## Rancher’s Perspective on The Importance of Livestock Water Quality: Johnson Ranch, Bailey Johnson

## Season 1, Episode 68

[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.

**Robin Salverson:**

Welcome to Cattle HQ, brought to you by South Dakota State University Extension. I am Robin Salverson, Cow-Calf Field Specialist, living the life in Lemmon, South Dakota. Our guest on this episode is Bailey Johnson. Bailey ranches with her family northwest of Mobridge along the Grand River. Welcome, Bailey, to this episode of Cattle HQ. I have had the opportunity to meet you throughout the years, especially around the area of livestock water testing. I know you are extremely busy because you are breeding cows right now, and I appreciate you being part of this episode because I know, like I said, we’ve been working together in this livestock water quality world. Could you just share a little bit about yourself and about the ranch?

**Bailey Johnson:**

Yes, I appreciate you having me today, Robin. A little bit about myself, I operate with my parents as Johnson Angus, raising seedstock with an emphasis on maternal efficiency. Like you said, we just are wrapping up our last little bit of AI. This is our 68th year of AI-ing, and we will host our 54th annual sale February 28, 2026.

**Robin Salverson:**

Oh, wow. That is quite a history right there. [Laughter] That is pretty awesome. Like I said in the introduction, that I’ve got to work with you over the years with livestock water testing. To get a little bit better grasp on your ranch and also the water there on your place, what do you rely on to water your cows?

**Bailey Johnson:**

We rely solely on dams for water year-round. We do not have wells, we don’t have any groundwater for artesian wells, or anything like that. There is no rural water in our area, so we are strictly dependent on rainfall and what we can catch for runoff to fill dams.

**Robin Salverson:**

What prompted you to actually start testing your water?

**Bailey Johnson:**

Drought has always been our biggest factor. When the dams are low and volume of water does not even necessarily indicate the quality, but you always find yourself in pastures that you would normally use at certain times of the year, there is a shortage. One thing that we do when we are in a shortage of water such as 2021 was one of the first years we started working extensively with you. We set up a lot of solar pumps with above-ground poly pipeline to get water where we need it to keep the cattle on a decent rotation where there is grass availability.

**Robin Salverson:**

Did you also see any effects within the weight gain of calves or any type of conception issues or anything like that when it comes to water quality, or is it more about making sure they have enough water?

**Bailey Johnson:**

I would say it is a little bit of both. In 2021, when we were really focused on water quality and having an abundance of water in front of them, we actually saw 82% conception rate AI. That was a couple of percentage points above average for us. We are usually in the 75 to 80% AI. Another thing is definitely calf performance. A huge difference in calf performance if you are keeping quality water in front of them, or quality of water to the best of your ability. We are normally, even in a good year, higher sulfate and higher sulfur. When we are focusing on our absolute highest quality, which may not be considered good for some, it makes a huge difference for us.

**Robin Salverson:**

Absolutely. You mentioned that sulfate is a big concern for you, and that is really an issue across the state of South Dakota, not just where you are located there in Northwest of Mobridge. Really, it’s an issue and it’s interesting you say sulfates or just poor-quality water in general, because when I first started Extension, it was always thought of as a very further western South Dakota issue, and it is really not. It is a problem not just up to the Missouri River, but across the river too, into eastern South Dakota. I am going to ask, did your parents ever think much about water quality throughout the years?

**Bailey Johnson:**

They had definitely done testing in the past, and we drilled an artesian well when I was younger. Obviously, went through and tested that to make sure that it was going to be usable, and in that case, it was totally not worth the time that it took in the monetary expense that was there. We have always lightly tested, but never as extensively as we do now.

**Robin Salverson:**

I know at one time when I was working with you, we sent not just the quick test with you, because we can do that electroconductivity test, but we sent some into the lab, we even sent some in for heavy metals, so not just even salts. There’s a lot of things within our water that can definitely impact their performance.

**Bailey Johnson:**

Definitely, yes.

Robin **Salverson:**

You also mentioned calf performance, and anecdotally, when we visit with producers, you mentioned seeing heavier calves at weaning, and you are selling bulls, right? The best performance you can get not only the bulls, but also your females, because they are the ones coming in and replacing your cow herd, right?

**Bailey Johnson:**

Yes.

**Robin Salverson:**

Performance is a huge deal. Just to deeper dive a little bit, have you noticed any changes in your cow herd since beginning monitoring? You mentioned calf performance, you mentioned some conception, things like that. Have you noticed anything else?

