



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

## Critical Management Steps for High Yield Winter Forage

See 7.5 min detailed [Video](#) (give time to upload)

Winter forage is NOT harvested cover crop. A cover crop is a cheap seed that is tossed out and if it turns green is considered a success. Winter forage is selected for high yield and winterhardiness; deliberately planted on time with a drill and fall fertilized for maximum yield potential. The difference between the two in the spring is huge. The other difference is that with the higher level of management, the winter forage gives soil and environmental benefits equal to **cover crops on steroids**. The benefits are far above a simple "cover crop".

The first choice in winter forage is between rye grain and triticale. Both will yield well. Both have similar digestibility if harvested at the same (flag leaf) stage. Rye may survive better if just tossed out and/or planted late but neither step supports high yields (see planting technique below). Newer triticale varieties mature almost the same day as rye if planted the same day. Research has found that rye has a narrower harvest window which is difficult to hit. The biggest problem with rye compared to triticale is the standability. Rye is about 25% taller than triticale, but most triticale varieties have been selected for dense tillering. The triticale produces high yields from many more tillers on a shorter plant. More importantly, the shorter triticale will stand and support much higher nitrogen rates. Rye at the same rate would be flat on the ground. Thus, triticale can result in much higher crude protein of 18% or more with good management.

Under **NO** circumstances do we suggest you plant a mix of winter rye and triticale. It is impossible to get the two to mature at the same rate. I know a farmer who bought cheap, bin-run seed that was a mix. The rye was at flag leaf stage the next spring when the triticale was only ½ grown. If he took it at the quality stage for rye, he lost half of the triticale yield. If he waited for the triticale, he had high-quality triticale mixed in with rye straw. **Been there, done that, don't do it.**

Buying Variety Not Stated (VNS) out of a



Applying critical management steps on left has huge impact on yield compared to cover crop management on right.



Triticale and rye mix is a disaster. We do NOT suggest this as a practice.

farmer's bin is even riskier than the above farmer's bad experience. You don't know what steps they took, or did not take, to maintain the germ for a high percentage that will actually sprout. Farms growing barley for malt found that you must dry carefully and at the right temperature or the seed will not sprout (malt). The same with triticale. If it is not dried and handled properly, it is like buying a steer to breed your cows, it doesn't work. In the photo at right by Dan Witzel of Parion Nutrition in Canada, a customer planted the left side with certified seed, the right with bin run; and you think you saved money? Would you buy bin-run corn from a neighbor to plant for silage?



Certified seed on left, bin run on right. The yield difference is huge.

Just like with corn and sorghum, there is the right seeding rate. My multiple year replicated research has **not** seen any advantage in planting over **100 lbs. winter triticale seed/acre regardless of the planting date**. As some suggest, planting 120 or 150 lbs. of seed means paying 20 -50% more for the same yield. If you are forced to plant late, utilizing seed with a 3-way fungicide (see below) will give you more yield.

A step many seed companies ignore is to have a **three-way seed treatment** on the seed. We have not figured out all the why's, but it has a clear, major benefit on the establishment and final yield of winter grains. Nearly all farms plant treated seed for intensely managed, high-yield wheat for grain, why not use this same benefit for high-yield forage? You can see this in the picture at the right of the same variety planted the same day with one treated and one not. In replicated plots, the triticale planting with the **treated seed grew much faster and tillered more when planted on time**. It was nearly double in height going into the winter. In the spring it yielded 15% higher than the untreated plots. When planted late (not recommended for high yield but it happens) the treated seed yielded 28% higher than untreated the next spring. Planting treated seeds helps to recover some of the impacts of late planting. It only raises the cost of the seed a minor amount. If you are that hysterical about the slight cost increase, reducing the planting rate on early planting from 100 to 90 lbs./a would pay for this extra treatment. You need to order your seed early to get this benefit as the winter forage seed providers are not used to doing this.

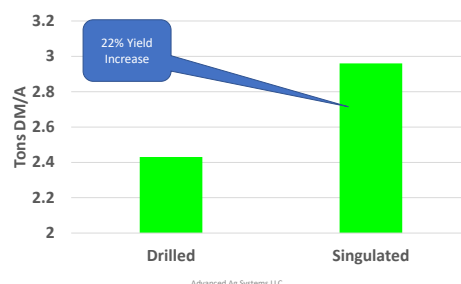


Treated seed on left, untreated on right. Same variety, same planting date.

