CropLinks April 3, 2019

Winter Wheat 2019

Most winter wheat growers have been out to have a look at their winter wheat by now. I have only seen a few disasters from heaving where the seed was not planted deep enough. There is also some true winter kill on some sandy fields, where the cold temperature penetrated the loose sandy soil and killed the crown.

Early planted wheat looks like it has developed an adequate number of tillers. Work by Jack Van Roestel from 2015-2017 showed that applying early nitrogen in March did not pay on this well-established wheat. Everything planted after October 1st is looking under developed and could use some nitrogen to try and stimulate early tiller development. Spring tiller development only occurs when temperatures are cool. Once temperatures warm up the plant goes into stem extension/ jointing and tiller development stops. On these under–tillered wheat stands it is very important to get some nitrogen on early to stimulate tiller development. Not a lot of nitrogen is required to do this. You are only looking at 30-40 lbs/ac of actual nitrogen at this time. Applying more than this at this time puts you at risk of nitrogen loss from denitrification or leaching. Once the wheat greens up you can apply the rest of the nitrogen that the crop requires.

So how do you make a decision on whether to keep the wheat stand?

Determining Yield Potential for Various Wheat Plant Populations

Number of Plants Per Foot of Row	% Yield Potential
20	100
10	95
7	90
6	85
5	80

Taken from OMFRA publication 11.

When checking your wheat stands it is important to do stand counts. In 20 places in the field count the number of plants per foot of row or per square foot. The chart above shows that even at 7 healthy plants per foot of row you can still achieve 90 percent of your yield potential. But what if some of those plants are heaved out? If plants are heaved out you only count these as .5 of a plant. Some heaved out plants will re-root, others will drop off. (7 plants per foot of row = 12 plants per square foot)

Make sure that you are assessing the stand as you do your counts by looking across the rows. Everything always looks better when you are looking up the rows.

Your wheat field will usually fall into one of four categories:

My is wheat is good and well tillered

- wait and apply nitrogen at green-up

My stand is good but spotty

- Do the dead spots make up less than 10-20 percent of the field?
- Frost seed (broadcast) some spring wheat into the spots
- No-till spring wheat into the spots
- Apply nitrogen at green-up

My stand is even but no tillers/stand count is low

- Apply early nitrogen to promote more tillers
- Or consider ProLiant plus Urea - applied early season as a foliar application it will increase tiller numbers $15.00/ac
- Is there leaf material for up-take?

My stand is low in the good spots and dead in bad spots

- Replant – but to what crop? If you are making the decision early you can no-till spring wheat into the stand or you can wait and make your decision later and plant corn or soybeans

Control of Volunteer Corn in Soybeans?

Last fall was a pretty rough harvest. High winds delayed harvest and a stressed out corn crop meant for a lot of lodged and shelled corn. Many of these fields are destined for soybeans this spring. But what can be done to control these potential volunteer corn plants in the soybean crop? Fall tillage

after the corn crop has been shown to reduce the number of volunteers. This is because the contact with the soil causes the seed to germinate or rot and then be terminated either by cold temperatures or spring tillage. Seed that remains above the surface and remains dry will survive and germinate during the next cropping year. Corn germinating in the following soybean crop can cause significant yield loss. Although no local research has been done on this subject, research from other areas is very solid:

University of Nebraska

- Volunteer corn density of 3,500 plants/acre led to 10% yield reduction in soybeans.
- Doubling the density to 7,000 plants/acre led to a 27% yield reduction.
- A density of 3,500 clumps (dropped ears) of corn/acre resulted in a 40% yield reduction.
- The greatest yield reduction occurred when volunteer corn was left uncontrolled or when it was controlled too late at the R2 soybean growth stage.

South Dakota State University

- Volunteer corn density of 5,000 plants/acre resulted in a 20% yield reduction (327 kg/acre yield loss in 1639 kg/ac soybeans). • Natural clumps of volunteer corn (associated with dropped ears) led to greater yield loss as they were more competitive than individual plants.

