Grain Sorghum
Best Management Practices for Mid-Atlantic Production

Sorghum offers many options for Mid-Atlantic farmers. Drought tolerant, water-sipping and nitrogen efficient, sorghum provides a summer rotation that has proven to be profitable in the harshest conditions and lucrative when good weather prevails. Sorghum also offers a change up in herbicide chemistry, offering a way for farmers to combat the increasing infestations of glyphosate resistant pigweed and horseweed while also leaving high residue on low organic matter soils. Sorghum also works well in a rotation to combat nematode infestations and seems to be less favored by the high deer populations compared to soybeans.

Hybrid Trials

Hybrid selection is critical to the success of the sorghum crop. Hybrids can be broken into three categories: early, medium, and late. Generally, early hybrids reach flowering in 45 to 55 days. Medium hybrids flower in 55 to 65 days and late hybrids take longer than 65 days to flower. A list of the most recent grain sorghum field trials for the Mid-Atlantic region can be found at www.SorghumCheckoff.com or at the link: http://pubs.ext.vt.edu/author/b/balota-maria-res.html

Harvesting Aids

Ideally, sorghum should be harvested at 16-18% moisture and dried down to 13.5%. This gives an excellent quality grain with less potential for lodging. Grain sorghum producers may consider harvest aids, particularly glyphosate, to manage sorghum drydown and harvest. When conditions are hot and dry and there is no substantial differential in head maturity, then harvest aids have less to offer and may be of questionable economic benefit. One caveat of applying harvest aids is significant presence of stalk or charcoal rot can make fields especially prone to lodging if a harvest aid is used and prompt harvest does not occur. Because of tropical storm wind and rain damage in coastal areas, if glyphosate is sprayed and plants are killed, then harvest must occur before stormy weather, whether the stalks have charcoal rot or not. Sodium chlorate and glyphosate are labeled for application in grain sorghum. Paraquat is not labeled for use in sorghum drydown. Glyphosate is a preferred option among many producers as additional late-season weed control benefits may be achieved, particularly in fields that have significant Johnsongrass. Both chemicals generally state that applications should be made once the field is generally mature and seed moisture is below 30%.

Planting Dates

Research in the Mid Atlantic region shows high yields can be obtained from planting dates ranging from May 1 to July 1. Optimum planting dates for consistent yields occur May 10 to June 15. Double-cropped sorghum could be planted as late as July 10, but later dates result in a crop that will not mature until late fall and will increase the risk of an early fall frost damaging the crop. Late maturing hybrids can be planted through July 4. After July 4, medium maturing varieties are recommended. After July 15, early maturing hybrids should be planted although planting that late is not recommended. There are very few early maturing hybrids suited for the Southeast. There are a good many late and medium maturity varieties that work well in the Mid Atlantic.
Anthracnose has the potential to be an important fungal disease impacting grain sorghum yield in North Carolina. Symptoms usually begin as red spots or lesions on the lower leaves, which expand and can eventually kill the entire leaf. The disease can move up the plant, infecting the stalk, peduncle and grain head.

Hybrid selection and carefully timed fungicides to control anthracnose can result in significant yield increases. Average yield of full-season hybrids can be related to how resistant hybrids are to anthracnose. In 2013, resistant hybrids yielded about 90 bu/ac while susceptible hybrids averaged about 20 bushels less. In a smaller test of late-planted short-season hybrids, resistant hybrids yielded 45 bu/ac compared to susceptible ones that yielded 30 bushels less. Headline (12 oz/ac) has been shown to give a 17 bu/ac yield advantage when applied at first flower due to anthracnose control.

Seeding Rates

Seeding should be done in seeds per acre NOT pounds per acre. Like wheat, sorghum seed varies greatly in the number of seeds per pound, which can impact the number of plants seeded.

In most cases, sorghum should be planted to achieve final plant populations of 75,000 to 100,000 plants per acre. At 85% emergence, this would require 88,200 to 118,000 seeds planted per acre. When planting after June 15, increase seeding rates by 20,000 seeds/acre.

Wheat Following Sorghum

If you are a Mid-Atlantic farmer considering planting wheat following sorghum, following these management techniques that are sure to make your wheat-sorghum rotation a success.

- Make sure pre-plant nitrogen, phosphorus, potassium and sulfur are at the high end of recommended levels.
- Sorghum produces more residue biomass than corn and growers should take steps to account for the effects of higher residue, including better chopping of stalks, a good preplant N program for wheat, early planting, etc.
- Due to the large amount of residue produced by sorghum, make sure your combine straw chopper is in good working order or mow sorghum residue after harvest to minimize large piles of residue that will lead to poor seed placement and poor wheat emergence around residue piles.
- If planting no-till wheat, remember to increase your seeding rate over conventional till rates.
- No-till wheat is not common in the South Carolina coastal plains.
- Strictly monitor wheat tiller development. Growers are encouraged to check tiller density around growth stage 25 (usually in late January or early February) and apply an early N split if needed.
- South Carolina growers can get the 2012 “Wheat Cheat Sheet” from their local extension office.
- Higher N rates for wheat at growth stage 30 should be considered to overcome N tied-up in sorghum residue. Tissue testing to determine optimal spring N rates is highly recommended for growers in North Carolina.