## Estrous Synch Natural Service

## Season 1, Episode 15

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**Robin Salverson**: Welcome to cattle HQ brought to you by South Dakota State University Extension, I am Robin Salverson Cow Calf Field Specialist based in Lemmon. And a familiar voice of Olivia Amundson Cow Calf Field Specialist in Sioux falls will be my sidekick for this episode joining us as our guest is Dr Bleaux Johnson. Bleaux is a veterinarian with West river health services and also ranches near Hettinger, North Dakota. During this episode Bleaux, Olivia and myself will share the value of using Estours synchronization with natural service.

 So Bleaux I am going to ask you a question right away. As a veterinarian wearing your veterinarian hat, do you see producers, leaving money on the table, because of an extended calving season.

**Bleaux Johnson**: Almost always. I think there's a lot of opportunity, whether it's with synchronization or just how we manage. Some of those later calving cows to try to tighten up that calving interval and it's nice to just be done quicker. The pounds that we give up on those later calves and it's costly, and then we also see those later cows eventually falling off. They just progressively get later and later, so I mean we end up finding more opens with those type of cows, as you follow them through so there's a lot of opportunity for retaining and weight gain that I feel like we give up and in those scenarios.

**Robin Salverson:** I think, we always talk about longevity in the dairy industry, but I truly believe longevity is an issue in the beef industry. On average research shows that our average cow age here in South Dakota is about five to six years of age, and we know that it takes more calves than that to have her start being profitable. So, I think incorporating things like estrous synchronization, as you mentioned and getting those females bred up earlier will keep them in the herd longer. And the pounds of calved weaned is important to profitability. I think and then pounds of Kathleen what is it about that a castle mean a day after counting. Olivia how many pounds can a calf gain?

**Olivia Amundson:** They gain approximately two pounds per head per day so depending on how many days earlier they calve in the calving season you just multiply that times two, so I mean let's say they calf 20 days earlier than some of their counterparts so that's an additional 40 pound of that calf that you're going to wean. Just because of being born earlier in the year due to utilizing estrus synchronization or something to get our cows in a more uniform or defined calving distribution.

**Robin Salverson:** Olivia you mentioned the word calving distribution and I know that is something that you were pretty heavily on, so just talk a little bit more about calving distribution and the impact of that.

**Olivia Amundson**: Yeah calving distribution is like my favorite word isn't it. Calving distribution and Estrous synchronization in my mind, in a way, probably go hand in hand, or they can go hand in hand. Calving distribution is literally the amount of females, that you have calving within a certain period of time, so a lot of us think of a calving season and so upcoming season can range from anywhere from 60 days to maybe even 120 days to who knows even 365 days, depending on what kind of our herd, you have. The distribution would be the amount of cows calving within a 21 day period. We use 21 day periods, because that's the length of the cycle of a cow, and so, by doing that we can get a distribution of how many of our cows are calving within that first cycle that second cycle third, fourth etc. We can even break that down into mature cows, two year olds and then even heifers to get an idea of where those animals are in terms of their calving distribution and so.

I think when we think of calving distribution, as well as extra synchronization because that is the topic of today's podcast. Estrous synchronization really allows us that additional opportunity to let that female have an extra chance to become pregnant earlier in that breeding season. If we think about her getting pregnant or that cycle being 21 days you know in 40 days she's had two chances, but if we incorporate estrous synchronization we give her an additional opportunity to get pregnant twice within a 30 day period so just giving her that extra opportunity.

**Robin Salverson:** So we typically think that estrous synchronization is utilized with Ai artificial insemination only, but there is a lot of research out there that shows that estrous synchronization is a very effective tool with natural service. So, Olivia or Bleaux if you guys would like to share some of the various protocols that people can use with natural service.

