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Sorghum Midge Resistance in 18 Grain Sorghum Hybrids-2009

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Grain sorghum is a good rotation crop in the southern Coastal Plain region, where it is impacted by a variety of cyclic insects and pathogens from the seedling stage through maturity. Diseases were of minimal importance in 2009. Although their damage was not as high as in 2008, 10 insect pests were recorded on sorghum in southern Georgia in 2009. They were, in order of importance for 2009, listed as follows: fall armyworm, sorghum webworm, sorghum midge, stink bugs (southern green and brown stink bugs), leaf-footed bug, chinch bug, corn earworm, and aphids (corn leaf aphid and greenbug).

Eighteen hybrids were evaluated for resistance to sorghum midge in 2009. The hybrids were planted with 4 replications on May 7, 2009. The flowering date (or days to anthesis) was recorded during July. Sorghum midge damage was rated on Aug. 10, 2009. Midge damage was rated according to the visual estimates of grain loss. Grain loss caused by midge infestation can be separated from other factors using the whitish-cast skins hanging at the tip of glumes during pre-harvest examination. Sorghum midge damage was assessed according to the following rating scale: Very Good = 0 - 15% of empty glumes on any of the sorghum panicles in an experimental plot; Good = a few empty glumes (16-30%) observed on a panicle; Fair = 31-75% of empty glumes on a sorghum panicle; and Poor = majority of sorghum panicles with more than three quarters (> 75%) of empty glumes.

The sorghum midge is a cyclic insect pest in grain sorghum production in the southern Coastal Plain region. The overall damage caused by sorghum midge is usually high on late flowering hybrids. Midge damage was low in general for 2009, which could be the result of earlier planting in 2009. The current test was planted on May 7, 2009, while the planting date for previous year was June 16, 2008. Most of the entries (14 of the 18 entries) were rated as Very Good (VG). Three hybrids were rated good (G), and one hybrid was rated as Fair (F), and none of them was rated Poor for 2009. Please refer to the table on next page for more details.

It is highly recommended that growers use available insect and disease-resistant hybrids, which is one of the most economical pest management strategies for sorghum production in our region. For further integrated insect management information, please consult with your local county agent and/or extension entomologists.

This test was maintained and flowering-date data were collected by Charles Mullis and Penny Tapp from the Crop Genetics and Breeding Research Unit, USDA-ARS, Coastal Plain Experiment Station, UGA-Tifton, Georgia.

Evaluation of Grain Sorghum Hybrids for Resistance to the Sorghum Midge, 2009, Tifton, Georgia[1]

Brand	Hybrid	Days to Anthesis[2]	Midge Resistance [3]
Asgrow	A571	63	VG
Pioneer	83G66	63	VG
Southern States	SS560	68	VG
Southern States	SS800	67	VG
DeKalb	DKS54-00	61	VG
University of Florida	NK8416	64	VG
University of Florida	FGS-0620	62	VG
DeKalb	DKS54-03	64	VG
University of Florida	FGS-06BK13	65	VG
DeKalb	DKS44-20	61	VG
DynaGro	771B	62	VG
DynaGro	720B	62	VG
DynaGro	730B	65	VG
Southern States	SS650	61	VG
DeKalb	DKS53-67	63	G
DynaGro	778B	70	G
DynaGro	732B	65	G
DynaGro	758B	67	F

1. The test plots were maintained with irrigation.
2. Days from planting to 50% bloom.
3. For sorghum midge resistance, VG = very good, G = good, F = fair, and P = poor.