

**2009**

**Soft Red Winter Wheat Cooperative Nurseries**

**5-State Advanced & Preliminary  
Mason-Dixon**

**Marker Reports**

**Eastern Regional Small Grains Genotyping Lab**

**Collaborator: Gina Brown-Guedira**

**USDA-ARS**

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### Some details of notations in the Marker tables

"nd" = not determined or lack of amplification

if marker is dominant, samples with no amplification are left blank

"?" indicates that markers may not be diagnostic or data not clear; therefore,  
can not be sure if gene is present or not

All numbers are size in base pairs of amplified fragments

Target alleles are in **bold** or *italics*

Rht-taqman = **Allele Y** = dwarfing = **yes**

Ppd-D1a = photoperiod insensitive = **yes**

## 2009 5-State Advanced & Preliminary

### Entry List

Nursery	Entry	Sample Name	Pedigree
5-St Adv	1	MO041687	MO 960304/MO 960815
5-St Adv	2	MO050219	MO 94-182/VA 91-54-219, 010708 RS
5-St Adv	3	MO061041	MO 94-310/P86981RC1-9-4-X
5-St Adv	4	MO070333	MO 003013/MO 981020
5-St Adv	5	Bess	MO 11769/Madison
5-St Adv	6	IL04-7874	G65201/IL98-12212
5-St Adv	7	IL04-7942	G65201/IL 98-12212
5-St Adv	8	IL04-10118	IL97-3578/IL97-7010
5-St Adv	9	IL04-17762	IL97-3578/IL97-7010
5-St Adv	10	Kaskaskia	IL77-2933/IL77-3956//Pike/Caldwell
5-St Adv	11	P0175A1-37-4	
5-St Adv	12	P0570A1-7-1	
5-St Adv	13	P0570A1-6-12	
5-St Adv	14	P05262A1-3-5	
5-St Adv	15	P05339A1-1-18	
5-St Adv	16	OH05-164-76	Pioneer 25R18/VA97W-375
5-St Adv	17	OH05-200-74	OH629/Hopewell
5-St Adv	18	OH02-12686	Foster/Hopewell//OH581/OH569
5-St Adv	19	OH03-41-45	IL 91-14167/OH599
5-St Adv	20	BROMFIELD	OH02-12678 before release
5-St Adv	21	KY00C-2697-04	
5-St Adv	22	KY00C-2025-06	
5-St Adv	23	KY00C-2249-02	
5-St Adv	24	KY00C-2039-15	
5-St Adv	25	Pembroke	
5-St Pre	1	MO071269	MO 990636/MO 001164
5-St Pre	2	MO071915	Truman//Bess/AP Patton
5-St Pre	3	MO080104	L910097/MO 92-599, 030291 RS
5-St Pre	4	MO080139	FFR 525/PL XW535, 030844 RS
5-St Pre	5	Bess	MO 11769/Madison
5-St Pre	6	IL04-10721	IL 95-4162/IL97-7010
5-St Pre	7	IL04-10741	IL95-4162/IL97-7010
5-St Pre	8	IL05-15079	NEL-1538/KY93C-38-17-1
5-St Pre	9	IL05-27333	IL96-24851-1-/IL97-3574//IL97-3950
5-St Pre	10	Kaskaskia	IL77-2933/IL77-3956//Pike/Caldwell
5-St Pre	11	P011007A1-14-44	
5-St Pre	12	P0537A1-3-12	
5-St Pre	13	P05269A1-4-9	
5-St Pre	14	P05247A1-7-3	
5-St Pre	15	P05287A1-4-5	
5-St Pre	16	OH05-72-6	Pioneer 25R18/VA97W-375
5-St Pre	17	OH05-101-1	Hopewell/Pioneer 25R26
5-St Pre	18	OH05-152-68	OH685/AP Patton
5-St Pre	19	OH05-249-32	OH685/OH686
5-St Pre	20	Malabar	OH02-7217 before release
5-St Pre	21	KY01C-1158-06	
5-St Pre	22	KY01C-1319-14	
5-St Pre	23	KY01C-1156-02	
5-St Pre	24	KY01C-1327-18	
5-St Pre	25	Pembroke	