Universities of Minnesota and Illinois

- There was greater competition with clumps of volunteer corn versus individual plants.
- Clumps of corn (7 – 10 plants/clump) were established at different densities and soybean yield was reduced 1% for every 75 – 115 clumps/acre.

Clumps of corn plants are of course caused by whole cobs of seed germinating. These may seem like heavy densities, 3500 plants per square foot will equal 1 plant/12 square feet. If the corn plant is allowed to mature, it may add moisture at soybean harvest and contaminate the soybean sample. Producers feeding their own soybeans with a little corn contamination will probably not mind, but export markets can be pretty picky about these details.

So the time for tillage making a difference is probably behind us and there are no pre-emergent/residual products that are effective for the control of volunteer corn in soybeans. That leaves you applying a grass herbicide in season, probably mixed with glyphosate while you are taking out other weeds. It is important to recognize the problem early enough so that the volunteer corn can be killed when it is small and perhaps saving you an extra sprayer trip. The corn plant is easier to kill when it is small. Taking it out early will also decrease the amount of yield robbing competition between the corn and the soybean crop. Remember that the critical weed free period for soybeans is from the first trifoliate to the third trifoliate. Chemical options:

	Control Rating	Optimum timing on corn	Rain Fastness	Pre-Harvest Interval	Rate
Assure II or Yuma	8-9	2-6 leaf stage	1 hr		150 ml/ac + surfactant
Excel Super	7-9	5-25 cm in height		60 days	275 ml/ac
Poast Ultra	6-8	1-4 leaves	1 hr	80 days	190 ml/ac + merge
Select, Arrow or Statue	7-9	2-6 leaf stage	1 hr	75 days	75 ml/ac + surfactant
Venture L	7-9	2-5 leaf	2 hr	90 days	.25 l/ac + turbo charge

New Chemical Registrations or Label Expansions for 2019

(see next page)

Manufacturer	Product	Group	Acitve Ingredients	Registered Crops
Bayer	**Infinity FX**	4	Fluroxypyr	Wheat (spring, durum and winter)
		6	Bromoxynil	Barley
		27	Pyrasulfotole	Triticale (spring and winter)
				Timothy
				Perennial Ryegrass
				Bromegrasses
				Red Fescues
Weeds Controlled				
Annual sow-thistle			Pale Smartweed	
chickweed			Perennial sow-thistle (suppression only)	
Cleavers			Round-leaved mallow	
Canada Fleabane			Shepherd's purse	
Canada Thistle (suppression only)			Stinkweed	
Common Ragweed			Stork's-bill	
Dandelion (suppression only)			Wild buckwheat	
Hemp-nettle			other annual broadleaf weeds	
Narrow-leaved hawk's -beard				
Bayer	**Varro**	2	Thiencarbazone-methyl	Spring, Durum & Winter Wheat
Weeds Controlled				
Redroot pigweed			Cleavers	
Stinkweed			Wild buckwheat	
Shepherd's-purse			Lamb's Quarters (suppression)	
other annual broadleaf weeds			Round-leave mallow (suppression)	
Green foxtail			Yellow foxtail (suppression)	
Barnyard grass			Persian Darnel (suppression)	
Wild oats				
Bayer	**Velocity**	2	Thiencarbazone-methyl	Spring, Durum & Winter Wheat
		6	Bromoxynil	
		27	Pyrasulfotole	
Weeds Controlled				
Wild oats			Cleavers	
Green foxtail			Common ragweed	
Barnyard grass			Round-leaved mallow	
Canada fleabane			Shepherd's-purse	
Canada Thistle (suppression)			other annual broadleaf weeds	
Chickweed				
Corteva	**Elvore**	4	halauxifen	pre-plant burndown herbicide
Weeds Controlled				
broadleaf weeds				
Nufarm	**Statue**	1	Clethodium	most broadleaf crops
Weeds Controlled				
volunteer corn and cereals in soybean				most annual grass weeds

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