



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."

Short on Forage

Across the northeast, the season has been a wide range of conditions. Much of New England and New York has been very to extremely dry. Further west, areas have been wiped out from too much rain. We lost several sorghum research experiments due to extended cold weather in June! The bottom line is that it is mid-July and we need forage. Fortunately, last year with the help of Preferred Seed Co., we put in an "oh crap it is mid July, what can I plant" test. It was very dry thereafter (only 4 significant rain events until the end of September). We still got crops of very good feed quality and economic yields. The potential advantage this year is that weather forecasters are saying September and October will be warmer than normal so we may capture more yield and reach maturity if we miss the frost.

There are a number of options. Where ever possible select a brown mid rib (BMR) type of forage as you need to maximize fiber digestibility in order to get milk production.

In most cases we are dealing with a wetter, high sugar forage. We found a longer length of cut – ¾ to 1 inch - with no processing, reduces the leachate tremendously. We highly suggest using a homolactic bacteria without enzymes to properly preserve this special forage.

For areas **south of New York** you can still plant an 80 – 85 day corn. Last year planting on July 10 we had a nice crop of corn silage by the end of September. The yields were a respectable 14 – 15 tons of 35% dry matter silage. It was still slightly immature with an average of 28% dry matter. Without a frost we could have waited for it to dry more. This is why we are suggesting this for areas south of NY border where they still have enough season to mature the crop. For this region, you could also plant a short season bmr forage sorghum and get an excellent late harvest. For New York, and across Michigan to Minnesota, the season is too late for either of these crops.

As we move north, the options reduce. The yields also reduces as we have less season and sunlight available to produce a crop. All is not lost though.

One that is not always considered is a BMR grazing corn that is **harvested at tassel stage**. Waiting to harvest later just leaves you with a lodged mess. We tested two varieties, an open pollinated variety and a hybrid. The hybrid emerged better and grew faster. The open pollinated produced 9.5 to 10.8 tons of 35% dry matter silage (had stand establishment issues – we don't know why) at 25 to 28% dry matter. The hybrid grazing corn produced 11.9 tons of 35% dry matter silage but it was wetter at 21% dry matter. Both would need to be chopped without processing and we suggest a ¾ to 1 inch length of cut to reduce leachate. A farmer in Canada put some of this wetter grazing corn on top of a 3 ft layer of drier haylage and



The narrower 15 inch rows of BMR grazing corn quickly covered the ground, intercepting the maximum amount of light. The traditional wider rows took longer for the same shading and yielded 2.7 tons less.

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had no leachate as the sugars, and proteins in the liquid running out of the wet feed were captured by drier forage underneath (smart idea!).

For all areas the most practical is to plant BMR sorghum Sudan. Drilled to capture sunlight for maximum yield, it will get out of the ground quickly. The two varieties we planted yielded 11.5 and 12.3 tons of 35% dry matter silage with no significant difference between them in replicated plots. Dry matter was not significantly different at 22% and 18%. These crops could be harvested with a direct cut head if you watch your forward speed, and the plants have reached heading stage. If they are shorter and vegetative, or thin stemmed, then mow directly to a windrow and chop. Tine conditioners use a huge amount of power and do not help drying. I do not suggest trying to dry this crop much as you add considerable dirt to the forage for decreased milk production. **Even worse, leaving it overnight burns off the considerable sugars** which are critical to production and fermentation; **plus increase the potential for clostridia and butyric formation**. If you put this wet forage in an oxygen limiting bottom unloading silo, you will never run out of feed as you will never get it out! The crop can be round bale wrapped if a processing knife is used to reduce the stalk size to a manageable level. A better choice for round baling would be BMR Sudangrass with its higher quality and smaller stems.

A crop we have been doing more work with is a BMR pearl millet. Other researchers and I have found that pearl millets have very high feed quality. In our replicated study, the corn was 12.9% crude protein, the sorghum-Sudan was 14.2%; and the BMR pearl millet was 20% crude protein. The energy as tested by several ways of measuring, was similar between the grazing corn, sorghum-Sudan, and pearl millet. All three had very high plant sugars. The grazing corn and pearl millet do not have prussic acid management issues. Pearl millet has thinner stems that may be easier to round bale for wrapping

As we get to the beginning of August, the temperatures start to drop at night and slow the production of the above warm season crops. Cool season crops can thrive under these conditions. For those planting early August, fall planted oats for forage has the biggest potential and most practical. Planted at 3 bu/a of grain type oats, you could harvest 2 to 4 tons of dry matter by the end of September if planted in early August (for Albany, NY area). As planting is delayed, yields fall dramatically. The normally cool night temperatures of September conserves the sugars and produces forage of high fiber digestibility.

