ultimately, the goal is to benefit those that live in rural areas of America that choose to, in this part of the world at least, integrate cropping systems into livestock production systems. That’s, I guess, the - how do I say? It’s a set of binoculars we use to identify, find problems, and create new research questions that, really, a lot of times, they’re just from what we hear in and outside from people - our stakeholders in the state. They’re really the ones that motivate us and tell us what we ought to be working on next. Then it’s just up to us to put the boots and the person on to the ground to solve those problems.

**Taylor Grussing:**

Today’s theme, we wanted to kick off today with receiving new calves into the feed yard. I don’t think we mentioned that previously. Addie, you’ll take it away with some of the first questions.

**Addie Stamps:**

Yes, and we’re going to keep you talking, Dr. Smith. Tell us what are some key things that you look for when you’re sourcing calves for research that may also translate to feed yards as they’re purchasing?

**Zach Smith:**

Yes. Probably first and foremost, Dr. Rusche and I, when we were looking for cattle - to purchase cattle for, really, any of our research projects, first place we look at is the source of origin, right? We prefer and nearly exclusively buy calves raised in South Dakota. There’s some one-off situations where the needs of the question we’re answering, or the company we’re working with that’s wanting to do research with us as a partner that dictates where we might have to deviate from that, but first and foremost is South Dakota calves. Historically, those calves are all - for us, at least, we’re reasonably close to the cattle source. We can purchase these livestock from a variety of sale barns across the state or even work directly with ranch partners. These calves, they’re one source, single-source calves in the appropriate weight and health category that we’re looking to seek. That’s one thing, just in general, that we don’t have to worry about here being in a state with a lot of cattle and quite large cowherds is - but typically speaking, when we line up to do a beef cattle feeding experiment, we need somewhere between 120 and 240 animals in one go. Our preference is for those animals to be low health risk cattle that have had the appropriate vaccinations, appropriate steroidal implantation at the right time. They’re in the right stages of production, and then we need to be able to go get those calves, hopefully, from this minimal amount of sources as possible.

That, really, with we need 240 steers, we need to be going and hunting calves from a 500-head ranch. Larger cattle outfits that would work, and that’s probably true even in other situations for our stakeholders, is for what we’re trying to do, and what we’re trying to answer is a specific biological question relative to a nutrition strategy or a management intervention. We want to be able to detect teeny tiny differences. Now, that’s not everybody’s cattle purchasing model. Talk to Dr. Rusche, and I’ll hand this off to him, but you can buy cattle and lots of - loads of two to 10-head, put those cattle together, and add value to those calves, and sell them as backgrounded calves. We’re typically in this production chain from weaning to harvest. We’re not looking for a bunch of odds and ends type cattle, and we do grow all the feedstuffs that we use on campus. We buy a few Coke products from out and about in the country, but really, looking for single-source calves that have been appropriately vaccinated calves, from a calving window that’s not 365 days long, and a reasonably tight weight distribution, so that we can use those. Those goals are a little different than maybe what some stakeholders have, but certainly, probably some similar things. They don’t want to buy a load of calves with a 1,000-pounder and a 400-pounder, things of that nature. Warren, I’m going to turn it off to you because you could talk a little bit more about the other - what our stakeholders might run into.

**Warren Rusche:**

Well, and to echo a little bit off of what Zach said, we try to buy a single source because that fits our research needs, minimize variation. For a lot of our cow feeders across the region, it may or may not do that because one of the things that we’re - everyone would love to get, be able to fill up your yard or several pens with single-source cattle. That comes at a cost. From this year, in particular, given where cattle values are, there’s people looking at either wanting to or needing to, excuse me, put cattle together from multiple consignments into groups. That’s something we don’t do. I am pretty familiar with it because when I was home, that was what our customers did. They bought up little to medium to big packages, put them together, and then our job was to keep them going and get them straightened out and out on the road. Guys, the nice thing about our business is there’s multiple ways to do almost anything. There isn’t a perfect system. There’s trade-offs regardless of what we do. Those single-source cattle are easy to manage, but you have to swallow a little harder in terms of what that cost is. Flipside, you can find some opportunity cattle at a lower cost, but they come with some challenges in terms of managing health and everything else.

It’s really a question, as much as anything, of thinking about what it is you’re good at, what do you have the resources to do, and what’s your business model. For Zach and I here, our business model is a single source group of calves that are average, close to what the maximum might be for genetic potential. Then we can start posing treatments on them to start thinking about how we - what can we do to make beef production better. If it were our checkbook writing out cattle, we – buying the cattle, we may very well do it differently because of different objectives. I think it comes down to, as much as anything, what you are good at, and what your goals are in terms of what you’re - the cattle feeding enterprise looks like.

**Addie Stamps:**

That makes me think the classic Extension answer is, “Well, it depends.” Zach, you gave some really good points, some principles you can keep to whenever you’re purchasing. Then, like Warren said, what is your goal, and what are your strengths, what capabilities do you have on your operation.