**Bleaux Johnson:** I would say, one of the easiest and probably most cost effective is just a prostaglandin injection. I know the protocol speaks for you to turn the bull out for five days and then inject the whole herd with prostaglandin. Then basically synchronizing that balance of the cows that are not bred prior to the injection. We do not cause abortion to cows that go bred prior to the injection, because a cow will not abort within 5 days after being bred. For some people that's difficult, you know, to bring them in sort off calves with this protocol after out in pasture. So I turn out the bull the day I give the prostaglandin injection. For me, I was one of those I have limited access in a pasture but I bought pairs my first year. Small deal, only had 25 head and one bull.

During a breeding season, we would like to see 70% of the cows bred up in the first 21 days. When we ultra-sounded, in a our first 21 day cycle we're hoping to hit 70% but the bulk of them coming in the last 10 days. So I was in my mind trying to come up with a scenario, so we could increase the number bred females in the first 10 days not necessarily the overall breeding, but if I could have more in the first 10 days, then my first cycle would be better, and my overall. My 21 days will be better, my 40 day or whatever else is trying to achieve would also be reflective by getting more bred or so.

My thought when I turned out was I didn't have good corral system, I wasn't gonna be able to run everything back in after four or five days. I'm like we're just going to see how this works. We're going to inject every cow when we unloaded them with the bull that day and just see how it goes. And so, for three years, that was my protocol. I gave the prostaglandin injection the day I turned the bull out, because it was just more convenient for us and we raised from 80 to 90% first cycle conception, because of that. The cows are in good shape, the nutrition is good, which allowed us to do that, so I wouldn't guaranteed just by going and grabbing good ladies restroom eight and we're going to do that every year.

But it was fairly consistently at good grass and good sceniors, it was like 2014, 2015, and 2016 and we had decent grass in that area. I feel very confident after doing it to promote it to clients because i've done it myself. In the long run, I don't see where there's really any negativity and we get we're talking like $2.50/head, I can bump them up a little bit it really group them up, nice and tight that first cycle.

I run them with my brother and the bulk of my cows were done calving that first cycle, like I said 80 to 90%. He was just kind of getting going, and I was almost done so it was kind of nice in that aspect too, You can see it in the fall, when the calves are heavier. Every year in 45 days I was completely done calving within a 40 to 45 day interval even though I had the bull out for 60 days.

**Robin Salverson:** I know some research we did down at the Research Station by Buffalo on heifers not mature cows, but heifers and we had over 50% of them bread up within the first 10 days.

Prostaglandin products include lutalyze, estrumate, prostamate. You need to get these products through your veterinarian because they are prescription drugs. It is a very effective and cheap tool, as you said, Bleaux about $2.50.

Olivia are their other protocols that individuals can use beyond the prostaglandin injection.

**Olivia:** So there is a seven-day CIDR protocol, without any injections of prostaglandin or GNRH (gonadotropin releasing hormone) and then for heifers there is an MGA protocol as well. You would feed MGA to heifers for 14 days and then turn the bulls in 10 days after you finish MGA.

With the seven-day CIDR protocol, as soon as you remove that CIDR than you would put the bulls in with those females. Those are two other protocols. Most that do these protocols have a pretty decent amount of success.

**Robin Salverson:** And there is one thing about that seven-days CIDR is like Bleaux mentioned the labor.

With the CIDR, you do have to bring you have to bring the girls in put them down the chute put the CIDR in and then seven days later, bring them back down through the chute and remove that CIDR. So there is an additional time down the chute obviously increasing the labor. But what's beneficial about the CIDR is, if you do have some of those non cycling females, jumpstart some of those non cycling females. Bleaux mentioned some of those late calvers, that might be a really good opportunity to stick those CIDRs in those late calving cows to maybe help jumpstart some of those female. So I think the CIDR protocol is effective, especially if you have more non cycling females. But I really liked the one shot prostaglandin, especially if have a lot of cyclity going on, it is a simple, quick and it's cheap.

**Bleaux Johnson**: One of the things I wanted to mention was just making sure that we've got a proper time interval from calving to synchronizing. When giving a prostaglandin shot, 15 to 20 days postpartum you're NOT it is not going to be effective. I would say, at least 30 days postpartum before you start considering synchronizing. That may sometimes difficult on those late calving cows. That's one of the first conversations I have with clients is making sure that we've at least got a 30 day window before we're trying to jumpstart that cyclity.

