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Resilient ranching workshop: field session 6, stagnated blue grama and soil pit

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BEGIN TRANSCRIPTION

00:00:01:06 - 00:00:25:12

Unknown

You can actually measure in the leaf. Your and your leaf comes right down and you're actually making your plants more stress. You're creating the same for more weeds in the long term. Differently would have been okay. It's like. Any time you need to. Okay. If I had to, possibly I don't know know without seeing everything because pigments would take over the field.

00:00:25:13 - 00:00:42:00

Unknown

Yeah. They will. They will. But that's where the fish is helpful. I, isn't here. I don't think we don't need to see. What do we want to know?

00:00:42:03 - 00:01:12:20

Unknown

Yes, but it's all, native grass. So just look at. So look at the pattern where cheatgrass is around the trial area. Thank you. Don't kill the full snake. He's all right. Yeah, yeah. Oh, really? Yeah. Yeah. Yeah, yeah, I would like to. Oh.

00:01:12:23 - 00:01:18:15

Unknown

Okay.

00:01:18:17 - 00:01:35:01

Unknown

And, Make out that, you know, someone with. My dad was like, I'm gonna try to pull away from.

00:01:35:03 - 00:01:49:13

Unknown

Here. So then he was like, yeah, it's a snake wrestler. Not yet. Yes. Yeah. What?

00:01:49:16 - 00:02:09:24

Unknown

This has been one of the most striking trials I can remember seeing. Like, just. We weren't going to miss this in the field. Now, what's quite interesting is just to see, the the that there's no cheatgrass in the middle of the trial areas. It's cheatgrass on the edge of it. Seems pretty happy. But, this is sorghum, Sudan.

00:02:09:25 - 00:02:32:26

Unknown

Those of you who aren't familiar with it. So this is. Well, I've just dug here. So this this is what the soil looks like out in the main field. It's had, you know, these plants out here have had that the the the seed coating. And this is where the spray happened, right? So notice we've got organic matter that I call these the constipated soils.

00:02:32:29 - 00:02:46:23

Unknown

Right. So you've got organic material that's just kind of sitting there. You pass it round I want you to smell it. I mean, you could dig with your hands. It's right underneath you feet. Okay, so.

00:02:46:26 - 00:03:07:06

Unknown

So, yeah, that's what that kind of soil looks like. And then what? I want to show you is notice, how a lot of that organic material was broken down between the sorghum. Oh, it's a ladybird.

00:03:07:08 - 00:03:29:24

Unknown

And what we're seeing is, the beginning and mixing of. See some of these darker patches is we're starting to form humus. Okay. So a lot of your organic matter on your properties just sits on the surface. Don't get me wrong. Letter is good. Letter is good. I was saying yesterday that in New Zealand, we can't build litter, right?

00:03:29:24 - 00:03:48:26

Unknown

We get these specialists coming in and talking about adaptive grazing to put the litter down and litter little litter. If you have a whole load of litter, you're basically mulching your property. But in New Zealand, that litter breaks down in a couple of weeks because we have biology metric thing right? What? Oh, totally totally totally. Right. We have.

00:03:48:29 - 00:04:08:18

Unknown

But people come in and say you need litter right out here. Yes, we need litter because we need ground cover because you don't have any living plants. But what's happening is your litter here is just oxidizing, right? It's not turning into humus. It's not turning into effective organic matter. And it's being lost to the atmosphere. Right? What we want to see is that litter.

00:04:08:20 - 00:04:36:21

Unknown

As we start to stimulate biology, we list nutrition and the litter changes color. It becomes a really golden color and it breaks down really quickly. So your job then is to out rice the litter because you need to have ground cover, but you need something on that surface. Yeah, we can hear those roots. Not quite all the way to Nebraska, but,

00:04:36:24 - 00:04:59:29

Unknown

Oh, what we found yesterday was really cool, and we're not seeing that today. Yeah, we are doing that. We saw it. Okay. We saw a lot of, a lot of, like, big chrome structures in black soil. Oh. You couldn't. Oh, I know, we'll put it back. All right. Got a break. A few extra, make an omelet. You got to put a few years in the field, don't you think?

