

SWEET CORN HYBRID DISEASE NURSERY – 2003

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Common rust, northern leaf blight (NLB), Stewart's bacterial wilt, and maize dwarf mosaic (MDM) can reduce yields of susceptible and moderately susceptible sweet corn hybrids. These diseases can be managed more efficiently if reactions of hybrids are known.

Resistance and susceptibility are the two extremes of a continuum of host reactions to diseases. Resistance is a measure of the ability of the host to reduce the growth, reproduction, and/or disease-producing abilities of the pathogen, thus resulting in less severe symptoms of disease. Major genes for resistance, such as *Rp1-D*, *Ht1*, or *Mdm1*, can prevent or substantially limit disease development if specific virulence is not present in pathogen populations. Hybrids with major gene resistance usually have clearly distinguishable phenotypes. Major gene resistance may be ineffective if specific virulence occurs, such as the *Rp1-D*-virulent race of the common rust fungus.

In the absence of effective major gene resistance, disease reactions often range from partially resistant to susceptible. Hybrids can be grouped into broad classes such as: resistant (R), moderately resistant (MR), moderate (M), moderately susceptible (MS), and susceptible (S) based on severity of disease symptoms. This procedure produces statistically "overlapping" groups without clear-cut differences between classes (e.g., the hybrid with least severe symptoms in the MR class does not differ significantly from the hybrid with the most severe symptoms in the R class). Nevertheless, a consistent response over several trials produces a

reasonable estimate of the disease reaction of a hybrid relative to the response of other hybrids. These reactions can be used to assess the potential for diseases to become severe and to affect yield.

Sweet corn hybrids also can be damaged by certain corn herbicides. Reactions of hybrids to herbicides can be classified in manner similar to disease reactions. This information can be used to identify sweet corn hybrids that are at greatest risk of being damaged; and to develop recommendations that specific herbicides not be used on those hybrids.

This report summarizes the reactions of 286 sweet corn hybrids to Stewart's wilt, common rust, NLB, and MDM based on their performance in the University of Illinois sweet corn disease nursery in 2003. The reactions of these hybrids to post-emergence applications of Accent and Callisto herbicides also are reported.

MATERIALS AND METHODS

Hybrids: Two hundred and eighty-six hybrids were evaluated in 2003. This included 142 *sh2* hybrids, 71 *se* hybrids and 73 *su* hybrids. Hybrids with multiple endosperm mutations or heterozygous reactions were placed in the most appropriate of these three categories. Standard hybrids with relatively consistent reactions to common rust, Stewart's wilt, NLB, and MDM (Table 2) were included to compare the results from the 2003 nursery to those from previous nurseries.

Table 1. Summary statistics for Stewart's wilt, common rust, NLB, MDM, Accent and Callisto.

Disease or herbicide	n	mean	std. dev.	Range	BLSD
Stewart's wilt (1 to 9 ratings)	286	2.8	0.91	1 - 5.9	0.88
Common rust					
avirulent rust (% leaf area infected)*	136*	27 %*	11.7 %*	8 - 67 % *	6.0 % *
<i>Rp1-D</i> virulent rust (% leaf area infected)	286	16 %	7.8 %	0 - 48 %	3.9 %
Northern leaf blight					
race 0 (% leaf area infected)	269	32 %	11.2 %	3 - 60 %	6.1 %
race 1 (% leaf area infected)	280	35 %	11.9 %	4 - 68 %	7.9 %
racess 0 + 1 (% leaf area infected)	286	30 %	11.7 %	2 - 70 %	7.8 %

Table 2. Reactions of sweet corn hybrids included as standards in the 2003 disease nursery

Hybrid	Stewart's wilt			avirulent			D-virulent			NLB			MDM		
	Prior	03	Rating	Prior	03	Rating	Prior	03	Rating	Prior	03	Rating	Prior	03	Rating
Bonus	1	2	1.8	0	0	2 %	3	5	15 %	5	5	32 %	1	1	0 %
Day Star	3	1	1.3	6	7	37 %	6	8	26 %	1	1	4 %	8	9	54 %
Eliminator	2	3	2.2	0	0	4 %	5	6	19 %	6	7	43 %	1	1	0 %
El Toro	2	5	2.7	0	0	4 %	5	6	21 %	7	6	36 %	2	2	2 %
Green Giant 27	2	2	1.7	2	2	10 %	2	3	6 %	3	2	16 %	7	9	31 %
Jubilee	9	9	4.6	5	5	24 %	5	5	17 %	8	9	52 %	8	9	57 %
Miracle	1	1	1.3	2	3	12 %	2	3	7 %	3	4	26 %	9	9	67 %
Sensor	5	6	3.2	3	2	10 %	3	4	10 %	5	5	34 %	9	9	54 %
Snow White	7	8	4.2	9	9	67 %	9	9	48 %	7	8	45 %	4	2	4 %
Sum. Sweet 7630	2	1	1.4	6	6	30 %	6	8	27 %	2	2	15 %	9	9	61 %

Prior - reaction in previous years (1984-2001).

03 - reaction in 2003: 1 - resistant, 3 - moderately resistant, 5 - moderate, 7 - moderately susceptible, 9 - susceptible.

Rating - mean rating in 2003: 1 to 9 for Stewart's wilt; 0 to 100% severity of rust and NLB, 0 to 100% incidence of MDM.

Experimental design and procedures: Each disease was a separate trial with three replicates of hybrids arranged in randomized complete blocks. Each trial was split into two main blocks: *sh2* hybrids and *su* or *se* hybrids. Each experimental unit was a 12-ft. row with about 10 to 18 plants per row. Six trials (Stewart's wilt, avirulent rust, MDM, and NLB race 0, race 1 and both races) were planted May 13 at Champaign, IL. The Rp1-D-virulent rust trial and herbicide evaluations were planted May 21.

Inoculation and disease assessment: The six trials planted May 13 were inoculated with: *Erwinia stewartii* (Stewart's wilt), Rp1-D-avirulent isolates of *Puccinia sorghi* (i.e., the "old race" of rust), *Exserohilum turcicum* (NLB) races 0, 1 or 0 and 1, and maize dwarf mosaic virus. Plants were inoculated with *E. stewartii* on June 10 by wounding leaves in the whorl and introducing bacteria into wounds. Suspensions of Rp1-D-avirulent *P. sorghi* urediniospores were sprayed into plant whorls June 12 and 16. A mixture of conidia of races 0 and 1 of *E. turcicum* were sprayed into plant whorls June 11 and 18 in one of the NLB trials. In the other two NLB trials, conidia of either race 0 or race 1 were sprayed into whorls June 11 and 19 (race 0) or June 11 and 18 (race 1). Plants were inoculated with a mixture of MDMV-A and MDMV-B (SCMV) on June 18 and 20 using a tractor-mounted, solid-stream inoculator. In the "new race" of rust trial, suspensions of Rp1D-virulent urediniospores of *P. sorghi* were sprayed into plant whorls June 23, 25, and 30.

Disease symptoms were rated on a plot (row) basis by two people for each row. Number of plants and plants infected with MDM were counted in each row July 2-3. Incidence (%) of MDM-infected plants was calculated from totals of all replicates of a hybrid. Stewart's wilt was rated August 1-2 using a scale from 1 (symptoms

within 2 cm of inoculation wounds) to 9 (severe systemic infection or dead plants). The percentage of the leaf area infected by common rust was rated from 0 to 100% August 4 (avirulent trial) and August 7 (D-virulent trial). Leaf area infected by the mixture of NLB races 0 and 1 was rated from 0 to 100% August 5-6, and leaf area infected by individual races of NLB was rated August 14-18.