**2009 5-State Advanced & Preliminary**  
**Summary of all Markers**

Nursery	Entry	Sample Name	Rht1-B1b	Rht2-D1b	Rht8	Ppd-D1a	Fhb 2DL-		Fhb 5A
							Fhb1	Wuhan1/W14	Ernie
5-St Adv	1	MO041687	yes	no	no	no	no	no	no
5-St Adv	2	MO050219	no	yes	no	het	no	no	no
5-St Adv	3	MO061041	yes	no	no	no	no	no	het
5-St Adv	4	MO070333	yes	no	no	het	no	no	no
5-St Adv	5	Bess	yes	no	no	no	no	no	no
5-St Adv	6	IL04-7874	yes	no	no	yes	no	no	no
5-St Adv	7	IL04-7942	yes	no	no	no	no	no	no
5-St Adv	8	IL04-10118	yes	no	no	het	no	no	no
5-St Adv	9	IL04-17762	yes	no	no	no	no	no	no
5-St Adv	10	Kaskaskia	yes	no	no	no	no	no	no
5-St Adv	11	P0175A1-37-4	yes	no	no	yes	yes?	no	no
5-St Adv	12	P0570A1-7-1	yes	no	no	yes	no	no	no
5-St Adv	13	P0570A1-6-12	yes	no	no	yes	no	no	no
5-St Adv	14	P05262A1-3-5	yes	no	no	no	no	no	no
5-St Adv	15	P05339A1-1-18	yes	no	no	yes	no	no	no
5-St Adv	16	OH05-164-76	yes	no	no	yes	het	no	no
5-St Adv	17	OH05-200-74	yes	no	no	no	no	no	no
5-St Adv	18	OH02-12686	yes	no	no	no	no	no	no
5-St Adv	19	OH03-41-45	yes	no	no	no	no	no	no
5-St Adv	20	BROMFIELD	yes	no	no	no	no	no	no
5-St Adv	21	KY00C-2697-04	no	yes	no	no	no	no	no
5-St Adv	22	KY00C-2025-06	yes	no	no	yes	no	no	no
5-St Adv	23	KY00C-2249-02	no	yes	no	yes	no	no	yes
5-St Adv	24	KY00C-2039-15	yes	no	no	yes	no	no	yes
5-St Adv	25	Pembroke	no	yes	no	yes	no	no	no
5-St Pre	1	MO071269	yes	no	no	no	no	no	no
5-St Pre	2	MO071915	yes	no	no	het	no	no	no
5-St Pre	3	MO080104	no	no	no	het	no	no	no
5-St Pre	4	MO080139	no	no	no	yes	no	no	no
5-St Pre	5	Bess	nd	nd	nd	no	no	no	no
5-St Pre	6	IL04-10721	yes	no	no	het	no	no	no
5-St Pre	7	IL04-10741	yes	no	no	no	no	no	no
5-St Pre	8	IL05-15079	yes	no	no	het	no	no	no
5-St Pre	9	IL05-27333	yes	no	no	het	no	no	no
5-St Pre	10	Kaskaskia	nd	nd	nd	no	no	no	no
5-St Pre	11	P011007A1-14-44	yes	no	no	yes	no	no	no
5-St Pre	12	P0537A1-3-12	yes?	no	no	het	het?	no	no
5-St Pre	13	P05269A1-4-9	yes	no	no	yes	no	no	no
5-St Pre	14	P05247A1-7-3	yes	no	no	het	no	no	yes
5-St Pre	15	P05287A1-4-5	yes	no	no	no	no	no	no
5-St Pre	16	OH05-72-6	yes	no	no	yes	no	no	no
5-St Pre	17	OH05-101-1	yes?	no	no	yes	no	no	no
5-St Pre	18	OH05-152-68	yes	no	no	het	no	no	no
5-St Pre	19	OH05-249-32	yes	no	no	yes	no	no	no
5-St Pre	20	Malabar	yes	no	no	no	no	no	yes
5-St Pre	21	KY01C-1158-06	yes?	yes?	no	yes	no	no	no
5-St Pre	22	KY01C-1319-14	no	yes	no	yes	no	no	yes
5-St Pre	23	KY01C-1156-02	no	yes	no	yes	no	no	yes
5-St Pre	24	KY01C-1327-18	no	yes	no	yes	no	no	yes
5-St Pre	25	Pembroke	nd	nd	nd	yes	no	no	no

**2009 5-State Advanced & Preliminary**  
Summary of all Markers

Nursery	Entry	Sample Name	Sr24/ Yr17/Lr37/ Lr34/Yr18/				1RS	H13	H9	Bdv2/3	Bx7 over-expressing	Glu-D1
			Sr36	Lr24	Sr38	Pm38						
5-St Adv	1	MO041687	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Adv	2	MO050219	no	no	no	no	non-1RS	no	no	no	no	2+12
5-St Adv	3	MO061041	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Adv	4	MO070333	no	no	no	no	non-1RS	no	no	no	no	het
5-St Adv	5	Bess	no	no	no	no	non-1RS	no	no	no	no	2+12
5-St Adv	6	IL04-7874	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Adv	7	IL04-7942	no	no	no	no	non-1RS	no	no	no	no	het
5-St Adv	8	IL04-10118	no	no	no	no	non-1RS	no	no	no	no	2+12
5-St Adv	9	IL04-17762	no	no	yes	no	non-1RS	no	no	no	no	5+10
5-St Adv	10	Kaskaskia	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Adv	11	P0175A1-37-4	yes	no	no	no	1RS:1BL	no	no	no	yes	2+12
5-St Adv	12	P0570A1-7-1	yes	no	yes	no	non-1RS	no	no	yes	no	5+10
5-St Adv	13	P0570A1-6-12	no	no	yes	no	1RS:1BL	no	no	no	no	het
5-St Adv	14	P05262A1-3-5	yes	no	no	no	non-1RS	no	no	yes	no	2+12
5-St Adv	15	P05339A1-1-18	no	no	yes	no	1RS:1BL	no	no	het	yes	5+10
5-St Adv	16	OH05-164-76	no	no	no	het	1RS:1BL 1RS:1AL	no	no	no	no	het
5-St Adv	17	OH05-200-74	no	no	no	no	1RS:1AL	no	nd	no	no	2+12
5-St Adv	18	OH02-12686	no	no	yes	no	1RS:1AL	no	nd	no	no	2+12
5-St Adv	19	OH03-41-45	no	no	no	no	1RS:1AL	no	no	no	no	5+10
5-St Adv	20	BROMFIELD	no	no	no	no	1RS:1AL	no	nd	no	no	2+12
5-St Adv	21	KY00C-2697-04	no	no	no	no	1RS:1AL	no	nd	no	no	2+12
5-St Adv	22	KY00C-2025-06	no	no	no	no	non-1RS	no	no	no	no	2+12
5-St Adv	23	KY00C-2249-02	no	yes	no	no	non-1RS	no	no	no	no	2+12
5-St Adv	24	KY00C-2039-15	no	no	no	no	non-1RS	no	no	no	no	het
5-St Adv	25	Pembroke	no	no	no	no	non-1RS	no	no	no	yes	2+12
5-St Pre	1	MO071269	no	no	no	no	non-1RS	no	no	no	no	het
5-St Pre	2	MO071915	no	no	no	no	non-1RS	no	no	no	no	2+12
5-St Pre	3	MO080104	no	no	no	no	non-1RS	no	no	no	het	5+10
5-St Pre	4	MO080139	no	no	yes	no	non-1RS	no	no	no	no	2+12
5-St Pre	5	Bess	no	no	no	no	non-1RS	no	no	no	no	2+12
5-St Pre	6	IL04-10721	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Pre	7	IL04-10741	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Pre	8	IL05-15079	no	no	no	no	1RS:1BL	no	no	no	no	het
5-St Pre	9	IL05-27333	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Pre	10	Kaskaskia	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Pre	11	P011007A1-14-44	yes	no	no	no	non-1RS	no	no	yes	no	2+12
5-St Pre	12	P0537A1-3-12	no	no	yes	no	1RS:1BL	no	het	het	no	het
5-St Pre	13	P05269A1-4-9	no	no	no	no	1RS:1BL	no	no	yes	yes	het
5-St Pre	14	P05247A1-7-3	no	no	yes	no	1RS:1BL	no	het	yes	het	2+12
5-St Pre	15	P05287A1-4-5	yes	no	no	no	non-1RS	no	yes	yes	no	2+12
5-St Pre	16	OH05-72-6	yes	no	no	het	1RS:1BL	no	no	no	no	2+12
5-St Pre	17	OH05-101-1	no	no	no	no	non-1RS	no	no	no	no	5+10
5-St Pre	18	OH05-152-68	no	no	no	no	1RS:1BL	no	no	no	no	2+12
5-St Pre	19	OH05-249-32	no	no	no	no	non-1RS	no	no	no	no	2+12
5-St Pre	20	Malabar	no	no	no	no	non-1RS	nd	no	no	no	het
5-St Pre	21	KY01C-1158-06	no	no	no	het	1RS:1BL	no	no	no	no	het
5-St Pre	22	KY01C-1319-14	no	no	no	no	1RS:1BL	no	no	no	no	2+12
5-St Pre	23	KY01C-1156-02	no	no	no	no	non-1RS	no	no	no	no	2+12
5-St Pre	24	KY01C-1327-18	no	no	no	no	non-1RS	no	no	no	yes	het
5-St Pre	25	Pembroke	no	no	no	no	non-1RS	no	no	no	yes	2+12

