...FROM THE DESK OF
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CCA 4R

Between the Rows

VOLUME 3 ISSUE 11 DECEMBER 5, 2025

INSIDE THIS ISSUE:

Fungicide Insensitivity in Sclerotinia in Canola

Sclerotinia stem rot, also known as white mold, is a disease that affects over 400 broadleaf plant species and is found in most parts of the world. Sclerotinia is caused by a soil-borne fungus *Sclerotinia sclerotiorum*. Here in the North Peace it mainly causes issues in canola, field peas and alfalfa. With the right environmental conditions yield losses can be greater than 50%. When conditions are right for the fungus to develop, growers are best served by applying a fungicide at the correct timing (20-50% bloom). As you've probably heard me say over and over again, "when you are spraying for sclerotinia prevention you are spraying the petals, not the plant".

So what happens when you spray the right fungicide at the right time but still get sclerotinia? Well it may mean that we've had extremely wet conditions conducive to infection and your application prevented some but not all of the infection. But something else may be happening as well: "fungicide insensitivity".

Fungicide insensitivity is not fungicide resistance. Lets get that straight right off the bat. Fungicide insensitivity occurs when small genetic changes occur in some of the fungus cells that reduces the effectiveness of a fungicide to kill these cells. Fungicide resistance is a larger genetic mutation that renders the fungicide completely unable to kill the fungus. Fungicide insensitivity can be usually be overcome by using a higher recommended rate or applying a fungicide that belongs to different group.

But can insensitivity be a warning sign? Researchers with Ag Canada in Saskatchewan are looking into this. By identifying the pathogen isolates (think of slightly different races of the same fungus) and there insensitivity to common fungicides in use now, they are hoping to identify potential resistance risks.

Unlike herbicides, there are only few different fungicide groups. Also the way fungicides are marketed tend to push producers into one or two of these groups, so we are upping the risk of resistance. Luckily only one fungicide, Benlate had true resistance develop. That product was deregistered in Canadian canola 15 years ago.

The take home message to farmers is that care must be taken when applying fungicides and the advice of a Professional Agrologist is recommended.

Testing New Products on Your Farm?

Every year there are new products coming into the marketplace, each claiming to be "new", "improved", "higher yields" etc. Now I may be a bit of a conservative when it comes to new products and skeptical to all their claims, I am not against you guys trying out these products to see if they work for you. What I do always caution you is, rather than going all-in on a new product, that you first try it out on a small-scale first.

By small scale I mean 10-100 acres. That way you can see how it works on your soils with your management techniques. Just because your neighbour had great success doesn't guarantee you will.

At the same time it very important that if you do want to test something new on your farm that the tests are set up so that you can actually use the results you get. As a Professional Agrologist I can work with you to set up simple trust-worthy trials, so you can trust their results.

With the deluge of new products and slick marketing ploys out there it is important that you separate the grain from the chaff. Together with an unbiased Professional Agrologist you can make better economical decisions based on facts not marketing.

If your interested in new products and want help setting up simple trials call me.

Boron

My main topic this week is Boron. I touched on Boron back in June 2024, but I thought I would revisit it again. My article back in 2024 focused on a lot of the science behind Boron, this time I'm going to focus on real world issues with Boron in the Mackenzie region.

In the 497 fields I've soil sampled since 2022 in this area, less than 10 have come back with adequate boron (>1ppm). That works out to 98% of these fields being deficient in Boron. In addition those 2% of the fields that didn't show as deficient tended to be soils with a higher pH (>7.3) which hampers the availability of the Boron that is there.

Boron is classified as a micronutrient. Micronutrient should not be confused with minor nutrient. Micronutrient refers to the fact that certain crops only require a small amount. That doesn't mean that if they don't get that small amount there wont be major issues. If a canola plant runs out of boron, it doesn't matter how much rain, nitrogen, phosphate or another nutrient you have, its yield will stop there. The most common boron applied to the soil is Solubor, a 20.5% boron product that is designed to be dissolved in water and sprayed onto the soil at 2.4 lbs./ac to give you 0.5 lbs./ac of boron. Kinetic Boron from ATP is 10% Boron product designed to be applied at 0.5-1.0L/ac.

