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Resilient ranching workshop: field session 7, Alfalfa

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BEGIN TRANSCRIPTION

00:00:00:25 - 00:00:24:10

Unknown

Then we'll flip on to the other side of the fence there. That's a little wetter. A little bug here. A lot of, Nebraska sedge over there. Pretty good feed. Do the same thing. We'll divide that thing in half and strip one side, and then strip the other side. Do the same thing on this meadow down here. The summit over here.

00:00:24:12 - 00:00:32:06

Unknown

Your cows are down there. I don't know if you saw him when he came in the day. They're down there by the.

00:00:32:09 - 00:01:06:03

Unknown

Clump oak. We just moved him here about an hour ago. When you say strip, how much storage is needed? I'm trying to travel. Take care. That. That very. We grazed on the other side of the road, and we took way too much with the beauty of the way of do a mistake there. Little adjustment. On the map. We believe that now, if we know each and half, we'd be perfect and then head back mentally to know that.

00:01:06:06 - 00:01:29:13

Unknown

Yep. Some places I do back fence like a back fence is field down here. I'll make a lane way where they come back and forth. And the same thing with this meadow over here, but probably not this one. Kind of depends on how long they're in here. You know, if I'm in a place that more than eight, ten days, I.

00:01:29:15 - 00:01:52:24

Unknown

My back fence. When will you graze it again? Like, did you just graze it once a year like this or do you come back in some places? I do, twice a year. The brome rate don't regrow a lot, does it, to graze droit. It can give it. Yeah. This is your first time grazing. It's right. You have increased it once.

00:01:52:24 - 00:02:15:12

Unknown

That all? Yeah. So you and how. Come on. Good, productive ground like this. You don't graze it like, twice in a growing season, like earlier and later. I've got too much for you. You got. Great problem.

00:02:15:14 - 00:02:22:24

Unknown

Here. Many, many.

00:02:22:26 - 00:02:55:19

Unknown

So from here, we can get a really good vantage point as to why his strategy is very different here than it is in that rocky area right there. Going down in Arkansas. What's the difference here? And in the last plot we were after? Well, there's something with the geology here. Of course, the but oh, see, there's places out there you can stamp on the ground, and then we go 30ft up there and you got the 77 somewhere.

00:02:55:21 - 00:03:15:01

Unknown

Have you irrigated this? Oh, no. You know, you'd have an irrigation. You know it's not irrigated, right? That's right. Have you tried to make it? Just cover your fissures, go over the top and take off the top. And then the cows follow the canal. I have done that. You like that or not? It's too much. Yeah. You gain quite a bit on the fish.

00:03:15:05 - 00:03:31:07

Unknown

Not really. Not really. Do you run in to get it to your mill? I have in the past. But you have to suffer earlier this year because you can't tell I. Just found something.

00:03:31:09 - 00:03:56:21

Unknown

During the canyons intensively to see it. So they're down on the lower place right now and they'll move. So I do look for sometimes twice, twice a day. I want to show you something that most people misidentify I've never seen. And it's called a pasta mealy bug. Right. And it's this fluffy white stuff. I'm going to hopefully pass it around.

00:03:56:21 - 00:04:25:01

Unknown

Someone's going to drop it. I know it, but. Okay, so you need the machine. You can look at it. Yeah, but super hot. So it's, They are Sep seconds. You can only see the females. So the males are invisible. For a long time they thought maybe they didn't have men friends, but apparently they do. That microscopic, do that these, causing some catastrophic crop losses around the world.

00:04:25:01 - 00:04:47:02

Unknown

And people don't even know. And seeing one, this isn't a problem, so I'm not worried about it. I just wanted to point it out to you. We can see

soils that are just white with this organism, and the white is a fluff that the female exudes and it makes soils water repellent and hydrophobic, literally afraid of water. There's something happening in Australia right now which is called pasta dieback.

00:04:47:05 - 00:05:09:11

Unknown

Tens of thousands of acres are dying in northern part of Australia, and it looks like someone's herbicide on it. And when you dig holes, what you find is this. So you find this one and a crown rot. I'm seeing it in Montana and I've seen it in Idaho. So I want you to look for it. The way that you would tell is you'll get grass.

