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Buckey Beef Byte Episode 3, Alvaro Garcia Guerra

Transcript

00:00:00 Clifton Martin

Welcome to the Buckeye beef bite. This is Clifton Martin with Ohio State University Extension and the OSU Extension beef team. This is episode three of a six part series we're bringing to you here in Winter 2021. To find more look for our episode releases on the OSU Extension Beef Team newsletter at beef.osu.edu. Check our show notes for links and references, Or to leave any comments.

I recorded this conversation in December with Garth Ruff, OSU Extension, beef specialist, and we interview Alvaro Garcia Guerra, who is an assistant professor in the Department of Animal Sciences at Ohio State and he will be sharing with us about current trends in research and beef reproductive management.

We're going to kick off the interview right here, as Doctor Garcia Guerra introduces himself at the beginning of our interview.

Enjoy the show.

00:00:51 Alvaro Garcia Guerra

Yes, well, so thanks for the invitation. It's a pleasure to be here, so I've been with a Ohio State since June 5th, 2017. And I'm an assistant professor in the Department of Animal Sciences, just a little bit of my background. I'm a veterinarian by trade. I'm originally from Argentina.

Well this raised there and actually attended veterinary school there and finished in 2009 and then after that I moved to Saskatchewan in Canada where I did my Masters and I also worked at the.

Ruminant sale service for the Western College of Veterinary Medicine, primarily serving cow calf operations in the Province of Saskatchewan and other parts of Western Canada, and then finished there in 2013 and moved to the University of Wisconsin, Madison, to do my PhD in reproductive physiology, so, spend there about three years and a half until I joined here, the faculty at Ohio State.

So a little bit, just a brief overview of what I do. My main focus of my lab is to work on reproductive physiology almost entirely tailored to cattle, and we've been doing some work now in small ruminants, both from an applied and basic perspective, so we try to look at some very basic science aspects of reproductive function and then try to translate those into new or improved management strategies for both cattle and sheep.

00:02:35 Garth Ruff

Alvaro, you've been around the state for awhile in different parts of state and research stations.

Can you just give us a summary of the different reproductive approaches that you've seen cattlemen used across the state and you know, knowing that we get a lot of small, smaller producers in the state that are just gaining some interests and things like artificial insemination and embryo transfer, what are some management considerations they should take before making that next step reproductively in their herds?

00:03:12 Alvaro Garcia Guerra

Yeah, so I think so that the main three approaches that we always.

Or everybody probably is aware of or discusses at some point in whether they are a producer or veterinarian or an extension agent are.

You know, natural breeding, which is what we've been doing for for ages, and it can work very well.

Uhm, artificial insemination, which probably during the last 50 years has been the biggest advancement, let's say and then, ultimately, or let's say the most advanced reproductive technique that we have available from a commercial standpoint probably is embryo transfer.

So I think an important aspect of each one of those is that there is no magic recipe for anything.

All three of those can work very well, and they can allow us to achieve a very specific objective, and I think that's the key to implement those technologies is what ultimately, what is the objective of that operation.

And why one over the other could help us achieve it as we move, let's say if we assume that you know moving from natural breeding to artificial insemination to embryo transfer is like.

Moving forward in complexity of of each of those techniques, I think, but it's quite a few things that we need to take into account on in order to establish those first of all, and I think this is a big challenge in in the beef industry as a whole is data management.

We need to be very aware of what we're doing with, for example.

What is our traditional reproductive performance?

If somebody is looking for moving into from bull breeding too artificial insemination, I think it would be very helpful to take a close look or of an assessment of what has been our reproductive performance historically.

What are some of the challenges that need to be overcome?

The second one, an I think I've seen that quite a bit here in Ohio is depending on the size of the operation is facilities.

You know, primarily in a bull breeding situation.

As long as we're able to keep the bull controlled during most of the year, we don't need a lot of facilities really to do that kind of approach.

As we start moving into artificial insemination, embryo transfer, well, it does require some handling facilities.

00:05:28 Alvaro Garcia Guerra

They don't have to be nothing you know out of the ordinary or really expensive facilities, but it does require minimum of a chute system.