Herbicide application and assessment: Post-emergence herbicides were applied 20 June when plants ranged from the 4- to 6-leaf stages and from about 4 to 10 inches in height. Environmental conditions at application were: clear sky, 65 F air temperature, 45% relative humidity, sunny, 3-7 mph wind, soil surface dry. Herbicides were applied to half of each 12-ft row, thus leaving 6 ft of each row as a non-treated check. Accent was applied at 0.031 lb ai/A with a 0.25% v/v nonionic surfactant (NIS) and 2.5% 28% nitrogen. Callisto was applied at 0.094 lb ai/A with 1% v/v crop oil concentrate (COC). The entire field had been treated pre-emergence with metachlor + atrazine.

Injury to corn leaves was rated visually 7 and 21 days after application (June 27 and July 11). Symptomatic leaf area (0 to 100%) was estimated for each treated plot (6-ft row).

Data analysis: Disease ratings were analyzed by ANOVA. Hybrid reactions to diseases and herbicides were classified from 1 (highly resistant) to 9 (highly susceptible) according to standard deviations from the mean (z-scores), Bayesian least significant difference (BLSD) separations (k=100), and/or the FASTCLUS procedure of SAS using various groupings of 6 to 12 clusters.

Table 3. Criteria for classifying hybrid reactions to diseases in the 2003 nursery

Rp	Classification of reaction								
	Resistant 1	Moderately resistant 2	Moderately resistant 3	Moderate 4	Moderate 5	Moderately susceptible 6	Moderately susceptible 7	Susceptible 8	Susceptible 9
Stewart's wilt	≤ 1.5	< 2	< 2.25	< 2.5	< 3.2	< 3.5	< 4	< 4.5	≥ 4.5
Rust -avirulent (%) *		< 12	< 20	< 24	< 30	< 35	< 40	< 50	≥ 50
Rust -D-virulent (%) 0		< 6	< 10	< 13.5	< 17.5	< 21.5	< 25	< 30	≥ 30
^a NLB (%)	< 15	< 20	< 25	< 30	< 35	< 40	< 45	< 50	≥ 50
MDM (%)	0	< 5	< 20			< 30			≥ 30

Classification: 0 - Rp-resistance, 1 - resistant, 3 - moderately resistant, 5 - moderate, 7 - moderately susceptible, 9 - susceptible.

*Rust severity ranged from 0 to 18% on Rp1-D hybrids. Hybrids identified as Rp1-D based on more severe rust in the D-virulent trial than in the avirulent trial (Fig. 1).

^aNLB – classification based on mean severity from three trials: race 0, race 1 and both races 0 and 1.

Hybrid reactions to Accent and Callisto were based on symptoms rated 7 and 21 days after application (see text).

RESULTS AND DISCUSSION

Symptoms ranged from very little disease to severely infected plants (Table 1). Reactions of standard hybrids to Stewart's wilt, rust, NLB, and MDM were generally within expected ranges (Table 2). The criteria for classifying hybrid reactions are listed in Table 3. Table 4 includes reactions and actual ratings of the 286 hybrids **based solely on the 2003 trial**. This is the only data we have for some of these hybrids. For hybrids that have been evaluated in previous years, a more complete assessment of disease reactions is presented in another report, "*Reactions of sweet corn hybrids to prevalent diseases - 2003*".

Stewart's wilt. Stewart's wilt was less severe in 2003 than in most of the previous nurseries. Ratings ranged from 1 to 5.9. Sixty-seven hybrids rated above 3.5 were classified as moderately susceptible to susceptible (7 to 9), and 119 hybrids rated from 2.25 to 3.5 were classified as moderate (4 to 6). Stewart's wilt would not have had a substantial impact on most of the moderate hybrids in this trial since yield is affected minimally if infection is non-systemic, i.e., ratings < 3. Sixty hybrids with ratings below 2 were not significantly different from the five hybrids (CrsuWP1-7, Merlin, Seneca Nation, Shogun, and SVR 08716622) with the lowest ratings of 1 and 1.1. These 60 hybrids were classified as resistant or R/MR (1 or 2). Forty hybrids with ratings from 2 to 2.25 were classified as moderately resistant (3).

Common rust. Rust severity ranged from about 0 to 68% in the trial inoculated with avirulent rust and from 0 to 48% in the trial inoculated with *Rp1-D*-virulent rust. Yield usually decreases about 0.5% for each 1% leaf area infected by rust, i.e., rust severity. A low frequency of *Rp1-D*-virulent isolates occurred in the trial inoculated with avirulent isolates, as evident from rust severity ranging from 0 to 18% on Rp-resistant hybrids. In the avirulent trial, 148 hybrids appeared to be Rp-resistant. Rust severity was 1% or less on 38 Rp-resistant hybrids, between 1% and 5% on 87 Rp-resistant hybrids, between 5% and 10% on 20 Rp-resistant hybrids, and between 10% and 20% on 3 Rp-resistant hybrids. In the trial inoculated with *Rp1-D*-virulent isolates, pustules were not observed (severity was 0) on 21 hybrids. Apparently, rust resistance in these hybrids is conveyed by an Rp gene other than or in addition to the *Rp1-D* gene. Severity of rust in the *Rp1-D*-virulent trial ranged from 3% to 32% for the other 127 Rp-

resistant hybrids which was similar to the range of severity for the 138 non-rp hybrids in this trial (Fig. 1).

For hybrids without Rp resistance, rust was only about 60% as severe (slope = 0.63) in the trial inoculated with the D-virulent race as compared to the trial inoculated with the avirulent race, however hybrid reactions were highly correlated among trials, $r = 0.93$ (Fig. 1). Four non-Rp hybrids (Merlin, MXH 11685, Lancelot, and SVR 8482608) were rated R/MR (2) in both trials. For hybrids with the *Rp1-D* gene, rust was about twice as severe (slope = 2.2) in the trial inoculated with the D-virulent race as compared to the avirulent trial because the *Rp1-D* gene was ineffective against the D-virulent isolates.

Northern leaf blight. NLB was very severe in all three trials. Severity ranged from 3 to 60% in the race 0 trial, from 4 to 68% in the race 1 trial and from 2 to 70% in the trial inoculated with both races. About 80 to 90% of the lesions on hybrids with the *Ht1* gene were necrotic in the trials inoculated with race 0 or with both races, therefore, race 1 inocula must have been mistakenly mixed with race 0 in these trials or race 1 spread into these trials from the race 1 trial. Since NLB severity (hybrid means) was highly correlated among trials ($r > 0.95$), data were combined for all three trials (3 replicates each) and hybrid reactions were classified based on means from all 9 replicates.

Three hybrids (Day Star, Shooting Star, and Twin Star) with less than 5% leaf area infected and four hybrids (BSS 0977A, BSS 6661, Shogun, and SVR 08736072) with less than 15% severity were classified as resistant (1). Twenty-six hybrids with less than 20% leaf area infected were classified R/MR (2). Usually, NLB does not affect yield substantially unless severity is 20% or higher. Forty-five hybrids with less than 25% leaf area infected were classified moderately resistant. Of the 78 hybrids classified from resistant to moderately resistant (1 to 3), 67 had Ht-resistance and 11 did not. Ninety-one hybrids with 40% or more leaf area infected were classified as moderately susceptible to susceptible (7 to 9) to NLB. Of these 91 hybrids, only 3 were identified as having Ht1-resistance based on the appearance of chlorotic lesions.

Severity of NLB averaged 24% for 116 hybrids with Ht-resistance and 39% for 170 hybrids without Ht-resistance (Fig. 2). There was no apparent benefit of the *Ht1* gene itself in these trials because of the high proportion of race 1 in all trials. Therefore, levels of general resistance to NLB appeared to be greater for the group of Ht-resistant hybrids than for the group of non-

ht hybrids evaluated in the 2003 nursery. This is similar to observations from previous sweet corn hybrid disease nurseries.