## Dwarfing genes & Photoperiod insensitivity

2009

Nursery	Entry	Sample Name	Rht1-Taqman	Rht2-Taqman	Rht1-B1b	Rht2-D1b	gwm261	gwm261	Rht8	Ppd	Ppd	Ppd-D1a
5-St Adv	1	MO041687	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	2	MO050219	Allele X	Allele Y	no	yes	175		no	283	413	het
5-St Adv	3	MO061041	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	4	MO070333	Allele Y	Allele X	yes	no	175	205	no	283	413	het
5-St Adv	5	Bess	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	6	IL04-7874	Allele Y	Allele X	yes	no	175		no	283	413	yes
5-St Adv	7	IL04-7942	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	8	IL04-10118	Allele Y	Allele X	yes	no	175		no	283	413	het
5-St Adv	9	IL04-17762	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	10	Kaskaskia	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	11	P0175A1-37-4	Allele Y	Allele X	yes	no	175		no	283		yes
5-St Adv	12	P0570A1-7-1	Allele Y	Allele X	yes	no	175	203	no	283		yes
5-St Adv	13	P0570A1-6-12	Allele Y	Allele X	yes	no	175	203	no	283		yes
5-St Adv	14	P05262A1-3-5	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	15	P05339A1-1-18	Allele Y	Allele X	yes	no	175		no	283		yes
5-St Adv	16	OH05-164-76	Allele Y	Allele X	yes	no	165		no	283		yes
5-St Adv	17	OH05-200-74	Allele Y	Allele X	yes	no	165		no		413	no
5-St Adv	18	OH02-12686	Allele Y	Allele X	yes	no	165		no		413	no
5-St Adv	19	OH03-41-45	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	20	BROMFIELD	Allele Y	Allele X	yes	no	175		no		413	no
5-St Adv	21	KY00C-2697-04	Allele X	Allele Y	no	yes	203		no		413	no
5-St Adv	22	KY00C-2025-06	Allele Y	Allele X	yes	no	165	195	no	283		yes
5-St Adv	23	KY00C-2249-02	Allele X	Allele Y	no	yes	165	175	no	283		yes
5-St Adv	24	KY00C-2039-15	Allele Y	Allele X	yes	no	175	195	no	283		yes
5-St Adv	25	Pembroke	Allele X	Allele Y	no	yes	175		no	283		yes
5-St Pre	1	MO071269	Allele Y	Allele X	yes	no	175		no		413	no
5-St Pre	2	MO071915	Allele Y	Allele X	yes	no	175		no	283	413	het
5-St Pre	3	MO080104	Allele X	Allele X	no	no	175	203	no	283	413	het
5-St Pre	4	MO080139	Allele X	Allele X	no	no	175		no	283		yes
5-St Pre	5	Bess	nd	nd	nd	nd	nd		nd		413	no
5-St Pre	6	IL04-10721	Allele Y	Allele X	yes	no	175		no	283	413	het
5-St Pre	7	IL04-10741	Allele Y	Allele X	yes	no	175		no		413	no
5-St Pre	8	IL05-15079	Allele Y	Allele X	yes	no	175		no	283	413	het
5-St Pre	9	IL05-27333	Allele Y	Allele X	yes	no	165		no	283	413	het
5-St Pre	10	Kaskaskia	nd	nd	nd	nd	nd		nd		413	no
5-St Pre	11	P011007A1-14-44	Allele Y	Allele X	yes	no	175		no	283		yes
5-St Pre	12	P0537A1-3-12	Allele Y	Allele X	yes?	no	175	203	no	283	413	het
5-St Pre	13	P05269A1-4-9	Allele Y	Allele X	yes	no	175		no	283		yes
5-St Pre	14	P05247A1-7-3	Allele Y	Allele X	yes	no	203	211	no	283	413	het
5-St Pre	15	P05287A1-4-5	Allele Y	Allele X	yes	no	203		no		413	no
5-St Pre	16	OH05-72-6	Allele Y	Allele X	yes	no	165		no	283		yes
5-St Pre	17	OH05-101-1	Allele Y	Allele X	yes?	no	165		no	283		yes
5-St Pre	18	OH05-152-68	Allele Y	Allele X	yes	no	165		no	283	413	het
5-St Pre	19	OH05-249-32	Allele Y	Allele X	yes	no	175	203	no	283		yes
5-St Pre	20	Malabar	Allele Y	Allele X	yes	no	165		no		413	no
5-St Pre	21	KY01C-1158-06	Both Alleles	Both Alleles	yes?	yes?	165		no	283		yes
5-St Pre	22	KY01C-1319-14	Allele X	Allele Y	no	yes	175		no	283		yes
5-St Pre	23	KY01C-1156-02	Allele X	Allele Y	no	yes	165		no	283		yes
5-St Pre	24	KY01C-1327-18	Allele X	Allele Y	no	yes	165	175	no	283		yes
5-St Pre	25	Pembroke	nd	nd	nd	nd	nd		nd	283		yes