00:05:09:11 - 00:05:27:18

Unknown

Pull. So when a cattle beast comes along, rips his tongue around the grass and pulls, the whole thing comes out. And I'm not talking about cheatgrass, right? You see it on cheatgrass? It's just cheatgrass. Talking about it might be fescue, old brome or something like that. In the whole. The roots are coming out. Take a look. You'll see this sucker.

00:05:27:20 - 00:05:51:22

Unknown

All right. And so the thought of that, what is the same answer for everything. Soil health. Right. So it's it's the same answer as grasshopper. It's the same answer as, drought. It's the same answer as dust storms. Right. So how how do we build resilience into these systems? But, yeah, I just wanted to point it out.

00:05:51:22 - 00:06:09:17

Unknown

We find a typical meadows. You guys have more root feeding organisms, and you have a livestock above the ground. And if you were to look at something, let's say, like, Army Catwoman two, Army cat worms will eat 2,000 pounds of dry matter per acre per year.

00:06:09:19 - 00:06:28:25

Unknown

It's a lot. All right. And I'm thinking of, you know, some of the damage from nematodes, like looking at that radish. And it didn't pointed out there's actually been, insects chewing on it. All right. So as we start to build more soil health, we want to see less of those chewing and fighting organisms so that you notice how thin and spindly the roots were in the other place.

00:06:28:25 - 00:06:59:02

Unknown

And they weren't very deep either. And there's no limitation here, really, for root penetration, and especially in these perennial grass systems, these roots should be dense and deep. And we really just not seeing that. So, how do this is nutrient dynamics. So there's, there's nutrient availability. And the relationship with phosphorus for instance. So phosphorus is our big root, root stimulant.

00:06:59:04 - 00:07:20:05

Unknown

Okay. We're seeing thick root systems. Maybe there's an issue with phosphorus. And we we can see that from some of the leaf tissue is that, actually we haven't got leaf tests from here, but in the other sample in the meadow. Oh, you think you have. Yeah. Yeah. For the net bleed. What am I sitting on? Netflix.

00:07:20:07 - 00:07:42:19

Unknown

Yeah. Yeah, that's the. What kind? Enough to detect Russian, Russian, Russian. Did you say there were some bugs on the Russian? Have you put them like you put some everything. So net weight.

00:07:42:22 - 00:08:18:06

Unknown

Yeah. So it's something that you're, it's minimizing. It's less. So the net bleed is. Has twice the phosphorus in it that the grasses do. All right. So it's actually helping to mobilize phosphorus. It has three times the amount of calcium. So often most of your weed weed problems are due to functional calcium. So you'll go, well, I'm sitting on loads of calcium.

00:08:18:06 - 00:08:40:25

Unknown

You can have calcium issues and be on limestone. All right. What it's telling you is you don't have active fungi. So fungi who make calcium available. And if we don't have fungi that are really active in the system, we'll see. Calcium loving plants. Okay, so this one's part of what's indicating that, that our fungal activity is not it's not adequate.

00:08:40:25 - 00:09:02:15

Unknown

Right. So they said leafy spurge was a fungal indicator net of bacterial. Right. So those of you that are using molasses already, I wouldn't be using molasses, net weed and, the interesting to do. Can we try I don't know if this is going to go through a separate you guys want to try. So just harvest the leaves.

00:09:02:15 - 00:09:18:10

Unknown

Just pull the leaves. Leave the stem. Let's see if we can get enough to do a sample. You just have fun. Like oh, does someone have my garlic press that this is coming? It's coming. Someone's doing it.

00:09:18:12 - 00:09:34:24

Unknown

Finds it. Thank you. There you go. If you can pass it round, just fill the field a little vial and let's see if we can get enough material. I'm sure you can.

00:09:34:26 - 00:10:02:22

Unknown

So looking at these root systems, do we. Are we seeing Rastafarian or naked roots? Is it kind of naked? They look kind of naked. I was shocked. Oh, gosh, you did well digging that whole thing up. It's you know, you can do, like, one. I think. Okay. So there's, I mean, it feels like there's pretty good moisture in here.

00:10:02:22 - 00:10:16:19

Unknown

We actually have some nice we've got some good crumb structures. Right. This is not the really, really fine stuff that we saw on the other sample. There's more mealybugs.