You know, the squeeze chute probably in order to safely restrain animals, be able to perform those procedures with with a level of comfort that would allow for great success.

And perhaps the last aspect that I would consider is really getting embedded or seek advice and help or assessment on the actual technology that are looking to implement what is required.

You know from where it's using synchronization, what is the cost associated with it.

Uh, and how we are going to logistically organize it?

I think if there if any producer goes in into adopting any of these with a good plan coming in, I think it would.

Their success is much more likely.

00:06:24 Garth Ruff

Speaking of, you mentioned data management and reproductive performance.

What are some of those metrics that you know, regardless of what system of producers using that, they should be keeping track of?

00:06:37 Alvaro Garcia Guerra

So I I personally think that's one of the areas where we will have.

I think we would have a great opportunity for improvement in the beef industry if we can improve our.

Data management or a data collection.

But just looking at very basically an I think I've seen quite a bit on on producers here across Ohio is pregnancy rates which involve actually doing pregnancy diagnosis.

Then minimum would be calving dates or calving data so we can calculate what the calving rate was, and then I would say after that you know will be you're weaning rate.

So that's the three 3 numbers basic numbers that we need to have.

I think pregnancy rates from establishing.

Technique like artificial insemination now in those pregnancy rates will be very very advantageous and the reason for that is if we let's if you post a scenario.

Let's say that you were having a problem with pregnancy rates.

Even with bull breeding it might be worth taking a hard look at what might be the issues there before going into the investment of.

I'm moving into a more complex technology.

The other thing is related to that is managing expectations.

Any of these techniques is usually designed to help us.

You know, move forward or achieve a certain objective.

I think the worst enemy that we have is false expectations.

Good example of that is.

Well, if you don't have very good pregnancy rates with your bulls because I don't know your cows are not in good condition, thinking that by bringing AI you're going to completely overcome.

That it's not going to happen.

And then the disappointment usually ends up killing the technology before anything else.

So managing understanding that I think is very important for establishing success.

00:08:38 Garth Ruff

That's certainly in addition to, you know, the economic ramifications of open cows

You know, The cost to keep some of those less productive females in the herd.

You know could be a culling consideration as well.

00:08:55 Alvaro Garcia Guerra

Yeah, and I think it's that that's a very important point in going off of the the data aspect.

As I mentioned, those are probably the three basic numbers.

The other one I like always to look at is what's your calving distribution, because for example, one of the techniques that can help you manage that distribution is fixed time artificial insemination.

We can increase in the percentage of females that will conceive.

Initial 21 days of the breeding season they will be calving in that initial portion and then if you are using a fixed weeing date, which is what most people do, then those calfs, regardless of their genetic background, they're going to be heavier at the time you wean them. So if you're selling those calves, you're just gaining.

Uh, pounds of weaned calf for you to sell, so that's another number I've I've been pleasantly surprised to say that a lot of the producers that I've talked to record calving dates, so that's that's a relatively easy data that it's worth having a look at.

00:10:00 Clifton Martin

Alvaro a yeah.

And have we talked about some of these metrics and and things here.

You know, obviously you're doing a little bit of research and a lot of record keeping up your own.

You know whatever the resources that you're using at OSU in terms of our facilities, and you know locations as you study and cover these various reproductive topics.

00:10:23 Alvaro Garcia Guerra

Yeah, so it's interesting that you mentioned that because actually that was one of the main reasons I was attracted to come to Ohio State.

Uhm, so we primarily use.

Yeah, actually, as of this year we use every single beef herd that Ohio State has, which is the OSU beef center here in Columbus.

Around the airport, the Eastern Agricultural Research Station, down in Belle Valley, the Jackson Agricultural Research Station in Jackson, OH, and then as of this year we are using also the beef herd that is ATI in Wooster.

So those are the main resources that we have.

It's been it's been a great experience because we have we have significant number of cows and heifers which allow us to do a lot of the research that we have.

The second aspect that I think it's a great asset as the people that we have working.

That they all clearly understand the purpose and the objective of those farms as sources for or research for research and as a source to generate information that could be then shared with producers in Ohio and in other places of the country in the world.