**Bailey Johnson:**

Not necessarily. I think the biggest changes that we – we’ve learned a work around it with high sulfates. We have changed our rations when we’re developing the bulls and developing the heifers. It gives you more information to work around and make the best possible choice to care for them the way they need to be taken care of.

**Robin Salverson:**

I think that is a very well-pointed statement that you change some management to help work around water quality or even water quantity issues. Prior to the start of this podcast, we were having a general conversation, and you were saying how you are managing your heifers differently this year because of water. If you know what your water quality really is, you can really help manage that. It is interesting you mentioned changing your rations. Do you feed byproducts like distillers’ grains or anything like that in your rations?

**Bailey Johnson:**

We do not. That is a recent change we made. We feed no distillers grains in our rations because the dam we use to water the feedlot is actually our highest sulfate and highest sulfur water source. When we’re looking into that perspective, we just cut the distillers out of that ration and made adjustments from there. That was our biggest change.

**Robin Salverson:**

That is a huge change. For a lot of people, distillers’ grains or some type of byproduct that typically has higher sulfur content in it. When you add a distiller’s grain product and then you add water with high sulfur or sulfates on it, it is a compounding effect. That’s great that, through livestock testing your water, you figured out some of those issues, because maybe folks do not understand what sulfates can actually do to an animal. Sulfate can cause - if it is too high, it can cause issues such as polio, which is blind staggers, but it can also just impact intake of the water. If animals are intaking water, they are not intaking feed. If they are not intaking feed, they are not gaining, right?

**Bailey Johnson:**

Yes.

**Robin Salverson:**

There are a lot of different things there. I know one time we talked about it, you guys have to how you bump across a lot of pastures and put on a lot of miles to get to some of these different dams and things like that. I’m just really curious if you’ve ever implemented any type of technology, whether that be cameras on your – I know you said you pump out water from some of those different sources or have you implemented any type of technology, drones, or anything like that, or would you like to if you haven’t?

**Bailey Johnson:**

It is probably more of a, “I would like to.” When you are looking at extensive heat, like you normally do in a drought, there are years when the solar panels are not enough to run long enough to keep the cattle watered. You have to go up there anyway to start a generator or something like that just to make sure the tanks are full right away in the morning when they get there, because they water so much earlier. Their grazing patterns change in years like that. You just adapt different ideas of what you need to do as you go. There are times when the solar panels are enough, but it would be really nice to have those cameras to keep an eye on things for you. [Laughter]

**Robin Salverson:**

Wouldn't that be nice? Yes, it takes a lot of time out of your day to monitor all of those.

**Bailey Johnson:**

It does.

**Robin Salverson:**

You’d hate to see water run out on hot days, because everyone has slightly different numbers of how many gallons a cow needs to drink in a day. On hot days like this summer – like today [Laughter], actually, it’s pretty hot out. It might be up to 35 to 50 gallons a day. Then you have calves drinking also, so you really need to really watch that they have that water, not just in quantity but in quality too. I am also interested, do you guys do anything unique with having water sources for your calves during the summer months? Do you guys provide anything like a small creep water source? They are not really creep waters, but anything specific for calves so the cows cannot get to them?

**Bailey Johnson:**

We do not. We are allowing access. If we are pumping water to a tank within the same pasture, they still have access to the dams. A lot of times, those calves are going to use it just to cool off and that is our [[Crosstalk]](https://recordings.civi.com/cgi-bin/player.php?file=PC-00002-CattleHQ-Ep68-johnson.mp3&starttime=709&duration=20)

**Robin Salverson:**

But you do have access for those calves for water consumption and things like that. I think a lot of people forget how much water calves are actually drinking even at a very young age.

**Bailey Johnson:**

Yes. When I say we are starting the generator to keep those pumps going, most of it is that you just want to maintain the water at a level in the tank where the calves can access it, versus it’s low, so the cows can get to it but the calves cannot.

**Robin Salverson:**

Absolutely. I think you are a very unique situation where you do rely solely on dams and pumping it out. I get a lot of questions on, “I’d like to pump out of a dam, into a tank,” because you get cleaner water, right? You don’t have cows trampling down into that, you might be able to spread or move those cows around that pasture a little bit. Can you tell us how that system looks a little bit more about from one dam you just have one tank? Do you have multiple tanks? What type of hose do you use? Those kinds of things?

**Bailey Johnson:**

Usually, depends on proximity to where we are pumping. We do have one dam that we, if need be, will use two pastures side by side for breeding. We’ll have quite a climb to get to the other one, where there’s two tanks set up. The dam that I’m speaking of now actually waters three tanks at a time with those solar panels. Just very unique with the situation and once again, just something we adapt to as we go.

