



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."

Why Sorghum

Most corn is in the ground. Fields that were weather-caused fallow can still produce a very high-quality forage from sorghum.

Sorghum is planted after corn because the soil has to be warmer than for corn for rapid germination. Thus, planting after early winter triticale and haylage harvest gets those jobs out of the way and gives time for the soil to warm. I have planted into warm soil with a rain immediately after, and the sorghum was all up in 2 days. I planted in warm soil and did not watch the weather forecast, and the field was bare two weeks after, as the cold rain that followed planting killed all the germinating seeds.



Corn seed is \$180/acre or more. Sorghum planted at the correct population is \$20/acre. This is a major savings. Sorghum kills corn rootworm, so the extra cost for rootworm control is not needed. Deer pressure is canceled as they hide in the crop and come out to eat the neighbor's corn. It does not get the corn diseases, and so far we don't have fungicide sprays for forage sorghum.

Drilling in narrow rows shades the ground sooner and allows for a larger stalk size for both standability and digestible nutrition storage. Our target is **60,000 seeds/acre in 6- to 8-inch rows**. 15-inch rows could do, but the plants are more crowded in the row. We do NOT suggest planting in 30-inch rows like corn silage. The crowded plants are very susceptible to lodging before harvest. Planting a higher rate of seeds/acre does **NOT increase yield and does INCREASE LODGING**. Smaller stems have a higher percent rind that is mostly indigestible lignin. Milk/ton was maximized in our replicated trial at slightly above 60,000 seeds/acre in 7.5 inch row planed with an air drill. Don't let a seed salesperson tell you different. You and your crop will pay the price otherwise.

You need to make adjustments to achieve this. There are several ways. The best appears to be planting with an air drill directly into 7.5-inch rows. Each seed is index-planted so it produces very uniform stands. In both triticale and forage sorghum, placing each seed exactly (like we do for corn) maximizes yield and minimizes lodging. Most drills are a controlled dump that does not have this degree of accuracy. The clump of crowded seed causes an increasing circle of lodging, which knocks over plants next to the clump. Adding insult to injury, cranking the drill down to 4 lbs. seed/acre, like most varieties need to be planted at, results in you planting ground-up sorghum flour – not viable seeds. Adding something like

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cracked corn at the same rate as the sorghum and then planting double the pounds/acre can help get around this, but having an accurate indexed drill planting each seed individually is best. An alternative is to take a 15-inch corn planter and put in Milo plates and set it for 30,000 seeds/acre. Set the draw bar 4 inches to one side. Plant up the field and then come back on the same tire tracks will make two rows that total 60,000 seeds/acre on 8-inch rows with each seed single-planted. Make sure you have adjusted both the forward and back set of planter units so they are planting the right amount. We made the mistake of setting one toolbar of planter units, not realizing that the second set also needs to be set separately. It created a lodged mess.

Planting sorghum after triticale harvest works very well. It is after 3 to 6 tons of very high-quality dry matter triticale silage is harvested. It is after haylage harvest, so that is on time. The soil is then warm, so the sorghum can jump out of the ground. Do **not no-till sorghum** into triticale stubble like we do corn, as **allelopathy will wipe out or severely decimate the sorghum stand.** The allelopathic compounds from the winter grain are in the top inch that affect the sorghum germination. Working the top inch will break down the allelopathy and eliminate that problem. Some farms apply manure and immediately work the top inch to capture the nitrogen while breaking down allelopathy, and then plant a day or so later, after the ammonia reacts with the soil.

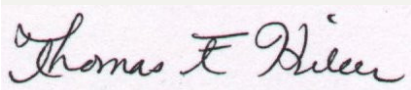
Most of our planting has been Brown Mid Rib varieties to achieve high digestible forage. Brent Bean of the Sorghum Check Off has seen varieties that were not BMR but had the same high digestibility. We are looking at this further, as forage digestibility is the critical factor we are looking for.

A major sorghum problem is grain production in silage systems. Grain quickly gets as hard as a shotgun shot and so goes through the animal, not digested. Corn processors will not do the job for the small hard sorghum seeds. They are working on other processors, but we have taken a different approach. Male sterile or treatment to produce no seed produces a crop with no hard seeds, low starch, but very high WSC sugar of 28-30%. (corn is 2 – 4% sugar). The major savings are canceled if the crop does not produce the same milk as corn silage. The surprise was a university trial where corn silage was partially removed from the ration, and BMR sterile sorghum with delayed harvest to increase sugar levels replaced the corn. The result was that the **milk production increased 8 lbs./cow, and components increased significantly.** Sterile sorghum was a superior crop to corn silage for milk production.

The biggest temporary problem is the availability of reliably seed supply. One I tried worked great. I tested it again 3 years later, and it was a disaster as the male sterile was contaminated with fertile grain and forage sorghum varieties that ruined the improved feed value. Another sent up a sterile head and then sent heads up from each leaf axis, with the result that the indigestible lignin went from 8% to well over 20%. Finally, watch the carryover seed. If it had been treated the previous season with a seed safener, the germination would be much, much lower than this season's fresh seed.

We will be testing some new male sterile varieties from outside the US this year. We will also be testing a treatment at flowering that will take normal bmr sorghum and make it sterile but without the risk of ergot infecting the inflorescence as sometimes happens with male sterile.

Sincerely,



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Hand
to Better
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