



ADVANCED AG SYSTEMS'S

Crop Soil News

<http://www.advancedagsys.com/>

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

Sorghum

The good, the bad, the on-going learning process

As I wrote December 2011, (<http://advancedagsys.com/newsletters/>), the sorghum species has tremendous potential under dry conditions. With the development of shorter season varieties (83 day), this potential has moved north. As long as the summer is warm, it will continue to move north. The BMR 6 gene prevalent in the varieties we tested; has been shown to produce the same milk as high quality corn silage. Because a greater percentage of the energy is contained in highly digestible forage, rumen pH's are higher and so components are benefited. As we have entered a new weather pattern of cool Pacific and warm Atlantic (a natural process that has been going for centuries - nothing to do with political climate change) we are expecting more radical weather for the next 10 – 15 years. Growing a number of different high yield, high quality forages, will reduce your risk of drastic shifts in forage supply or quality. Sorghum is one of those new crops.

As with any new crop there is a learning curve. My job is to make the mistakes so you don't have to (so I am qualified as a professional screw-up??). A number of farms have also helped by contributing both mistakes and advances in how to manage this crop.

The first thing most farmers learned is if your sorghum seed supply only plants half the acreage it is supposed to, you **over planted**. It is the **most common mistake**. Most drills have to plug every other hole in order to get the seeding rate low enough without planting sorghum flour (ground up seeds). Newer ones have gear reductions for correct planting. Over planting sorghum, like over planted corn, assures that the crop will probably start lodging about the time it heads. The fortunate part is that BMR sorghum will lodge about 1 to 2 feet off the ground. This gives enough clearance for a row-less chopper head to slip under and get the entire crop (picture above). The farmer reported that they had to take the snouts off to allow the lodged material to feed in. Another farm that planted with a drill in twin rows on 30 inch centers was able to get all the material by going one direction after a severe thunderstorm laid the crop down at boot stage. In another field after a sequence of severe thunderstorms pushed the crop even flatter on the ground, the farmer was able to get the entire crop by mowing with his condition-less hay mower and putting it directly into the windrow for chopping. This is not a step we want to plan on taking as the extra trip increases the cost of producing the crop.



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Until we can do more research, I am leaning toward a corn planter with sorghum drums planting on 15 inch rows for uniform stand establishment. Accurate seed indexing is becoming more important in a number of crops (wheat, triticale, soybeans), but especially in sorghum. Our own planter (a 1960's era press wheel drill) was set to plant every other row (12 inch center to center) at 8 lbs. /acre. It tended to plant single seeds and then dropped a clump. The weak bunch that was then produced tended to lodge first, knocking down the stronger plants. There are several vegetable planters out there that have the ability to plant sorghum size seeds in a single pattern on narrow rows.

The **long term lodging answer** lies in incorporating the **brachytic dwarf gene** in the shorter season varieties. This produces a much shortened stalk that has the leaves close together (see photo). The stalk though is 2 – 3 times larger in diameter. Thus, it will produce the yield without the lodging. The analogy is of a 7 ft. tall basketball player and a 6 ft. tall football linebacker. The linebacker will outweigh the basketball player every time. The same with the brachytic dwarf varieties; they are football linebackers. The field results are showing excellent yields without lodging. At this point the only variety is a very long season type that has to be grown south of the Mason-Dixon Line (lower edge of Pennsylvania). We will be testing new varieties that are in the 90 day range. This is still a bit long for northern half of our region to grow in combination with double crop winter forage, but there are new shorter season ones in the breeding line. There is also a BMR brachytic dwarf sorghum-Sudan that we will include in our trials. We will keep you posted on how the new ones did as we complete the research each year. It is a rapidly changing scene and we are learning as we go.



What We Learned This Year: Drills can be set for 8 lbs. /acre seed rate if you plug every other hole. You can also use a drill to plant twin rows on 30 inch centers for harvest by regular corn choppers. We used Concept treated seed that allowed us to use atrazine and Dual for weed control. Once the plants reached knee high, the ground was completely shaded (drill gave 12 inch row width). At the Cornell Valatie Research Farm, **early corn reached 15 tons/acre** before dying in the drought. The longer season corn managed to stay alive and was very short but produced a good ear from the later rains. In spite of a dry June, extreme dryness most of July (burst of rain at the end of the month) and dry for much of the first half of August, we achieved an average of **20.5 tons/acre @ 35% dry matter from the BMR Sorghum**. Our plots started to lodge in the thunder storms of late August when they were starting to fill the seed heads; but were knee high before bending horizontal which allowed for harvest. In spite of being at above optimum moisture we were able to get excellent fermentation. Read the October 2012 newsletter (<http://advancedagsys.com/newsletters/>), on how we can wet forages and ferment them safely for high forage diets.

Sincerely,

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Hand
to Better
Agriculture**