## FHB QTLs

2009

Nursery	Entry	Sample Name	umn 10	umn 10	umn 10	gwm 533	gwm 533	gwm 533	Fhb1	cfb 233	cfb 233	gwm 539	gwm 539	gwm 539	gwm 608	gwm 608	Fhb 2DL- Wuhan1/W14
5-St Adv	1	MO041687	236			119	147	162	no	290		131			154		no
5-St Adv	2	MO050219	229			157			no	280		133			150		no
5-St Adv	3	MO061041	229			147	157		no	280		<b>124</b>			150		no
5-St Adv	4	MO070333	229	236		119	157		no	284		126	137		150		no
5-St Adv	5	Bess	236			119			no	290		137			<b>152</b>	162	no
5-St Adv	6	IL04-7874	229			147	157		no	278		137			154		no
5-St Adv	7	IL04-7942	229			147	157		no	278		137			150	154	no
5-St Adv	8	IL04-10118	229			147	157		no	278		137			150		no
5-St Adv	9	IL04-17762	229			147	157		no	288		152			154		no
5-St Adv	10	Kaskaskia	229	236		119	147	157	no	280	290	<b>124</b>	137		154	164	no
5-St Adv	11	P0175A1-37-4	<b>239</b>			129			yes?	270		139			150		no
5-St Adv	12	P0570A1-7-1	236			119			no	270		<b>124</b>	161		156		no
5-St Adv	13	P0570A1-6-12	236			119			no	271	290	<b>124</b>	137	161	<b>152</b>	156	no
5-St Adv	14	P05262A1-3-5	236			119			no	278	284	139			150		no
5-St Adv	15	P05339A1-1-18	236			119			no	278		<b>124</b>	139		150		no
5-St Adv	16	OH05-164-76	236	<b>239</b>		<b>145</b>			het	270	278	131	139		150		no
5-St Adv	17	OH05-200-74	236			129			no	270		131	137		150		no
5-St Adv	18	OH02-12686	229			147	157		no	270		131			150		no
5-St Adv	19	OH03-41-45	229			147	157		no	290		<b>124</b>	133		156	162	no
5-St Adv	20	BROMFIELD	236			nd			no	278		131			150		no
5-St Adv	21	KY00C-2697-04	236			nd			no	278		139			150		no
5-St Adv	22	KY00C-2025-06	236			nd			no	284		137			154		no
5-St Adv	23	KY00C-2249-02	236			119			no	272		133	135		158		no
5-St Adv	24	KY00C-2039-15	236			119			no	274	278	139			150		no
5-St Adv	25	Pembroke	236			119			no	270		133			156		no
5-St Pre	1	MO071269	229			144			no	278	290	161			150	<b>152</b>	no
5-St Pre	2	MO071915	236			119			no	290		139			154		no
5-St Pre	3	MO080104	229	236		147	157		no	271	280	133	137		150	156	no
5-St Pre	4	MO080139	229			147	157		no	274		133			158		no
5-St Pre	5	Bess	236			119			no	290		137			<b>152</b>	162	no
5-St Pre	6	IL04-10721	229			147	157		no	280		131			150	154	no
5-St Pre	7	IL04-10741	236			119			no	280		131			150		no
5-St Pre	8	IL05-15079	229	236		119	147	157	no	278		137	159		150		no
5-St Pre	9	IL05-27333	236			119	147	157	no	278		139			150		no
5-St Pre	10	Kaskaskia	229	236		119	147	157	no	280	290	<b>124</b>	137		154	164	no
5-St Pre	11	P011007A1-14-44	236			119			no	278		139			150		no
5-St Pre	12	P0537A1-3-12	229	236	<b>239</b>	119	129	147	het?	278		<b>124</b>	139	161	150	154	no
5-St Pre	13	P05269A1-4-9	236			119	129		no	288		<b>124</b>	137		nd		no
5-St Pre	14	P05247A1-7-3	236			119			no	288		137			nd		no
5-St Pre	15	P05287A1-4-5	229	236		119	147	157	no	270		<b>124</b>			nd		no
5-St Pre	16	OH05-72-6	236			119			no	290		126			156	162	no
5-St Pre	17	OH05-101-1	236			nd			no	270		<b>124</b>	133		156		no
5-St Pre	18	OH05-152-68	236			119	129		no	272		137			154		no
5-St Pre	19	OH05-249-32	236			119			no	278		139			150	158	no
5-St Pre	20	Malabar	236			129			no	270		155			150		no
5-St Pre	21	KY01C-1158-06	236			119	162		no	268	278	135	139	150	150	154	no
5-St Pre	22	KY01C-1319-14	236			119			no	272		133			158		no
5-St Pre	23	KY01C-1156-02	236			119			no	268		150			nd		no
5-St Pre	24	KY01C-1327-18	236			119			no	270		133			156		no
5-St Pre	25	Pembroke	236			119			no	270		133			156		no