00:10:16:21 - 00:10:47:15

Unknown

Oh yeah. There's a bunch of it's something bigger is oh I don't know what it is a new species. It could be. You know what it looks like. I don't want to get too excited yet. Okay. One drop, one drop is an endangered species. You see where it. I have a hold, Steve, to see. Just pinch it.

00:10:47:17 - 00:10:57:03

Unknown

It's like looking. Well, I think so. Again.

00:10:57:06 - 00:11:22:23

Unknown

Yeah, exactly. Now, I don't know what it is. I mean it's got some kind of casing on it anyway. Something, a new thing might at white stuff. Yeah, yeah. It's got, it's actually got an insect inside it. If it's a mealy bug it's the biggest mealy bug. Never seen. We grown big up here. Oh that's true. It's not quite Texas.

00:11:22:23 - 00:11:50:10

Unknown

Midland, Texas. Gosh. It's luscious. Just luscious. But, we want to do worm counts in these meadows, and we should. We should count at least my my baseline is 45 worms. I want to see 45 worms per shovel. You had 100, didn't you? Like in your garden? The highest river count is 202. It's pretty exciting. And that was in pretty, cold climate.

00:11:50:10 - 00:12:17:09

Unknown

But what's interesting is you want to see, baby worms. We have also got nest worms, the worms that have actually gone to sleep. And then they're down here like they were curled up. Drop them. Worm eggs can actually their babies can sit in that soil for ten years inside an egg until the perfect conditions arise. So worms numbers can suddenly just explode with the right conditions.

00:12:17:12 - 00:12:39:03

Unknown

They can be as much as ten babies inside a worm egg. And if it sits there for ten years, they do like sharks do. And they eat each other until there's only one left, and then they'll be just one that hatches. But yeah, we want to see those conditions so we can see that there's been

worm activity and worms actually deeper down in the soil profile that we've got burrows.

00:12:39:06 - 00:13:07:18

Unknown

Yeah. Does that help the fungal thing? So seven. Right. Seven on the net. Boyd core, I believe. Yeah. And then if we can do the three three doing it and then do the grass, we need the leaves. Rake leaves. Just the leaves. Marvelous. So, so what's kind of interesting is. Yeah, we have naked roots, even though we have this beautiful soil structure that, then it's cool.

00:13:07:21 - 00:13:32:10

Unknown

So it talked about 20, 25 worms for 45, but that must vary depending on kind of the aridity of the environment. Oh, yeah. Yeah. So I see it and I had the proviso. And then there will be around two parts per million. And we're seeing it two there's no alfalfa in here is the no no. Oh. Can you grab me, some the plant, please.

00:13:32:12 - 00:13:40:22

Unknown

Stuff with me, baby. Stuff coming. We like new babies.

00:13:40:24 - 00:14:00:25

Unknown

And the cup is low, which could be interesting. So I would test. Did we have a leaf test for this? That would be interesting to see what it's saying. Thank you. In terms of copper, I thought it'd be useful for this fact. So one way we can tell if we low in boron is that alfalfa will be hollow.

00:14:00:27 - 00:14:29:02

Unknown

It's not hollow. Yeah, I so, alfalfa is, Okay. It's still not too bad. So alfalfa is kind of the canary in the mine, right. So alfalfa will show off the boron deficiency first, and we'll see a decline of boron or a decline of, legumes in passion when we don't have adequate boron and we don't have cobalt, molybdenum.

00:14:29:02 - 00:14:51:23

Unknown

We'll see them start to creep out. They really like phosphorus. They really like sulfur. So if we get imbalances with those nutrients, we'll see those legumes disappear. So you use that. I said to the group yesterday I'd send them a key lotion recipe, with some trace elements in it. So I'll send it to you guys as well.

00:14:51:25 - 00:15:22:12

Unknown

And commercially, it cost about \$50 an acre to make. And so you guys to make it yourself across the dollar. So it gives us just enough as a catalyst to get the nitrogen cycling working and getting the boron working. Okay. And it's really easy to make, otherwise we typically use a

little bit of what they call soluble on meadows, and we might use as much as 10 pounds or something like soluble because we find boron is a deficiency that shows up often, and you only need to do it once, right?