The two main crops grown here that require the most boron are canola and alfalfa. Boron plays a critical role throughout the growth cycle of plants. Boron is crucial in the uptake of phosphate and potassium by the roots, vital in the function of the apical meristem (growing point) and root interactions with mycorrhizal fungi. Later on Boron is vitally important to pollen tube fertilization. If boron is deficient, pods may not form and the canola plant may extend the flowering period delaying maturity and reducing yield.

Boron deficiency can be referred to as hidden hunger. Symptoms of boron deficiency are not highly visible and are often chalked up to something else. Poor root growth and early development could be cool dry soils. Shorter crop: dry conditions. Delayed flowering and blanks on the stem: heat stress. All of which may be true, however since we know Boron plays a key role at these times maybe it is deficiency. Tissue testing can be done to confirm this hidden hunger. Since a foliar option for Boron is available you can address this issue in crop.

The two characteristics of boron that make it more interesting are : it's highly mobile in the soil, but it also immobile in the plant. Since it very mobile in the soil, applying Boron to the soil in the spring and fall are not recommended in lighter soils (CEC<15). Heavier soils (CEC>15, with less leaching potential) applying products such as Solubor are both longer lasting and cost effective. Seed placement of a concentrated boron source is not recommended.

One strategy I have advocated for in lighter soils is priming the seed with a nutrient that contains a small amount of boron, then doing two applications of 10% foliar boron at herbicide and fungicide timing. The advantage of this strategy is that it gives the plant boron at 3 key stages: early root growth, mid-vegetative and flowering. The disadvantage is higher costs and applications. However if conditions are right for a bigger crop the applications of boron will likely pay for themselves.

The key takeaway this week is that while a micronutrient, Boron is by no means a minor nutrient.

Verticillium Stripe in Canola

Verticillium stripe disease in canola is caused by *Verticillium longisporum* and was officially first reported in Manitoba in 2014. Disease surveys in Manitoba now show it being visibly identified in 60% of canola fields, in Saskatchewan 32% of fields having some of the disease present. In Alberta 25 fields with the disease were found in 2024. Even with the low number of fields officially reported researchers now believe the incidence in Alberta is comparable to our neighbouring Provinces. The good news is that the number of fields that had economic damage due to disease is low, but concern is mounting that this number could also grow.

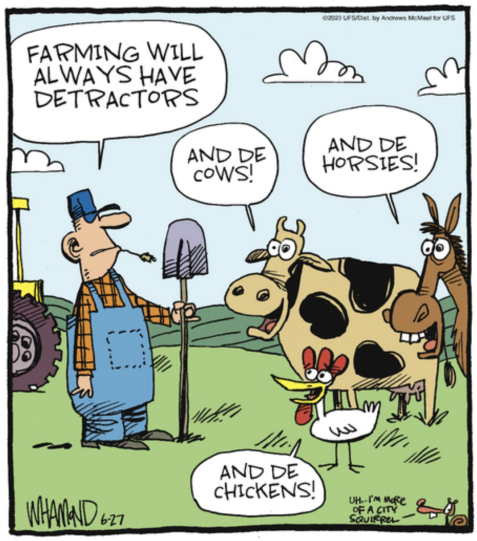
Back in 1998, Mike Hall and I were called to a field just outside Fort Vermilion on Highway 88. This field had Quest canola. For those young pups out there, Quest was the first commercially available Roundup-Ready canola, and in those days the TUA was paid separate from the seed, and based on a $15/acre on only the acres taken to harvest. So as a retailer, we had to physically go to each field with the grower to negotiate the acres to charge. Long story short, in this field we found a very distinct disease damage pattern to a couple plants, Striping on only one side of the plant, with those branches having damaged leaves and no pods. This damage mimicked Verticillium wilt in alfalfa, however since it was only a couple of plants it was nothing to be concerned with. In fact farmers started to call it the Quest-disease and after Quest was replaced we really didn't see it anymore. So those plants may have actually had Verticillium stripe but we'll never know for sure.

Last August I did find Verticillium stripe in canola near Fort Vermilion, just a couple of plants, but we will continue to monitor fields.

Verticillium Stripe in Canola

Verticillium Stripe near Fort Vermilion in 2025

Farming is Fun



Need paperwork?

If you would like your farm to receive invoices, statements, load tickets sent to your direct farm email. Please send a quick Hello to Keven at FVmanager@bigriveragro.ca

Thanks

Keven

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Big River Agro Christmas

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