



ADVANCED AG SYSTEMS'S

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**

Sorghum Update: Uncovering the Potential

With increasing number of farms incorporating winter triticale in their rotations, there is a need for a highly digestible summer energy source that can fit in the slightly narrower season between spring harvest and fall planting of the superior quality winter forage. Unfortunately, corn falls short on two fronts. Except for a few specialty breeders, most of the shorter than 90 day corn is out of flint type germplasm (think popcorn type kernel) that produces a hard kernel that does not digest as well even after steeping in the silo for a number of months. The second reason is that the bmr corns that are available are all longer season and so have the potential in much of the northern portions of the northeast to significantly reduce the yield of the higher milk/ton winter forage because the longer corn forces later triticale planting. (note:sorghums do not get corn diseases and vice versa).

As an alternative, we have been researching shorter season BMR sorghum in upper New York for best management practices.

This year we finally were able to test the new BMR brachytic dwarf sorghum. Many forage sorghum with grain heads have a habit of falling over shortly before you are ready to harvest. Because they normally lodge 2 – 3 feet off the ground, most omni direction harvesters have no real problem – for row units it is a problem. The concept of a dwarf is to make a shorter plant that is more resistant to lodging. Also, because of their stocky stalk, lodging resistance is significantly increased. Before you jump to conclusion and say "I don't want to grow a dwarf crop," consider this point. Who weighs more, a 7 ft tall basketball player or a 6 ft tall football linebacker? The brachytic dwarf is the football linebacker. In the photo at right are two dwarf stems of the 85-89 day bmr dwarf sorghum variety. In the middle is a stem of the 83 day bmr sorghum that I had written about and pictured last year. The outer plants were 6 - 7ft. tall while the inner was 9 + feet tall, yet there was no statistical difference in yield between them.



As you can see in the photo on the next page, the 83 day this year, last year, and the year before lodged as soon as the seed head started to fill. There was NO lodging or even leaning in the brachytic dwarf varieties. They stood through the wind and rain, but with the BMR gene are highly digestible. Having studied and tested various sorghum species for a number of years, this advance is a real game changer. Unless you are harvesting at boot or early head for grass fed beef or have such a

restricted growing season, I suggest you not use the 83 day non-dwarf variety but use the newer dwarfs.

A critical change we made (for the better) was to switch from the 1960's drill pictured in the last newsletter to a new Great Plains no-till drill thanks to Jean-Paul Cortens of Roxbury farm. The difference in uniformity of seed placement, precise control of seed rate, and ease of operation was like night and day. Modern drills with depth control, press wheels, and gear controlled seeding mechanism allows exact planting at the very low <10 lb. /A seeding rates at which most sorghum is planted.

We are still looking at, and hopefully will again this year test, various management practices to optimize this crop. One of the first critical issues is to determine optimum seeding rate. For the dwarfs we used 4 – 5 lbs of seed/acre (hence the need for a very accurate drill). The dwarf seed is smaller than the regular sorghum and was much slower to emerge. Couple this with the cold and wet first half of June in our area, and dwarf stands were not as thick or uniform as we would have liked. This is where the species came to our rescue. The tremendous ability to tiller produced five and six mature stems from one seed where the population was the lowest. This ability to fill in saved the yield for us. We will be looking at planting 7 – 9 lbs. /A of seed next year to correct this issue. Even with the very low establishment rate, the dwarf's yield ranged from 16 to 26 tons / acre of 35% dry matter silage (one plot hit 40 but we think that was a fluke). With sufficient and uniform population in the future we expect yields to go higher.

The other test we are researching is to plant in narrow rows. The objective is threefold. First, as we plant further north, and need to wait for warm soils, we are delaying the time to canopy closure that maximizes sunlight interception and hence yield. Narrow rows quickly limit weed escapes (we had excellent weed control utilizing a seed protectant on the sorghum seed and a standard corn broadleaf/grass weed control). Narrow rows also intercept raindrop impact from downpours that tends to blast and destroy the soil structure on the surface. Destroyed surface soil plugs the pores that let air and water into the deeper soil profiles, and so limits plant growth. In this one year, one location test, the narrow 7.5 inch row gave numerically higher yields but was not statistically significant. This means that those planting with a corn planter and sorghum seed metering disks will not have a yield loss. (note to our friends in upper Canada – sorghum species does NOT like cold soils or cool summers so there is a northern limit for this crop)

In the south they have been growing this crop for years. We are still in the learning phase and will hopefully be testing a number of practices this year. For those who are innovative and want to test a small acreage, I have been told that seed will be available this year.



The short (83 day) bmr sorghum for us lodged as soon as the head filled.



BMR brachytic dwarf sorghum has tremendous standability yet is both highly digestible and high yielding.

Sincerely,

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