00:15:22:12 - 00:15:47:06

Unknown

If you've got good management, it's a one off application. If you're a terrible manager, that's fine. You're gonna have to spend some money, right? You get to choose manage good or spend money or complain about the weather. Those are your options. All right. What's wrong with your graphs? I can't get it to be. The phosphorus in here is actually really good.

00:15:47:13 - 00:16:09:09

Unknown

Like, you've got good phosphate levels and seems to be. All your fields are like that. Is that just natural that must be. And his phosphorus levels being the way it is, it probably points to good to good management because we see phosphorus being depleted with overgrazing. So that's a good sign. Yeah. And 3% organic matter in here.

00:16:09:11 - 00:16:37:07

Unknown

Very, very little nitrates and nitrogen. Right through this and into that organic matter is 4% a year. 2000 oh. Am I looking at the wrong place? I thought, is it you know, you might think that might be oh so 4%. Okay. Well four. Yeah. So in a Sandy alone 4% is pretty good. Pretty pretty good for an organic matter level.

00:16:37:10 - 00:17:06:06

Unknown

How good can you get it? Nobody knows. There's no one I've ever met that's like, finished soil health. I'm there, you know, like I've never found anyone that's just top down. People are just getting better and better and better, and it becomes this beautiful, virtuous cycle upwards. All right. And so to have a base foundation of a soil like this, like I'd buy this place, like just just for that, you know, like, because there's a lot of this is.

00:17:06:08 - 00:17:23:22

Unknown

You're a weirdo. I just want to say that. All right? This this very. You're not normal. You cannot way to do. You're not normal. It's very few people that are doing this. What you see is compaction layers pretty much in every place we go. And if there's not compaction on top, there's a, pretty hard core hard pan further down.

00:17:23:24 - 00:17:44:00

Unknown

Right. So it's really nice to see the structure like this. We're also not seeing a lot of other pasture pests, like I'm seeing ladybirds and spiders. I'm getting them all crawling all over me. But normally when you come into fields like this and you do that out, jumps all of the the alfalfa fleas, the alfalfa weevils, the, little lace wing.

00:17:44:02 - 00:18:04:10

Unknown

We see a lot of pest insects. And we're really not seeing that in here at all. Got a couple grasshoppers. But what we found with emerging in Montana at the moment, some of these fields had 180 grasshoppers per square yard. So you are you're at economic harm at 15, right. You've got like 1 or 2. We could name them.

00:18:04:10 - 00:18:28:27

Unknown

That's for it. So I feel like there's all this. What we're missing in here is biodiversity. And that's not just sitting like in this one little section, you know, not walking too far. Greg did you dig? Did you miss thinking that look we addressing is the kind of them on, so why is it that you see less grass growth?

00:18:28:29 - 00:18:46:19

Unknown

Well, you've been driving compaction. Compaction. All right. But you know that the shovel went in real easy. Yeah. Yeah. Because and there's still some mixing cabin and stuff in there. But in part it's, it's due to this soil type. Right. So we got some lighter soil. We have a bit of sand in it but a bit lighter.

00:18:46:19 - 00:19:20:01

Unknown

But still these soils are pretty amazing. So compaction is your second biggest limiting factor to growth. So not being able to breathe there's something before that that's going to slow your growth down. What is it. Moisture. Moisture is number three. Number three Mindset. Mindset always always mindset. Lack of organic. There. Sunshine. All right. The sun. Which if it goes out we're in so much trouble right.

00:19:20:04 - 00:19:38:22

Unknown

Luckily it's not going to go out. So the first place really for you to look at is what's happening in terms of air movement. Anything that compromises air movement compromises growth. So we don't see grass growing. Well, you've been driving because you squeezed out the air and plants can't grow in it. Right. The number one limit, just like you can't survive very long without air, we can survive.

00:19:38:22 - 00:19:51:08

Unknown

How long without water? Through three days. How long without food? For three weeks. Three weeks. Longer for you.

00:19:51:11 - 00:20:13:02

Unknown

You days. You, Josh and I would be fighting last minute. Yeah, guys pretending. So it's the same with microbiology. They could not survive very long with that. If they can survive a little longer without water and even longer without food and even longer without comfort, I mean that

that can be uncomfortable for a long time, but they need air critical, right?