Maize dwarf mosaic. Incidence of MDM-infected plants averaged 41% for the trial. We believe that MDMV-A predominated in this trial based on observations following inoculation in our other trials in 2003. No plants were infected with MDM for 44 hybrids that were classified as resistant (1). Twenty-two hybrids with 1 to 5% incidence of MDM-infected plants were classified as R/MR (2). Twenty-one hybrids with 5% to 20% incidence of MDM-infected plants were classified as MR (3). Hybrids with 20% to 30% MDM were classified as MS (7), and hybrids with more than 30% MDM-infected plants were classified as susceptible (9). Most of the hybrids that were classified as resistant to moderately resistant in this trial probably have the *Mdml* gene or other genes for MDM resistance.

Reactions to herbicides. Most hybrids were not affected by post-emergence applications of Accent or Callisto although some hybrids appeared to be relatively sensitive to Accent.

Accent. No symptoms of damage were observed on 156 hybrids that were classified as tolerant to Accent (0). Ten hybrids with 10% to 60% symptomatic tissue 7 days after application and 30% to 95% symptomatic tissue 21 days after application were classified as susceptible or moderately susceptible (8 to 9) to damage from Accent. This group includes: CrsyBF2-47, HW 1283, HY 1559, HY 1734, Mystique, Shogun, SVR 08413005, SVR 08705770, SVR 08705778, and SVR 8478578. Fourteen hybrids with up to 30% symptomatic tissue 7 days after application and up to 25% symptomatic tissue 21 days after application were classified as having a moderate (5) response to Accent. Hybrids with 3% to 15% symptomatic tissue at either rating were classified as moderately tolerant (3), and hybrids with some symptoms but less than 3% tissue affected were given reactions of 1 and 2.

Callisto. There were no symptoms of damage from Callisto on 207 hybrids. These hybrids were classified as tolerant (0). No hybrid had severe symptoms 7 days after application of Callisto and only one hybrid (SVR 08705778) had any symptoms 21 days after application. Seven hybrids with 10% to 20% symptomatic leaf area (which appeared albino or without chlorophyll) were classified as being moderately intolerant (5) to Callisto. This group includes: Argent, CrsyBF2-47, CrsyWF1-26, Green Giant Code 145, HW 1283, SVR 08705770, SVR 08705778, and SVR 8478578. Seven hybrids with 5% to 10% symptomatic leaf area were classified as MR/M (4). Several hybrids with less than 5% symptomatic leaf area were classified from 1 to 3.

In our 2002 nursery, plants were stunted and symptoms were severe on several hybrids when Callisto was applied with 2.5% v/v urea ammonium nitrate (UAN). In the 2003 trials, application of Callisto did not include UAN.

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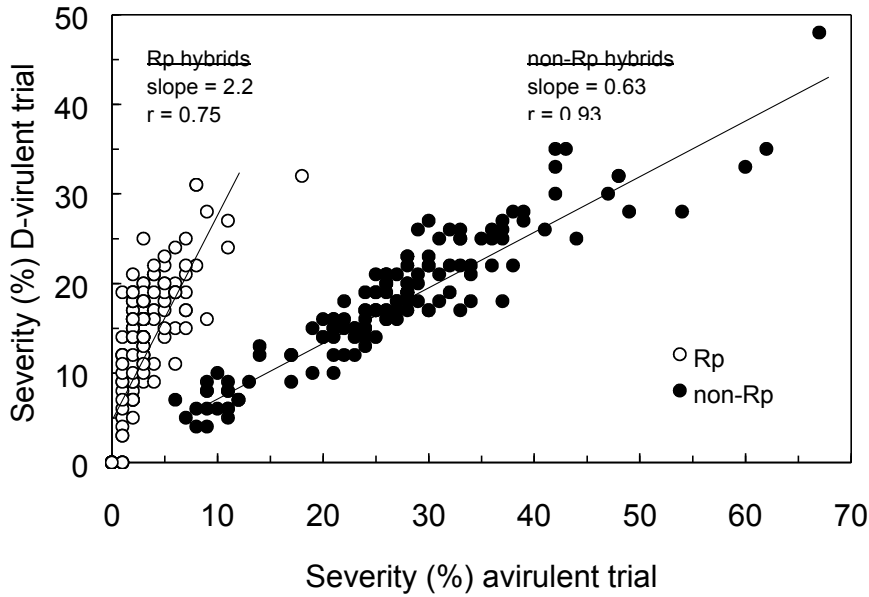


Figure 1. Severity (% leaf area infected) of common rust on sweet corn hybrids with and without Rp-resistance in trials inoculated with *Puccinia sorghi* that was avirulent or virulent against the *Rp1-D* gene. Each data point is based on the mean of three replicates in each trial for each hybrid.

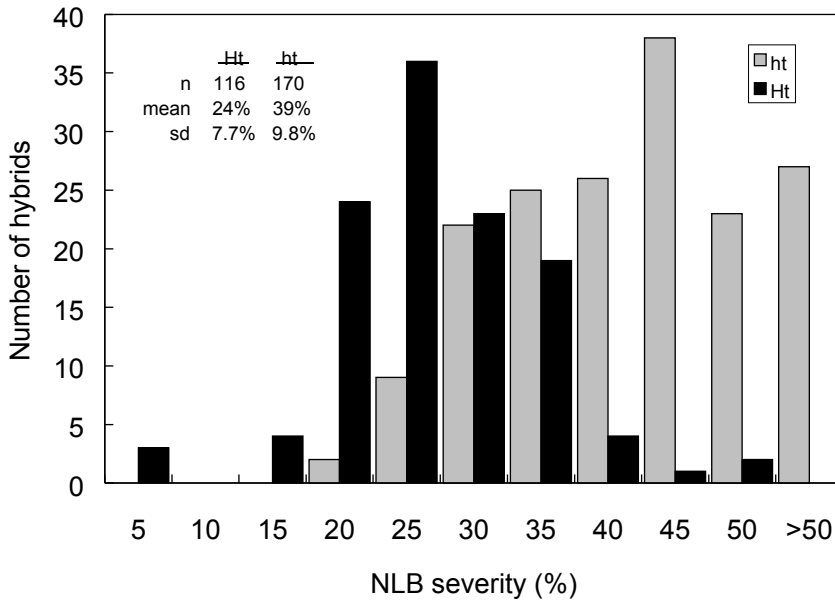


Figure 2. Distribution of NLB severity (%) for sweet corn hybrids with and without the *Ht1* gene. The *Ht1* gene is associated with resistance to race 1 based on approximately 80% to 90% necrotic lesions on hybrids with the *Ht1* gene (see text).

Table 4. Reaction of sweet corn hybrids in the University of Illinois disease nursery in 2003