**Zach Smith:**

Right.

**Warren Rusche:**

I would say a couple of the principles hold true across the board. The higher health status cattle are worth more money. This year, given where the values of calves are, they’re worth a lot more money to keep cattle that are healthy. If I were buying calves, that would be the first, second, and third thing on the list is are they healthy. After that, we can make light calves, small calves, fleshy calves, green calves, all kinds of things work. It’s really hard to make cattle get sick. That turns into a train wreck really fast. I think that health status is - well, not - there are tolerances of people for risk and how much they’re willing to deal with. It still becomes one of these real top-of-the-mind attributes that are really important.

**Zach Smith:**

Warren, we always joke also. You notice Warren didn’t say a single thing about a hide color or a breed. We’re agnostic against that. One thing we’re probably not going to go out and willfully do here is bring a bunch of eared cattle. That’s Texas slang for Brahman cattle or cattle with Bos indicus influence, but aside from that, all the cattle - lots of the cattle in South Dakota are really good. If they’re healthy, we can find a management program in an avenue to work with those cattle.

**Taylor Grussing:**

Like you said, this year might be changing some people’s plans because of the cattle price and the feed price. If you look at that and say they are going to put together smaller groups, what are some things they need to do right away when those calves are arriving? Is it different receding protocols? Is it a different type of ration? How hard and fast do you need to be on monitoring their health from day one?

**Zach Smith:**

I would say when you look at the cattle production through our lens, we’re in a marathon and not a sprint, okay? These calves that are weaned in the mid to late fall, so October into November, those calves are easily going to spend 300 to 340 days under our care. When we think about it, the things like implant technologies, we used to think we need to get it in them maybe a little bit after arrival, but there’s new labels on how we use and can - in timing and stage of production when we apply those technologies. That first 45 to 60 days is the minimum. If you’re buying cattle and warming them up for somebody, I’d say 60 days is how long you need to have them on your property before they go and enter a new marketing channel. We look at this as a 350-day marathon, not a 350-day sprint. We’re going to take things easy. We’ve got some rules of thumb we follow on all calves. Most of the calves that we receive are going to be balling calves. They’re separated the morning. Oftentimes, we start on a Monday because we got a lot of things to get through done before Friday. Calves are separated on Monday morning from their mother. They’re transported six to 12 hours across the state to our facility. That first night they get there, we’ve got an open lot concrete facility. The only thing in the bunk is grass hay, and it’s not chopped grass hay. It’s long-stem grass hay. It’s flowing out of the bunk. We’ve got waters filled to the brim. We want this to be as easy a transition from the prairie into the feedlot. Well, whenever we get calves in, we grow lots of silage. There’s going to be lots of silage put up this year with the cost of what people are getting for corn in town. We got to remember those are fermented feeds, okay?

We’ve got to - those are things that Warren and I think about on newly arrived calf nutrition management. We’re going to let them eat hay the first night. We’re going to let them rest. Depending upon the information sharing through the production chain, if we knew they got shots or have had shots, or have been poured, we’re going to tailor our veterinary strategy along with our veterinarian to use the best possible outcome for those calves. When I think about forages or feeds for these calves, not all hay is the same. Ditch hay is different than reed grass hay, which is different than haylage. Anytime we get a fermented feed in front of what I call a naive calf, those become things we look at. We’re going to have hay in the bunk. We’re going to have slow, low-stress livestock handling, and we’re going to pay attention to how those cattle respond to that hay delivered the first night. If they don’t touch it, we’re going to alter our feeding strategy for the next day, but it’s really a - I don’t know. It’s not a one-size-fits-all approach. It’s pretty fluid in the process of how we’re looking and how we’re reading what those cattle are doing, but we do know there are some things that can set us back. We think about good hay, long-stem hay that’s of nice quality, that’s not rain-damaged. We don’t want to feed wet fermented feeds, at least the first day, when we’re thinking about hay in the bunk. Legume hays are not what we want to be feeding the new weaned calves, at least as that long-stem hay in the ration. Those are some strategies we use on every set of cattle to become really important, especially when we’re talking about a calf coming from the prairie into the feedlot. It’s different if we go pick up some calves that were backgrounded in a dry lot that have been fermented forages and Coke products. Well, we’ll probably start them out of 1.75%, 2% of body weight as intake and just let them shoot to the moon.

