Agronomy Update May 2016

Hello Everyone,

By the time this is published, seeding will likely be wrapped up, so I can't claim this is timely information. However, I do think we often don't use enough of the resources available to us to determine when we should start seeding, so despite this being too late to help with this spring, I thought I would go ahead and put it in the May agronomy update. If nothing else, it may be food for thought in future years!

When Should I Seed?

Every year, as spring approaches and warm April days fool us into thinking that it is already summer, we are tempted to roll out into the fields and start seeding. Especially this year; the air temperature has been well above normal all year, and the soil was as warm by the third week of April as we would normally expect it to be in mid-May. In a year where early moisture is limited, it very enticing to think of early starts and making use of the moisture before the inevitable spring winds dry out the seedbed. So why wouldn't we just go ahead and start planting in April if the conditions would allow?

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There is a lot of data that tells us that early seeded crops have a greater yield potential than those seeded later. In fact, Alberta Agriculture has spent considerable effort studying links between seeding date and yield outcomes (Figure 1 is just one example) and it conclusively shows a drop off in yield potential on canola seeded after the week of

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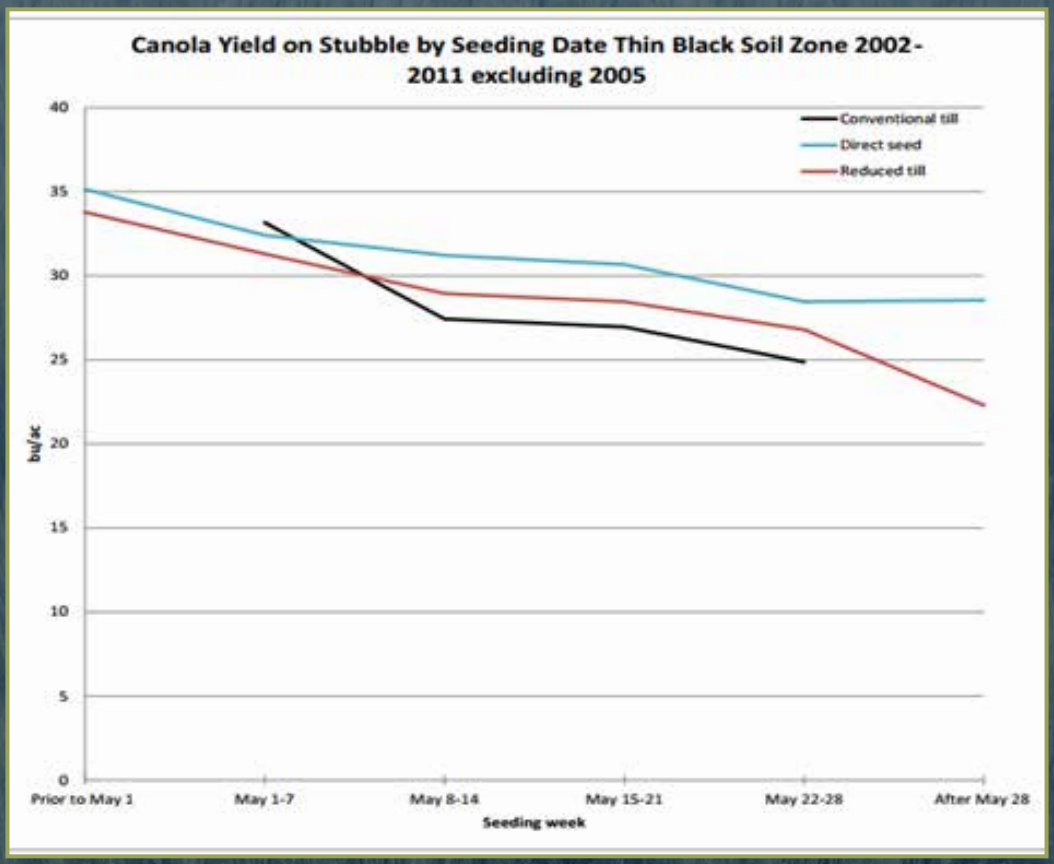

Figure 1

May 15 th to 21st in direct seeding systems. While the actual dates may vary by crop or by soil zone, the trend is the same for everything we grow – seeding early will maximize the yield potential. Yet, this potential gain must be balanced with the risk of frost that may lead to crop injury that can hurt your yield or in extreme cases even lead to reseeding with all the associated increased expenses in time, seed, and equipment depreciation. We hope for what we see on the left below, but a producer should never lose sight of the possibility his early seeded crop could end up like the picture on the right!

