

## 538 Plants Don't Read Our Manuals

#RealisticRegenAg | Rick from the GardenFork podcast frequently remarks, "Bees don't read our manuals," when he discusses beekeeping. I've found this to be equally true for plants. In this episode, I'll share a year-end review of what I learned over the summer in the fields and my garden.

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](http://www.plantsdigsoil.com), for resources and information about the services I offer.

Transcript is available:

<https://www.plantsdigsoil.com/podcast/plants-dont-read-our-manuals>

My consulting packages:

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SCAP overview: <https://youtu.be/OicitHJR2lk>

SCAP program details <https://www.alberta.ca/sustainable-cap.aspx>

My course: Profitable From the Start: Cover Crops for the Prairies:

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Without a doubt, this year was dry. We're a few years into a drought cycle, and I'm noticing changes on a landscape scale. Some farmers have observed that fields are behaving differently compared to the past. As I was driving one day, I realized this could be due to deeper, underlying changes.

Back in 2010, we experienced "more rain than we'd seen for a thousand years," (to quote a Corb Lund song) which likely replenished groundwater reserves deeper than most root crops reach. The year 2011 was almost as wet, and somewhat normal rains persisted through the 2010s. However, the last four years of drought have depleted this lower groundwater. It's possible that it initially moved into some areas through lateral flow, benefiting crops for the first years of the drought. But now, that reservoir is depleted. We're extremely dry.

This has led me to consider the adaptability of our farming machinery. Stripper headers have been used for years by dryland growers who wish to leave as much straw standing as possible. These headers remove the heads and leave most of the stalk. Recent research reveals that, in addition to trapping snow, there are water efficiency benefits.

Tall straw creates a microclimate that shields from wind more effectively than shorter stubble. With less wind, more humidity is retained at ground level, leading to less surface evaporation and less water use by plants. Irrigation farmers have always been able to compensate for this by running their pivots more. But with water restrictions on the horizon, they may need to rethink their strategies. This won't help for 2024, but it's worth considering for the future.

When the rains return, we may need to adapt further. Even if we continue using the stripper header, we might incorporate strip till or a tillage pass to avoid excess moisture where we want to grow the crop.

Regarding irrigation, the title of this episode comes from a coffee shop talk about an unexpectedly large potato crop. Every grower has a secret recipe for fertility, but ultimately, weather is the showrunner. This year, potatoes weren't short on water as growers were able to ration their other crops and direct water where it was most needed. The weather was nearly perfect: Most days were around the 26°C optimum, and nights cooled to 12°C.

Plants don't read the manuals, and perhaps the soil doesn't either? If optimal fertilizer placement were only about getting the right amount out there, then the results couldn't have exceeded expectations. Somehow, they adapted and so did the soil, providing what was needed.

The weather was also great for keeping diseases at bay. I had hardly any to report. In fact, the provincial plant pathologist contacted me looking for disease samples for ongoing studies. I couldn't think of any fields where he could find what he needed.

Insects weren't a problem for irrigated areas this year. Grasshoppers don't like humid areas due to fungal infections, and lygus bugs get washed off the plants with each pivot pass. The story was different for dryland: it was a challenging year. It's tough to keep spraying for insects when the crop is barely alive.

However, if you don't spray they could eat it all. And we did see this. Organic growers do not have controls for grasshoppers. A well managed system can keep them from being a big issue but when there are the numbers out there that there were this year they quickly overwhelm the system. Organic has been losing acres from high conventional prices. I'm afraid we'll see even more acres lost from lack of controls.

Switching to my garden, most things went pretty well this year. As I mentioned last month, I returned to drip irrigation, which worked well for weed suppression. I was diligent about pulling weeds early and often when establishing my vegetables. Once the crop took care of the weeds in the rows, the string trimmer handled the ones in the pathways. The lack of rainfall and water delivered close to the crop roots completed the job.

In my agronomy business, it's time to slow down. Most of the fall work is done, and many of my farmer clients are ready for a break. I usually don't hear much from them until February or March once the snow starts in November or December.

So, what's next for me? I'm still teaching, which occupies most of my time. My next project is to read as many books as I can. I have a list of forty books and, while I know I won't get through them all, I aim to read one book a week over the winter.

I also plan to update my cover crops course. It's been two years since I created and released it, so it's due for some tweaks. I'm also interested in creating more courses. If there's a topic you'd like me to cover, let me know. One idea I've been considering is examining nutrient flows on the farm for more comprehensive planning beyond just soil tests and fertilizer application.

Join me next month when I cover the regenerative agriculture news that has piqued my interest from this month.