## Trey Patterson Part 2

## Season 1, Episode 12

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**Robin Salverson:** Welcome back to Cattle HQ, brought to you by SDSU Extension. We will now resume our conversation with Dr. Trey Patterson from the Padlock Ranch near Ranchester, WY. Kiernan ended the last episode with asking Trey how they manage their heifers and their young females on the ranch.

**Kiernan Brandt:** I think you bring up some really, really good points there about how it is just so crucial for us in this industry to constantly have our finger on the on the pulse of what's going on throughout the entire operation and be able to constantly adapt and evolve and kind of move on the fly with a lot of these things.

You know I love that quote by Albert Einstein that once you stop learning that is when you start dying and I think that really says a lot about how progressive we really have to be to stay relevant and stay at the top of this industry.

Maybe this is a great time to transition back to the female side of things a little bit and maybe you can tie some of that together with how you guys think about managing down the road in terms of forage availability and your forage base. How you guys make decisions on feed allocations to your heifers and how that frees you up to take care of some of those younger cows. As you mentioned, perhaps they are going to need some more feed resources as they go through the winter.

**Trey Patterson:** I think one thing that we want to look at in these production systems kind of going back to where we started with our conversation today about turnover rates and having replacement cows and you know we started with the value of those coming out, but what about the cost of those going in. Remember the ratio or the metric, I said we looked at was value of cull cows over what it cost us to put a replacement into the herd as a bred heifer. So obviously. you can work on both sides of that equation and depreciation costs, depending on ranches sometimes look at more cash accounting where you're paying for all those costs up front. In our system and accrual accounting where those cows could capitalize and depreciated over five year period of time either way you look at it that's a huge cost depreciation cost of that cow herd. That reduction in value over time versus what is a big deal and it's something that we have to manage.

 On the replacement heifers side, I think one of the concepts that we have really ascribe to is, we want to look at on the on the replacement heifers so bred with her first calf, we want to look at optimal breeding rates, not necessarily maximum. If your heifer development costs are low enough, an open heifer can still be profitable it is like a yearling. However, if your costs are high, then that pregnancy rate becomes more critical to you.

One of the things that we have used some in the past and I will quantify this a bit more in just a minute is range-developing heifers. One of the concepts is if we are going to ask these cows to go out and be good range cows doesn't it make sense to start young on those and put maybe even put some selection pressure on those heifers when they're young to be able to do that. I don't know how much selection pressure we put on them, because those heifers do really, really well out on grass in the wintertime in Montana in fairly rough environments. We are supposed to be 15 below tonight. We get pretty tough out here but they do pretty darn well and I think sometimes they do better than young cows do grazing out. So, if we can build a

 lower cost replacement by running them on grass. Just realize, we may have to allocate some of that savings back into taking care of the young cow once they are bred, because I think once they enter your herd as a bred cow, then the loss of them is expensive. Because you have not captured back that value yet depending on your marketing program to some degree, as we talked about earlier.

But can you see my conversation, how everything is inter-related and now you have to think about it that way. We have had a lot of success when we have done that. Running cows out on grass in the wintertime wit modest protein supplementation they do well and in our system where we're not breeding them until July, we have seen no reduction in pregnancy rate as a yearling.

Those calves are about 150 to 160 pounds lighter than the calves that were developed in the feedlot on a silage ration that typical heifer developed ration, so the range-developed calves are lighter than the feedlot. But their gains in May and June of the year, are over a pound a day better and they'll compensate more than half of that weight differential during that time of the year. There are still a little lighter at breeding but they've still got bred.

One of the things we looked at as in my hypothesis was that that we would have more of those cows in the herd, at five to six years of age. Because we have built, a better cow by training them early our data shows that the retention of the cows was the same so we didn't hurt it. Didn't quite fulfill my hypothesis, that our system was going to be better. That comes back to a really important systems question, if we can run heifers on grass and do that cheaper and if we can still get the reproduction that we desire. Why not do that all the time? Well grass is not free and there's a cost to that either I am replacing some cows and actually reducing the number of cows on the ranch to make room for those heifers to graze all winter long or I may be feeding some cows, in place of running those heifers out on grass or leasing pasture. So looking at those costs and the differences become important in making those decisions, because we do know that turnover is important to profitability. In other words, the number of animals that were selling, so stocking is really, really important.

 We actually had a student intern with us last few years, as part of the Dan Scott School for Management at Montana State did a project on that last year. What we looked, we took our financial data from 2020 and looked at heifer development costs and depreciation, subsequent depreciation based on two different types of heifer development. One was development in the feedlot and the other being range developed heifers. We also looked at if we range develop the heifers if we if we kept the same number of cows, but fed more cows hay what that looks like. Or if we reduced the cow numbers, so we had the same amount of grazing out days as we did before and if hay was cheap. It was interesting the cost to produce a weaned calf was similar between all three of those scenarios as hay got over because we looked at it kind of as a sensitivity analysis as hay got over $150 a ton that feeding scenarios started to really increase your costs of calf.