**Robin Salverson:** That's a really good point Bleaux. When we do our Ai school, Olivia and I always say anything after 30 days postpartum because we don't want to interfere with that process of uterine involution or that shrinking back of that uterus and because they if we interfere that, it just extends that postpartum interval out further. So you are absolutely right, putting that CIDR in or the prostaglandin shot at the appropriate time.

So Olivia with the MGA protocol, why do we wait 10 days after we remove the MGA to put the bulls in?

**Olivia Amundson:** It is because of the amount time we feed MGA. We've pretty much induced a persistent follicle and so essentially what's happening is that follicle is aging itself out and after we would remove that MGA making that egg that is released from the follicle is sub-fertile with a poor conception rate. She would be like that follicle and essentially it just wouldn't be a fertile enough oh site to fertilize and conceive. So therefore we wait to to allow her to recycle because this will allow the females to kind of all bunched up to restart their cycles at a similar time, so we like to wait 10 days, before we try and breed those females for a fertile ovulation.

**Robin Salverson**: If we send those bulls out right after removing the 14 days of MGA into those females, you will see a lot of activity amongst the cows. As a result, the bulls will be very active wearing themselves out before those females are actually fertile.

So why don't we use the same protocols that you would see in the back of an AI Sire catalog?

**Bleaux Johnson**: The biggest thing for me, the protocols we use with AI are a timed insemination. I used to run around and help them do breeding project. We would typically come in and do a time breed, meaning, all the cows would come in at one time and be bred versus breeding off of heats.

So these time breeding protocols were ideal for Ai and so you could show up one time breed everything and move on to the next one. It's really nice even on you know, a regular cow calf producer just being able to be done, get back to the fields or whatever we're doing so, the time management is a huge part of those.

We're not necessarily getting more bred with a time breed with AI, but it's just a nice time management. If you used a time timed breeding protocol with bulls, I wouldn't even want to guess how many bulls, we need to cover those cows. Because a vast majority of those cows are coming into heat within a 24 hour period. So if you follow the true time breeding protocol with natural service, we are going to be very disappointed in the conception rate we would get.

In those CIDR protocols scenarios, you still utilize bulls but you're going to need to have the right stocking densities because there is going to be more females coming into heat quick. So you know a lot of time we talk about peak production of a bull being up around eight cows a day.

You know if you if you are dry allotting or something like that, and you use the CIDR synchronization. I wouldn't plan, on the 1 to 25 ratio for that first cycle. You can bring some bulls out after the first cycle. but I have had clients to do that, they might double stock their bulls; meaning 1 bull per 10 cows until they get through that synchronized period and then they'll start moving some of those bulls out to different pastures, and things like that.

After a week or two weeks of being in with them, so you can use them to a level, but I would not plan on your exact time breeding to do that because it just we won't get them all, like we want.

**Olivia Amundson:** I know we personally had a situation where we were setting them up to breed and it was supposed to be like a time breed. Unfortunately, it came down to a situation where I was going to be the only one around to time breed the 100 head. I thought this is not going to work, so we ended up putting like 13 bulls out with these cows and we did have a decent breed-up. But mind you, these were fall bred cows, due to them being open from the spring breeding.

We were uncertain, why we had several open cows from the spring breeding, but it was enough cows were like we need to just re-breed them and try and get something out of them. Because the price of a cull cow was just not there. So we ended up doing a timed AI protocol and but due to unforeseen issues, we just put bulls out there with the cows. But like you said, having the correct stocking density, for a long time I watched a lot of bulls riding cows quite a bit. Rick Funston has done some work on fall breeding cows or rebreeding cows after they have come up open. They found they would get about 80% re-bred in the fall. In the herd that I described where we needed to use natural service instead of timed AI, we had about a 76% pregnancy rate, so not too bad.