Seed				Reactions to herbicides															
				Stewart's		Common rust				NLB			MDM		Accent			Callisto	
				Rxn	Rate	avirulent Rxn	Rate	D-virulent Rxn	Rate	Rxn	Rate	Ht	Rxn	Rate	Rxn	Rate	Rate	Rate	Rxn
Type	Color	source	Hybrid										7-d	21-d		7-d			
Sugary hybrids																			
su	Y	SnR	Blitz	1	1.3	0	9	5	16	6	36		1	0	0	0	0		
su	Y	Rog	Bold	3	2	0	18	9	32	3	20		1	0	3	10	0		
su	Y	Rog	Bonus	2	1.8	0	2	5	15	5	32	Ht	1	0	3	7	0		
su	Y	Cr	CrSUYP1-1	4	2.4	0	2	4	12	9	51		1	0	3	10	0		
su	Y	Cr	CrSUYP1-2	5	2.8	0	3	4	12	9	51		2	4	3	3	0		
su	Y	Sem	El Toro	5	2.7	0	4	6	21	6	36		2	2	3	13	0		
su	Y	Cr	Eliminator	3	2.2	0	4	6	19	7	43		1	0	0	0	0		
su	Y	SnR	Empire	6	3.3	3	17	3	9	7	43		3	18	0	0	0		
su	Y	SnR	Enterprise	3	2.2	0	3	3	9	2	18	Ht	3	17	3	7	0		
su	Y	HM	Esteem	6	3.3	3	12	3	7	5	34	Ht	1	0	0	0	0		
su	Y	Sem	EX 08302418	2	1.8	0	1	2	4	2	15	Ht	9	54	0	0	0		
su	Y	HM	Excalibur	7	3.8	0	3	4	11	9	53		9	53	0	0	0		
su	Y	GG	GG Code 125	4	2.4	0	3	4	12	6	35		9	70	0	0	0		
su	Y	GG	GG Code 127	4	2.3	0	2	3	9	4	27		3	10	0	0	0		
su	Y	GG	GG Code 128	4	2.4	0	2	3	7	3	24		1	0	0	0	0		
su	Y	GG	GG Code 139	8	4.3	0	1	0	0	8	46		9	95	3	10	0		
su	Y	GG	GG Code 143	6	3.4	0	0	0	0	5	33		9	61	0	0	0		
su	Y	GG	GG Code 144	7	3.9	0	1	3	9	5	33		1	0	0	0	0		
su	Y	GG	GG Code 145	5	2.6	0	1	4	12	4	28	Ht	2	2	0	0	0		
su	Y	GG	GG Code 146	8	4.2	0	0	0	0	5	33	Ht	1	0	0	0	0		
su	Y	GG	GG Code 147	4	2.3	0	1	0	0	4	27		3	7	0	0	0		
su	Y	GG	GG Code 148	2	1.9	0	0	0	0	4	27		2	2	0	0	0		
su	Y	GG	GG Code 149	2	1.9	0	2	3	7	3	22	Ht	1	0	0	0	0		
su	Y	GG	GG Code 23	6	3.3	0	7	6	19	2	18		1	0	0	0	0		
su	Y	GG	GG Code 27	2	1.7	2	10	3	6	2	16	Ht	9	31	0	0	0		
su	Y	GG	GG Code 64	3	2.2	0	3	5	14	5	33		9	49	0	0	0		
su	Y	GG	GG Code 83	5	3.1	0	1	3	8	7	42		9	59	0	0	0		
su	Y	GG	GG Code 92	3	2.1	2	11	3	8	4	29		3	5	0	0	0		

su Y GG GG Code 99 1 1.4 2 11 3 6 2 19 Ht 7 20 0 0 0 0 0

Table 4. Reaction of sweet corn hybrids in the University of Illinois disease nursery in 2003

Type	Color	Seed		Stewart's				Common rust				NLB			MDM		Reactions to herbicides		
		source	Hybrid	Rxn	Rate	avirulent		D-virulent		Rxn	Rate	HT	Rxn	Rate	Accent		Rxn	Rate	
						Rxn	Rate	Rxn	Rate						Rate	Rate			7-d
su	Y	Rog	GH 0934	2	1.9	4	20	5	14	3	23	Ht	1	0	0	0	0	2	1
su	Y	Rog	GH 0937A	2	1.9	0	1	4	10	4	27		1	0	0	0	0	0	0
su	Y	Rog	GH 1829	5	2.6	0	0	0	0	6	35		9	77	0	0	0	0	0
su	Y	Rog	GH 2148	7	3.7	0	1	5	14	4	25		1	0	3	7	0	0	0
su	Y	Rog	GH 2298	8	4.3	0	0	0	0	8	49		1	0	3	3	7	2	2
su	Y	Rog	GH 2396	5	2.7	0	0	0	0	5	32		1	0	3	7	0	0	0
su	Y	Rog	GH 2669	6	3.4	0	0	0	0	4	28		1	0	0	0	0	2	2
su	Y	Rog	GH 5704	4	2.4	0	0	0	0	5	33		1	0	0	0	0	0	0
su	Y	Rog	GH 6510	4	2.4	5	29	6	21	7	41		9	56	0	0	0	0	0
su	Y	Rog	GH 6631	7	3.7	0	0	0	0	7	41		1	0	3	7	0	0	0
su	Y	Rog	GH 9589	6	3.4	0	0	0	0	7	42		1	0	0	0	0	0	0
su	Y	Rog	GH 9590	6	3.2	0	1	0	0	8	48		1	0	3	10	0	2	1
su	Y	Rog	GH 9597	2	1.8	0	0	0	0	5	32	Ht	1	0	3	7	0	0	0
su	Y	Cr	Intrigue	6	3.2	0	2	3	7	8	48		9	64	3	7	0	0	0
su	Y	Rog	Jubilee	9	4.6	5	24	5	17	9	52		9	57	3	3	0	0	0
su	Y	HM	Lumina	9	4.7	0	2	6	19	8	49		9	58	3	3	0	2	1
su	Y	SnR	Prelude	5	3	4	21	4	10	8	45		3	17	0	0	0	0	0
su	Y	SnR	Punch	7	3.7	5	24	4	13	7	44		9	31	0	0	0	0	0
su	Y	Sem	Reveille	6	3.2	9	60	9	33	9	59		9	46	0	0	0	2	1
su	Y	Sem	Rival	7	3.7	5	27	6	18	8	45		9	38	5	17	0	0	0
su	Y	Sem	SVR 08302411	4	2.3	0	2	4	10	5	30		9	41	3	8	0	0	0
su	Y	Sem	SVR 08302415	2	1.9	0	1	2	5	2	19	Ht	9	45	0	0	0	0	0
su	Y	Sem	SVR 08302436	3	2.1	0	4	4	11	4	28		7	24	0	0	0	0	0
su	Y	Sem	SVR 08413766	2	1.6	0	1	2	3	2	16	Ht	9	35	3	3	0	0	0
su	Y	Sem	SVR 08705338	2	1.9	0	2	3	8	2	16	Ht	9	30	0	0	0	2	1
su	Y	Sem	SVR 08705627	3	2.2	2	9	3	8	4	26		7	22	3	3	0	2	2
su	Y	Sem	SVR 08705642	3	2.2	0	1	2	3	5	33	Ht	2	4	0	0	0	2	1
su	Y	Sem	SVR 08715917	6	3.2	0	3	4	13	9	54		1	0	3	13	0	0	0

su	Y	Sem	SVR 08716570	1	1.4	2	8	3	6	2	18	Ht	9	66	0	0	0	0	0
su	Y	Sem	SVR 08726093	5	2.7	0	3	4	11	5	31		1	0	3	3	0	0	0

Table 4. Reaction of sweet corn hybrids in the University of Illinois disease nursery in 2003