00:05:00:01 - 00:05:24:19

Unknown

Okay, so. Yeah. Right. I want you to see that black. That blackening is the beginning of the humidification process. It's turning soil dark all right. And that's what this whole field's missing is unification to actually see it. You see it? If those of you got the little lenses right, we want to see that real darkening. And we can build soil so fast.

00:05:24:22 - 00:05:50:04

Unknown

You know, I've got a case where we're building a millimeter, which is 1/25 of an inch every month. So we're building an inch of topsoil a year. All right. Now, an admittedly unlimited budget. And moisture. So, but we can build soil far faster than what we think is possible. And every time I think, oh, yeah, this is probably the limit, we see someone come in and just blow that limit out the water.

00:05:50:07 - 00:06:15:22

Unknown

Right. So what was what was this treated with? Again this is the compost extract that went on. It. The full strength. So. Right. So this was all planted the same same year standing on it. And then that constant that Patrick and I were talking about yesterday is that these seeds were coated. Right. So the seeds were coated and we came back and sprayed.

00:06:15:24 - 00:06:34:29

Unknown

The whole field was and they were quite what happened when they were coated with sugar high fungal compost. So this is what we came down the road. This is this is the the double. This was the hot dust. Exactly. And we decided to do that because we just didn't see much of the cold. So I just thought, okay, we're going to we're going to work.

00:06:35:01 - 00:06:59:12

Unknown

So here what I was finding it just this is a of no buckwheat thing, so. Oh yeah. These leggings, it was peas this. And they didn't come up. And then none of them did not hear. No. You could see them as we walked over there. There is some peas and yeah, there's think this is like a mirror to the spirit.

00:06:59:12 - 00:07:26:21

Unknown

And then, but the whole field of this plant at the same. But you see something different here. No, no, the seed is all the same. The seed got treated. And then this patch got an extra foliar spray. That's the that's the only difference. Yes. You walk us through once again what you did all over here. Well, the first thing I did was we intensively grazed that stuff off to the north of this here.

00:07:26:23 - 00:07:50:13

Unknown

I didn't graze this thing just because I could see. Oh, geez, I was worried about there being too much perfection on this stuff. The plant. Okay, so three, three consecutive days in a row, I planted. I planted a, cool seed mix over there where we first start. Stopped in a warm season because I think this is a warm season, I think.

00:07:50:15 - 00:08:22:17

Unknown

Yep. Yeah. And but but previous to that, any and I came out and we just randomly picked these I don't know how many spots. Ten. No we did 27 2020. So we did nine replicates in each kind of vegetation type. Right. And that was like 20 days before it planted. That was May 5th. Yeah. So we we sprayed these meter plots and then I coded the seed and planted three, three day consecutive days in a row.

00:08:22:19 - 00:08:46:09

Unknown

And it just happened. It was the end of me. And we got some good rain. Well, why would there be the bare ground between them and other things not coming into that? Because you don't break. Right. In some of the other plots. Sorry, buddy. We've got different diversity. We still see the sorghum. Sorghum is, a little perfect to that, right?

00:08:46:09 - 00:09:05:11

Unknown

Yeah. So it's it's it's sitting. It's like this is mine. Okay. And this is buckwheat for those of you that haven't seen buckwheat. Buckwheat known mycorrhizal, but we use it like we use lupines to release phosphate for the following crop. So this has an amazing, acid that it releases. It's going to release phosphate for next year.

00:09:05:11 - 00:09:40:22

Unknown

So it is a nice crop to put in with the blend. I don't want to see. I don't want too much brassica. So people go crazy for brassicas. Yeah, yeah, yeah. Max. Yeah. Just because it is non mycorrhizal and I'd rather get some more stuff like this going on. Mississauga mycorrhizal. Yes. Very. Yeah. So one of the thoughts and this is a, this is a question I have for you, is that we put the, the turnip passage in and my thought is that that would create, higher organic matter.

00:09:40:24 - 00:10:00:07

Unknown

Yeah. In that. Yeah. Now that was that was a tough one because we all loved that one. Yes. And when we planted it last year, you know, the turnip was like sticking out of the ground this year or maybe this year in places because the soil I think was more compacted. Yeah, this year at least, the turnips, like it's down in the ground, they turn up to radishes.