One of the things to realize if you reduce cow numbers, then your fixed costs go up, and so in one scenario on the graze out if you can follow me here, we're looking at kind of the status quo, develop heifers in the feedlot while grazing as many cows out as we can. Two was developing heifers on range and feeding a portion of cows that they displaced and so those pastures the heifers grazed were pastures the cows could not graze. We assume we fed those cows hay. The third scenario we just reduced cowherd numbers so our stocking rates or grazing days were the same for the cows but we grazed the heifers out. When we fed the hay to the cowherd, we increase the variable costs. We fed more fed feed, which increases your cost of calf.

But when hay was cheap, it was offset by lower depreciation costs or lower cost of developed replacement heifers. When hay was cheap, they were offset, and so it was the same. As hay got more expensive, it was actually cheaper to reduce the cow herd size, even though they're fixed cost per head were higher. Those are costs that don't change by the number of animals you have, so what you pay yourself, what you pay for your land, whether that be rent or property taxes or whatever what you pay for utilities, depreciation on machinery, and so on those things that you're going to have anyways. That fixed cost per calf goes up as you reduce that number, but all the way through those different hay prices, though, reducing the cow herd size was same or better in the cost or calf to produce a weaned calf because of the savings and depreciation. We have less heifer development costs. Now in a systems analysis, you have to take that a step further, and say if selling calf or me as profitable and profitable enough, I maybe I had to have a more expensive calf and sell more of them. If the value you are receiving for those calves is near breakeven you are going to be better off selling fewer.

That have a lower cost, a higher profit per head, but we really don't want to look at profit per head, we want to look at profit per ranch. So, a person can sit down and make some of those calculations, but it was interesting to me that it did not raise the cost to do that. But in our system, I mentioned, we have a fairly intensive farming, the feedlot operation and so that adds overheads and so stocking rate for us at turnover is very, very important.

And so we have not made the leap and our system to developing all of those heifers on grass every year and reducing that cow herd size. We try to do it opportunistically. We are continuing to evaluate that but what I can tell you, it has worked really well for us and we've done it and I love it. But maybe you know the scenario is saying, some of those three year old cows that we try to graze out longer maybe struggle on condition. Maybe I should allocate some of those hay resources to some of those young cows and start feeding on those a little earlier. Then run those replacement heifers out which pays for that and ups your overall heard pregnancy rates. If you don't have those low breed ups and the young cows to me that's a system really worth evaluating.

I know there's been some work at the University of Nebraska with spring calving herds where they have looked at more extensive heifer development. They have really shown that too is that the reproduction, even in that spring calving herd was not markedly affected by running those cows out. So lots of opportunity there and a really important part of our business to focus in on.

I do not have a silver bullet recommendation, there are so few of those outside of crossbreeding and rotational grazing in our industry.

I can't say in a podcast that if you are a rancher in Harding County, South Dakota that you absolutely should be developing those heifer son grass. We did some of that heifer development work up by Buffalo when I was there, Robin helped with that research. Those cattle did really well in Harding County. That is a fairly tough environment, so it works, you can do it, you just really have to look at it from the whole system perspective, I hope that doesn't complicate it too much.

But the decisions we make are not uncomplicated and I think we don't want to get caught in the weeds but we don't want to dummy these things down either.

**Robin Salverson:** Thank you Trey. You said it really well that it really depends on your ranch and the system that you have within your ranch. Looking at it as a systems versus a linear approach, like I am going to calf May and June, because this is what I want to do, because I don’t have the labor. But there are unintended consequences with that.

I really do appreciate what you said, I think there's great opportunity in the research that was done in Harding County on heifer development a few years back. There is opportunity to develop those heifers on grass, I think a lot of people, maybe just say we can't do that, and I think that they need to look at their ranch, look at their system and see if it is a potential opportunity and if it's not it's not. I think we get so wrapped up into the day to day activities of the farm and ranch that we don't work on the business all the time. Like you said, looking at the data and analyzing it and not being.

Consider the whole thought process and not get caught up that we have to go do, fix fence today and then that's all we do, or we have to go calve today and that's all we're doing, I mean those things have to happen, but we also have to work on the business side also.

**Trey Patterson:** That is absolutely right. If I had a word of encouragement for people listening is don't let the complications that are associated with these decisions, all the ramifications scare you away and by us saying it may depend somewhat on your ranch. Please don't let that prohibit you from evaluating your system, because I think everybody needs to take a real hard look at their strategies and evaluate other opportunities and try some new things. Like we said earlier, if it if they're not working, you can adjust if you're paying attention.