**Warren Rusche:**

Zach handled a lot of the diet things really, really well. The one thing I would add to that is feed is cheap, cattle are valuable. I think it is a mistake for people to overemphasize cost per pound, cost per ton of the diet, especially early on. Later, you bet. We’ll figure out ways to beat this diet cost down where it makes sense. That’s the last place I want to be ego tripping over dollars, picking up pennies. We need to make sure what they’re eating is going to actually support them. Back to your earlier question, all right, if we’re - either by choice or by necessity, having to start thinking about putting together more groups, I think some of that comes down to your facilities. Here’s where having several smaller pens pays off because now, I can put the cattle that come in - I can start grouping them by arrival time. If I’ve got one 250-head pen and it takes me three weeks to get them all brought up and gathered, we’ve just got those first ones up and going. Then we drew some new calves that get on top of them, and they don’t know what to do. Meanwhile, some of the ones that came in between those groups, they’re just now getting sick and affecting both ends. That’s a case of if we’re going to be picking up groups, ideally, I’d like to have them all penned up within - or everything in that pen arrive at the yard within a week. Then now I can manage those as a step. I still got variation from herds, but at least I don’t have as much variation in terms of where we’re at in feed intake, where they are at in terms of the disease curve.

I think, Taylor, you mentioned a little bit about handling. I am a huge proponent of there is not much substitute for the eye of the master. I’m the person walking through the pens in terms of getting cattle used to being handled. I can give you a story from when I was home, where the year I didn’t do that because I couldn’t, because I started my new career. We got lucky. Cattle stayed healthy, but they became really - they were never easy to work with. That daily interaction, it’s sometimes hard to measure in terms of sickness rates or some other things, but it’s really important in terms of being able to handle cattle with minimal stress. How would we manage some of these? I’m getting into veterinarian areas, so you need to talk to a veterinarian. A fairly common value on a weaned calf versus a non-weaned calf right off the cow is going to be somewhere around $2,500.00 a head. I think this deserves a second consideration on things like mass treatment, using - whether that’s some antibiotic in a bottle or something that’s in the feed. The consequences of having a 1% death loss is going to be - on a bunch of calves we buy is going to be $25.00, $30.00 a head. Here’s where this might - where, maybe five years ago, that didn’t make sense. The margins weren’t there. I don’t think that’s true this year. To me, that’s a conversation to have now. Here, we’re doing this in early September. Have a conversation with your veterinarian about the plans for either the home-raised calves who are going to wean or the calves you’re going to buy as part of the fall run. Think about how you're going to manage those, what kinds do you think we’re going to be buying. Is it an approach of, “I’ve always bought the top end and bigger groups. Nothing’s going to change. I’m going to keep doing that?” If we’re venturing into some higher risk or more commingling, or our risk level’s increasing, how are we going to deal with that? Because certainly, the dollar values that are at stake are much higher than they – than any of us could ever think, frankly.

**Zach Smith:**

Warren, I’m just thinking out loud here. It’s tough. When we think about size of feedlot pens, at least in the circles we work in, everyone says they’re 200-head, right? 200 to 250-head. Are there strategies or not cheap, but quick, dirty, and easy - whether that’s two strings of hot wire the cattle panels to maybe add supplemental waters to make this strategy, so that - when Warren said the disease curve, what he’s talking about is cattle tend to break with disease 14 to 28 or 35 days after they get here. If it takes you two to three weeks to fill that pen, you’re starting at the break of the curve, and you’re going to have more get sick two to three weeks later. If we can group those up in smaller lot level loads, 100-head pens, we can manage that disease and that pen much easier. You got any ideas on your - I’m thinking about these freestanding cattle panels.

**Taylor Grussing:**

Yes, that’s what I was going to say.

**Warren Rusche:**

You read my mind. They’re all over. It seems like almost every small town’s got a welding shop making some. To me, that’s a really easy way that I can manipulate the pen size, and I can keep them up closer. I can guide the pens, depending on the waters. There’s a lot of things we can do with those. Then, after a couple weeks or two weeks, when the group’s going fine with someone there, we can start combining and say, “Okay. Now, we’ve got these cattle. They’ve all been here three, four weeks. They’re probably all right. We’ll put them together.” We’ve got to support that herd. The water issue, that…

**Zach Smith:**

Gets cold. [Laughter]

**Warren Rusche:**

Well, yes.

**Addie Stamps:**

I was going to say we can hopefully do it before it gets cold, though. We can start now.

**Zach Smith:**

Thanksgiving.

**Warren Rusche:**

Depends on when cold weather hits. We may be able to get away with some non-energy watering solutions for a while. Maybe there’s a pen. I know this was when I was on my family’s operation. At least our own calves, we have one pen we started our calves in. We gave them a couple weeks, and then they went into big pen. If we had been - depending on the geometry of your yard, that could be the pen that we start a lot of calves. Now, the downside is if we use that same pen for everything, your later cattle are getting exposed to what the first cattle had, but maybe that’s where that metaphylaxis or mass treatment comes in play, too. I think as we talked about earlier, there’s - couldn’t tell on the audio, whether this is Addie or Taylor that said it’s the Extension answer, it depends. Well, kind of does. Looking at facilities sometimes dictate what we can do, but it’s very rare that their facilities become such a barrier that they make certain things impossible. We can do some things. We can manage around that. We just need to understand what animal husbandry steps we might need to take to accomplish that.