00:10:00:09 - 00:10:20:20

Unknown

Oh, sorry. The radish. Looks like good. Oh, good. That's delicious. In terms of how that breaks down and adds to the soil profile. Can you talk about that? Well, is I mean, you've got that whole body that's going to turn into organic matter to feed microbes, which is awesome. Yeah. I've seen places where they just end up with these holes.

00:10:20:23 - 00:10:45:05

Unknown

Yes. And we got glasses. Yeah. Yeah. We had holes all over the place. Yeah. Yeah, yeah I think maybe too. But, but that's why I prefer sunflowers. Yeah. Because sunflowers will add all of that. Yeah yeah yeah. On those radishes. Yes. When they're growing down and they hit me. Beautiful. I have a stack soil or more.

00:10:45:07 - 00:11:09:08

Unknown

That's when they start growing up. Growing up? Yeah. When the shoulders get bigger and bigger and start popping up out of the ground. So when you're measuring that p.s.i, then you should tailor your seed mix for. Well, my point was the radish itself, the bulb of the round. It grows out of the ground in the pocket that it leaves is is that once it's rotted away, that's what you got.

00:11:09:08 - 00:11:37:01

Unknown

That was the rat tail that the actual taproot is was able to drill through the on to it. Yes, I think yes. Okay. Okay. This is the actual action of killing that you get from a radish isn't leaving a pocket at the surface. It's all those individual run down that go through. Okay. All right. So if you're looking at breaking compaction so it is a useful one.

00:11:37:03 - 00:12:00:28

Unknown

You have to imagine how is it useful. It's not leaving big types of, pockets in your, in your soil. The more those individual tail roots that you can get growing into the deeper soil, the more action is the same with sunflower seed, right? The deeper action is from that thinner, stronger root. It's not from the fibers roots of that.

00:12:01:00 - 00:12:24:06

Unknown

Sure, but already is winter kill correct? Yeah, but some turnips don't. Yeah. Good. Purple top turnips come back the next slide. Yeah. Softer and

have that that same. You don't have exactly the same pattern and they don't serve at the same capacity. Right. We just raised them for forage but they would come back in the spring. The bulbs itself bounce off the ground so cattle can get there.

00:12:24:06 - 00:12:52:28

Unknown

Yeah. Would you the radish, if it's doing its action and you're not impacted, most of that bulb is going to be below ground. But it's if you're on a situation and start stacking up on it. If you mind commenting about the, potassium vacate levels, possibly toxic out here. So like wherever I go. So there's a lot, this is these all these fields are high potassium now seem great.

00:12:53:05 - 00:13:15:07

Unknown

Make stuff grow. Every cell in an animal body has a potassium sodium pump. You might have learned that, like when you did biology. Some of you. Right. So the body doesn't distinguish between potassium or sodium. So if it's presented with a lot of potassium, it takes on a lot of potassium. The issue with that might be metabolic problems.

00:13:15:10 - 00:13:33:24

Unknown

We've had between two dairy farmers. They lost 160 dairy cows in production, which is not cool at two. And a half thousand dollars a pop. And the reason for that was a flush of potassium, and it can look like a metabolic problem, or it can look like bloat. All right. So some people get worried that they're going to get bloat on fields.

00:13:33:26 - 00:13:57:28

Unknown

What you'll often find is it's an imbalance with potassium and sodium. So making sure you in high potassium environments you have to put salt at will. Cows will die literally. But you guys are putting so out, so that's fine. But we can actually balance this with putting and we have this on our leaf tests like your leaf test is 0.01% sodium, where a plant should be 0.2 to 0.6.

00:13:57:28 - 00:14:20:11

Unknown

So you're sitting in about one tenth to 1/20 of what the sodium should be in people. So sodium is not considered a plant growth element because it doesn't you know, it's not for plants, but it's essential for anything that's alive, which includes our underground workforce. Right. So microbiology all microbes need sodium. So all your bacteria, all these organisms need sodium.