Seed				Reactions to herbicides															
				Stewart's		Common rust				NLB			MDM		Accent			Callisto	
				Rxn	Rate	avirulent		D-virulent		Rxn	Rate	HT	Rxn	Rate	Rxn	Rate	Rate	Rate	Rate
Type	Color	source	Hybrid	Rxn	Rate	Rxn	Rate	Rxn	Rate	HT	Rxn	Rate	Rxn	7-d	21-d	Rxn	7-d		
su	Y	Sem	SVR 8478578	8	4	0	1	3	7	9	50		3	6	9	33	88	5	13
su	Y	Sem	SVR 8478598	5	2.9	0	1	4	11	7	44		3	13	0	0	0	2	4
su	Y	Sem	SVR 8482608	5	3	2	8	2	4	6	38		9	71	0	0	0	2	1
su	Y	Sem	SVR 8491929	2	1.6	3	12	3	7	3	21	Ht	9	45	0	0	0	0	0
su	Y	Sem	SVR 8492269	1	1.4	2	9	3	8	3	21	Ht	9	74	0	0	0	0	0
su	Y	Sem	SVR 8492359	2	1.7	0	2	3	7	3	20	Ht	9	33	0	0	0	0	0
su	Y	Sem	SVR 8492369	3	2	0	2	3	9	5	30	Ht	7	29	0	0	0	0	0
su	Y	Sem	SVR 8492389	3	2	0	3	4	12	4	29		9	53	0	0	0	0	0
su	Y	Sem	SVR 8492729	5	3.1	0	3	5	14	7	43		9	77	0	0	0	2	1
su	Y	HM	Topacio	4	2.4	0	1	2	5	4	27	Ht	1	0	3	7	0	0	0
su	Y	SnR	UY 2503	7	3.7	5	24	5	14	7	43		1	0	0	0	0	0	0
su	Y	SnR	UY 2827	.	.	0	5	5	14	5	34		1	0	0	0	0	0	0
su	W	Cr	CrSUWP1-7	1	1.1	0	3	6	18	2	19		9	66	0	0	0	2	3
Sugary enhanced and synergistic hybrids																			
syn	Y	Cr	Applause	5	2.8	6	32	6	19	7	40		9	80	0	0	0	0	0
syn	Y	Cr	Blaze	4	2.3	5	24	5	15	3	23	Ht	9	67	3	7	0	2	1
se	Y	Sem	Champ	7	3.7	5	24	5	16	7	41		9	53	3	10	0	0	0
se	Y	Sem	Cinch	9	4.6	6	30	7	22	4	29		2	4	3	13	0	0	0
se	Y	Cr	CrseYP1-25	6	3.4	0	2	5	14	6	36		9	86	3	3	0	0	0
se	Y	Cr	CrseYP1-3	5	2.8	0	2	5	16	9	51		9	81	1	2	0	0	0
se	Y	Sem	EX 08716607	8	4	0	2	5	16	6	36		9	72	3	3	0	0	0
se	Y	Sem	EX 8441107	6	3.4	0	7	7	22	7	42		9	90	0	0	0	2	2
se	Y	Sem	EX 8452067	6	3.3	0	3	5	16	8	49		9	31	0	0	0	0	0
se	Y	GG	GG Code 124	8	4.1	0	3	4	10	6	36		1	0	0	0	0	0	0
se+	Y	Rog	Honey Select	6	3.2	5	24	5	15	8	49		9	67	0	0	0	0	0
se	Y	Cr	Incredible	4	2.4	4	20	5	14	8	46		9	59	0	0	0	0	0
se	Y	MM	Merlin	1	1	2	7	2	5	5	34		9	68	0	0	0	0	0

se	Y	Cr	Miracle	1	1.3	3	12	3	7	4	26	9	67	0	0	0	4	5
se	Y	Sem	PX 9330109	7	3.7	5	25	5	17	6	37 Ht	9	77	0	0	0	0	0
se	Y	Sem	SVR 8445917	3	2.1	0	2	5	15	6	35	1	0	5	20	0	0	0

Table 4. Reaction of sweet corn hybrids in the University of Illinois disease nursery in 2003

Seed				Reactions to herbicides															
				Stewart's		Common rust				NLB			MDM		Accent			Callisto	
				Rxn	Rate	avirulent		D-virulent		Rxn	Rate	HT	Rxn	Rate	Rxn	Rate	Rate	Rate	Rate
Type	Color	source	Hybrid	Rxn	Rate	Rxn	Rate	Rxn	Rate	HT	Rxn	Rate	Rxn	7-d	21-d	Rxn	7-d		
se	Y	Sem	SVR 8481708	5	2.7	0	2	2	5	7	40	9	45	3	3	0	2	1	
se	Y	Sem	SVR 8482578	3	2.2	0	1	3	6	7	42	9	58	0	0	0	0	0	
se	Y	HM	Sweet Dawn	8	4.3	8	44	7	25	8	48	9	60	0	0	0	0	0	
se	B	Sem	Absolute	3	2	5	27	5	17	6	37	9	63	3	7	0	2	1	
se	B	MM	Accord	1	1.2	4	21	5	15	2	16 Ht	9	46	3	7	0	0	0	
se	B	Cr	Ambrosia	3	2.2	5	28	6	19	4	29	9	60	3	7	0	0	0	
se+	B	Rog	BC 0805	8	4.2	0	1	3	9	7	43 Ht	9	61	0	0	0	2	1	
syn	B	Cr	Bojangles	5	2.8	5	26	6	19	7	42	9	80	0	0	0	0	0	
se	B	MM	Bon Appetit	7	3.8	7	37	6	18	4	29	9	59	3	7	0	0	0	
se	B	MM	Brocade	3	2.2	4	21	4	12	3	20 Ht	9	67	3	7	0	2	1	
se	B	MM	Buckeye	1	1.4	2	11	3	9	3	21	9	45	0	0	0	0	0	
syn	B	Cr	Cameo	4	2.3	3	19	4	10	4	27 Ht	9	67	0	0	0	0	0	
syn	B	Cr	Charmed	6	3.4	4	20	5	16	5	34 Ht	9	67	0	0	0	0	0	
syn	B	Cr	CrsyBF1-12	6	3.2	5	25	5	17	6	35	9	40	0	0	0	0	0	
syn	B	Cr	CrsyBF2-47	2	1.9	5	26	6	20	5	30	9	76	8	10	32	5	10	
syn	B	Cr	CrsyBF2-48	7	3.6	5	27	6	18	6	39	9	80	0	0	0	0	0	
se	B	MM	Double Gem	7	3.6	5	27	5	16	3	24 Ht	9	51	5	0	20	0	0	
se	B	MM	Double Play	5	3	7	36	8	26	5	34 Ht	9	40	3	3	0	2	1	
se	B	Cr	Early Ambrosia	5	2.9	8	42	9	33	9	68	9	63	0	0	0	0	0	
se	B	Sem	EX 8487249	7	3.7	2	9	3	9	7	41	3	8	0	0	0	2	1	
se	B	Cr	Fleet	9	4.7	8	42	8	30	9	64	9	52	3	10	10	0	0	
syn	B	Cr	Frisky	7	3.8	7	38	7	22	9	53	9	63	3	3	0	0	0	
se	B	MM	Lancelot	4	2.3	2	11	2	5	3	24	9	75	3	10	0	0	0	
se	B	MM	Luscious	5	2.7	5	26	6	21	5	30 Ht	9	51	3	3	0	0	0	
syn	B	MM	Montauk	7	3.6	5	28	7	22	8	48	9	65	0	0	0	0	0	
se	B	MM	MXH 11467	2	1.7	2	9	3	6	5	32 Ht	9	56	3	7	0	2	1	

se	B	MM	MXH 11685	1	1.3	2	9	2	4	4	27	Ht	9	57	0	0	0	0	0
se	B	MM	MXH 11707	2	1.7	3	17	4	12	4	25	Ht	9	47	5	22	0	0	0
se	B	Cr	Mystique	1	1.4	6	33	7	25	2	16	Ht	9	48	9	37	45	2	4
syn	B	MM	Navset	4	2.3	2	11	3	6	9	55		9	65	0	0	0	0	0

Table 4. Reaction of sweet corn hybrids in the University of Illinois disease nursery in 2003