**Bleaux Johnson:** What we have seen a lot of clients that just grab everything that was open from the fall pregnancy check and implement them into a fall breeding program, I would have even said lower a lower pregnancy rate than what you experienced Olivia. You know, every scenario is different, was it bad water, nutrition. There are several scenarios why cows have an increased open rate, and there are some that are not going to breed that first year. I would say, getting closer to 50% pregnancy rate on those cows that get re-bred for a fall calving until the fall herd is established.

In many places I have had some of those 70 to 80% but I see more closer to 50 to 60% on that first year, so getting 76% turnaround I would have been pretty happy with that.

**Olivia Amundson**: Yeah and I think you're right and honestly I am not sure why these cows ended up open, I would like to say it wasn't the cows fault, so that might have been the main reason that we got that 76%. When talking to multiple other people they are like ooh you will be lucky if you get over 60%. So again just based on this scenario it could have been a fluke deal and not so much the females fault, but I do agree with you. If they came up open, last year during pregnancy diagnosis there was probably a reason why.

 **Robin Salverson:** Coming back to using an estrous synchronization recommended with natural service. The most common question that Olivia and I get and we've already kind of alluded to this “How many balls do I need to have?”. A lot of people are quite surprised if we're using one of the three protocols, we talked about, the one shot prostaglandin or a seven day cedar or just MGA without any other injections research shows that the bull to cow ration is 1 bull to about 20 cows, is what research shows both for conception rate and economics.

Olivia I think you would agree, and probably Bleaux too, that is when we tell producers that they get a little concerned that is not enough bull power again not utilizing the full Ai type protocols, but these ones designed for natural service. But what we have seen is a bull to cow ratio of 1 t o20 is sufficient. Is there anything else individuals should be considering when selecting bulls or a different thoughts on the bull to cow ratio?

**Bleaux Johnson:** I am a small example, but I would say I am living proof to some sense when I gambled by giving my prostaglandin shot and turning in 1 bull with 25 cows. I had a two year old bull, I don't know if I necessarily gamble on that ratio, with a yearling bull. With yearling bulls, you hear the old story they kind of fall in love. So we see yearling bulls being able to cover cows, but can that do that many in a short time frame probably not. If I only had a yearling bull, I would probably plan for closer to a ratio of 1 to 15 instead of that 20 to 25 cows.

I had one producer tell me that he heard this in a meeting that a bull should be able to breed as many cows, as he is months of age, so yearlings when we turn them out are typically around 16 months old, that matches up to the my recommendation of 1 yearling bull to 15 head. As we get out to a two year old in that 24-25 head range, which I feel is adequate and up to about a four year old. Obviously, we're not going to say that a six year old bull can breed 70 head that is kind of crazy, but after you know 40 to 45 head that is max. We know there is balls out there that can do that, but would I rely on a four year old bull to breed 48 head, you know I mean that's crazy. I mean they can do it, but the minute I told a producer to do that we'd have 30% open, and I would look like an idiot. So, I think you can use something like that within reason, I think, from your yearlings, twos, and threes it's probably a good close perspective. I don't like allocating a bull more than 30 and it just kind of a risk management assessment deal, yes, you might be able to handle that and do it in a very good timely manner. But it just makes me nervous. One of the thing that producers often will come with it, you know this one bull he did 40 to 50 cows. However, the duration of that calving interval is often skewed with some of those to. They often won't do that in a 40 day or 50 day calving interval. If we get beyond 16 often 90 or 100 days yeah you're spreading those calving the amount that they need to breed over a longer period of time, so I guess I have used those kind of deals, as my rule of thumb.

