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Crop Soil News

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December 2016

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

The Good the Bad the Ugly Of Forage Sorghum Research

Advanced Ag Systems
Research, Education, Consulting

There is increasing interest in moving this southern US crop, forage sorghum, into the far north. Yields have been competitive with many corn varieties; it is flexible enough to fit between the spring harvest and fall planting date of the rapidly increasing acres of winter forage; it is not bothered by deer and corn rootworm pressure; and the seed cost /acre is $15 to $20, not the $83+ /acre for some corns. We have been conducting research with help from Dr. Ketterings at Cornell, sorghum seed companies, and key help from the **New York Farm Viability Institute** to determine the true forage potential of this crop in dairy rations and what potential problems there are so farmers can avoid them. The following is a synopsis of what we had this past season.

The bad: We followed the best management and waited until the end of May when soil temperatures were above 65 F before planting. The first trial went in on May 25. It emerged in spite of the somewhat dry weather. The next trial went in on June 3 when soil temperatures were 72 F and soil moisture was prevalent up to the surface. One trial was planted with a cultipacker seeder and the other was planted with a drill with press wheels-so far, so good. Then we had three nice sunny days followed by an icy cold rain and three day/nights in the lower 40F. The soil temperature at 4 inches plummeted to the upper 50's. It was much colder where the seed was planted. It did not hurt the first emerged stand, but the later planted that were just sprouting but not emerged, suffered chilling injury that killed 98% of the stand in both trials. I have also had this occur with corn about 5 times in my Extension career. It is the luck of the draw. It took a bit to realize that the damage was done and so we replanted on July 8.

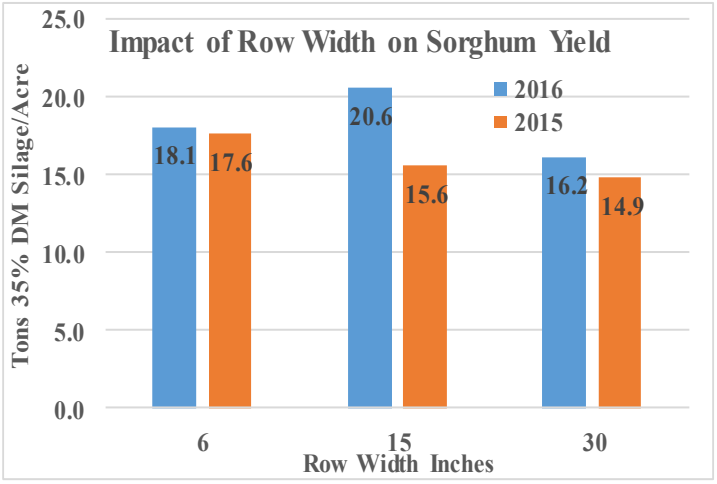
The ugly was the extreme dry condition of June and most of July. For our sandy soils that get very fluffy when dry, a packing before running even the cultipacker seeder appears to be beneficial for the critical seed soil contact necessary to get the small sorghum seeds germinated – something we learned after planting. When the plants were small they struggled to find water as the top 8 inches of soil was flour dry. This affected the final populations that were established. Stands were a lot thinner than for what we had planted – yet yields were close to normal as its prolific tillering filled in any gaps in the stand. Sorghum can fool you like that. On-going research is looking at how to increase the percentage of the planted seeds that become mature plants. In spite of our best efforts, only about half of the

30 inch row @150,000 seeds/a (8.3 lbs./A)

15 inch row @150,000 seeds/a (8.3 lbs./A)

6 inch row @150,000 seeds/a (8.3 lbs./A)

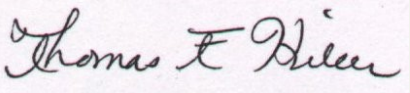
seeds actually become mature plants – which complicates our effort to determine optimum populations in the Northeast. In the population study of row width and seed rate, narrow rows have a yield advantage over the standard corn 30 inch rows. In **2015** the 7.5-inch space was significantly higher yielding than the 15 or 30 inch. These results were the same as work completed in Texas. In the second planting **July 8, 2016,** the15 inch rows (often planted by a drill with every other hole plugged in order to achieve the low seeding rate of 8 pounds/acre suggested) came out significantly higher than the 6 inch rows. The bottom line: cover the ground as soon as possible to maximize yield from sunlight interception; out compete weeds by shading the ground quickly; prevent soil erosion and moisture loss.



Narrow rows if you harvester will permit, maximizes many of the benefits of forage sorghum. NOTE: the 2016 yield is from a crop planted **JULY 9** ; harvested **OCTOBER 6.**

The good: The dry conditions also showed the positive side of the sorghum species in that it will produce twice the amount of dry matter on an inch of water than will corn. In spite of struggling with many days tightly rolled, when it started raining, sorghum unfurled its leaves and started to grow again. Yields exceeded corn silage planted at the same time. The stage of harvest studies yielded 23.5 tons /acre of 35% dry matter silage at one site, and 26.8 tons /acre at the other site that had two extra key watering's in the season. We are in the middle of determining the feed value compared to corn silage. Preliminary work indicates that harvesting slightly earlier than soft dough stage is possibly the best. Data is being analyzed to determine this.

Sincerely,



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