**Zach Smith:**

Say, Warren, I’m just sitting here doing some math. I don’t sell panels for a living, but say, you get a 24-foot panel, and it’s $400.00, and you need six of those to run the back of a 150-foot pen. Well, now, we’re at $2,400.00 for the panel to split that pen. That’s one dead calf.

**Taylor Grussing:**

Right. That’s a pretty big number. Yes.

**Warren Rusche:**

It isn’t like that piece of equipment becomes a single-purpose thing that we never get to use. We can do all kinds of things with that. If we need to make some additional pens somewhere, I see those all over because they’re - we could move on - they’re just a handy product. I think that’s one of those answers of, in a lot of cases, we may have those tools already on the yard. We just need to think about are we going bottom so we can do things during calving, but they also work to manage calves when they wean.

**Taylor Grussing:**

Standing panels, someone has referenced them before. They’re like the greatest thing since sliced bread, a little bit. No matter what size, if you’re a cow/calf operation, if you’re a feedlot, they’re able to just, obviously, stand and ready to go, whether you’re changing your sorting facility with all these new calves coming in. A question maybe for Addie here, too, in terms of receiving calves and that low stress. What are some - is it the feedlot, I don’t know, Sandhills calving system type of deal? Is the nose-to-nose contact with pens just as important to minimize as before you bring them in together, or how are some things you can look at that from a biosecurity standpoint? If you’re going to metaphylaxis one group, how soon or how long afterwards do you have to wait to put them in a pen with a group that’s just been bought and had the same process done to him, but it’s two weeks apart, for example?

**Addie Stamps:**

I can give the BQA standard, and that is keep new groups of cattle separate for 30 days. You guys can take a practical perspective if you’d like.

**Warren Rusche:**

Yes, I don’t disagree with 30. No. That may or may not be as easily to implement, and it also depends, too, on risk. Taylor, let’s say, we were dealing with home-raised calves, and we went and got some of them weaned. Now, we got to take a break because it’s time to chop silage, and maybe we took out some earlage. Then we had to switch over to get the combine ready for beans. It ends up being 15 day - two, three weeks before we got around to the next group. I wouldn’t be terribly concerned about maybe mingling those after two and a half, three weeks. Where if I was - flipside, if I’m sitting in the sale barn, I’m sitting in four barns a week and I’m buying groups of 10 and 20, that one, maybe I definitely want to keep those isolated for 30 days. I think that waiting period depends a lot on what are risk level is. The home-raised calves, fairly low risk. We’re really just keeping them, Zach, isolated so that they’re on the same - so we get them to the same point in terms of intake.

**Zach Smith:**

Right.

**Warren Rusche:**

Where the other group, now we got to deal with some of those disease things because we - the more groups that - I don’t know if there is a formula, but in my head, the more groups – the more herds that are represented in the pen, our health risks go up exponentially. Again, that’s my gut call rather than a - I’m sure there’s some science answer.

**Zach Smith:**

There is. Vets do it all the time. It’s an epidemiological-type outcome where you get more animals from more naive pathogens coming together. When we think about home-raised calves and filling that weaning pen, what we’re really - they’ve all been exposed to the same bugs, if you will, the same things that are making them sick. It’s more management. When Warren said - training behavior, really. When Warren talks about that intake deal, it’s when you got two - one group that was between two weeks earlier, and they’re up to 14 pounds of dry matter intake, and the other group’s at sub maintenance because you just weaned them. We really got to get those lined up on the same wavelength on intake. I’m not so worried about it as a pathogen risk load, but when we’re filling pens for multiple sale barns, now we are bringing into the equation pathogens that make animals sick. Not only are we training them how to eat over a three-week period, and we’re bringing new ones in. They’re bringing new pathogens into the pen. On the home-raised level, it’s more just getting them - it’s like you got two sets of - a set of twins. One learning to ride their bike in one week, and he’s taken off with Mom. The other one’s taking three weeks, and he’s back at the house with Dad, trying to learn to pedal. That’s what we’re working with on home-raised calves.

**Warren Rusche:**

Yes. Maybe one way to look at it is on the home-raised calves, we’re solving one problem. With the purchased calves, we’ve got two or three. We’ve got the disease thing. We also have to - they’re also learning how to eat, but then we’ve also got - there is that overcoming the stress of all the transportation and all the things we did. That’s different if cattle went through the sale barn versus direct from the ranch. I think you can think of it as - think of the stress load we put on calves. The bigger the load, the more we have to be careful with them when we get them to the yard, if that makes sense.