## FHB QTLs

2009

Nursery	Entry	Sample Name	gwm304	gwm304	gwm304	wmc705	wmc705	wmc705	Fhb 5A Ernie
5-St Adv	1	MO041687	199			164			no
5-St Adv	2	MO050219	199			164			no
5-St Adv	3	MO061041	213	<b>220</b>		131	<b>135</b>		<b>het</b>
5-St Adv	4	MO070333	199			164			no
5-St Adv	5	Bess	199			164			no
5-St Adv	6	IL04-7874	199			164			no
5-St Adv	7	IL04-7942	199			164			no
5-St Adv	8	IL04-10118	199			164			no
5-St Adv	9	IL04-17762	199			164			no
5-St Adv	10	Kaskaskia	203			139			no
5-St Adv	11	P0175A1-37-4	<b>217</b>			160			no
5-St Adv	12	P0570A1-7-1	199			164			no
5-St Adv	13	P0570A1-6-12	199	203	<b>220</b>	133	139	164	no
5-St Adv	14	P05262A1-3-5	203	212		139			no
5-St Adv	15	P05339A1-1-18	199			162			no
5-St Adv	16	OH05-164-76	199			139	164		no
5-St Adv	17	OH05-200-74	197			139			no
5-St Adv	18	OH02-12686	<b>217</b>			160			no
5-St Adv	19	OH03-41-45	199			164			no
5-St Adv	20	BROMFIELD	<b>217</b>			160			no
5-St Adv	21	KY00C-2697-04	201			139			no
5-St Adv	22	KY00C-2025-06	203			139			no
5-St Adv	23	KY00C-2249-02	<b>220</b>			<b>135</b>			<b>yes</b>
5-St Adv	24	KY00C-2039-15	<b>220</b>			<b>135</b>			<b>yes</b>
5-St Adv	25	Pembroke	199			164			no
5-St Pre	1	MO071269	199			162			no
5-St Pre	2	MO071915	199			164			no
5-St Pre	3	MO080104	199	203		139	164		no
5-St Pre	4	MO080139	199			164			no
5-St Pre	5	Bess	199			164			no
5-St Pre	6	IL04-10721	199	213		137	164		no
5-St Pre	7	IL04-10741	213			137			no
5-St Pre	8	IL05-15079	199	213		137	164		no
5-St Pre	9	IL05-27333	199			164			no
5-St Pre	10	Kaskaskia	203			139			no
5-St Pre	11	P011007A1-14-44	203			139			no
5-St Pre	12	P0537A1-3-12	199	<b>217</b>	222	<b>135</b>	164		no
5-St Pre	13	P05269A1-4-9	203	215		133	139		no
5-St Pre	14	P05247A1-7-3	<b>220</b>	222		<b>135</b>			<b>yes</b>
5-St Pre	15	P05287A1-4-5	199			164			no
5-St Pre	16	OH05-72-6	215			134			no
5-St Pre	17	OH05-101-1	197	199		139	162		no
5-St Pre	18	OH05-152-68	197			139			no
5-St Pre	19	OH05-249-32	197			139			no
5-St Pre	20	Malabar	<b>220</b>			<b>135</b>			<b>yes</b>
5-St Pre	21	KY01C-1158-06	199	203	215	133	139	162	no
5-St Pre	22	KY01C-1319-14	<b>220</b>			<b>135</b>			<b>yes</b>
5-St Pre	23	KY01C-1156-02	<b>220</b>			<b>136</b>			<b>yes</b>
5-St Pre	24	KY01C-1327-18	<b>220</b>			<b>135</b>			<b>yes</b>
5-St Pre	25	Pembroke	199			164			no



