

Wheat (*Triticum aestivum*)

Leaf blotch complex (Tan spot, *Dreschlera tritici-repentis*; Septoria blotch, *Septoria tritici*)

Leaf rust, *Puccinia triticina*

Powdery mildew, *Erysiphe graminis* f.sp *tritici*

Wheat Disease Evaluations-2013

Disease severity was evaluated at three variety trial locations located in Newcastle, Kent, and Sussex counties. The variety trials test the adaptability of winter wheat varieties to Delaware growing conditions and susceptibility to common diseases in the region. Leaf rust, leaf blight complex, and powdery mildew were the only diseases present in sufficient amounts to rate. Moderate levels of head scab were present at the plots, but the disease was not rated due to variation in flowering date, which can impact apparent resistance to this disease.

Disease severity was too low to rate at the Newcastle location and high temperatures resulted in rapid senescence of tissues prior to evaluation at the Sussex county location. In general, powdery mildew was not prevalent this year although low levels were observed at the Kent county location. The data are summarized in Tables 1 and 2.

The disease ratings were made at the Kent County location on May 28th and June 2nd 2013. The stage of development was Feekes' 10.54 to 11.1. Plots were labeled with numbers and not variety identifications. There were four plots per variety. Five flag leaves per plot were randomly sampled and rated using standard disease severity scales (C. James, 1971. A Manual of Assessment Keys for Plant Diseases. The American Phytopathological Society. St. Paul, MN). The average area of diseased leaf (severity) was calculated for each plot by averaging the severity ratings for the five leaves sampled. Data were analyzed with ANOVA using Statistica® v. 12 statistical software (StatSoft Inc.). Means were separated using Fishers Protected LSD ($\alpha=0.05$).

Source	Variety	Disease Severity (%)		
		LR	PM	Blotch
AgriMaxx	413	0.7 a-f	1.3 c-i	4.9 b-l
AgriMaxx	415	0.7 a-f	2.3 h-m	5.1 b-l
AgriMaxx	427	2.4 b-h	1.1 a-h	8.2 d-m
AgriMaxx	434	2.1 e-i	4.4 j-m	4.0 b-g
AgriMaxx	438	1.7 d-h	1.7 e-k	5.6 b-j
Dyna-Gro	9012	1.4 a-h	4.0 k-m	5.3 b-j
Dyna-Gro	9171	1.0 a-g	3.5 i-m	7.4 e-m
Dyna-Gro	9223	8.7 k	1.3 d-i	11.7 k-m
Dyna-Gro	Shirley	0.4 a-e	0.0 a	0.7 a
Dyna-Gro	Yorktown	0.1 a	0.0 a	6.7 c-m
Gro-Mark	815	4.1 h-k	2.6 h-m	7.2 c-m
Gro-Mark	820	0.7 a-f	2.9 i-m	5.2 b-l
Gro-Mark	888	0.2 a-d	0.2 a-c	7.2 b-i
Mercer	11-V258	0.1 a-d	0.6 a-f	6.4 c-m
Mercer	12-V251	0.0 a	0.7 a-g	3.0 b-f
Mercer	12-W270	0.2 a-d	1.1 a-h	4.1 b-i
Mercer	12-W296	3.9 f-i	0.4 a-d	6.4 c-m
Mid. Atlantic	MAS2	0.2 a-d	0.6 a-f	4.4 b-j
Mid. Atlantic	MAS23	3.0 f-i	2.0 g-m	4.4 b-g
Mid. Atlantic	MAS26	1.2 a-f	0.4 a-d	3.1 b-f
Mid. Atlantic	MAS4	0.8 a-f	4.0 k-m	7.9 d-m
Mid. Atlantic	MAS6	0.1 a-c	0.3 a-d	9.4 i-m
Mid. Atlantic	MAS7	3.4 g-j	1.6 b-i	6.7 c-m
Ohio	Lion	8.5 j-k	0.3 a-d	11.6 h-m
Ohio	Tiger	1.4 a-g	0.5 a-d	6.6 b-l
Public	Chesapeake	0.7 a-f	0.1 ab	2.2 ab
Public	Jamestown	0.5 a-e	0.3 a-d	11.5 lm
Public	Merl	0.7 a-f	0.2 a-c	13.6 m