**Taylor Grussing:**

Yes. I think that makes a lot of sense in terms of two different strategies, two different problems. You’re going to have to flux your intake receiving protocol based on what pen you’re working with that day. Not to say you can’t manage both, but you’re going to have to do things differently. Just keep going on the price of feed. Is it going to be an issue this year, right? I think we talked a lot about the different rations. Like you said, long-stem hay, lighter calves. We talked about straight off the ranch to maybe a backgrounded scenario. Is there different types of - I think you mentioned implant strategies. You’re going to kick off right away with those different things, or do you think people are going to do things differently before they offer them for sale this year, too? How do you guys manage that conversation with the people you’re buying them from or from the sale barns?

**Zach Smith:**

When it comes to cheap feed, depending upon the weight classic cattle we’re placing, the apparent risk, that’s when we start thinking about all these things. Calves prefer highly palatable diets. We’ve got to think about where they’re coming from, what they’re coming into. They’re grazing a prairie with forage that’s beginning to decline. They’ve been drinking some milk. They’ve been eating whatever you’ve been tossing, Mama, whether that’s liquid feeds or we call it cake down in Texas, protein supplementation. All those things become really important. Warren and I and Dr. Dehaan, we’ve had good luck feeding calves a finisher the day they arrived. That’s one research area we work in. Again, it really depends on what you can do. When I think about mixer loads and incoming cattle, the one thing, at least in our research feedlot, that takes a lot of time each day is feeding. We want to optimize the loads that we’re manufacturing. We want to minimize partial loads, and we want to have feeding done in a timely fashion without any breakdowns. That’s really a talk that a stakeholder needs to have with their nutritionist or their feed sales representative of, “Okay, this looks good on paper. I know we’ve got these six diet steps to get them through here, but I’ve only got five or six hours of the day that I really want to be out here feeding.” Okay. There could be, “What we did in old days, maybe we change it up.” I don’t know what I’m trying to say here, but there’s a lot of ways to skin this cat. We could feed them a finisher on the first day. That’s not for everybody. I don’t recommend it, but it can be done. We also want to optimize loads. We don’t want a bunch of partial loads. We don’t want to be going and getting a one-off thing that’s special, that improves this, but it’s really hard to handle.

**Warren Rusche:**

I was going to add something on that. When Zach was talking about starting calves on a finisher, really important to point out, we don’t let them eat all they want.

**Zach Smith:**

Yes, that’s a good point.

**Warren Rusche:**

Very controlled.

**Zach Smith:**

We limit feed them.

**Warren Rusche:**

Because someone can hear that wrong, and that could be ugly. I think, Taylor, as far as feed costs go, to some extent, at least in South Dakota, we’re going to - we usually always have hay. We usually have some silage. We’ve got grain. We’ve got Coke products. We balance that in with some commercial supplements. We mix up our casserole, and we feed cattle. To some extent, our ingredients haven’t changed that much. Now, it’s a little bit of, “All right, what flavor are we going to do here?” I think one of the potential ideas out there is going to be to take a look at buying lighter cattle that can take advantage of things like corn silage or some other roughage sources. When you have periods when grain gets cheap, the temptation is to feed more grain to backgrounded cattle, and that works until it doesn’t. We create a bunch of cattle to get a little too fleshy, and then we get discounts on the other end. We do need to be careful about - we need to think of this in terms of a best cost rather than least cost, especially because what I don’t want to do is mess up the sale value and then wreck my value of gain. I think this is a case of - I’m not sure. In some ways, I don’t know if we change anything very much based on cost of feed. Now that said, there’s some wrinkles this year that might play into account. In the entries of state, grain is stronger than milo. That, right now, at least early September, that is incredibly cheap feed stuff relative to corn. It may make some sense for people that have never fed milo before to take a look at it as a way to lower cost to grain. We certainly know these cattle are valuable, and it creates a big investment to buy them. If we can come up with a lower cost diet, it gives us the equivalent or near equivalent performance that makes the margins work better. There’s always some variations on the theme, so to speak, but by and large we’re still going to be taking some combination of - well, it will be - in a lot cases, what did we grow, and what do we have that we need to market through cattle? Then we’ll come up with the mix that makes most sense.

**Zach Smith:**

Even, Warren, not what did we grow, but what did we go that we can sell in town, but what can we get from another part if trucking is reasonable? Within the state of South Dakota, there’s a $1.00 difference in cost per bush. In certain parts of the state, it’s corns a $1.00 back on the board. That’s when the strategies are limit feeding a finisher may or may not work, and it’s a nutritionist that you hire. They should know the strategy. They might not always want to try to do it, but it’s all about caloric intake, right? I can feed them this much corn and this much forage and effectively get them to the same out weight in flesh with different amounts of feed. So, it can be done, and one should put a pencil to it. Milo is going to be good buy. Corn is going to be a good buy in a lot of places. Hay might be more expensive than other places. Really, this is the year to not trip up over it, but to think about capitalizing. We know calves are worth a lot, but the value of gain is worth a lot a lot. If we can make those small adjustments, I think there’s opportunities to return more revenue to the farm if you think it through and don’t just shoot from the hip.