Type	Color	Seed source	Hybrid	Reactions to herbicides															
				Stewart's		Common rust				NLB			MDM		Accent			Callisto	
				Rxn	Rate	avirulent Rxn	Rate	D-virulent Rxn	Rate	Rxn	Rate	HT	Rxn	Rate	Rxn	Rate	Rate	Rate	Rate
														7-d	21-d		7-d		
se	B	MM	Precious Gem	2	1.6	3	13	3	9	4	26		9	58	0	0	0	2	2
se+	B	Rog	Providence	7	3.6	0	3	5	14	7	41		9	53	0	0	0	0	0
se	B	Sem	Seneca Nation	1	1	3	17	4	12	3	21		9	47	0	0	0	0	0
se	B	Sem	Seneca Spring	5	3	4	23	5	14	5	31		9	59	3	13	0	0	0
se	B	Sem	Sensor	6	3.2	2	10	4	10	5	34		9	58	3	3	0	0	0
se+	B	Rog	Serendipity	8	4	6	31	6	18	8	48		9	46	3	13	0	0	0
se	B	Sem	SVR 08705680	6	3.4	0	7	5	15	5	33		1	0	0	0	0	0	0
se	B	Sem	SVR 08716633	2	1.6	0	5	6	19	3	23		9	55	0	0	0	0	0
se	B	Sem	SVR 08717125	5	2.6	0	3	6	18	5	31		2	2	0	0	0	0	0
se	B	Sem	SVR 8444277	6	3.3	0	1	6	19	6	39	Ht	7	24	0	0	0	0	0
se	B	HM	Sweet Chorus	7	3.9	9	54	8	28	9	54		9	71	0	0	0	0	0
se	B	Sem	Temptation	6	3.4	8	49	8	28	7	44		9	46	0	0	0	0	0
syn	B	Cr	Trinity	7	3.6	8	47	8	30	6	37		9	74	3	3	0	0	0
syn	W	Cr	Alexis	5	2.7	3	19	5	15	4	27		9	64	0	0	0	0	0
se	W	Cr	Argent	2	1.9	4	21	5	15	5	30		9	62	3	10	0	5	12
syn	W	Cr	Celestial	3	2.1	5	26	5	16	4	29	Ht	9	64	3	3	0	5	10
syn	W	Cr	Cinderella	3	2.1	4	23	4	12	4	29		7	27	0	0	0	0	0
se	W	MM	Cloud Nine	3	2.2	4	22	4	12	4	28	Ht	9	63	0	0	0	0	0
se	W	Sem	EX 8414877	7	3.6	0	6	6	19	8	48		9	80	0	0	0	0	0
se	W	Sem	Fantasia	9	4.7	4	23	5	15	9	59		9	88	3	13	0	4	7
se	W	MM	MXH 20617	3	2.2	5	28	6	19	5	31	Ht	9	57	0	0	0	0	0
se	W	MM	MXH 20655	2	1.8	2	11	3	8	4	27	Ht	9	66	3	10	0	0	0
se	W	MM	MXH 20867	3	2.1	2	6	3	7	5	33	Ht	9	57	0	0	0	2	1
se	W	Sem	SVR 8444677	6	3.4	6	34	6	18	5	30		9	67	0	0	0	0	0
se	W	MM	Whiteout	4	2.3	7	37	7	25	6	39		9	56	3	7	0	2	1

Shrunken-2 hybrids

sh2	Y	IFS	173A	6	3.3	4	21	5	16	9	51	9	53	3	3	0	0	0
sh2	Y	Sem	Challenger	4	2.4	6	32	7	22	4	29	9	72	0	0	0	0	0
sh2	Y	Cr	Crisp n Sweet 710	4	2.3	7	36	7	22	3	23 Ht	9	46	0	0	0	0	0
sh2	Y	Cr	CrshWP1-19	1	1.3	0	3	6	20	3	22	3	7	0	0	0	4	5

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Type	Color	Seed source	Hybrid	Reactions to herbicides															
				Stewart's		Common rust				NLB			MDM		Accent			Callisto	
				Rxn	Rate	avirulent Rxn	avirulent Rate	D-virulent Rxn	D-virulent Rate	Rxn	Rate	HT	Rxn	Rate	Rxn	7-d	Rate	21-d	Rxn
sh2	Y	Cr	CrshYP2-54	4	2.4	0	5	7	22	5	30	9	71	3	3	7	0	0	
sh2	Y	HM	Day Star	1	1.3	7	37	8	26	1	4 Ht	9	54	3	5	0	0	0	
sh2	Y	Sem	EX 08716636	6	3.3	0	3	6	18	4	29 Ht	7	22	0	0	0	0	0	
sh2	Y	Sem	EX 8462518	5	2.6	5	26	6	20	6	39	9	59	0	0	0	2	1	
sh2	Y	GG	GG Code 107	4	2.4	0	3	6	20	4	27	9	42	5	17	0	0	0	
sh2	Y	GG	GG Code 141	5	2.6	0	3	5	16	4	26	9	37	0	0	0	0	0	
sh2	Y	SnR	Gladiator	3	2.1	0	1	4	12	3	23 Ht	7	23	0	0	0	0	0	
sh2	Y	SnR	Goldensweet Improved	8	4.4	0	3	5	16	7	43	9	36	3	7	0	0	0	
sh2	Y	Rog	GSS 0966A	3	2	0	0	0	0	2	15 Ht	9	48	0	0	0	2	1	
sh2	Y	Rog	GSS 1303	5	2.7	0	4	6	21	3	24 Ht	9	62	0	0	0	2	1	
sh2	Y	Rog	GSS 2675	8	4.4	5	28	6	18	9	53	9	42	0	0	0	0	0	
sh2	Y	Rog	GSS 2914	8	4.3	0	3	4	13	7	42	9	48	3	10	7	0	0	
sh2	Y	Rog	GSS 8076	5	2.6	0	0	0	0	5	30	2	3	0	0	0	0	0	
sh2	Y	Rog	GSS 8357	3	2	0	4	5	17	2	16 Ht	9	51	0	0	0	0	0	
sh2	Y	Rog	GSS 9298	3	2.2	5	25	5	14	3	23 Ht	9	57	3	3	0	2	1	
sh2	Y	Rog	GSS 9641	1	1.2	0	0	0	0	2	19 Ht	2	2	3	8	3	0	0	
sh2	Y	SnR	HY 1012	3	2.2	5	25	6	19	2	18 Ht	3	12	3	8	0	2	3	
sh2	Y	SnR	HY 1558	6	3.3	0	3	6	18	6	36	9	45	8	30	36	0	0	
sh2	Y	SnR	HY 1734	5	3.1	0	3	5	14	4	27 Ht	3	12	9	53	66	4	7	
sh2	Y	SnR	Lancaster	8	4.3	0	6	6	20	4	27 Ht	7	22	0	0	0	0	0	
sh2	Y	SnR	Matador	3	2	0	2	5	14	2	17 Ht	3	10	3	3	0	0	0	
sh2	Y	SnR	Rising Sun	7	3.6	0	5	5	15	7	40	3	11	0	0	0	0	0	
sh2	Y	HM	Rustler	4	2.4	0	5	6	20	6	38	2	2	1	2	0	0	0	
sh2	Y	Sem	Shimmer	5	2.8	0	3	5	14	3	20 Ht	9	81	0	0	0	2	1	
sh2	Y	Cr	Shogun	1	1.1	0	3	7	25	1	12 Ht	1	0	9	57	95	2	2	

sh2	Y	AC	Summer Sweet 7630	1	1.4	6	30	8	27	2	15	Ht	9	61	3	7	3	0	0
sh2	Y	Rog	Supersweet Jubilee	9	4.6	5	25	6	19	8	49		9	39	5	3	13	0	0
sh2	Y	HM	Suregold	6	3.4	0	6	6	19	6	37		3	9	3	13	0	2	1
sh2	Y	Sem	SVR 08413000	5	2.7	0	8	9	31	8	48	Ht	9	80	3	3	0	0	0
sh2	Y	Sem	SVR 08413005	9	5.9	0	2	6	21	8	49		9	59	8	20	30	4	5