## Leaf, Stripe & Stem Rusts

2009

Nursery	Entry	Sample Name	wmc	wmc	Sr36	barc	barc	Sr24/	ventriup	Yr17/Lr37/	cslv34	cslv34	Lr34	Lr34	Lr34/Yr18/ Pm38
			477	477		71	71	Lr24		Sr38					
5-St Adv	1	MO041687	169		no	93		no		no	235		515		no
5-St Adv	2	MO050219	167		no	105		no		no	235		515		no
5-St Adv	3	MO061041	165		no	105		no		no	235		515		no
5-St Adv	4	MO070333	169		no	105	112	no		no	235		515		no
5-St Adv	5	Bess	169		no	105	112	no		no	235		513		no
5-St Adv	6	IL04-7874	165		no	105		no		no	235		515		no
5-St Adv	7	IL04-7942	165		no	105		no		no	235		515		no
5-St Adv	8	IL04-10118	165		no	105		no		no	235		515		no
5-St Adv	9	IL04-17762	165		no	105		no	<b>256</b>	<b>yes</b>	235		515		no
5-St Adv	10	Kaskaskia	169		no	105		no		no	235		514		no
5-St Adv	11	P0175A1-37-4	<b>187</b>		<b>yes</b>	105		no		no	235		515		no
5-St Adv	12	P0570A1-7-1	<b>187</b>		<b>yes</b>	105		no	<b>256</b>	<b>yes</b>	nd		513	515	no
5-St Adv	13	P0570A1-6-12	162	169	no	105		no	<b>256</b>	<b>yes</b>	235		515		no
5-St Adv	14	P05262A1-3-5	<b>187</b>		<b>yes</b>	105		no		no	235		515		no
5-St Adv	15	P05339A1-1-18	162	169	no	105		no	<b>256</b>	<b>yes</b>	nd		513	515	no
5-St Adv	16	OH05-164-76	165	169	no	105	112	no		no	<b>155</b>	235	<b>510</b>	515	<b>het</b>
5-St Adv	17	OH05-200-74	169		no	105		no		no	235		515		no
5-St Adv	18	OH02-12686	162		no	105	112	no	<b>256</b>	<b>yes</b>	235		515		no
5-St Adv	19	OH03-41-45	167		no	105	112	no		no	235		515		no
5-St Adv	20	BROMFIELD	162		no	112		no		no	235		515		no
5-St Adv	21	KY00C-2697-04	162		no	112		no		no	235		515		no
5-St Adv	22	KY00C-2025-06	162		no	105	112	no		no	235		515		no
5-St Adv	23	KY00C-2249-02	169		no	<b>87</b>	105	<b>yes</b>		no	235		515		no
5-St Adv	24	KY00C-2039-15	169		no	112		no		no	235		515		no
5-St Adv	25	Pembroke	162		no	105		no		no	235		515		no
5-St Pre	1	MO071269	171		no	102		no		no	235		515		no
5-St Pre	2	MO071915	169		no	112		no		no	235		515		no
5-St Pre	3	MO080104	165	169	no	105		no		no	235		515		no
5-St Pre	4	MO080139	169		no	102		no	<b>256</b>	<b>yes</b>	235		515		no
5-St Pre	5	Bess	169		no	105	112	no		no	235		513		no
5-St Pre	6	IL04-10721	165	169	no	102		no		no	235		515		no
5-St Pre	7	IL04-10741	169		no	102		no		no	235		515		no
5-St Pre	8	IL05-15079	167		no	102		no		no	235		515		no
5-St Pre	9	IL05-27333	165		no	112		no		no	235		515		no
5-St Pre	10	Kaskaskia	169		no	105		no		no	235		514		no
5-St Pre	11	P011007A1-14-44	<b>187</b>		<b>yes</b>	116		no		no	235		515		no
5-St Pre	12	P0537A1-3-12	167		no	105		no	<b>256</b>	<b>yes</b>	235		515		no
5-St Pre	13	P05269A1-4-9	167		no	112		no		no	235		513	515	no
5-St Pre	14	P05247A1-7-3	167		no	105		no	<b>256</b>	<b>yes</b>	235		515		no
5-St Pre	15	P05287A1-4-5	<b>187</b>		<b>yes</b>	105		no		no	235		515		no
5-St Pre	16	OH05-72-6	<b>187</b>		<b>yes</b>	105		no		no	<b>155</b>	235	<b>510</b>	515	<b>het</b>
5-St Pre	17	OH05-101-1	167		no	105		no		no	235		515		no
5-St Pre	18	OH05-152-68	167		no	105		no		no	235		515		no
5-St Pre	19	OH05-249-32	165		no	112		no		no	235		515		no
5-St Pre	20	Malabar	162		no	105		no		no	235		515		no
5-St Pre	21	KY01C-1158-06	169		no	105	112	no		no	<b>155</b>	235	<b>510</b>	515	<b>het</b>
5-St Pre	22	KY01C-1319-14	169		no	112		no		no	235		515		no
5-St Pre	23	KY01C-1156-02	162		no	105		no		no	235		515		no
5-St Pre	24	KY01C-1327-18	162		no	105		no		no	235		515		no
5-St Pre	25	Pembroke	162		no	105		no		no	235		515		no

