

SMALL GRAINS UPDATES

VARIETY RELEASES

Dr. J. W. Johnson, Department of Crop and Soil Sciences, Griffin Campus, Griffin, GA 30223-1797.

Vigoro McIntosh is a high yielding, excellent test weight, medium late and tall soft red winter wheat variety. It is resistant to currently predominant races of stripe rust. It is resistant to soil-borne mosaic virus and tolerant of *Septoria nodorum* blotch. It is moderately resistant to Hessian fly, leaf rust and powdery mildew. Vigoro McIntosh is marketed by Royster-Clark, Inc.

USG 3592 is a high yielding, excellent test weight, medium maturing and tall soft red winter wheat variety. It is resistant to currently predominate races of Hessian fly, leaf rust, *Septoria nodorum* blotch, and soil-borne mosaic virus. It is moderately resistant to stripe rust and powdery mildew. USG 3592 is marketed by UniSouth Genetics.

Horizon 321 is a winter oat which performs well for both grain and forage production in the Southeast. It is high yielding, excellent test weight, good crown rust resistance, and medium maturing.

AGS 104 is a rye for early season forage productions that will work well in blends with ryegrass for long season forage production with excellent leaf rust resistance. In appearance, AGS 104 most closely resembles Wrens 96 and is slightly later than Wrens 96 in maturity, but similar in height and seed appearance. AGS 104 has been released exclusively to AGSouth Genetics.

"342" (likely will be referred to as Trical brand 342) is a triticale which performs well for grain production. It is high grain yielding, medium maturing and good test weight.

Releases by private companies for production in Georgia: Pioneer 26R31, AgriPro Panola and Hornbeck HBK 3266. The experimental line AgriPro APW742 will be released as NK Coker 9553.

DISEASES

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The headline in the story of this growing season, for wheat producers in Georgia, was the reappearance of stripe rust. After a growing season (2003) without observing stripe rust, its presence was again felt across south Georgia for the second time in three years and particularly at Plains. Tifton also had a significant stripe rust outbreak. Lesser amounts of stripe rust were observed at Calhoun and Griffin. Yield losses to stripe rust were significant in the statewide variety trial at Plains. This disease will present a challenge to control because every year will not be a stripe rust year, and timing of fungicide applications will be key. Most of the CIMMYT lines screened at Plains this year have stripe rust resistance.

Barley Yellow Dwarf Virus (BYDV) was observed at higher levels at Calhoun and Blairsville, which typically always have more BYDV than other locations. BYDV was at lower levels at Plains and Tifton. Based on historical data, the upcoming season (2005) could be a potentially favorable BYDV year and producers should monitor fall and late winter aphid populations.

Powdery mildew played a part in reducing yields, particularly at Plains. Tifton also had significant mildew. Griffin and Calhoun observed lesser amounts. With the mildew occurring as early as it did in south Georgia, growers sprayed fungicides earlier and may have also reduced problems from stripe rust. Mildew pressure was greater in Plains than in several previous years and stayed active for a longer period of time this year.

Leaf rust was an issue in grain production this year and came in later in the season. With some varieties at Plains it was hard to tell when stripe rust declined and leaf rust began. Again the Plains location seemed to be harder hit than other locations around the state. Variety selection is still the best way of avoiding leaf rust.

Glume blotch (*Stagonospora*) was observed at all locations at low levels.

Crown rust on oats was at moderate levels at Plains and Tifton, with the greatest pressure being at Tifton.

INSECTS

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The variety test was planted in the fall of 2004 at the Southwest Branch Experiment Station near Plains and was sampled for Hessian fly, *Mayetiola destructor*, infestations in late April 2004. Triticale entries also were evaluated at Plains (second table). Wheat entries also were evaluated at the Bledsoe Research Farm near Griffin. Results are shown in the next table. Several wheat varieties showed good levels of Hessian fly resistance including AGS 2485, Pioneer 26R31, 26R38 and 26R61, NK Coker 9152, USG 3350 and 3592, and SS 8308. AGS 2000 and AgriPro Crawford are considered to be resistant but had significantly more Hessian fly than the most resistant entry at Plains. 'Roberts' and 'Fleming' contain resistance genes but are susceptible in Georgia and will not stand up to a heavy infestation. Varieties such as USG 3592 with good resistance in southern Georgia may not be resistant in northern Georgia because of the presence of biotype L in northern Georgia. The only currently available variety with biotype L resistance is 'Pioneer 26R61'.

Several triticale entries had good levels of Hessian fly resistance. Rye and oats also are good Hessian-fly resistant alternatives to wheat for forage production, because rye is highly resistant and oats are immune to the insect.

Warm weather also encouraged aphid populations in the fall months throughout the state. Aphids cause direct injury to wheat and also transmit barley yellow dwarf virus (BYDV). BYD infection generally was not severe in the Coastal Plain region but was prevalent in the northern half of the state. Although the level of expression of symptoms varies between varieties, no varieties are truly resistant or tolerant of BYDV infection. Systemic insecticide seed treatments and properly timed foliar applications of insecticides can reduce aphid numbers and minimize BYD incidence.

The cereal leaf beetle now is established throughout northern and the Upper Coastal Plain from Macon to Statesboro. Larvae and adults are present in the spring during grain filling where they remove the upper leaf surface and chew elongated holes in leaves. Populations generally were lower this spring presumably because heavy rains reduced larval establishment. Populations in most areas were below the treatment threshold of 0.5 larva or adult per stalk and few fields were treated for this insect this year.

Consult your local county extension agent and 2005 Georgia Pest Management Handbook for a list of recommended insecticides and for management practices for these and other insect pests of small grains.

Hessian fly infestation in wheat entries in the 2005 Georgia State Small Grain Variety Test, Plains and Griffin, GA.

