



ADVANCED AG SYSTEMS'

Crop Soil News

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March 2020

"It is the crops that feed the cows that make the milk which creates the money."

Ready, Set, Go: A New Cropping Season

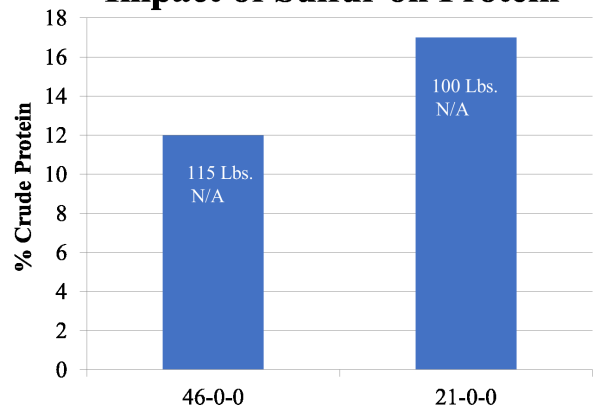
Take a deep breath and put your best effort forward. We are about to start a new cropping season. We try to learn from the last horrible season and work to a better tomorrow. For the southern areas of our newsletter, the warm temperatures have started the winter forage. This is the crop that gives you the earliest and the highest quality forage to support production by your top producers. Now is the time to add nitrogen and the critical sulfur so you can save on soybean meal by harvesting high protein forage.

The yield potential was mostly set last fall depending on planting date, and any fall nitrogen available (for on time planting, up to 60 lbs. N/a in the fall is beneficial to next spring yield). These two critical factors generate the number of fall tillers that set the yield potential for the following spring. Of the two, planting date is the most important. Even if you planted later, there is still potential for economical yields as long as the stand came through the winter.

For any nitrogen application to winter forage or to intensively managed grasses, **sulfur is critical for protein formation.** As you can see in the graph at the right, adding extra nitrogen without sulfur only gave us 12% crude protein. Adding a lesser amount of nitrogen with sulfur gave us 17% crude protein. For a field that has not had manure last fall (a major on-farm sulfur source) an effective ratio is roughly 1 lb. of sulfur for every 10 lbs. of nitrogen. A mix of 1500 pounds of urea (treated with an anti-volatilization agent) mixed with 500 pounds of ammonium sulfate will give you approximately 40-0-0-6S. This is also perfect for

all cool season grasses, in addition to the winter forage grains such as triticale. Sulfur is also critical on corn and especially on the sorghum which can produce much higher protein in the forage. With winter forages, our research found that even with immediately incorporated manure before planting in the fall, we still needed to add spring nitrogen. The fertilizer did not increase the spring yield on manured ground, but raised the crude protein in the triticale from 9% to over 19%. This gave a 3 to 1 pay back on the nitrogen fertilizer though soymeal savings. In our research we found injecting 12,000 gal/a of manure into the triticale sod with the new rolling wavy coulter incorporation unit, in the end of November, can meet all the nitrogen needs of the crop for both yield and generate 20% crude protein.

Impact of Sulfur on Protein



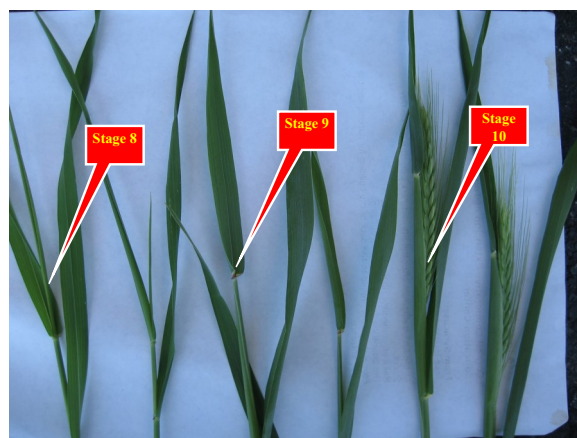
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It is common for farms to apply 75 to 100 lbs. nitrogen/acre in the spring. Even with manure before planting, we are suggesting to increase this to at least 125 lbs. N/ acre to boost protein and save on soybean meal. Remember, a 3 ton dry matter yield at flag leaf (easily achieved with on time planting), will remove 192 lbs. of nitrogen/acre at 20% crude protein. (if an extreme dry spell hits after then you may need to test for nitrates – we haven't seen an extreme dry spring for several years now). What is not used by the present winter forage will still be used by the next planted crop.

Caution: do not try this higher rate on rye grain winter forage. Triticale is only 2/3 the height of rye and so is resistant to lodging. Our trials found triticale yielded 35% higher than rye because of the higher tiller density. Rye has limited tillering and produces a tall but thinner stand. It is very prone to lodging above 50 lbs. of nitrogen/acre.

Do not apply nitrogen on snow covered ground. Losses were as **high as 44%** with an average of 26.3% loss when applied to cold or frozen surfaces, especially if they **have some snow on them**. It is highly suggested to add an anti-volatilization agent even under low temperatures in the spring. This will inhibit the urease enzyme from splitting the urea into ammonia that is then could be lost. **Treated urea loss was 63% less** than the untreated in the same field. The anti-volatilization compound increases the chance of full return on your fertilizer money.

Finally, for those new to this crop (winter forage acres are increasing rapidly as farmers realize both the very high quality forage it can produce, and the 35% yield increase from double cropping) the picture on the right must be committed to memory. You want to harvest at flag leaf stage (stage 9) for optimum quality at high yield. Stage 8 does not have higher quality than 9 and had a substantial yield penalty from harvesting to soon. If temperatures are normal to warm, then you need to push to harvest at stage 9-flag leaf stage. Conversely, if it is at stage 8, you have a sunny day, and a week of rain forecasted, get it cut so you have quality forage.



Optimum stage of winter forage harvest is stage 9 where the last leaf (flag leaf) has unfolded yet the head has not emerged yet. Preliminary data is indicating that if temperatures are cool to cold, the forage quality (milk producing ability) could hold into early head.

Sincerely,

Thomas Kilcer,
Certified Crop Advisor

172 Sunnyside Rd
Kinderhook, NY
12106

Tel: 518-421-2132

tfk1@cornell.edu

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