There are critical steps for success. Planting the end of July or the first of August has the risk that **aphids bring in Barley Yellow Dwarf Virus** which can kill the plant. Dr. Shields at Cornell reports, "Since Barley Yellow Dwarf virus is circulative, a neonic seed treatment will kill many aphids before they can transmit the virus.....most of your problems would be in the disease area like rust." Rust is very prevalent this year and there are a lot of spores to infect new oat plantings. There are some resistant varieties coming on to the market. It is highly suggested that your seed dealer treats any VNS (bin run clean oat grain) with both a fungicide and an insecticide before planting for forage. This will alleviate a lot of potential disasters. If you choose to ignore this advice and plant non treated seed, we suggest slightly delaying for the cool nights of August to reduce the aphid population. We once planted oats at the end of July and by the end of August all were dead from disease.

Grain oats will be ready in late September when you still have some heat to dry it for silage. If you are not going to be able to plant until later then the slower forage oat type would be the better recommendation. Be liberal with the manure and immediately incorporate it to capture the ammonia nitrogen. Oat silage is 16-17% crude protein if it has enough nitrogen and sulfur. **NOTE!:** If you applied manure before planting, it is **NOT** recommended that you feed this to **dry cows** as **potassium levels** will run over 5%. For high pro-



BMR forage sorghum-Sudan can produce good yields of quality forage in a very short period of time.



BMR pearl millet is dense, high yielding and high quality. The smaller stems fit round bale wrapping very well.

ducing dairy cows, mow as soon as the flag leaf is out (will also reduce lodging issues). If you are extremely short on forage, the traditional “boot” stage or even headed stage will give you higher yield of good forage. The later cut could still have high digestibility because very cool night temperatures inhibit respiration of the most digestible parts, and they accumulate in the plant. We often have green oats until the first snow.

Heavy yielding fall oats are wet. **Mow wide swath, and TEDD** after two hours of drying. You are trying to dry something that can yield 2 – 3 times more tons of dry matter than a heavy first cutting alfalfa. As soon as the top has a light grey cast (pick up a surface plant and see if it is greener underneath) ted to get the lower layers spread and drying (use a slower forward speed or you will make non-drying tedder lumps). **It is critical that it be ensiled the same day you mow** because of the very high sugar levels. Leaving it overnight burns off the sugars and produces higher populations of Clostridia and higher levels of butyric acid. The only **exception** for overnight, appears to be nights that drop to the 30's which appear to reduce respiration and hold quality. Use a homolactic bacteria that can handle a high sugar wetter forage to produce an excellent fermented forage.

Fall Spring Oats plus Winter Triticale: Three bushel of oats planted with 80 pounds of triticale in the beginning of August will give an oat harvest the end of September. If you **mow the oats at cut height of at least 3.5 inches** the triticale will continue to grow into the fall. It is **critical that the triticale be planted at 1.25 inches deep to prevent heaving**. Fertilized the triticale as normal the next spring and you can have two very high quality forage crops in one planting.

Last, Last Chance Forage As we move into the cooler temperatures of fall and with adequate moisture, it is perfect conditions to grow high yields of high quality cool season grass. It has the kind of digestibility in a forage you want for your peak producers. For grass or greater than 50% grass in the stand, an application of nitrogen (plus sulfur to boost protein) in August can give you very good yields of very high quality forage. As with the oats above, the cool night temperatures reduce lignin and conserve the sugars as the plant grows, and so you end up with a very highly digestible wet forage.

Winter Forage for Early Next Spring:

The winter forage such as triticale provides an early harvest of extremely high quality forage. Farms were shocked to find that it also produce high quantity of forage. They didn't realize how much they needed to chop to get it into storage. My plots this year averaged 3.38 tons of dry matter (9.7 tons of silage) per acre. The cows loved it. The earlier you plant the higher the yield potential the next spring (providing we get spring rains, not like 2015). Based on our research we suggest **planting 10 days to two weeks before wheat date** in order to optimize winter forage yield potential from maximized tillering.



Cool season grasses put on a burst of growth in the fall. Feeding this burst with nitrogen and sulfur can greatly increase the production and build your drought shorted feed supply with quality forage.



The earliest and the highest quality forage produced in the northeast is winter forage at flag leaf stage. Not only does it augment the rapidly dwindling forage supply, but produces forage that supports the high cows.

Sincerely,

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