So how do we assess the risk that goes along with the potential reward of early seeding? It really comes down to three factors that need to be considered.

1. What is your soil temperature and seeding depth? This will impact the speed of emergence of the crop. If you are planting into warm soils, expect the crop to be up quickly. For example, at 15 C soil temperature and a 1" seeding depth, wheat can emerge as quickly as 7 days after seeding and canola seeded at ½' into 15 C soils can be up in as few as 5 days.

2. What is the long range forecast? Keeping in mind that any forecast more than 72 hours into the future starts to lose accuracy in a hurry, it is still worthwhile to check and see if the general trend over the next couple of weeks is warmer or colder. If you are going into a cooling trend and it's still early, you may want to delay seeding for a few days.

3. What is the probability of frost? You can sometimes find weather station data where they will give you the "average" last day of -3 C frost for the year. For example, the average last day of frost for Killam is about May 10th. Remember that means that 50% of the time, the last frost falls after May 10th, so don't assume there is no risk after that date.

Many experts suggest it makes the most sense to think of frost risk as a sliding scale. As the chart below (figure 2) shows, you can take your mean date of last frost and adjust it to a risk factor you are comfortable with. For example, if May 10th is your last average killing frost, your risk of frost is 50%. If you are more comfortable with a 20% chance of frost, you would be looking at delaying seeding by 9 or 10 days according to this scale.

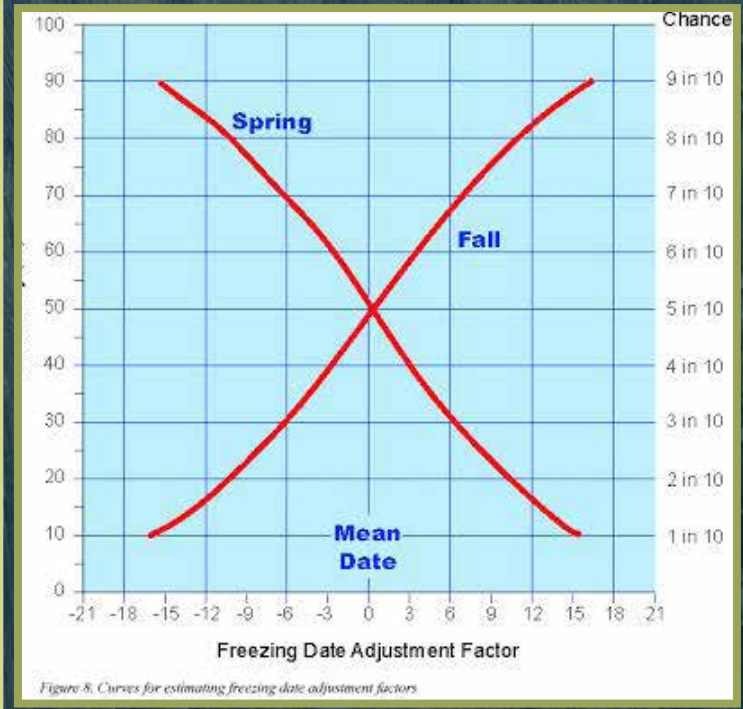

Figure 2

So while there are no hard and fast rules that tell you when it's safe to seed, there are tools available that can help you assess the risk and come to a decision on seeding date that fits with your risk tolerance. Combine the soil temperature, and 14 day weather forecast to estimate when the crop will be coming out of the ground. Furthermore, consider the position of the growing point on the crop as it is emerging. Cereals have a growing point that does not emerge above the ground until well into the crop's development, so losing a few leaves is not the end of the world. Peas are a crop that is also tolerant of frost. Not only do the plants have a good capacity to withstand cold, they also have auxiliary buds underground that can allow the plant to regrow if frost damage kills the above ground growth. It maintains these underground buds almost up until the 5th node so this crop will have the lowest frost risk of the ones we commonly grow. Canola and flax, on the other hand have growing points that are on the highest part of the plant, so they are more susceptible to frost damage.

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The bottom line is that if you are going to gamble with seeding dates, do it with cereals or peas. With vulnerable crops (and expensive seed!), I am likely to play it more conservatively. My appetite for risk may be less than yours and every year has to be assessed on its own merit, but to me it makes sense to be seeding canola between May 7th and 15th most years. That would put emergence at around May 14th to May 21st under normal conditions. By this time the frost risk is coming down to between 20% and 30% - numbers that would allow me to sleep at night and would still have my crop in the ground early enough that I am not sacrificing yield potential at the other end.

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