$P < 0.0001$ $P < 0.0001$ $P < 0.001$

Table 1. Ratings of 28 wheat varieties (A through P) in Kent County DE on May 28th and June 2nd, 2013. Severity is the percent of infected leaf area present on the flag leaf at the time of rating (from a sample of 5 leaves per plot). LR = leaf rust; PM = powdery mildew; Blotch = leaf blotch complex. **Bold text** indicates that the resistance rating for a given disease is statistically equivalent to top rated variety. Different letters indicate significant mean differences using Fisher's Protected LSD ($\alpha = 0.05$). Log transformation of data was used in analysis of statistical significance.

Source	Variety	Disease Severity (%)		
		LR	PM	Blotch
S.States	SS520	1.1 a-e	0.5 a-d	8.7 b-j
S.States	SS5205	0.1 a-c	0.4 a-d	7.0 c-m
S.States	SS8302	6.8 jk	3.4 i-m	5.5 b-l
S.States	SS8340	0.7 a-f	1.5 d-j	8.3 g-m
S.States	SS8350	0.6 a-e	2.6 i-m	3.1 a-c
S.States	SS8404	1.0 a-f	2.3 f-l	5.6 b-l
S.States	SS8500	1.8 b-h	1.4 d-i	8.7 h-m
S.States	SSEXP412	0.1 a	0.3 a-d	5.1 b-k
Syngenta	Harrison	0.3 a-e	5.1 lm	2.9 b-d
Syngenta	Oakes	1.6 a-h	2.8 h-m	3.8 b-g
Syngenta	SY-1526*	1.8 c-h	3.0 i-m	5.0 b-j
Syngenta	SY-438	5.3 i-k	1.2 b-i	4.9 b-j
UniSouth	USG3201	0.6 a-f	3.8 i-m	3.6 b-g
UniSouth	USG3209	2.3 a-h	0.3 i-d	4.0 b-g
UniSouth	USG3315	0.9 a-f	0.6 a-f	8.6 d-m
UniSouth	USG3404	0.8 a-f	2.9 i-m	4.1 b-e
UniSouth	USG3409	4.7 f-i	0.3 a-d	9.4 h-m
UniSouth	USG3523	0.7 a-f	2.1 g-m	4.9 b-j
UniSouth	USG3555	0.7 a-f	0.7 a-e	5.9 b-l
UniSouth	USG3612	5.5 i-k	1.9 e-k	10.1 i-m
UniSouth	USG3770	2.4 b-h	5.9 m	10.5 j-m
UniSouth	USG3993	0.1 a	0.6 a-f	6.1 b-l
Univ. GA	GA03257-10LE34	0.1 ab	0.4 a-d	8.3 f-m
Univ. GA	GA04570-10E46	0.0 a	0.1 a	3.9 b-h
Univ. MD	MD04W-249-11-7	1.3 a-f	0.5 a-e	6.3 b-l
VA Tech	VA-07W-415	1.0 a-f	0.1 ab	4.0 b-j
VA Tech	VA-09W-73	0.7 a-e	2.1 d-j	5.3 b-l

P<0.0001 *P*<0.0001 *P*<0.001

Table 2. Ratings of 27 wheat varieties (S through V) in Kent County DE on May 28th and June 2nd, 2013. Severity is the percent of infected leaf area present on the flag leaf at the time of rating (from a sample of 5 leaves per plot). LR = leaf rust; PM = powdery mildew; Blotch = leaf blotch complex. * Indicates stripe rust present. **Bold text** indicates that the resistance rating for a given disease is statistically equivalent to top rated variety. Different letters indicate significant mean differences using Fisher's Protected LSD ($\alpha = 0.05$). Log transformation of data was used in analysis of statistical significance.