**Warren Rusche:**

Yes. I guess I’m always an advocate of every year, we evaluate the feed markets and what do we have on hand, and how do we best use that. This year, certainly, across the board, feed costs are cheap relative to everything else. Having said that, that limit feeding approach, which we’ve talked about over the years on things like even wintering cows and so forth. The other part of the scale is you have to balance labor requirements, too. It takes a little more attention, a little more management. If those resources aren’t available, maybe everyone is busy, then it might be a case of, “Yes, we could save them a little bit by doing that, but the trade-offs are high enough that I think we’re going to” - maybe the decision then becomes we’re going to do what we are good at, which is maybe feeding a silage, ground hay, corn liquid supplement. Milo corn distill is next, and there’s nothing wrong with doing that. I look at it as, “I’m going to evaluate the opportunities and determine which ones make sense.”

**Taylor Grussing:**

I used to get that question a lot of, how much silage can I feed? How much corn silage will a cow eat, or how much corn silage can a calf eat because that seems to be the biggest pile in the feed lot, or at the ranch? It’s the biggest pile, and they feel like they have a lot of it. They want to use the most of it. Whether it’s 50 bushel an acre corn that it was chopped off of or 200 bushel corn an acre it was chopped off makes it a huge difference, but they think it’s just corn silage.

**Warren Rusche:**

In a year like this, Taylor, that I think is going to come into play because almost everyone we work with has - they got a foot in both worlds. We got cattle and farming, and this year, the cattle side of their brain is very happy. The farming side of the brain is not so much. One of the opportunities to maximize revenue on the farming side is to run the property through cattle. Silage becomes part of that. Yes, I expect we’re going to have that question a lot as to how - what is the upper limit.

**Zach Smith**:

We’ve done the studies, Warren.

**Warren Rusche:**

Zach and I have done some of that. We learned that 450-pound calves, there’s a limit on the silage we can make them eat. Flipside, we can put more silage in the finishing cattle diets than what the book or what the cool kids say you can do and come up with acceptable performance. Back to whoever made the comment of the Extension answer, it depends. It really does. [Laughter] It does make our jobs fine in that we’ve got different options and different approaches we can use to solve them.

**Addie Stamps:**

Yes. You guys did a good job of touching on or really getting into how we can utilize the different feed stuffs that may be available this year, maybe a little cheaper. If you’re just going to sell them versus maybe somebody wants to feed those. They’ve never finished cattle before, but they want to utilize their crops that way. What are some tips that you guys would give those people who are trying to finish their cattle this year, maybe haven’t done it before, have some cattle experience, but don’t have a whole lot of that finishing experience?

**Zach Smith:**

You got to remember we’re in a 300-day minimum marathon on these weaned calves till finish. If you’ve got questionable facilities and you don’t think you can handle a March blizzard or mud, these are things when it’s okay to look through the mirror and be like, “Man, this looks good, but I don’t want to have a wreck later.” We’ve noticed it in our facilities that were built in the 1960s, a lot of them don’t have enough concrete, okay? Those that make for the worst springs for feeding cattle, becomes an animal welfare issue. Pen stocking density needs to be watched. If it’s questionable, I’d be careful. Get out when you got the money, and you can make money at that stage or when you get rid of them. Facility’s design would be the first thing I look at. Even if you’ve got the feed, the first thing I would question is, am I set up to go through spring? We don’t know if winter is going to be horrible or easy again this year, but those are things I’d be managing and looking at and ready to pull the trigger without a lot of emotion. I need to have - it’s not that we aim to do this, and now we’re in a wreck. If we’re in a wreck, a lot of other people are in a wreck. Really, before you commit to this strategy, I’d really make sure that you’ve got the right place to do it at moving forward because you can get out at a certain time. If you’re in it and everybody else is in it, it’s going to get ugly.

**Taylor Grussing:**

It’s not easy to cut the fence on pen of fat cattle as it is cows, right?

**Zach Smith:**

No, you can’t tell them to let them go out to the patch of grass and let them ease up on the mud.

**Warren Rusche:**

The other thing, Addie, when you talk, there’s a couple of different types of people in that there’s - suppose you were an operation that’s weaned and backgrounded and looking at maybe extending into some finishing period, that’s - Zach brought up a great point in the facilities. That would be where I start. Going from a backgrounded enterprise to adding finishing, it’s a modest step. If they’re not - depending on who they’re working with, I’m a nutritionist, get in touch with someone who’s comfortable advising them on finishing cattle because that - I’ve run into people where they’ve made that step, and things were a little bumpy. Go in, ask some questions, figure out what the plan is. We do not have to feed - we grow a lot of roughage in South Dakota. We’ve talked already about silages and hays and so forth. They’re a bit of a security blanket in terms of feeding cattle on an insurance policy. We don’t have to push - not everyone has to push the envelope as far over as we possibly can to try to get an 8%, 9% roughage diet or less to maximize a feed efficiency. There’s nothing wrong with feeding a 15% roughage because it’s nice and easy. The cattle will get fat. May take them a couple weeks longer, but they’re going to get there.