An an because of that.

Actually the amount of information that has been recorded over the years is pretty impressive.

We are currently working with our two stations in Eastern Jackson to actually try to put a historical kind of overview of what the reproductive performance has been.

In, let's say, two representative farms in in Southern Ohio looking at pregnancy rates and calving distributions, and weaning weights and just have some benchmark information that I think would be very useful for producers in the state to be able to reference.

00:12:18 Clifton Martin

Is that kind of thing as we you know, just think about things in the future we might do.

I mean that that's information we would be able to then share out with the general public at some point, perhaps, and kind of have those conversations that you know, even as we, in extension, at least you know.

In Eastern Ohio we use that Eastern Agricultural Research Station quite a bit.

For some some work, so that would be.

I'd be pretty interesting if we had that information with.

00:12:42 Alvaro Garcia Guerra

Us, yeah, and that's that's the exactly the goal, and that was the reason why I mentioned before that.

I think data is one of the limitations of the beef industry, and I don't know if it's because I spend so much time in Wisconsin.

I had a lot with the dairy industry, where you know data is is everywhere.

Yeah, actually, we have so much information that sometimes we don't know exactly what to do with it.

Uhm, that's I sometimes see how can we make some of that happen in the beef industry so that we have better, better understanding of everything that's going on.

What should I benchmarks really be?

Because it's very hard to to put numbers for people to aspire to or say well, if you are within this range you are, you are in a really good place or if you are below you should be looking at some improvements or changes to try to address those problems.

It's very hard to do that when there's not constant data and that is updated frequently, you know.

Everybody has a magical number for pregnancy rates that they think they should be above.

Well, but that doesn't really reflect the reality of year to year variations in your area and accounting for, you know, droughts or flood or other things that may be happening.

So that's exactly the goal that we're trying to accomplish with putting this data together.

It's just have that an.

We've put a system in place now or we're working on it that we would be able to incorporate.

Every year the new data that comes in and be able to update those numbers and and share that information.

00:14:22 Garth Ruff

Thinking about data and data management and you mentioned you know the comparison between dairy and beef, and there's been an opportunity for more that precision livestock precision technologies in the dairy industry, you know, looking forward at some of your future research interests.

You know, it's that technology part of where we're going, part of where you'd like to go.

00:14:48 Alvaro Garcia Guerra

Yes, absolutely.

We are actually since my arrival at Ohio State, I became started at collaboration with.

A researcher from Australia from Central Queensland University actually is a.

Has a lot of expertise in the precision agriculture area.

Started more on the plant side of things and has moved more into the animal or the livestock aspect of it.

And we've actually hosted did some experiments with one of his grad students here two years ago.

Looking at some calving monitoring systems for.

Beef cattle and then about a year ago we actually got were successful in getting funding from the American Association of Bovine Partitions to look at using on-animal sensors to monitor bull performance during natural breeding.

So one of the ideas or concerns that I had.

I'm a big proponent of artificial insemination, but when you look at National Statistics, you see that the percentage of cows in our overall cow herd that are inseminated is still really, really low.

00:16:04 Alvaro Garcia Guerra

So most of our cows are still being bred by bulls, so I thought that would be an interesting area that would have a very large reach.

But we can make some improvements.

So the basis of of that work is to try to accomplish two objectives.

The first one is see it through.

Primarily we're using accelerometers which are.

Same basis for those estrous detection systems are commonplace in the dairy industry and then the second one is GPS units.

And the goal of using those is is twofold.

One is to try to identify what we call bull breakdown, mainly lameness or any other diseases, which in smaller herds like some of the ones we encounter here in Ohio, in which you might have single sire mating groups.

It can be a really dramatic.

Event because if I bull becomes lame and it's not noticed relatively soon, that could have really dramatic consequences.

An overall pregnancy in a small herd when you're using only one sire and then the second one is to see if we can actually.

Enhance our ability to select bulls that are better breeders that is more of a long term goal of this process, but one that we think might actually have really significant impact.

The stage that we are right now with that kind of project is we're not using any commercial system.

We're working off of research grade devices.

The idea is to establish.

