



ADVANCED AG SYSTEMS'

Crop Soil News

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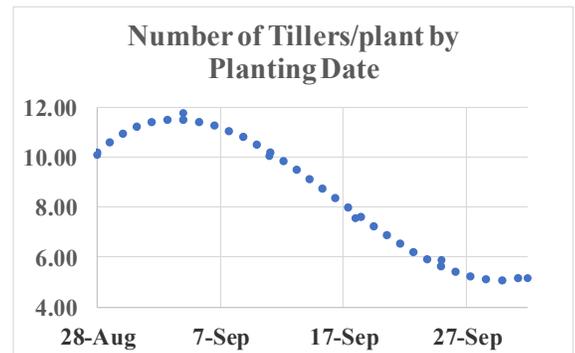
"It is the crops that feed the cows that make the milk which creates the money."

Advanced Ag Systems
Research, Education, Consulting

How Much Nitrogen For My Winter Forage?

The last newsletter had a table with the amount of nitrogen that winter forage removes at 20% crude protein, depending on the yield. With the higher cost of nitrogen this spring and even higher cost for soymeal in the ration, getting the nitrogen right is important. If you are really good, you can put a leaf between cheek and gum and can tell much nitrogen is needed to 4 decimal places. For the rest of us mere mortals, we need to guesstimate what your field will respond to economically. The **huge factor of yield potential** depends on the **planting date and fall growth**. This establishes the number of tillers which establishes the yield potential for each field (see graph at right). If the triticale is planted on time (10 days – 2 weeks before wheat for grain) it maximizes the number and size of tillers. Planting on time means you have a significant high yield potential. If sufficient nitrogen was available in the soil (from heavy manure applied before the previous summer crop, or up to 60 lbs. of fall applied nitrogen), **the yield potential can increase 43%** more from increased size and number of tillers (photo at right). Our replicated research found that the *on-time planting will pick up and store 60 to 120 lbs. of nitrogen before winter*, utilizing the manure nitrogen still being released after the summer corn silage is harvested. If your triticale is 6 to 10 inches tall and thick (picture at right) then you can assume the higher number and can subtract that from the topdress. I have found that fields like this have a **potential yield of 3 – 4 tons of dry matter**.

The simple change of planting later than the above date will have a profound effect dropping the potential yield by 35% or more. You will still get a very high-quality forage as that depends solely on when and how you harvested

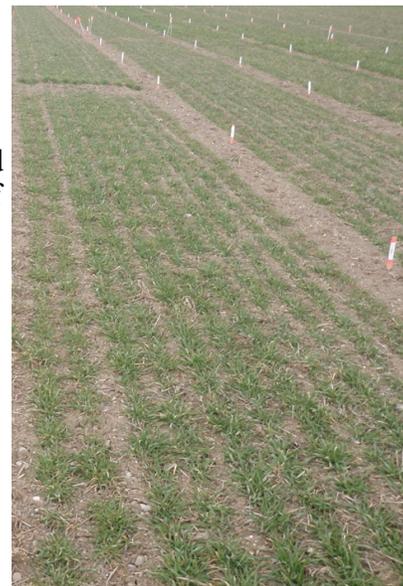


The earlier planted winter forage will have both more tillers and larger tillers. The increase fall biomass will store more nitrogen for the spring growth. Lots of fall growth does NOT smother. It is snow mold that accumulates in pockets and where water collects that kills the plants in those areas.



3 to 4 ton DM/a yield potential at green up

(discussed in the next letter). A crop that was planted at the same time or even later than the wheat planting date for your area will not have the tiller generation necessary for high yields. A secondary effect is that the manure released nitrogen left-over from the corn crop, is wasted as we found that the late planted winter forage only has time to take up 4 -5 lbs. of nitrogen instead of 60-120 lbs. (90% reduction of available forage nitrogen for next spring). If the winter forage is only 3 – 4 inches or less, and especially if you can see the rows with soil between (see photo at right), then you can only realistically assume 2 – 2.5 tons of dry matter yield and should fertilize for that accordingly.



For those who think they can topdressing manure (we do **not** recommend it) to supply nitrogen, they are mistaken. Unless it rains immediately after spreading, it will only supply about 2- 3 lbs. of nitrogen/1000 gal. manure topdressed. This is because the ammonia portion will react with enzymes on the vegetation and split it off as ammonia gas, which then volatilizes. The organic fraction of the manure left on the vegetation will need time to decay and being on the surface is only 85% used by the crop. The final impact is that the winter forage is harvested before spring warmth allows much of organic to break down. Any organic manure remaining in and harvested with the crop **pollutes the silage** (see photo below right).

If planted late, and your stand looked like this going into the winter you should expect only 2—2.5 tons of DM /Acre

From the above and the table from the March newsletter, you can guesstimate how much nitrogen and sulfur to apply (sulfur needs to be at a minimum of 1 lb. for every 10 lbs. of nitrogen). The crop starts spring growth and reaches the harvest stage in about 8 weeks so split nitrogen is not suggested unless the rates of nitrogen and sulfur are high enough to burn the leaves of the crop.



A word of caution for those pushing for higher crude protein in their winter forage to offset the high soymeal prices. If you have prolonged dry spells followed by rain just before harvest, be sure to do a safety check for nitrate accumulation. Many different plants can accumulate nitrate with the right weather conditions and the low cost of a nitrate test allows you to feed with confidence. This is especially true if you **forgot or did not apply sufficient sulfur and/or were short on magnesium**, so the plant cannot convert nitrate to useable protein. Shortage of these critical elements, not high nitrogen rates, are at the basis of many nitrate issues.

Broadcast manure loses about 15 lbs. of N/1000 gal due to ammonia volatilization. The organic N is only 2-3 lbs. of N/1000 gal available the first year. The crop is harvest in 8 weeks after green up so most of the organic N is not available yet. Mostly it just pollutes/ruins the very high quality silage

Sincerely,

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Hand
to Better
Agriculture**