The other audience that, Addie, you talked about is people that haven’t done that before. I don’t want to say they can’t because everyone starts somewhere. Just make sure that they really are getting some advice and some input as to do it. It’s not as easy as simply saying, “Well, gosh, I’ve got a whole bunch of 350 corn or less. I don’t like selling it in town. I’m going to feed cattle, and I’ve never done it before. I know my family’s have livestock for 40 years.” That learning curve’s steep, and it’s not like they get to buy $800.00 feeder steers right now either. I would never tell anyone they can’t. What I would encourage those folks, Addie, is to get some input so they understand what resources they need, what time commitment is there. Understand how we are going to manage these scales because the only thing worse than having to sell grain in town at two mill a price is to invest a whole lot more money in a set of cattle, buy yourself a lot more work over the winter, and then end up - when it’s all said and done, you would have still been better off just selling the corn. I think for that portion of our South Dakota farm audience, it’s tempting, but it just needs to be entered into carefully.

**Taylor Grussing:**

I think that’s some good points, especially with the way the markets are right now. We’re seeing a lot of open heifers go through the market, for example, and yearlings and things. You could probably add some pretty cheap gain to those right now, too. That would be a different avenue to go and off topic from what we started with talking today about receiving calves, but there’s different times in the cattle cycle you can jump into feeding cattle with a little bit less risk.

**Warren Rusche:**

The other part, Taylor and Addie, back to that individuals got crops that are cheap, but maybe there’s a neighbor. Maybe there’s a young family that’s - they got the skill. They’ve got the desire to do it, and they’ve got facilities that would work, but capital is an issue. Maybe partner with them and say, “All right. I’ve got some feed. Maybe there’s some - we can figure out a way that this becomes a win-win for everybody.” There’s a lot of opportunities. It’s just a question of, “All right, figure out which one of these make some sense, and then thinking through all the logistics and business aspects of that.”

**Taylor Grussing:**

All right. I think we’re getting close through most of the questions that we had today, but to circle back around, any last thoughts on, really, the time of year that we’re in with receiving those calves. The weather has been great, I guess, the last couple weeks. We never know how long that’s going to stick around. We don't know when snow will fly, but just any last comments from each of you on people getting those calves on feed the right way and how to survive and succeed through the fall?

**Warren Rusche:**

I’ve got a couple. I’m feeding a bit. They’re off of an article I wrote a few years ago that’s on the website, but one of the things we haven’t really touched on is water. That is the number one - if they don’t drink, they don’t eat. If they don’t eat, they get sick, and they don’t gain. Water, making sure that any of it, and it’s good quality is critically important. For the other things, see a lot of places where, “Well, we’ll put in sulfuric hay ring and maybe a creep feeder in the back of the pen. Maybe some lick tubs, some stress tubs, other things.” Those approaches are less successful than putting a good mixed diet in a bunk, in my opinion, because we have too much variation in what cattle eat. I realize sometimes we’re dealing with some constraints on facilities, but gosh, if we can move away from letting the animal pick what they eat to forcing them to eat what we’ve designed, the better off we’re going to be. A couple other things, from a management standpoint, for 10 months out of the year, if those cattle are on feed for 300 days, for 260 of them, I’m going to be not too concerned whether you feed once a day, twice a day. Do what works. That first month, I’d really like you to feed them twice a day if for no other reason than because it forces us to look at them more often. Helps some of those more timid cows get up to the bunk because once we get them over the hump of weaning, then they’re a lot of easier to manage. Once they get them to day 30, day 45, then this becomes a lot less complicated.

**Zach Smith:**

Warren, I’m with you. I wouldn’t say you can’t do it. I’d recommend against it, but hay ring feeding newly weaned calves is not the way to do it. We want to hand-feed that. We’re training them to come to that bunk. As Warren mentioned, the health - the potential to manage and optimize animal husbandry by them ca - those cattle’s standing up, coming to the bunk, putting their head in there, now that’s an easy tool to be used to assess cattle health. If they’re not coming to the bunk when you feed them twice a day and they’re cleaning - the other calves are cleaning their feed up, that critter needs to be taken a look at, okay? He needs to be pulled and be managed. You can’t say never because it depends, but hay ring feeder in a pen for newly weaned calves is about one of the worst management techniques.

**Warren Rusche:**

It’s harder. I think we can do it if we’re hand feeding the supplement, at least becomes easier. If I can - If you’ve got - certainly, if you have enough of them where we can justify mixer wagon, to me, that is the approach to do.