**Robin Salverson:**

I think adapting is good.

**Bailey Johnson:**

[Laughter] Absolutely. You mentioned, which is also very unique, your winter water, is this correct? Please correct me if I am wrong but comes from a dam that waters your feedlot or feed yard, right?

**Robin Salverson:**

Yes, it does. With that, we are able to run a pump system versus the cows just to keep them off of the ice in the winter. A lot of times, we are trying to run a siphon for lack of a better way to do things. You do lose some water there, but you are also really keeping the quality of your water. When you have all the manure and everything on that ice in the spring, melting off and going into your water source, you do not want your cattle drinking wastewater, essentially.

**Bailey Johnson:**

Yes, you are fully dependent on surface water, but most of it is being pumped out. That is very unique. Not having the ability to get good-quality water, like you said with artesian wells that failed and finding good quality water. That does make it a unique, challenging situation, but you have been adapting to the situation and finding ways to deal with it. Going back to water testing, how did you find out about it? I am just curious about how you reached out to me.

**Robin Salverson:**

I was referred to you by an AI Tech, that has worked with you on a lot of breeding projects through SDSU, and I was able to get in touch with you. You were a wealth of knowledge and a huge help to get things going in the right direction for what we needed to do.

**Bailey Johnson:**

Well, that leads into something I can share. SDSU Extension does offer for the listeners out there. They offer a quick test and actually, across the state of South Dakota in various location in our county extension offices in our 8th regional center. If anybody find themselves wanting to test some water, I encourage you to either reach out to me or go to the SDSU Extension website to find those locations that are testing that water. It is a service free of charge. If you reach out to me, I love going on location, going on to the ranch, and testing for folks. It makes my day, and hopefully, it makes it easier for you guys that are listening. With that, I think we are about close up or wrap up this podcast. Do you have any last closing thoughts or comments, Bailey?

**Robin Salverson:**

Just when you are monitoring your water quality, recognize that it’s not always going to be your biggest dams are not always going to be your highest quality. That is one thing we learned the hard way. We’ve gone through a lot of work recognizing that it is more so what the water is running off and collecting from the soil versus what is there for water volume wise.

**Bailey Johnson:**

That is such great advice because I hear this a lot, Bailey, that A, “The water is super clear and I’d even drink it,” but unfortunately, that is usually the worst water because nothing wants to live in it. You mentioned usually the larger dams. Everybody has that thought, “Oh, it should be good,” but that is not always the case and I think you made a really good idea. You just shared that. Another one I get credited to is my neighbors are having no problems, so I shouldn’t have problems. Again, that is not a good policy to follow. Last two that I hear quite a bit is, if you are running off a creek or you’re on creek or maybe something spring-fed, that it is spring-fed that it’s good. You made the comment about where the water is running off and what type of soil profile it is going through. Our soils are typically very high in salt, so not all spring-fed water sources are good. That is actually a very big misconception out there that I hear quite a bit. The last one is, “My cattle are always on well water, so it’s good.” Well waters go bad, or the wells go bad. They can get - something can happen where that water gets contaminated, or that well shuts down or quits, or electricity goes off or lighting strikes. Guess where those animals headed? To the dugouts and dams. If you have not tested them and they’re stuck on that and that’s their water for 24 hours, you could have a big problem. I thank you for bringing up about the size of the dam is not always the indicator, or the look of it is not always the best indicator. Thank you for joining us. It is always great to see you and visit with you. With that, as I mentioned earlier in the podcast, I’d rather, folks, our listeners here, test before you see a problem. You guys didn’t have a major crash or problem. You did not have dead animals. You didn’t have any of that, but you knew there was something going on and needed to test. Typically, I don’t get people coming in to have their water tested until they have big problems, like big problems. Very poor conception rates or deaths. I really encourage all you listeners to have their water tested. Don’t let the animal be your tester. That is not the best way to handle things. It’s a free test that we offer here with SDSU Extension. It’s a cheap insurance policy. Even if you have to send it in for further testing, you guys have done to understand that sulfates was a big problem for you guys and how you can manage that. Thank you again. Before we end this episode of Cattle HQ, I just want to share with listeners that we do have Cattle HQ Live webinars held monthly basis by SDSU Extension. You can learn more about those Cattle HQ live webinars by visiting our extension website or SDSU Extension website. Once again, 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 our next episode, the best way to improve your looks is to wear a smile.

**Kiernan Brandt:**

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

[Outro music]