529 Breeding, Research, and Policy

#RealisticRegenAg | From crop breeding, to agronomy research, to policy, there's a lot to cover in this month regenerative agriculture news. Join me in this episode as I cover the important news that I saw come across my news feeds this month.

Welcome to Plants Dig Soil, a podcast about #RealisticRegenAg. I'm your host, Scott Gillespie, and I'm an agronomist from the western Canadian prairies specializing in climate-smart agriculture. I discuss scientifically proven practices that benefit the planet and, just as importantly, farmers' economic sustainability. Be sure to visit my website, www.plantsdigsoil.com, for resources and information about the services I offer.

Resources mentioned in this podcast:
https://spudsmart.com/late-blight-found-in-ontario-potato-fields/
https://www.producer.com/crops/novel-soybean-variety-now-contains-pork-protein/
https://www.producer.com/news/researchers-encourage-plants-to-be-co-operative/
https://csanr.wsu.edu/breeding-better-food/
https://www.seed.ab.ca/the-first-cut-the-deepest-for-alberta-winter-wheat-agronomy-research/
https://fieldcropnews.com/2023/06/when-do-cover-crops-with-and-without-manure-applied-release-nitrogen-that-can-be-used-for-my-corn-crop/
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https://www.realagriculture.com/2023/06/sustainability-standards-board-established-for-canada-why-agriculture-should-pay-attention/
https://spudsmart.com/growers-want-to-share-the-bigger-picture-when-it-comes-to-regen-ag/

Transcript is available:
https://www.plantsdigsoil.com/podcast/breeding-research-policy

My course: Profitable From the Start: Cover Crops for the Prairies:
https://plantsdigsoil.thinkific.com/courses/cover-crops-prairies

My funding service offerings:
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So the first article relates to what I talked about last week on.

Using genetically modified techniques to give resistant to potatoes. There's been late blight has been found. And if you look in this article that all post. There's quite a concoction of chemicals have to be applied. Now that the late blight has been found, if the potatoes had been resistant to it, we would need these.

There's three different chemicals. I know some of them are older chemicals, a little more potent or a little tougher on the environment and on people. And this is a very expensive mix. I'm thinking about $50 an acre. So that's an interesting one that has just come up related to last week.

Now this next one is where I'm not sure I'm comfortable with genetically modified foods going. Is there is now a soybean variety that has a pork protein in it. And it seems like it's so that you can grow the pork without having to feed the soybeans to the pig. Check it out. See what you think, and I'd love to hear back from you, but to me, this doesn't seem like a great use of the technology.

Along the breeding line. Here's one where they are looking at understanding the genome and plants to know how they can be more cooperative. This is a real big debate that I that I get into. And then I'm, I'm not sure how exactly it works, whether plants are naturally cooperative or some are competitive.

But this is what I think we need to do is kind of it's interesting field. This is where I think I'm excited about the future when we can figure out these things. And get to know them better. But this article. Goes through all the different things that they are trying or how they're, they're learning which traits are the ones that make plants co-operative and which ones are more competitive and see if you can adjust the breeding for that.

And this last article and breeding, this is not exactly related to regenerative agriculture, but I think it fits in with the whole idea of a climate smart agriculture or looking at population level things. They're looking at breeding crops to be better for people. I think a lot of what we have been doing is breeding for maximum yield.

But maybe that's not the best thing. And this is going to take time. It's a program out of the United States. So I was encouraged to see this here.

One last article on breeding. I had forgotten about this one. Winter wheat. Research has been cut. In terms of a good crop for climate smart agriculture, at least in my opinion. And I think the opinion of the breeders being able to get crops that can use the shoulder seasons. So use the.

Fall moisture to get started and be quick out of the gate in spring and get ahead of the summer heat. Before the rains dry up or before the rain stop. Seems like a great idea. And maybe then we grow a hot season, cover crops. In the summer, but that's not, it doesn't seem to be the focus of the government for some reason. This was disappointing to see. You can read more about it in. The article that I'll post.

Now let's get onto more agronomy related stuff that, you know, to me, I think is the stuff that works right now, or helps us to understand things now. This is work on when.

We can expect nutrient release in manure and in, along with cover crops. There's a very interesting chart that they have created here. But what they have found is it's not as easy as we thought. And I think I referred to this a similar article. Back in. A few months ago where. There was work, trying to.

Figure this all out and hopefully get a Geist, nice guide for producers. On what time you kill a cover crop and what you can, when you can expect the nitrogen credit. But it turns out it doesn't work as easily as we expected. I think. As we move towards the future. I think as we learn this, or I think as we kind of get a system going.

Once we have the. The nutrient cycling, we'll be able to just count on them at a certain point or maybe assess the crop and add in as we need. But for right now, it's, it's still, there's still a lot to be learned.

Another great article. And you will ryegrass is a cover crop debt I would like to use more of, but it is a problem in. Killing it. And, or being concerned of it. Overwintering when you want it to die in the winter. So this is a great article.

Where you can look at variety, which can help you decide which one you want, according to the goals. So maybe you do want it to overwinter or you want it to last longer into the winter. You use different varieties. And this relates a little bit to the breeding side too, but also just you know, basic agronomy research that we need for regenerative agriculture. We're trying to fit, you know, forage crops as cover crops, or we're just taking whatever we can.

And make them work as cover crops, but there's a lot of knowledge there that we just need deed to. We need to learn it. And then we also need to know how to apply it and then what we need to do for the future.

Now, this is something I talked about a lot was looking at these nitrogen fixing bacteria. There's the products have been coming out over the last few years. There was fairly good research in the U S showing that they did not seem to be working, but I am happy to see that there is some research going on in Western Canada.