Entry	Plains		Griffin	
	% Infested stems	HF larvae & pupae per stem	% Infested stems	HF larvae & pupae per stem
SS 535	75.0*	2.42*	18.3*	0.30*
VA 00W-526	71.7*	1.72*	36.7*	0.70*
MD Choptank	71.0*	1.79*	28.3*	0.43*
LA 95140BVA70-2	66.7*	1.72*	3.3	0.07
AgriPro APW 726	65.0*	2.02*	23.3*	0.53*
MD MV5-46	60.0*	2.12*	18.3*	0.32*
LA 952D3-1-3-C	58.3*	1.27*	26.7*	0.37*
NK Coker 9553	56.7*	1.33*	6.7	0.12
SS 520	51.7*	1.22*	6.7	0.10
AGRТА 101	50.0*	1.38*	30.0*	0.60*
GA 951395-3E27	48.7*	1.03*	10.0	0.13
AGRТА 102	46.7*	0.95*	25.0*	0.57*
GA 971541-4E37	45.0*	0.98*	16.7*	0.28
GA 951395-3A31	45.0*	0.78*	15.0*	0.23
AgriPro Panola	44.7*	0.89*	6.7	0.08
LA 95135D54-2-3-C	43.3*	0.93*	18.3*	0.27*
AgriPro APW 749	43.3*	0.92*	23.3*	0.38*
GA 961526-3E15	43.0*	0.72*	15.0*	0.20
GA 98186-4A32	38.3*	0.93*	15.0*	0.27
GA 96693-4E15	36.7*	0.87*	16.7*	0.25
Roberts	33.3*	0.58*	23.3*	0.30*
GA 951231-4E25	31.7*	0.77*	13.3	0.13
NC Neuse	31.7*	0.58*	1.7	0.02
SS MPV57	31.7*	0.72*	15.0*	0.20
NK B980416	26.7*	0.47	23.3*	0.42*
McIntosh	26.7*	0.48	15.0*	0.18
GA 951395-3E25	25.0*	0.48	15.0*	0.23
USG Exp. 910	25.0*	0.33	8.3	0.12
McCormick	23.3*	0.40	11.7*	0.12
Pioneer 26R24	23.3*	0.53	30.0*	0.45*
Pioneer 26R12	23.3*	0.57*	2.3	0.03
Pat	21.7*	0.33	45.0*	0.85*
Fleming	21.7*	0.50	6.7	0.07
GA 951216-2E26	20.0*	0.40	25.0*	0.43*
Vigoro Tribute	20.0*	0.38	26.7*	0.37*
GA 96693-4E16	20.0*	0.43	30.0*	0.60*
AGS 2000	20.0*	0.32	11.7	0.15
GA 96229-3A41	18.3*	0.25	23.3*	0.33*
GA 951395-2E19	16.7*	0.38	11.7	0.20
LA 95181BVB40-1	15.0*	0.23	10.0	0.12
USG 3209	15.0*	0.22	28.3*	0.38*
AgriPro Crawford	13.3*	0.18	18.3*	0.22
AGS 2485	11.7	0.25	3.3	0.05
Delta King GR9108	11.7	0.23	16.7*	0.25
GA 96229-3E39	10.0	0.12	11.7	0.23

Hessian fly infestation in wheat entries in the 2005 Georgia State Small Grain Variety Test, Plains and Griffin, GA.

Entry	Plains		Griffin	
	% Infested stems	HF larvae & pupae per stem	% Infested stems	HF larvae & pupae per stem
Continued:				
NK Coker 9152	9.0	0.18	13.3	0.22
LA95283CA78-1-2-B	8.3	0.12	18.3*	0.40*
Pioneer 26R31	8.3	0.15	8.3	0.08
USG 3592	6.7	0.17	23.3*	0.38*
GA 951079-2E31	5.0	0.05	1.7	0.02
LA 9560CA22-1	4.3	0.04	1.7	0.02
GA 961171-4A9	3.3	0.03	1.7	0.02
GA 961176-3A48	3.3	0.07	0	0
Pioneer 26R38	3.3	0.05	0	0
GA 961567-4A35	1.7	0.03	5.0	0.07
GA 951231-4A15	1.7	0.02	1.7	0.02
GA 951231-4E25	1.7	0.02	0	0
USG 3350	0	0	15.0*	0.23
SS 8308	0	0	8.3	0.10
GA 961171-4E21	0	0	1.7	0.02
Pioneer 26R61	0	0	0	0
GA 961171-3E38	0	0	0	0
GA 951231-4E26	0	0	0	0
LSD (0.05)	-	0.67	-	0.34
LSD (0.10)	-	0.56	-	0.29

* Significantly different than zero ($P < 0.1$); % infested data arcsin-square-root transformed before analysis.

Hessian Fly infestations in triticale entries in the 2005 Georgia State Small Grain Variety Trial, Plains, GA.

Entry name	% Infested stems	HF larvae & pupae per stem
Trical 336	51.7 a*	1.02 a*
SRX 4529	50.0 ab*	0.83 a*
SRX 4528	28.3 abc*	0.45 b*
AGRTS 102	26.7 bc*	0.45 b*
Monarch	21.7 c*	0.43 bc*
Trical 342	13.3 c*	0.17 bcd
AGRTS 101	1.7 d	0.02 cd
SRX 4527	1.7 d	0.02 cd
AGRTS 103	0 d	0 d
Trical 314	0 d	0 d
LSD (0.05)	-	0.51
LSD (0.10)	-	0.42

*Entry significantly ($P = 0.1$) different than zero; means within columns followed by the same letter are not significantly different (LSD $P = 0.1$); percentage values analysis of arcsin (square root) transformed data.