**Kiernan Brandt:** Well, and one thing that you, you mentioned that I want to circle back to just a little bit that I think is hugely important. In all of those strategies that you talked about, and all those scenarios, you talked about with those cows and developing those heifers. Those were all situations where you guys were minimizing a washout in those two coming three year olds. In addition to that, I think you guys are already perhaps doing a lot of things very well that are not so commonplace within the industry. I would love to have you touch a little bit more on the crossbreeding you guys are already doing. You put the emphasis on these lowly heritable traits and reproductively challenge these animals to put them in scenarios where by the time they are even pregnant, for the first time they're going to go on to be successful throughout the duration of their lifetime. You mentioned some displeasure with the not seeing any differences in the longevity of those cows and I am with you there I would have imagined that you would seen some of those more roughed developed heifers stay a little bit longer, but I think, maybe you guys are already doing so much right. That it is getting hard to see big differences in the longevity when you guys are doing a lot of fundamental things correctly to challenge the reproductive efficiency of your animals.

**Trey Patterson:** There is no question, and things like crossbreeding do affect the live calf weaned per cow exposed, pregnancy rates weaning rates and calf survivability.

So I think that kind of plays into part of the system that we're talking about and you want to take this if I haven't talked about interrelationships further. We talked about our rotational grazing and how we are fire prone in our area and so on, so forth. You know, one of the things that we are doing to accomplish our range management goals and keep heterosis high from crossbreeding is we are using crossbred bulls. And so we're we found partners that are producing some of these crossbred bulls that kind of fit our scenario that balance traits that are important to us, which include you know pretty big emphasis on maternal traits to be able to supply those kind of bulls, for us. Then you can you can probably do a better job of maximizing herterosis of more conventional crossbreeding systems if you can manage that I don't discourage that at all.

For us where we may have a unit that burns out with fire, since we don't have breeding groups because we're using these crossbred bulls. We can put and take in different resources in different areas. Since we are not breeding one herd to one bull and another herd to another bull. Ours are getting bred to the same crossbred bulls. We are just trying to be careful in our selection of those to have some breed mixed to keep heterosis. You know, keep it up in those cattle so again, you know it's all part of the system. We have learned some things, we are still learning, you know our learning curve is steep as anybody else's.

**Kiernan Brandt:** You briefly touched on this a little bit ago and I would love to just have you flush it out a little bit more. Tell us just a little bit more about what those heifers are going through, as they get ready for their first breeding season. You mentioned that they get bred to those Wagu bulls. Maybe just talk a little bit more about that marketing arrangement and the destination for those calves and then how you guys maximize on the profitability of those heifers that maybe don't take during that breeding season.

**Trey Patterson:** Good questions so you know we've got an arrangement with a company out of Idaho before we breed the heifers to sell these F1 calves as yearlings not as calves. So we are two years out from that marketing arrangement. So when we breed heifers in 2021, they are going to calve in 2022 and be yearlings the spring of 2023. With that arrangements put forth by doing that we got a stable market on those and a value added market which allows us to range calf the heifers. Their other genetics you can use to accomplish that, but in this case, we feel like we are working on the marketing side and the cost side simultaneously. Instead of taking away value from those calves that are born to heifers, we have got a value added program. There are different ways, you can do that, than we are. All that is thought through before we breed them. We pregnancy test by ultrasound on a fairly short season about a 45 day season in the fall of the year, and those heifers that are open can be really profitable yearlings to sell off of grass in the fall or a lot of times we feed those, that group of animals can be fed. They perform really well for grass and their conversions are good.

 It is also a way to move some income across years, so if you're having a pretty good year this year, you know next year is going to be a little tougher. Retaining ownership on those animals help you move some income and it can be very profitable to feed, so it opens up opportunities. That is what I think we don't want to do in any of our decisions, is shoe horn ourselves into having to take a particular marketing time or a particular marketing scenario. We need to have some diversity, and the types of programs were using and the timing of those programs that allows us to manage these markets, and we also use a lot of a risk protection on them, the futures board and manage risk that way. The marketing today is incredibly frustrating and how fast these markets move.

When you think about the system that I described to you that the Padlock Ranch has. Where weaning these lighter weight calves in the fall and selling those as yearlings and March, April and May of the next year. Think about COVID year 2020 what happened to the markets in the spring of that year, they absolutely crashed. That could have been devastating for us, but we had different marketing programs. Some cattle were slated to go on feed and some that had premiums associated with them and we had a lot of risk protection on them and with forward contracts, basis contracts, and futures contracts, and so we did not feel the pain of that like we might could have.

Just don't let marketing as you're thinking about your system, we love to work on production but don’t let marketing fall to the wayside it's extremely important.

**Robin Salverson:** Thank you Trey for joining us today on Cattle HQ. I think we will be wrapping it up here, but thank you for sharing your insights, your philosophies and your thoughts for everyone listening to our podcast here today. I guess it goes back to again, not just focusing on the production, but looking at the marketing the human aspect of it, we could get into a whole labor issue here if we wanted to. But we will leave that for another podcast episode. But remembering to look at it as a systems approach versus a day to day activity. Thank you, Trey. Trey is always willing to visit with people, and I know if you contacted him at the Padlock Ranch he would give you a tour.

Thank you, Trey, again for joining us, and once again this has been cattle HQ brought to you by a SDSU Extension headquarters for all things beef. Visit extension.sdstate.edu for the latest information. Until our next episode remember you are not fully dressed until you're wearing a smile.

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