Feasibility and how that would be accomplished so that then could be taken by, you know, the industry to develop devices that would allow real time translation of the information, which I think is one of the greatest challenges of using precision technologies and livestock is how do we get that?

Real time information in extensively managed cattle.

00:18:02 Clifton Martin

Oh, this switches gears here a little.

Bit I was, as we've been talking here, I've kind of been thinking about it.

You've you've been, you've worked in several locations.

I think I've kind of heard you mentioned Canada, Wisconsin, Ohio.

You know what?

Sets and obviously here.

Now we're in Ohio and we're kind of trying to talk to an Ohio producer.

What sets Ohio producers apart from other?

These other places that you've worked, you know?

What advantages do we have?

What disadvantages do we have, you know?

And as we talked about some of these these reproductive questions and strategies, I mean, do you have any kind of final thoughts and suggestions and just overall as we?

Think about the industry here locally.

00:18:55 Alvaro Garcia Guerra

I guess yeah, every place has its own little things.

You know that makes me unique.

I think perhaps I was, not that I like to be negative.

I always think of the challenges because that's where really we can take action.

You know, I think perhaps one of the challenges is that if you look at overall herd size, Ohio and on average, herd size is below the national average, which mean we have a lot of small operations.

A lot of those which are not the primary.

Let's say, income for for those individuals, so they have another job.

So that means coordinating task is always going to be a challenge that they have to overcome.

So I think that's that's a challenge, but at the same time I think it's an opportunity because, you know, some of these techniques will allow and allow smaller operations to actually function more efficiently.

Because, you know, one can think of if you're doing natural breeding in a very small herd.

Well, you know the amount of investment in the bull.

That is only serving a very small group of cows is is pretty dramatic if you compare it, so artificial insemination can actually help you from that perspective.

True, you have to think about facilities, so there's so also at some challenges.

But the other advantage of using some of the practical techniques is that one of the greatest things that I think has been accomplished from a reproductive standpoint.

Is that we've been able to, we have allowed producers to now control the reproductive cycle of a cow.

That way we can set work to be done a specific time, so for somebody that has another job that has other responsibilities, those techniques allow you to control and predetermine when work has to be done rather than working and natural cow cycle that will come and randomly, so I think that's you know at the same time as sometimes it could be a limitation.

00:20:54 Alvaro Garcia Guerra

It's also an opportunity to look into some of these techniques.

Uhm, the other thing that I've seen is that very different landscape that we have in Ohio and as you move in through different areas, an somebody that came from out of the state, kind of.

Seeing how people manage cows in those different areas, how sometimes you know how spread they are in different locations also creates its own challenges, but I think overall I've seen enough individuals that I've met.

Through this time that you know, want to push the industry forward, and I think that's the most important thing, as long as we have that desire to keep improving, then we can find solutions or ways to keep making those improvements.

00:21:42 Garth Ruff

Clifton, I think you know that there's a good transition an you know an opportunity.

To discuss that very question in our 2021 extension, cow calf schools are going to be virtual. Well, we've got Alvero lined up to be a guest for one of those evenings where he's going to talk about how to manage the breeding breeding season.

And all that information beef.osu.edu,

You know from an extension perspective, a lot of the questions we get are either nutrition or reproduction related.

And I think.

A lot of times a component that gets missed.

When those questions are asked is health.

You know the health of that cow.

You know an it comes down, of course, facilities being a challenge in the size of our producers, those type of things.

But a common question is, you know.

What should we you know in order to protect reproduction or improve reproduction?

You know what needs to be maintained in terms to cow health and vaccinating.

Or cowherd, those type of things.

00:22:50 Alvaro Garcia Guerra

Well, so I think you know here in the in the state you know most of most of the bigger challenges are you from the reproductive diseases.

Let's say you know ensuring vaccination for BVD and IBR.

You know that that sort of thing are probably the ones that are more reproductive related.

Or immediately related that I think people are very aware of.

I guess a lot comes down to what you mentioned facilities and being able to actually.

Take those animals through the chute and vaccinate them in a timely fashion is probably very important.

I don't think it can be.

Overemphasize that that is a critical component.