**Rye Translocation -- Hessian Fly -- Barley Yellow Dwarf Virus**

2009

Nursery	Entry	Sample Name	scm9	scm9	IRS	cfd132	H13	cfa 2153	cfa 2153	cfa 2153	cfa 2153	H9	Bdv3	Bdv3	Bdv2/3
5-St Adv	1	MO041687			non-IRS	116	no	169				no	185		no
5-St Adv	2	MO050219			non-IRS	116	no	195				no	185		no
5-St Adv	3	MO061041			non-IRS	116	no	211				no	185		no
5-St Adv	4	MO070333			non-IRS	116	no	195	220			no	185		no
5-St Adv	5	Bess			non-IRS	116	no	203	220			no	185		no
5-St Adv	6	IL04-7874			non-IRS	116	no	203				no	185		no
5-St Adv	7	IL04-7942			non-IRS	116	no	203				no	185		no
5-St Adv	8	IL04-10118			non-IRS	116	no	203				no	185		no
5-St Adv	9	IL04-17762			non-IRS	116	no	195				no	185		no
5-St Adv	10	Kaskaskia			non-IRS	116	no	195	220			no	185		no
5-St Adv	11	P0175A1-37-4	<b>208</b>		<b>IRS:IBL</b>	116	no	195				no	185		no
5-St Adv	12	P0570A1-7-1			non-IRS	116	no	203				no	<b>200</b>		<b>yes</b>
5-St Adv	13	P0570A1-6-12	<b>208</b>		<b>IRS:IBL</b>	116	no	203				no	185		no
5-St Adv	14	P05262A1-3-5			non-IRS	116	no	203				no	<b>200</b>		<b>yes</b>
5-St Adv	15	P05339A1-1-18	<b>208</b>		<b>IRS:IBL</b>	116	no	212				no	185	<b>200</b>	<b>het</b>
5-St Adv	16	OH05-164-76	<b>208</b>	<b>224</b>	<b>IRS:IBL IRS:1AL</b>	116	no	203				no	185		no
5-St Adv	17	OH05-200-74		<b>224</b>	<b>IRS:1AL</b>	116	no	nd				nd	185		no
5-St Adv	18	OH02-12686		<b>224</b>	<b>IRS:1AL</b>	116	no	nd				nd	185		no
5-St Adv	19	OH03-41-45		<b>224</b>	<b>IRS:1AL</b>	116	no	195				no	185		no
5-St Adv	20	BROMFIELD		<b>224</b>	<b>IRS:1AL</b>	116	no	nd				nd	185		no
5-St Adv	21	KY00C-2697-04		<b>224</b>	<b>IRS:1AL</b>	116	no	nd				nd	185	187	no
5-St Adv	22	KY00C-2025-06			non-IRS	116	no	195				no	185		no
5-St Adv	23	KY00C-2249-02			non-IRS	116	no	203				no	185		no
5-St Adv	24	KY00C-2039-15			non-IRS	116	no	195	207			no	185		no
5-St Adv	25	Pembroke			non-IRS	116	no	203				no	185		no
5-St Pre	1	MO071269			non-IRS	116	no	203				no	185		no
5-St Pre	2	MO071915			non-IRS	116	no	220				no	185		no
5-St Pre	3	MO080104			non-IRS	116	no	195	203			no	185		no
5-St Pre	4	MO080139			non-IRS	116	no	193				no	185		no
5-St Pre	5	Bess			non-IRS	116	no	203	220			no	185		no
5-St Pre	6	IL04-10721			non-IRS	116	no	199				no	185		no
5-St Pre	7	IL04-10741			non-IRS	116	no	199				no	185		no
5-St Pre	8	IL05-15079	<b>208</b>		<b>IRS:IBL</b>	116	no	201				no	185		no
5-St Pre	9	IL05-27333			non-IRS	116	no	211				no	185		no
5-St Pre	10	Kaskaskia			non-IRS	116	no	195	220			no	185		no
5-St Pre	11	P011007A1-14-44			non-IRS	116	no	195				no	<b>200</b>		<b>yes</b>
5-St Pre	12	P0537A1-3-12	<b>208</b>		<b>IRS:IBL</b>	116	no	<b>181</b>	195	203	213	<b>het</b>	185	<b>200</b>	<b>het</b>
5-St Pre	13	P05269A1-4-9	<b>208</b>		<b>IRS:IBL</b>	116	no	203	212			no	<b>200</b>		<b>yes</b>
5-St Pre	14	P05247A1-7-3	<b>208</b>		<b>IRS:IBL</b>	116	no	<b>181</b>	203			<b>het</b>	<b>200</b>		<b>yes</b>
5-St Pre	15	P05287A1-4-5			non-IRS	116	no	<b>181</b>				<b>yes</b>	<b>200</b>		<b>yes</b>
5-St Pre	16	OH05-72-6	<b>208</b>		<b>IRS:IBL</b>	116	no	207				no	185		no
5-St Pre	17	OH05-101-1			non-IRS	116	no	203				no	185		no
5-St Pre	18	OH05-152-68	<b>208</b>		<b>IRS:IBL</b>	116	no	169				no	185		no
5-St Pre	19	OH05-249-32			non-IRS	116	no	203				no	185		no
5-St Pre	20	Malabar			non-IRS	nd	nd	195				no	185		no
5-St Pre	21	KY01C-1158-06	<b>208</b>		<b>IRS:IBL</b>	116	no	203	207			no	185		no
5-St Pre	22	KY01C-1319-14	<b>208</b>		<b>IRS:IBL</b>	116	no	203				no	185		no
5-St Pre	23	KY01C-1156-02			non-IRS	116	no	203				no	185		no
5-St Pre	24	KY01C-1327-18			non-IRS	116	no	203				no	185		no
5-St Pre	25	Pembroke			non-IRS	116	no	203				no	185		no

## Quality Traits

2009

Nursery	Entry	Sample Name	bx7oe	bx7oe	Bx7 over-expressing	umn25	umn25	umn26	umn26	Glu-D1
5-St Adv	1	MO041687	403		no	275		390		5+10
5-St Adv	2	MO050219	403		no		293		407	2+12
5-St Adv	3	MO061041	403		no	275		390		5+10
5-St Adv	4	MO070333	403		no	275	293	390	407	het
5-St Adv	5	Bess	403		no		293		407	2+12
5-St Adv	6	IL04-7874	403		no	275		390		5+10
5-St Adv	7	IL04-7942	403		no	275	293	390	407	het
5-St Adv	8	IL04-10118	403		no		293		407	2+12
5-St Adv	9	IL04-17762	403		no	275		390		5+10
5-St Adv	10	Kaskaskia	403		no	275		390		5+10
5-St Adv	11	P0175A1-37-4		448	yes		293		407	2+12
5-St Adv	12	P0570A1-7-1	403		no	275		390		5+10
5-St Adv	13	P0570A1-6-12	403		no	275	293	390	407	het
5-St Adv	14	P05262A1-3-5	403		no		293		407	2+12
5-St Adv	15	P05339A1-1-18		448	yes	275		390		5+10
5-St Adv	16	OH05-164-76	403		no	275	293	390	407	het
5-St Adv	17	OH05-200-74	403		no		293		407	2+12
5-St Adv	18	OH02-12686	403		no		293		407	2+12
5-St Adv	19	OH03-41-45	403		no	275		390		5+10
5-St Adv	20	BROMFIELD	403		no		293		407	2+12
5-St Adv	21	KY00C-2697-04	403		no		293		407	2+12
5-St Adv	22	KY00C-2025-06	403		no		293		407	2+12
5-St Adv	23	KY00C-2249-02	403		no	275			407	2+12
5-St Adv	24	KY00C-2039-15	403		no	275	293	390	407	het
5-St Adv	25	Pembroke		448	yes		299		407	2+12
5-St Pre	1	MO071269	403		no	275	293	390	407	het
5-St Pre	2	MO071915	403		no		293		407	2+12
5-St Pre	3	MO080104	403	448	het	275		390		5+10
5-St Pre	4	MO080139	403		no		293		407	2+12
5-St Pre	5	Bess	403		no		293		407	2+12
5-St Pre	6	IL04-10721	403		no	275		390		5+10
5-St Pre	7	IL04-10741	403		no	275		390		5+10
5-St Pre	8	IL05-15079	403		no	275	293	390	407	het
5-St Pre	9	IL05-27333	403		no	275		390		5+10
5-St Pre	10	Kaskaskia	403		no	275		390		5+10
5-St Pre	11	P011007A1-14-44	403		no		293		407	2+12
5-St Pre	12	P0537A1-3-12	403		no	275	293	407	407	het
5-St Pre	13	P05269A1-4-9		448	yes	275	293	390	407	het
5-St Pre	14	P05247A1-7-3	403	448	het		293		407	2+12
5-St Pre	15	P05287A1-4-5	403		no		293		407	2+12
5-St Pre	16	OH05-72-6	403		no		293		407	2+12
5-St Pre	17	OH05-101-1	403		no	275		390		5+10
5-St Pre	18	OH05-152-68	403		no		293		407	2+12
5-St Pre	19	OH05-249-32	403		no		293		407	2+12
5-St Pre	20	Malabar	403		no	275	293	390	407	het
5-St Pre	21	KY01C-1158-06	403		no	275	293	390	407	het
5-St Pre	22	KY01C-1319-14	403		no		293		407	2+12
5-St Pre	23	KY01C-1156-02	403		no		293		407	2+12
5-St Pre	24	KY01C-1327-18		448	yes	275	293	390	407	het
5-St Pre	25	Pembroke		448	yes		299		407	2+12