**Zach Smith:**

Yes. The twice-a-day feeding, Warren, I’m so glad you brought that up. I should have had cheater notes. That time period when we’re starting those calves off, and I’m just going to use a theoretical 550-weight calf here. That first day, he’s getting long-stem hay on the bunk and about three to four pounds of dry - of as fed feed. It’s about two pounds of dry matter. We’re going to bump those cattle up pretty quickly. We want to get them to about 14 pounds on the 14th day. In during that climb and intake, 14 pounds of dry matter, during that climb and intake, what we’re watching is the cattle’s response to feed being delivered to the bunk. If they’re healthy and coming along as they should, they know that that feeds not going to last long. After maybe the first or second day, their buddies are going to eat it. We want to see them all up there at the bunk having uniform consumption. Any critters that hold back, there’s a problem in that calf, whether it’s an ear down, a starter respiratory, a sore shoulder from the trip over, but at $2,500.00 ahead, he deserves attention. Well, he deserves attention when they’re $800.00 a head. Those management strategies that we use, starting calves at twice-a-day feeding, them coming up to the bunk, gauging their speed at which they consume the feed, and those things, those were critical tools to animal welfare and health that are - they’re free. You don’t have to pay any money. It’s not in a bottle. It’s not a wearable device. It’s the intuition of the cattle feeder. Strongly recommend that. Good thing you brought that up,  Warren.

**Taylor Grussing:**

Do you think that makes a difference if you’re using fence-line feed bunks versus driving in the pen? I just wanted to know for some of our smaller feeders. You’re disrupting their system by simply driving in there twice a day. Still should get them up and help them look at them, as you’re saying.

**Warren Rusche:**

I talked about it. In our operation, we have this yard that you would start a lot calves in. That was a drive-in pen. It was a hassle because someone had to be right there at the gate because the little rats would want to all get out, but to me, that’s a - assuming that the conditions are dry. If this is muddy and everything else, that’s a different deal, but if it’s dry, I don’t really care. In fact, I like it because you put those bunks right in the middle of the pen, and it makes it so that they encounter feed more often. Encountering feed and water, that was a term I had Dr. Pritchard share with me once, setting things up so that they don’t have - that they’ve accidentally run into feed encourages intake. Where if we’ve got especially larger pen, where the bunk is off on the fence, like maybe in the nice, high, dry spots over ways off, they’re lot - they don’t find it as often. Early on, Taylor, I’m not sure I care that much on whether we have to drive in or not. It’s more a case of the more times we give those calves chances to get up to the bunk, the more they are to figure out, “That tractor or that truck means feed. That person walking around the pen is a good thing. He’s my buddy. He’s going to help me.” Those are all things that help them make that adjustment, and then once we get them over that, then we can switch them over to the J bunks, and we can run once a day if that’s what fits our labor needs. We can do a lot of different things once we get them going.

**Taylor Grussing:**

Last thing on that, does timing of day - is morning better than afternoon, or can that just be variable based on your schedule?

**Zach Smith:**

Depends.

**Taylor Grussing:**

[Laughter] It depends. [Laughter]

**Warren Rusche:**

Back to the starting, I still want to do it twice a day. After that, there’s data that says feeding them in the afternoon helps in terms of taking advantage of heated fermentation in the winter and avoiding the peak heat in summer. I come back to, “Tell me what you can do well, and then let’s do that.”

**Zach Smith:**

That’s exactly right.

Warren Rsuche:

Our yard at Beresford Southeast Farm, we feed cattle nearly all the time in the morning unless it’s extremely hot. Then Scott, the manager, will shift over and do some afternoon things, but most of the time, it’s in the morning. I’ll be frank, we fed the morning, too, and mostly it’s because Murphy - you ever heard of Murphy’s Law? Murphy lives on feedlots and cattle operations, and sometimes feeding in the morning meant you got it done [Laughter] because we’ve got a chance to get the snow moved and fix some other things. Where maybe if there was a breakdown in the afternoon and evening feed, it pushes things really late. I think it depends on a whole lot on the individual operation more so than a hard - I hate hard and fast rules, especially for South Dakota farmers and farm families where they’re wearing a lot of different hats. It’s, “Tell me what you can do well, and then we’ll work around the rest.”

**Zach Smith:**

Yes. It’s very true.

**Taylor Grussing:**

This has been some great information on lots of different things. Addie, do you have anything else?

**Addie Stamps:**

I’m good.

**Taylor Grussing:**

All right. Well, with that, thank you, Dr. Rusche, Dr. Smith, for joining us. We can find more information on receiving calves on the Extension website, extension.sdstate.edu. We can share your guys’ contact information with our podcast listeners as well. Don’t be strangers, and hopefully, we’ll have some people reaching out to you with questions, or we’ll pass them on to you. With that, this has been Cattle HQ brought to you by SDSU Extension headquarters for all things beef cattle. Visit extension.sdstate.edu for the latest beef information. Until the next episode, stay curious and keep learning.

**Kiernan Brandt:**

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[Outro music]