00:20:13:02 - 00:20:30:19

Unknown

So this is a well aerated great desk guest diffusion water can then move through that system. And we have the foundation for health is driving on the road. We take all the health out of that system.

00:20:30:21 - 00:20:48:10

Unknown

Not working. Did you did you try the garlic crust? Yeah. I just get mush. Oh we can with the coin in the bottom. Yeah. All right. Let me have a truck. Yep. You're the you've done this a few more times. I want to know is that just a garlic press. Sorry. You put this back on on it to try to concentrate it.

00:20:48:13 - 00:21:06:27

Unknown

Put it on the other side. But, Kim, there you go. Can we grab some alfalfa? Can someone take a sample of the alfalfa? And is there any alfalfa around you guys sample it just.

00:21:06:29 - 00:21:31:21

Unknown

Not foreign. Foreign, foreign. And then how do we know if we have it in the cows cooking joints? Okay. And I click sometimes. Yeah, it could be my feet. They do, they do. We get some boron in you. So one of the richest sources of boron. It's chicken manure. I'm not saying you eat chicken manure, but, so if I do smell.

00:21:31:21 - 00:21:50:16

Unknown

So if for some reason, like a chicken will. Thank you, a chicken eats food and poops boron. All right. Very concentrated form of boron. So running chickens across landscapes like this might be another enterprise to consider. Your kids. Can you guys pick me some grass? It's going to take me forever. You thought you had trouble? Here's some over here.

00:21:50:17 - 00:22:11:07

Unknown

Goats wrote personal. Thank you. You don't have time to do so. There's probably not chicken operations up here. I don't know, we've actually got our tractors and we've done a few batches. Oh, cool. Yeah, we'd like to do I get cool, and so do you see real health behind? I wouldn't say we've done it enough for paid attention.

00:22:11:07 - 00:22:28:27

Unknown

I got to do that. Thanks. Got it. Guys. Would be nice. All I could say is you see a lot more, there's less dirt spat, you know, places after you go through it. Yeah. Even throughout the drought, it stays a little greener to rip it, rip it into one inch length. Yeah. And the customers are crazy for it.

00:22:28:29 - 00:22:48:17

Unknown

Yeah. Yep. Yeah. Like that. Right. So our biggest problem is we just. We rent. We're always kind of on the verge of moving, so I can I can move the cows easier than be chickens. Right? I need more grass. People give me grass here. He grass. He's got a couple of drops. I think he's got it. He's got it.

00:22:48:20 - 00:23:14:19

Unknown

After all. There you go. Okay, now that's good. Okay, now what we want your winner. Is that the eight, eight and a half? We've said the net was 977000. So that's a good. That's a good result. I want to see it like 2 or 3 times 2 or 3 degrees higher. So hard than that point. So what does that mean?

00:23:14:19 - 00:23:34:19

Unknown

It's not that it's up. It's it's, it's yeah, it's pushing more sugars out than the net weight, but it's pretty close race. I'd want I'd want to see it like three units. Difference with the eyes. So yeah, I'm working on that. Okay. Do you think you could do that with, your feeding of. Yeah. Micro. Yeah, I did not.

00:23:34:19 - 00:23:54:22

Unknown

I think out here it's not a microbial problem. If you guys want to put your high fungal extract compost on here, it's not going to do anything. Yeah. You got microbiology. All right. This would be probably a trace element issue that we don't have. So we want we worked through the trees. Right. We know that some lights are not moving as well as it could.

00:23:54:28 - 00:24:20:28

Unknown

Airflow is fine. What if what I'm going to assume is fine without being out here? Then the next step is to look at decomposition is things decompose. Composing. What was it? Decomposition. You know. Yeah. No. Excellent. So decomposition is working. So then the next place we look. So in the book I have the step by step process. We work through this to make a decision is the next step is nutrition.

00:24:21:01 - 00:24:41:06

Unknown

All right. What's happening. Is there a trace element that's missing from the blend. And let's have a look and see what Nat Boyd's trying to tell us. Right. Is this zinc. This is copper. Could be a little bit of copper. Are we going to get a little bit of copper out with folic acid or humic acid to feed the plants and watch this curl up?