There's no re no results from this yet. It's just. It's just It's just just getting started, but it is a good one to keep an eye on.

This next article is about spiders and in their past control, I can tell you from scouting many fields I have seen spiders, I have learned to not be afraid of them. I see them a lot in potatoes near the end of their the life of the potato plant. I'll see, lots of spider webs out in the field.

Again, this is something that we are only just learning. We haven't paid attention to the beneficials or all the other creatures out there. We've been mostly just paying attention to. What we need to kill, which was the focus of one of my previous episodes was. We almost always look at just what to kill, not what's out there.

I think there's a lot of good research that is going to be showing up in the next few years, five years, maybe 10 years as. It starts working through the university systems where people are actually working on stuff that. Is going to be beneficial for us. I as we And applying it and I think maybe.

Maybe by the time I retire the people that are just starting out or those that have started now and are at my age. We'll have so much more knowledge in the toolbox. For going out, there's

not a lot to, there'll be less to learn. There'll be more just being taught how to do it. It'll be less experimental and more just using the knowledge. So it's exciting to see.

A lot of this research coming up that just wasn't done before.

A little bit related to that. And related to these nitrogen project products, or even. Well, I guess it, it is actually related to the, the IPM or the, you know, finding spiders or other things there. Some work where they compare high input systems. Where you kind of throw everything at it.

To integrated pest management systems. The interesting thing is that usually you could increase yield. But it wasn't always the case and it's kind of interesting. Their range was about five or actually. Minus 5% to about 12% yield. Effect. So sometimes you can throw everything at the crop and actually do less yield.

And in my opinion, to a 12% gain in yield. The, the extra bushels you get might be eaten up by all the extra stuff you have to do. So. And interesting. Metric to was the yield risk. So. Whether the yield was more steady. In IPM versus high input. And they didn't seem to do that. So. This shows that I think you don't, you don't have to choose one or the other, but it shows that using the strategies of regenerative systems.

And not just trying to go with products or trying to go with everything at the crop. I think. Can be a more resilient system for you.

On the agronomy focus, let's get into something that is a little bit more in tune with regenerative ideas or regenerative systems.

Intercropping chickpeas and flax seems to reduce Ashikaga blight. And this is where I think it's important to be looking at intercropping. And not just doing intercropping because it seems like it's a regenerative practice or it seems like you can get ahead use it to solve a problem. So the flak seems to help the chickpea to get less disease. So.

This is a great system to pursue and get to know better. The, the article goes through all the details of the study, but it is, it is really fascinating.

Now on that flip side or on the other side of it, this was an interesting article that I found They found that or at least the. They were, they were looking at soil health. In inter crops. And they use soil test measures or soil. Oil health test measures. And. The legume, which was Fabien in the, in the, the test crop.

When it was a monocrop, it had the best soil health. The. The flax, when it was on its own, had the least style health. When you had the intercrop, it was somewhere in between. And so this is where I find, I think if you're just trying to. Go after numbers that go after. Gotcha. Yeah. Go

after the numbers or the test number, or try to say something about soil health. I think you're missing the point of intercropping.

So go after what actually makes sense. Don't don't just do something because you think it's going to give you a benefit.

Now this next article kind of transitions me to the, the end of the podcast where I talk more about the policy side of things. Here's a. An example of a food company. That's going to work on intercropping. I think it's mostly about because they it's labeling it's it's making their company look, climate smart.

I hope that it actually has benefits to the farmers or that they're going to pay the farmers to do well with this. And Actually, I do hope that they are actually going to take the results and use them properly. And. They're not just using it to try to think along the same lines is what I just said. They're not just going to use them to.

To try to. To make intercropping. And work because it seems like a great idea. So. It's an interesting one in the business world. I would check it out.

Now on. This, there is an article here about a study that warrants of simultaneous crop failures. It is actually fairly balanced. I think it goes back and forth between different opinions on whether things are going to be. Where whether the world could be, there could be more chances of.

Crop losses across the entire area or the entire world at once, or whether each area will make up for it. But I think this is the reason to look more at regenerative practices. It's. Maybe, if you can find a market share, go, go for it. But solve problems, solve problems on your farm. And

nd, and then worry about what else you can get for it. But I do think that there is something to being able to.

Do things that are going to help your. Crop weather, the extremes, or just natural changes in the weather.

And. I finished with two articles. Actually I have three articles left. There's one on. A sustainability index. And I think whether people like it or not, these are coming. Farmers are going to be. Maybe, hopefully not forced, but he's going to be there. So I think, look at them. And learn about them.

Before you before you just discount them. It could be in the future. You're going to have to prove your sustainability to sell your crop is already happening in the high value crops like potatoes. Sugar beets to some extent. Kent and I think it's going to be coming for the rest. Now

this was something I wasn't quite sure of the. The sustainable standards board is established. And I think this is different than that other organization that put out a sustainability index. It's coming. Companies are getting more and more. Pushed into having to show there. What they're doing for their. There The environment and food companies, especially because of Relying on agriculture. And we have to keep an eye on making sure that these standards. Actually makes sense and are not just being used for Greenwashing, I think that's the point of this board, but we still have to be careful.

One last article. And it relates to growers And I kind of wondered about this with the McCain announcement and this specifically relates to it. Some of the potato growers are speaking out and saying, yes, we, we like seeing all this, or we do see all this announcements from McCain, but We want to benefit from this too. We don't want to have to just change our practices so that.

We can check off things that fit your climate goals or your shareholder goals. So here, it's an interesting article from growers looking at this.

So, thanks again. It was a lot to cover this month. I found so many different articles that I could have put in here, but I will go down to this and even then it was a long one, but thanks for sticking with me. And I will talk again next week.