00:14:20:14 - 00:14:41:08

Unknown

So this is where we're doing like 5 pounds of Redmond salt to 20 pounds of salt an acre. I know someone that put 10001 an acre of, sea water on. He said it did burn temporarily, but then it was good. But I had a guy

ring me once, and, he's telling me at his place, and I said, I think you need some seawater.

00:14:41:08 - 00:14:59:15

Unknown

And he's like, okay, thanks for your time. Bye. Anyway, time it leaches out the soil, right? So fast. But anyway, he ran back the next day and he's like, you've solved a family mystery for the last seven years. We have a field that outperforms all other fields. We can graze it 2 or 3 times as often. The cows look amazing when they come out.

00:14:59:18 - 00:15:17:25

Unknown

Seven years ago, they had put they had a fire on there and monsoon buckets had taken seawater to put the fire out. And he's like gone down to the beach. Right. So it's something that we see. It's an electrolyte like nitrogen and it can lift the activity. And it's why people don't like it. It's too much. Your engine's burning out, right?

00:15:17:25 - 00:15:36:13

Unknown

We're going to burn out of soil, but a small amount might just be the catalyst that that, that animals need. So when I say high potassium, I'm often thinking maybe you need a little bit of sodium just to balance it. It's all about rumen function. You know, cows need that sodium, obviously for the rumen, the potassium relative to what's growing there, you know.

00:15:36:19 - 00:15:53:27

Unknown

Yes. Just for a reference point. Yeah. For 34 years. And we manure the garden. The garden did great. So the manure, the garden the garden did great. All of a sudden my wife says the garden is not doing any good anymore. And I checked it and I was 12% potassium on my garden. Become toxic. Yes, because of potassium?

00:15:53:29 - 00:16:13:06

Unknown

Yes. Well, part of what it does is it makes soil really tight. Okay. So it's like pulling a north or south pole together. We can magnetize our soil with an excess of potassium so we can end up with compaction issues. You're not going to have that problem, right? Because you've got that soil. You've got that lovely sandy soil texture and you're working on this.

00:16:13:06 - 00:16:29:29

Unknown

You'll be all right. What's interesting to me with what Steve and Nancy are doing is just all of the trenches that we go to. We're not seeing really obvious signs of compaction, and in sand, but we can compact sand. I mean, that's what people are working on. And turf or. Yeah, there's lots of ways we can really compacts.

00:16:30:06 - 00:16:52:29

Unknown

So through management actually keeping the soil open. Yeah. So high potassium can come back to soil. High magnesium can compacted soil. You could. Do you want to look at the native grass, say it's kind of right over here. Well I just want it just seem more like it could win. So just wanted to point this out here to you.

00:16:53:02 - 00:17:18:12

Unknown

You can still see the rows of plants here. Yeah, but look at how unhealthy compared to this plot we sprayed right here. Yeah. So did you show when did you. This? May 20th. May fit a post emergent. No pre pre framing. And why did you do the emergence right. I don't know. And he was here. Yeah pretty much.

00:17:18:12 - 00:17:37:29

Unknown

Yeah. So did you spray earlier bags. And this is the only one that we got this result. Oh no. Okay other. Yeah. You can see that there's one over here came up one there. Yeah. You can see them all over. But there was, there was cheatgrass when you. Yeah. So there was, there was roots on the ground. So there was a roots in the ground.

00:17:37:29 - 00:17:59:21

Unknown

And that was that's another question that I had because last year we had purslane. But the first line was like, I mean this crystalline looks awesome this year. Last year it was like this tall and it was red was it was it was like red for most of the season. And then we had bare ground, like probably, what, 60% bare ground.

00:17:59:21 - 00:18:23:22

Unknown

I mean, it was like blowing away. Did you see this the first thing. No no no no no. You see an actively growing cheatgrass, it was at the tail end of the year and he grazed it. I didn't, which wasn't getting a lot of competition from the cheatgrass. Right. Yeah. It was all and that was actually one of our thoughts too, is that we need to time it with the monsoons.

00:18:23:22 - 00:18:32:02

Unknown

And cheatgrass is obviously very early. And it had kind of done its thing. Well. So there's my friend who.

END TRANSCRIPTION