

Evaluation of Grain Sorghum Hybrids for Resistance to the Sorghum Midge

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Although grain sorghum is a good rotation crop, the plants are impacted by a variety of insects and pathogens from the seedling stage through maturity in the Coastal Plain region. Nine insect pests of sorghum in southern Georgia were detected in 2005. They are, in order of importance: the sorghum midge, the southern green and brown stink bugs, the sorghum webworm, the fall armyworm, the lesser cornstalk borer, the corn earworm, the greenbug, and the leaf-footed bug. In addition, during the growing season of 2005, sorghum ergot infection was also severe in the experimental plots.

The midge-infested heads can be separated from seed losses by other factors using the whitish-cast skins hanging at the tip of glumes during the pre-harvest examination. The sorghum midge is a cyclic pest in grain sorghum production in Tifton and the Coastal Plain region.

Sorghum midge resistance was recorded in 8 of the 21 cultivars in the test, which was planted on May 10, 2005. Evaluation of grain sorghum for resistance to the sorghum midge was conducted on August 20, 2005. The midge damage given in the following table is expressed according to the visual rating of grain loss based on four replications. Although the other sorghum insect pests were observed on sorghum plants, the damage was not evaluated in 2005. It is highly recommended that growers use available resistant hybrids, one of the most economical strategies available for midge control. For further integrated insect management information, please consult with your local county agent and/or extension entomologists.

Grain yield and quality loss caused by the sorghum ergot and other secondary fungal infections was severe, which was possibly associated with the relatively high precipitation and moderate temperatures around the flowering time of the plants. Five hybrids showed less infection of sorghum ergot than the rest of the entries. Please consult with extension plant pathologists for sorghum ergot and other plant disease management strategies.

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Company	Hybrid	Days to Anthesis ²	Midge resistance ³	Ergot resistance ⁴
Asgrow Seed Company	A567	71	VG	F
Monsanto Company	MSC531	73	VG	F
Asgrow Seed Company	A571	67	VG	P
Southern States Coop	SS-800	70	VG	P
Walter Moss Seed Co., Ltd	M927ER	67	VG	P
Crosbyton Seed Co.	X3066	69	VG	P
Crosbyton Seed Co.	X8067	67	VG	P
Plantation Seed Co.	Exp 401	72	VG	P
DeKalb	DKS54-00	72	G	F
Monsanto Company	MSC332	72	G	P
Monsanto Company	MTC15525	71	G	F
DeKalb	DKS53-11	72	F	F
Southern States Coop	SS-650	71	F	P
Crosbyton Seed Co.	X3167	67	F	P
Plantation Seed Co.	Exp 408	72	F	P
Pioneer Hi-Bred Int.	83G66	70	P	P
Walter Moss Seed Co., Ltd	M-1024-DPW	72	P	P
Plantation Seed Co.	GS 105	75	P	P
University of Florida	FS-03BK-5B	74	VP	P
Walter Moss Seed Co., Ltd	M929MB	67	VP	P
Plantation Seed Co.	GS 104	75	VP	P

1. The test plots were irrigated four times (each with an inch of water), and fertilized using 25 lb N, 50 lb P, 75 lb K/acre, as well as sidedress of 100 lb N/acre.
2. Days from planting to 50% bloom.
3. For sorghum midge resistance, VG = very good, G = good, F = fair, P = poor, and VP = very poor.
4. For ergot resistance, F = fair or showing moderate resistance, and P = poor or susceptible.