Renwood Farms October 15, 2016

Cereals: Planting Wheat for High Yields

For every wheat seed that emerges into a healthy plant, we expect to harvest the seed heads from three tillers. Each healthy tiller will produce one bu. /acre of wheat. When 30 healthy plants per square foot emerges and each plant produces three viable tillers, we will produce 90 bu. /acre of 58# test weight wheat which our goal. Decent March weather may allow four tillers per plant and a few extra pounds of test weight to push yields further.

Seeding Guidelines

To produce 30 healthy emerged plants per ***square*** foot, several variables guide the number of seeds to be planted per ***row*** foot:

- Germination guarantee of the seed
- Seed size (seeds per pound)
- Seed treatments
- Drill versus broadcasting
- Drill width
- Tillage (add 10% to 15% for no-till)
- Soil residue
- Time of planting (early, middle, late window)

For example, with conventional tillage producing a smooth but firm seedbed and planting seed in the optimum window with 90% germination, plant 34 seeds ***per square foot*** regardless of row spacing. For a 7.5 inch drill, a square foot is 19.2" of row (144 / 7.5=19.2). Planning for 34 seeds per square foot means calibrating for 21 seeds ***per row foot***.

Increase seeding rates 10% to 15% for no-till and 25% for broadcast seeding. Planting later than the optimum window for any variety means increasing the seeding rate by two seeds per foot of row since fewer tillers developed.

Wheat varieties for 2017 are ranging from 13,000 to 15,000 seeds / lb. so calibration is critical for accurate seeding rates.

Our data shows that planting 1.6 to 1.8 million seeds per acre for conventional tillage fields and 1.8 to 2.0 million seeds per acre (depending on residue) for no-till cereals has produced the highest yields.

Increase seeding rates if planting late (photosensitivity ratings), using worn disk openers or planting through heavy crop residue. According to equipment manufacturers, drills are meant to be pulled at 4.5 mph. Faster speeds usually result in poorer stands.

The chart below shows how many seed/row ft. to plant under different population targets and drill widths.

Seed Depth

Seed depth should be one-inch below the soil surface not the residue surface. Deeper is usually better than shallow. Uniform emergence is key to high yields.

The soil moisture in fields is perfect thanks to our recent rainfall. The last few Octobers have been dry and the ground hard so a recheck of the down pressure may be needed.

Seed Treatments

Once seeding is complete, the goal is to produce and protect healthy tillers. We recommend Renwood Farms Vizor 5Z™ seed treatment to produce healthy roots which in turn produce healthy tillers. Vizor 5Z™ protects these young tillers from germination through emergence and early growth from damage from insects like Hessian fly and aphids plus root rot and foliar diseases.

	Seeds Per Row Foot		
Drill Space in inches	95%	90%	85%
	1.6 million seeds/acre		
7.0	21	22	23
7.5	23	24	25
	1.8 million seeds/acre		
7.0	24	25	27
7.5	25	27	28
	2.0 million seeds/acre		
7.0	26	28	29
7.5	28	30	32