We I was also involved a few years ago NDSU had done a veterinary assessment research project, where they had four or five different veterinary clinics across the state that would pregnancy checked by ultrasound. It was a questionnaire card with how many cows do you have? How many opens? How many bulls do you use. With that information, they were able to assess stocking rates and breeding percentage is based off that questionnaire card. It is not a perfect scenario type deal. It is more of a by the cuff type of assessment, because not all those bulls and cows are in one pasture to use that assessment. But it did, show a kind of a dynamic when we looked at the best rates for stocking densities for the amount of cows we got bred and it seemed like our one to 15 ratios were one of the lower pregnancy rates, if I remember right. As we got that 25 to 30 head stocking ratios were some of the best. There is that bell shaped curve that we often hear about in meetings where the outer edges of that curve which is really high stocking or really low stocking we did not have the best breed ups. But right in the middle that that 25 to 30 we did the best, so that is often my goal with clients is a 25 to 30 head stocking density for a bull. Unless they're younger or extremely older that will alter based off that.

**Robin Salverson:** There is research at Nebraska that supports what you just said Bleaux, about having too many or not enough bulls mimicking that that bell curve you mentioned. So more the merrier is not always the best when it sometimes comes to conception rates.

Some other things we consider when selecting bulls, with estrous synchronization is making sure those bulls have a breeding soundness exam completed. During that breeding soundness exam we can't determine their libido or their desire to breed but at least we know their sperm motility and morphology and evaluating anatomical parts such as good testes. So one recommendation, without a doubt that I think we should have done, for all bulls regardless if we're using synchronization or not to tell is a breeding soundness exam (BSE).

 And then something else to you mentioned is the yearling side of things and not feeling comfortable sending out a yearling bull like you did on your place, wait I misspoke, sorry you sent out a two year old bull with 25 cows. And I agree also that yearlings are not the best option when utilizing estrous synchronization with natural service. If you do you yearlings, you need to be very diligent on watching to see if they are able to physically breed those cows. Yearlings are not ones that you can just turn them out and hope and pray that everything goes okay.

Olivia do you have any other recommendations when selecting, I know also some other individuals that I was visiting with at a meeting last week, they actually hold a bull back so they always have an additional bull to turn out later. To ensure a good, fresh bull. Something I have noticed, too, is the pecking order and making sure that that pecking order has already been established. It is really no different than whether you're using or not using synchronization is that pecking order and making sure they understand who's boss. Any additional thoughts on selecting bulls, Olivia?

**Olivia Amundson:** No, I think you and Bleaux covered it all. That was a really good recap or caption of what we need to look for when we're selecting bulls for synchronization Program.

**Bleaux Johnson:** There is one other thought that came as we're talking about breeding soundness exams, that we do. There is a minimum scrotal circumference and when you start talking on the synchronization you are trying to group up the cows or heifers. Even though your bull may pass there BSE, there is always that capacity situation of how much can a bull do, especially in a short time frame. Basically, how quickly can he recover to breed another cow and have enough, I mean semen sperm available to do that. And so they may pass the test and they may be, a two or three year old bull but he has a marginal scrotal circumference. It may not wise to use that bull. You may be able to be utilized but I would not rely on him to cover all of our needs in a short time frame as well.

**Robin Salverson**: That's a really good point. They need to have capacity in this type of situation to be able to breed as many cows as possible on one day or during the five to 10 days after synchronization. Should all producers utilize us resynchronization?

**Bleaux Johnson:** I would like to say yes. It isn't perfect in certain scenarios I get that.

I don't want to say this in a negative way, but I mean we are located in an area where we got a lot of different dynamics on how cattle are raised. When go and try using synchronization, but still the backbone of any success is our nutrition program. There are some of these cows that are real “ranchy”, as I refer to them. They maintained on range, there's little supplementation those cows have of adapted to that well. But where we have our greatest successes, when we have our cows in a good body condition score if had adequate or supplemental nutrition, to get them through some of these things so.

I am not saying it wouldn't benefit, but we probably won't see the greatest benefit on some of those cows that are not in a great nutritional plane. So I think everybody would have an opportunity to benefit from it at some level, but I think that nutrition and our overall health status and things like that need to be evaluated. Other places where i've seen it as a negative is when people buy cows and reintroduces them really quick into a herd there's pecking orders and stress. We have tried to synchronize heifers that just came into a place about two weeks to a month before breeding, and we have a wreck on that group but the main home raised heifers did great. So some of that is diet changes different things like that that really does affect these animals, especially when we are trying to alter their cyclity.