Change your drop tubes on the drill from accordion to smooth-sleeved type. This has a major impact on the uniformity of the stand. My 1950s drill with sleeved tubes planted more uniformly than a brand new \$20,000 drill that had accordion tubes.

Ideally, you would place the seeds one at a time in the soil, this is called indexing or singulating. We switched to that with corn planting and saw a major yield improvement. It works with small grains. The best systems are the newer air drills that index each seed. When I planted with a sleeved drill and with an indexing plot planter, the indexed seed yielded 22% higher in replicated plots. You can then turn around and use the same drill to get that advantage planting the male sterile BMR forage sorghum I wrote about in March 2023.

Impact of Seed Placement on Triticale Forage Yield



**Two critical key steps** for a very high-yielding winter triticale foundation are to **plant on time and fall fertilizer**. Planting on time is the proverbial 500 lb. gorilla in the yield room. My research yields puttered along at 2 to 2.5 tons of



dry matter/a yield until I quit planting at the same time as wheat. **Triticale does best planting early** to maximize the number of tillers. We strongly suggest planting winter forage **two weeks before the wheat planting date** for your area. This is the most important factor in setting up the crop for high yield potential next spring. When I moved the planting date earlier the yield response the next spring was tremendous. Farmers who have followed this management step now are harvesting 3 to 4 tons of dry matter/acre at flag leaf the next spring. The crop should go into the winter as a solid stand with no soil showing between the rows. If the soil shows, you have not maximized yield potential.

Another factor that goes with the above key for establishing high yield potential is to supply **a minimum of 60 lbs. of nitrogen/acre in the fall**. These drives fall growth and tiller production for the next spring yield. This can be as simple as applying 60 lbs. of nitrogen and 6 lbs. of sulfur at planting time. If you heavily (excess) manured the field before the previous corn crop the organic fraction of the manure will still be released after the corn is harvested and can supply all the needed nitrogen and sulfur. If the field is a runout hay crop that was killed at the end of August, it will also supply enough nitrogen before cold temperatures stop the organic matter breakdown. My research and that of Pennsylvania State have found you should **NOT DELAY PLANTING IN ORDER TO APPLY MANURE**. Even with added manure nitrogen, you lose more yield potential delaying planting. In those cases, apply some nitrogen at planting, and save the manure to be injected after soil temperatures drop below 50. At this late point, you can save a pile of money and apply manure in an environmentally sound manner by injecting it with a rolling coulter manure injector. Set at a shallow angle and less than 3 mph, few if any stones are brought up. One pass with a roller the next day will assure the field is smooth for next spring's mowing.

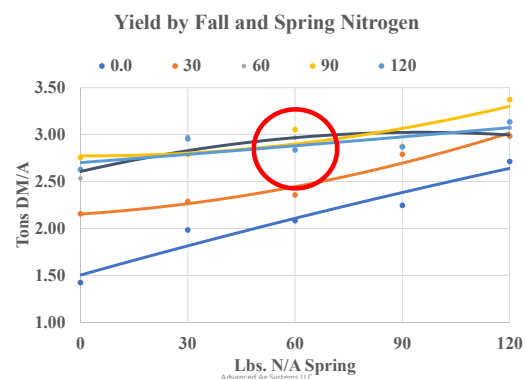
Planting early with nitrogen to boost fall growth will **NOT produce excess growth that winter kills**. We clearly saw that in multiple, replicated planting date/nitrogen trials. What kills the stand is snow mold that occurs when water collects in low areas and tire tracks during winter thaws. These are perfect conditions for snow mold to grow. The bigger plants (planted early or on time with fall nitrogen) are usually more successful at staying above it and growing out of the mold. For flat or pocketed fields that turn into small ponds in the winter thaws, you can fertilize those areas by spraying with liquid sulfur fertilizer and a spreader sticker in late November before the snow. This has stopped the snow mold. (Note: this is a fertilizer recommendation, not a pesticide recommendation ).



Planting on time on left maximizes yield, nutrient uptake and storage, smothers weeds, and stops soil erosion. Late planting/cover crop management on right does none of these.



On time planting on left maximizes yields of 3 to 4 tons of dry matter/acre.



Sincerely,

*Thomas F. Kilcer*

Thomas Kilcer,  
Certified Crop Advisor

2150 Cherry Street  
Rutledge, TN 37861

Tel: 518-421-2132

[tfk1@cornell.edu](mailto:tfk1@cornell.edu)

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