Sometimes when somebody vaccinates all the time, it's hard to see the benefit, but it only takes one time that you suffer the consequences to really make you realize how important it is.

And then I think that the health aspect is very important and you know sometimes I look at nutrition also as part of that.

Healthy asking a lot of times we end up when reproduction goes bad is because we're dealing with that.

You know, nutritional problems an but make that hurt you less likely to be able to achieve pregnancy in a timely manner.

So anything that can be do from that perspective.

Then you know different areas are different operations.

I've had history that's I think, where data is also.

Kind of important.

You know, as you go through different areas and this is true for the state and from other regions of the country or the world, you know you have specific conditions that might be more more prevelant, you know, having that knowledge in advance can help you design the best strategies that you can for.

To mitigate potential losses and related to that, and part of this because I was involved for a long time and doing that and I worked quite a bit on venereal diseases in diagnosis in bulls.

Doesn't seem to be a problem in Ohio, at least not.

You know, rampant like I've seen in other places, but I thought it would.

Related to, that's important if you know if we're doing bull breeding and that kind of strategy for breeding, it's important that breeding soundness exams in both are are a must, an and cannot be overly emphasized that that has to happen every year.

I'm I'm a big proponent that.

It's not, we shouldn't be testing only yearling bulls.

We should be testing our bulls every year before the breeding season there's too much at stake in that breeding season.

To overlook that.

And I think that's a great tool that we have is not perfect.

It doesn't prevent from a lot of things from happening, but I think it's a great one too.

To be utilized and that can can help us avoid some really bad situations that can really impact our ability to be.

Affective in how we manage.

Our reproduction.

00:25:53 Clifton Martin

That's something I think I hear come up and in a couple of different places as we look at other livestock as well.

It's just that idea of the breeding soundness exam and just kind of this concept of knowing what you're working with.

I think is really what it gets down to.

So I would collect data and keep keeps us informed and helps us with our decision making and making sure we we know what we're doing so.

00:26:20 Alvaro Garcia Guerra

I think one of the challenges with that has always been and that's related to some of the things we're trying to do with the precision lifestyle is of precision technology.

Excuse me, one of the things that breeding soundess exam is a single snapshot in time an and that has been the biggest limitation.

Unfortunately, we don't have anything better than that.

It would allow us to identify bulls that are that have permanent conditions that would make them either sterile, which would be the easiest scenario to identify, but also that might have some subfertility, so that's where it really does a really good job identifying those.

The other one that sometimes is overlooked a little bit during those breeding soundness exams is confirmation and general structure.

A bull uses a major physical investment to undergo a breeding season, so making sure that bull has proper confirmation.

That has sound.

Locomotive system it's it's very, very important that part of that it cannot do for us. That exam is unfortunately give us a complete insurance policy that that will bull is going to work through the entire brain season where it's 45, 60 days or 90 days or whatever.

It is the lenth.

Things can always go wrong.

Doing that right now.

I think the only alternative that we have is make sure that we keep a close monitoring, even if it is just a visual monitor.

Make sure that bull is working that you see him actually mounting that sort of thing, making sure that doesn't become lame or anything like that.

That's the only tools that we currently have.

That's one of the things we're trying to tackle.

Is see if we can have a system that would allow us to do that for my hands off perspective, and much more quicker than what maybe your or I can catch.

Depending on how often.

And we were able to monitor them.

00:28:22 Clifton Martin

Well, we've we've.

Covered a lot of territory here, and it sounds like there is quite a bit of quite a bit.

Further, we could go actually if we wanted to keep the conversation going, but time is of course precious here, so Alvaro, appreciate you taking a few minutes to talk with Garth and I and then take the time to.

Share this information with everybody who is listening.

Thanks again for joining us.

00:28:48 Alvaro Garcia Guerra

Thank you very much.

It was a pleasure.

00:28:51 Clifton Martin

That's all for now. As a reminder, you can find more from this series at the OSU Extension Beef team newsletter at beef.osu.edu.

We appreciate, your suggestions and comments and we always appreciate feedback on our work.

Then you can provide that using the link in our show notes.

Thanks for listening to the Buckeye Beef Byte. Take care.