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Type	Color	Seed source	Hybrid	Reactions to herbicides															
				Stewart's		Common rust				NLB			MDM		Accent			Callisto	
				Rxn	Rate	avirulent Rxn	avirulent Rate	D-virulent Rxn	D-virulent Rate	Rxn	Rate	HT	Rxn	Rate	Rxn	7-d	Rate	21-d	Rxn
sh2	Y	Sem	SVR 08413014	5	2.9	8	48	9	32	8	45		9	60	3	7	7	2	1
sh2	Y	Sem	SVR 08705808	5	2.8	0	8	9	31	9	54		2	2	0	0	0	0	0
sh2	Y	Sem	SVR 08716613	5	2.9	0	6	6	19	4	27	Ht	2	4	5	10	23	0	0
sh2	Y	Sem	SVR 08716709	3	2.2	0	7	6	21	6	38		1	0	3	10	0	0	0
sh2	Y	Sem	SVR 08717179	5	2.6	0	1	4	12	4	27	Ht	1	0	3	3	0	0	0
sh2	Y	Sem	SVR 08717180	3	2.1	0	3	5	16	5	34		1	0	0	0	0	0	0
sh2	Y	Sem	SVR 08717184	2	1.6	0	2	5	17	5	33	Ht	1	0	3	7	0	0	0
sh2	Y	Sem	SVR 08717187	4	2.4	0	2	6	19	5	30	Ht	1	0	0	0	0	0	0
sh2	Y	Sem	SVR 08717197	6	3.4	0	6	7	24	5	34		3	14	0	0	0	0	0
sh2	Y	Sem	SVR 08717201	5	3	0	4	5	17	3	22		9	66	0	0	0	0	0
sh2	Y	Sem	SVR 08725226	5	2.6	4	21	5	16	6	36		9	48	5	23	0	0	0
sh2	Y	Sem	SVR 08736049	6	3.2	0	1	0	0	4	29	Ht	3	5	3	10	0	0	0
sh2	Y	Sem	SVR 08736073	5	2.7	4	22	5	15	1	13	Ht	9	60	0	0	0	0	0
sh2	Y	Sem	SVR 08736091	5	2.7	0	8	7	22	3	24	Ht	9	61	3	3	0	0	0
sh2	Y	Sem	SVR 08736102	7	3.9	5	28	6	19	6	37		9	52	3	3	0	0	0
sh2	Y	Sem	SVR 08736103	5	3.1	6	33	5	17	7	40		9	60	0	0	0	0	0
sh2	Y	Sem	SVR 8460758	6	3.3	0	2	5	16	4	25		9	77	3	3	0	0	0
sh2	Y	Sem	SVR 8461098	7	3.8	0	9	8	28	5	31	Ht	9	74	3	13	0	2	1
sh2	Y	Sem	SVR 8467418	2	1.9	6	34	6	21	7	40		9	67	3	3	0	0	0
sh2	Y	Sem	SVR 8483299	7	3.9	0	3	6	19	5	30		9	75	0	0	0	0	0
sh2	Y	HM	Swifty	7	3.9	0	7	5	17	8	48		1	0	3	7	0	0	0
sh2	Y	Rog	Winstar	4	2.4	0	3	4	13	2	19	Ht	9	44	5	27	0	0	0
sh2	Y	IFS	XTH 1168	7	3.7	7	38	8	28	9	52		9	51	0	0	0	2	2
sh2	Y	IFS	XTH 1169	7	3.8	6	33	7	25	9	54		7	26	3	7	0	2	1

sh2	Y	IFS	XTH 1170	8	4.1	5	28	7	23	9	53	9	68	3	10	0	2	3
sh2	Y	IFS	XTH 1172	7	3.8	6	30	7	22	8	49	9	44	5	30	7	4	7
sh2	Y	IFS	XTH 1174	8	4.1	6	32	8	26	7	43	9	44	0	0	0	0	0
sh2	Y	IFS	XTH 1175	7	3.7	0	5	5	17	8	46 Ht	9	51	3	3	0	2	1
sh2	Y	IFS	XTH 1176	6	3.3	0	5	7	23	7	42	9	51	3	3	0	0	0
sh2	Y	IFS	XTH 1177	5	3.1	7	36	7	25	7	44	9	62	0	0	0	0	0

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Type	Color	Seed source	Hybrid	Reactions to herbicides															
				Stewart's		Common rust				NLB			MDM		Accent			Callisto	
				Rxn	Rate	avirulent Rxn	Rate	D-virulent Rxn	Rate	Rxn	Rate	Ht	Rxn	Rate	Rxn	7-d	21-d	Rxn	7-d
sh2	Y	IFS	XTH 1178	6	3.4	6	30	7	23	7	41	9	65	3	3	0	0	0	
sh2	Y	IFS	XTH 1180	3	2	0	2	5	16	3	21 Ht	9	82	0	0	0	0	0	
sh2	Y	IFS	XTH 1181	3	2	0	2	5	14	2	17 Ht	9	46	3	13	0	0	0	
sh2	Y	IFS	XTH 1182	3	2	0	3	6	18	3	22 Ht	9	50	0	0	0	2	1	
sh2	Y	IFS	XTH 1273	8	4.3	5	28	5	17	7	41	9	45	0	0	0	2	3	
sh2	Y	IFS	XTH 1274	2	1.6	4	23	5	15	3	22 Ht	9	48	3	7	3	0	0	
sh2	Y	IFS	XTH 1275	7	3.8	5	28	6	20	8	45	9	63	3	7	0	0	0	
sh2	Y	IFS	XTH 1276	5	3	5	26	6	21	8	49	9	65	0	0	0	2	3	
sh2	Y	IFS	XTH 1277	5	2.9	7	37	8	27	9	50	9	53	0	0	0	0	0	
sh2	Y	IFS	XTH 1281	2	1.9	0	3	5	16	3	20	9	39	3	3	0	0	0	
sh2	Y	IFS	XTH 1282	2	1.8	0	2	6	18	3	20 Ht	9	53	3	3	0	0	0	
sh2	Y	IFS	XTH 1375	7	3.6	5	26	6	20	7	43	9	78	3	3	0	0	0	
sh2	B	IFS	273A	7	3.7	5	28	6	19	9	53	9	43	0	0	0	0	0	
sh2	B	IFS	274A	7	3.6	8	42	9	35	9	50	9	63	0	0	0	0	0	
sh2	B	IFS	277A	4	2.3	5	26	5	17	6	36	9	65	3	7	0	0	0	
sh2	B	IFS	282A	4	2.3	0	4	5	16	4	26 Ht	9	70	0	0	0	0	0	
sh2	B	Rog	BSS 0977A	4	2.3	0	0	0	0	1	11 Ht	9	69	0	0	0	0	0	
sh2	B	Rog	BSS 6562	7	3.7	6	30	5	17	5	31 Ht	9	38	3	3	0	0	0	
sh2	B	Rog	BSS 6661	1	1.5	0	0	0	0	1	14 Ht	1	0	0	0	0	0	0	
sh2	B	Cr	CrshBF2-69	2	1.8	0	4	6	20	2	17 Ht	9	52	3	13	0	0	0	
sh2	B	Cr	CrshBF2-70	5	3	8	43	9	35	4	27 Ht	9	37	0	0	0	2	1	
sh2	B	Cr	CrshBF2-71	6	3.2	7	39	8	27	5	33	9	35	0	0	0	0	0	
sh2	B	Sem	EX 08705788	5	2.9	0	11	7	24	5	33	2	2	0	0	0	0	0	

sh2	B	SnR	HB 2572	7	3.6	5	29	6	20	7	40	3	18	0	0	0	0	0
sh2	B	Sem	Hollywood	6	3.3	0	4	7	22	6	35	9	64	5	23	3	0	0
sh2	B	Sak	K0-305	5	2.9	6	34	7	22	9	54	9	64	1	2	0	0	0
sh2	B	Cen	Mirai 301BC	3	2	5	25	6	21	6	39	9	51	0	0	0	0	0
sh2	B	Cen	Mirai 327BC	7	3.9	5	24	6	19	7	40	9	59	0	0	0	0	0
sh2	B	Sem	PX 9362379	2	1.9	5	29	6	18	4	27 Ht	9	55	0	0	0	0	0
sh2	B	Sem	PX 9381178	5	2.9	5	27	5	17	5	32	9	44	0	0	0	0	0

Table 4. Reaction of sweet corn hybrids in the University of Illinois disease nursery in 2003