In the grand scheme of things I think there's a great opportunity but there's some areas where it may not be the perfect scenario.

**Robin Salverson:** Or it might just also be covering up as I guess you already said this, but covering up some underlying issues such as nutrition. Olivia.

**Olivia Amundson:** Well, I was just gonna say we were doing a podcast with Dr. Perry and one of the comments that he made and I, and I think this is a really well stated comment is that you know estrous synchronization is a tool for our toolbox, but it doesn't necessarily cover up or fix poor management. So it does come down to how those cows are being managed if they're going to be successful in whatever sort of reproductive program that we put them into. So as much as Robin and I would like to say reproduction isthe most important part of the whole operation, I guess, nutrition, plays a large part in that success too.

**Bleaux Johnson:** I use that scenario example in a lot of my conversations as well, because you know we look to vaccines to prevent problems, but it's a tool in our toolbox as well. But if we don't have that underlying proper nutrition levels of micronutrient, protein, energy, everything has to be at least at a minimum standard for success with those. So to me it's one of the biggest things that we face, you know we get drought conditions that changes everything and trying to manage that, breed ups and just health status, it can be challenging.

**Robin Salverson:** Absolutely was there anything else that we want to share in regards to utilizing estrous synchronization with natural service here today on this podcast.

**Bleaux Johnson:** A final note, if it's something you're considering, after hearing this it might be a benefit to visit your veterinarian your extension agency things like to discuss the positives and negatives, on your own operation. If you're seeing like a delayed calving interval from start to finish, if you're happier within the 60 day and I mean may not, it may not be a benefit or as big a benefit for you. But if you're, maybe seeing success in your overall breed up at a 95% but you're out there calving for four months. It might be time to look at tightening that up. You may have a good overall breed up, but we could have a lot more pounds on those calves during that last two months of your cabin interval. Plus you don't have to calf out for four months too. It it's a challenge to assess when we need or if we need it, but I always think it can benefit most herds so just be open minded to have that discussion with extension or with your veterinarian to see where you can maximize that benefit.

**Robin Salverson:** Absolutely, Olivia do you have any final thoughts.

**Olivia Amundson:** Of course, I have no final thoughts right at the moment. I'm sure I'll think of some later, but um no I mean, I think we covered most of the aspects in terms of thinking about natural service for synchronization program and I think Bleaux ended it really nicely just by saying you know if this is something that you're thinking about definitely have a conversation and even just think about. Some of those things that he just mentioned, like yeah you have a 90% pregnancy rate but your are calving for four months. What kind of pounds are being left on the table, you know Robin and I have been sitting in a sale barn for the last few months and that's very much noticeable when you have uniform lots of calves coming in. Not only does it make the sale move faster but you're seeing that additional money come in, because of those uniform groups. I just sat in on a sale, where one of the guy’s on the block made the comment that this group of cows has been Ai’d (artificially inseminated), and so I was personally interested. I know we're not talking about artificial insemination, but obviously there was probably some sort of extra synchronization that went on with these animals, and I was interested to see if there was some sort of a premium for this lot of cattle. It wasn't so much that there was a premium, as there was you saw this uniform group of calves that more or less got that premium. So incorporating some sort of extra synchronization whether it's with Ai or natural service, I think has that added benefit because those calves did walk away that day, getting the most bang for their buck walking out of that sale barn so. I don't know if you need to incorporate that into the podcast Robin but there we go.

**Robin Salverson:** But I believe you're right Olivia that creating that uniform calf crop through several means and we've been talking about estrous synchronization as Bleux said it's a you have to look at overall nutrition, the minerals and herd health, so that you have the best reproductive success that you can have. Estrous synchronization is just one tool in that tool box. Thank you to both Olivia and Bleaux for joining us today.

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Until our next episode remember attitude as a little thing that makes a big difference Winston Churchill.

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