00:24:41:08 - 00:25:06:01

Unknown

Is there any way to find out any toxins through the Brix test? No. Nitrates. Probably the only one in terms of toxins. Yeah, yeah. So I

mentioned the cows look pretty good coming out of here. No, no. No issues. No, I you don't really have animal health issues anymore. I don't know. Yeah. You guys got this.

00:25:06:03 - 00:25:34:10

Unknown

It's free. And if anyone wants to look through that, this is some doctors, and. Oh, this isn't it. This one. I clean this one off, so that works for this car that goes up towards midday. Oh, yeah. Into mid afternoon. Yeah. Here you go. What kind of, yeah. Test run the same time. But it's just building a picture for yourself so it doesn't become something to compare to others.

00:25:34:10 - 00:25:58:09

Unknown

It's like, how good can I get it? And just getting in that process of testing, and not worrying about time of day otherwise known. We'll do it because we were all busy. So just get in the habit of doing it. Just do it. Yeah, because it's only going to vary. It might vary 3 or 4 degrees, but if you can, can I get some more alfalfa please?

00:25:58:11 - 00:26:19:23

Unknown

We want to see it's still above 12. Even if that was 10:00 in the morning or 2:00 in the afternoon. So how good can we get it? And if we're doing trials just to be able to do a trial or even with you grazing, is this lifting bricks? Are we heading in the right direction? Because some of you would have cited at the bricks of five with grazing, and now you're 12, but you never knew that because you weren't sampling.

00:26:19:28 - 00:26:40:16

Unknown

Yeah. So you need to get some Timothy out here. See. Yeah. Most of them I did. They will. No thank you. Yes. Oh, flowers for me. All right. Thank thanks. You.

00:26:40:19 - 00:26:51:08

Unknown

Know, it's like crazy rescue. Is it? As you know, I mean, yeah.

00:26:51:11 - 00:27:09:23

Unknown

See, there's one right there. That's Mary Beth hammer. Yeah. I don't know what that is saying. Happy know? Yeah, I think it's two years older. Every time I have to.

00:27:09:25 - 00:27:40:02

Unknown

Yeah. So one of the other. I don't want five. And someone died. Right. Okay, okay. The latest. Yeah. Best you for you to hear shatter. We will. Go try to keep oh exciting as next year. And then the alfalfa is running at 13. So not bad. 13. Oh, perfect. We won at about 16. I want 20, so good start.

00:27:40:02 - 00:28:11:11

Unknown

13. 13. 13 on the alfalfa. Okay okay okay. And so what does that mean. What would you do to bring it up more I could we're going to figure that grass alfalfa that's out. Did we say we don't have tests from you though. The pond is not here. That's right. So. And so none of these are from me?

00:28:11:13 - 00:28:30:29

Unknown

No. So what would be good would be to sample the net weed. You could sample Timothy. You could sample the alfalfa and just take a look because they're getting what they need. And alfalfa with its massive root systems should be accessing stuff. You know, like there's no reason why it couldn't be getting down. And we should get you to dig up an alfalfa.

00:28:31:01 - 00:28:50:01

Unknown

It's all right. I'm not serious. What did you say would help bring down. No, no, we got to figure that out. There's a trace element that's not working in here. Oh, yeah? And then it'll just be a single application, and it will be like sitting fire to the like. It will. It will light up in terms of nutrition and trace mineral and water and diluted.

00:28:50:01 - 00:29:13:04

Unknown

Yet the trace elements are very hard to put out. Is a solid. It's too hard to do damage. So what do you think the difference between this and seal. I love the diversity over there. Yeah. Why is that there. Yeah, exactly. And I don't think that soil looked like this. It wasn't as dark. That was the summer. Yeah.

00:29:13:10 - 00:29:32:15

Unknown

Didn't have the prime structure. Wasn't this good? This is why I think it's a dry sound and just kind of figure it out. What's what's being the slow down.

00:29:32:18 - 00:29:56:26

Unknown

All right. With any. I'm right here. Oh. Is there anything else you want to discuss while we're here? Do you want to talk more about the the thinking about grazing or. I think that work time wise, it was good to to go back. Okay. That works. Yeah. Yeah. Something I think the net weight is not very tasty just so.

00:29:56:29 - 00:30:00:15

Unknown

No, no. Oh. Are you done? Yeah.

END TRANSCRIPTION