Type	Color	Seed source	Hybrid	Reactions to herbicides															
				Stewart's		Common rust				NLB			MDM		Accent			Callisto	
				Rxn	Rate	avirulent Rxn	Rate	D-virulent Rxn	Rate	Rxn	Rate	Ht	Rxn	Rate	Rxn	Rate	Rate	Rate	Rxn
sh2	B	HM	Shooting Star	1	1.4	0	7	7	25	1	3	Ht	2	3	3	3	0	2	2
sh2	B	AC	Summer Sweet 8102	3	2.1	5	28	6	20	3	20	Ht	9	58	3	7	0	0	0
sh2	B	Sem	SVR 08705758	6	3.4	5	24	5	17	4	28		1	0	0	0	0	0	
sh2	B	Sem	SVR 08716390	2	1.8	0	1	0	0	3	24	Ht	9	42	0	0	0	0	0
sh2	B	Sem	SVR 08716618	6	3.4	0	3	5	14	5	33	Ht	1	0	3	7	0	2	2
sh2	B	Sem	SVR 08716622	1	1.1	3	14	4	12	4	26	Ht	9	61	5	17	0	2	2
sh2	B	Sem	SVR 08716623	2	1.8	4	21	5	14	3	24	Ht	9	46	0	0	0	0	0
sh2	B	Sem	SVR 08716790	3	2.2	0	4	3	9	2	17	Ht	1	0	3	7	0	0	0
sh2	B	Sem	SVR 08717186	5	2.6	0	2	5	14	4	25	Ht	1	0	3	3	0	0	0
sh2	B	Sem	SVR 08725230	1	1.3	7	35	7	25	4	26	Ht	2	2	0	0	0	0	0
sh2	B	Cr	Tango	4	2.4	5	25	5	17	4	26	Ht	9	62	0	0	0	0	0
sh2	B	HM	Twin Star	2	1.9	0	11	8	27	1	4	Ht	2	4	5	17	0	2	2
sh2	B	IFS	XTH 2169	5	2.8	4	22	5	16	5	31	Ht	9	54	3	13	0	0	0
sh2	B	IFS	XTH 2172	6	3.3	6	31	6	21	7	43		7	24	3	10	0	0	0
sh2	B	IFS	XTH 2178	3	2.1	0	3	6	18	3	21	Ht	9	58	3	3	0	2	1
sh2	B	IFS	XTH 2180	2	1.8	0	2	5	16	3	24	Ht	9	69	3	13	0	0	0
sh2	B	IFS	XTH 2181	2	1.7	0	2	5	15	3	24	Ht	9	59	5	20	0	0	0
sh2	B	IFS	XTH 2276	4	2.3	5	26	5	17	7	41		9	79	0	0	0	0	0
sh2	B	IFS	XTH 2278	3	2.1	0	3	5	16	3	20	Ht	9	44	0	0	0	0	0
sh2	B	IFS	XTH 2279	1	1.4	0	2	5	17	3	20	Ht	9	58	3	3	0	0	0
sh2	B	IFS	XTH 2280	2	1.6	0	3	5	16	3	20	Ht	9	53	0	0	0	0	0
sh2	B	IFS	XTH 2281	2	1.8	0	3	5	16	3	23	Ht	9	42	0	0	0	0	0

sh2	B	IFS	XTH 2379	1	1.4	0	3	5	16	3	21	Ht	9	55	3	10	0	0	0
sh2	B	IFS	XTH 2381	2	1.9	0	3	5	16	2	19	Ht	9	53	3	7	0	0	0
sh2	W	Rog	Aspen	8	4.1	8	41	8	26	8	45		9	59	0	0	0	0	0
sh2	W	Cr	CrshWF1-21	2	1.7	0	2	6	19	4	26	Ht	2	4	0	0	0	0	0
sh2	W	Cr	CrshWF1-23	6	3.3	4	22	6	18	4	27	Ht	9	31	0	0	0	2	2
sh2	W	Sem	Even Sweetier	6	3.4	7	39	8	28	7	40		9	40	1	2	0	2	1
sh2	W	SnR	HW 1283	7	3.6	6	30	5	17	6	36	Ht	3	17	9	27	62	5	13
sh2	W	SnR	HW 1292	8	4.2	5	28	7	23	7	43		9	33	0	0	0	0	0

Table 4. Reaction of sweet corn hybrids in the University of Illinois disease nursery in 2003

Type	Color	Seed source	Hybrid	Stewart's		Common rust		NLB			MDM		Reactions to herbicides						
				Rxn	Rate	avirulent		D-virulent		Rxn	Rate	HT	Rxn	Rate	Accent		Callisto		
						Rxn	Rate	Rxn	Rate						Rxn	7-d	21-d	Rxn	7-d
sh2	W	Sak	K2-501	5	2.6	5	27	6	21	9	51		9	54	0	0	0	0	0
sh2	W	Sak	Millenium	2	1.6	0	2	6	18	3	21	Ht	2	2	0	0	0	0	0
sh2	W	HM	Snow White	8	4.2	9	67	9	48	8	45		2	4	3	10	0	2	3
sh2	W	AC	Summer Sweet 7631	3	2	5	29	8	26	2	15	Ht	9	56	3	3	0	0	0
sh2	W	AC	Summer Sweet 781 Ultra	3	2.1	6	33	8	26	2	19	Ht	9	47	0	0	0	0	0
sh2	W	Sem	SVR 08413133	5	2.9	5	26	5	16	7	42		9	85	0	0	0	0	0
sh2	W	Sem	SVR 08413134	5	3.1	6	33	7	22	9	53		9	59	3	3	0	0	0
sh2	W	Sem	SVR 08705770	7	3.8	0	7	5	17	5	33	Ht	2	2	9	37	52	5	16
sh2	W	Sem	SVR 08705771	4	2.4	0	5	6	18	3	24	Ht	1	0	0	0	0	0	0
sh2	W	Sem	SVR 08705778	8	4	0	5	6	19	5	32		2	2	9	43	78	5	15
sh2	W	Sem	SVR 08715822	6	3.2	0	6	6	19	6	35		1	0	0	0	0	0	0
sh2	W	Sem	SVR 08736096	7	3.9	5	28	6	19	6	38		9	67	0	0	0	0	0
sh2	W	Sem	SVR 8413997	9	4.9	8	48	9	32	6	37	Ht	9	71	3	13	13	2	1
sh2	W	HM	Sweet Magic	6	3.2	9	62	9	35	9	53		9	46	1	2	0	2	2
sh2	W	Rog	WSS 9842	5	2.8	0	6	5	15	2	18	Ht	9	73	0	0	0	2	1
sh2	W	IFS	XTH 3173	5	2.7	6	31	7	25	7	44		9	65	3	7	0	2	1
sh2	W	IFS	XTH 3180	3	2	0	3	5	16	3	22	Ht	9	58	3	10	0	0	0
sh2	W	IFS	XTH 3181	3	2	0	5	6	20	3	22	Ht	9	46	0	0	0	0	0
Brittle-1 hybrids																			
btl	Y	Haw	No.10cb	2	1.9	3	14	4	13	3	23	Ht	3	7	0	0	0	0	0
btl	Y	Haw	Sarah c 5	3	2.2	4	21	5	15	3	22	Ht	3	16	0	0	0	0	0

btI Y Haw Waimanalo Super Sweet 9c 5 2.6 0 6 4 11 3 24 Ht 2 3 0 0 0 0 0

Rxn - classification of hybrid disease reactions: 1 - resistant, 3 - moderately resistant, 5 - moderate, 7 - moderately susceptible, 9 - susceptible

Rate - disease rating: 1 to 9 scale (Stewart's wilt); 0 to 100% leaf area infected (rust, NLB); 0 to 100% incidence of infected plants (MDM)
0 to 100% leaf area symptomatic (herbicide damage)

Seed source: AC - Abbott & Cobb, Cen - Centest, Cr - Crookham, GG - Green Giant, Haw - Univ. Hawaii, HM - Harris Moran,
IFS - Illinois Foundation Seeds, MM - Mesa Maize, Rog - Rogers (Syngenta), Sak - Sakata, Sem - Seminis, SnR - Snowy River