**2009 Mason-Dixon****Entry List**

<b>Nursery</b>	<b>Entry</b>	<b>Sample Name</b>	<b>Pedigree</b>
Mason-Dixon	1	25R47	
Mason-Dixon	2	Branson	
Mason-Dixon	3	Pioneer25R15	
Mason-Dixon	4	Tribute	
Mason-Dixon	5	KY01C-1002-07	
Mason-Dixon	6	KY01C-1002-12	
Mason-Dixon	7	KY01C-1088-19	
Mason-Dixon	8	KY01C-1159-11	
Mason-Dixon	9	KY01C-1159-12	
Mason-Dixon	10	KY01C-1177-06	
Mason-Dixon	11	KY01C-1346-06	
Mason-Dixon	12	KY01C-1531-06	
Mason-Dixon	13	KY01C-1531-13	
Mason-Dixon	14	KY01C-1537-05	
Mason-Dixon	15	KY01C-1070-02	
Mason-Dixon	16	KY01C-1159-02	
Mason-Dixon	17	KY01C-1159-03	
Mason-Dixon	18	KY00C-2697-04	
Mason-Dixon	19	KY00C-2059-04	
Mason-Dixon	20	KY00C-2515-02	
Mason-Dixon	21	KY00C-2567-01	
Mason-Dixon	22	KY00C-2175-10	
Mason-Dixon	23	KY00C-2053-19	
Mason-Dixon	24	KY00C-2255-06	
Mason-Dixon	25	MD02W125-08-6	
Mason-Dixon	26	MD02W135-08-2	
Mason-Dixon	27	MD02W135-08-4	
Mason-Dixon	28	MD02W135-08-9	
Mason-Dixon	29	MD02W135-08-11	
Mason-Dixon	30	MDKY-25-08-6	
Mason-Dixon	31	MDKY-25-08-7	
Mason-Dixon	32	MD01W255-08-1	
Mason-Dixon	33	MD01W270-08-11	
Mason-Dixon	34	MD01W270-08-12	
Mason-Dixon	35	MD01W28-08-11	
Mason-Dixon	36	MD01W28-08-14	
Mason-Dixon	37	MD01W28-08-16	
Mason-Dixon	38	MD01W28-08-17	
Mason-Dixon	39	MD00W16-08-3	
Mason-Dixon	40	MD00W16-08-4	
Mason-Dixon	41	MD00W16-08-5	
Mason-Dixon	42	MD00W16-08-10	
Mason-Dixon	43	MD00W389-08-4	
Mason-Dixon	44	MD00W389-08-6	
Mason-Dixon	45	VA03W-412	
Mason-Dixon	46	VA04W-90	
Mason-Dixon	47	VA04W-259	
Mason-Dixon	48	VA04W-306	
Mason-Dixon	49	VA05W-151	
Mason-Dixon	50	VA05W-414	
Mason-Dixon	51	VA05W-139	
Mason-Dixon	52	VA06W-6	
Mason-Dixon	53	VA06W-93	
Mason-Dixon	54	VA06W-194	
Mason-Dixon	55	VA06W-256	
Mason-Dixon	56	VA06W-423	
Mason-Dixon	57	VA04W-92	
Mason-Dixon	58	VA06W-412	
Mason-Dixon	59	VA07W-27	
Mason-Dixon	60	VA07W-83	
Mason-Dixon	61	VA07W-138	
Mason-Dixon	62	VA07W-214	
Mason-Dixon	63	VA07W-347	
Mason-Dixon	64	VA07W-415	

## 2009 Mason-Dixon

### Summary of all Markers

Nursery	Entry	Sample Name	Rht1-B1b	Rht2-D1b	Rht8	Ppd-D1a	Fhb1	Fhb 2DL-Wuhan1/W14	Fhb 5A Ernie
Mason-Dixon	1	25R47	no	yes	no	yes	yes?	no	no
Mason-Dixon	2	Branson	yes	no	no	yes	no	no	no
Mason-Dixon	3	Pioneer25R15	yes	no	no	yes	no	no	no
Mason-Dixon	4	Tribute	no	yes	no	no	no	no	no
Mason-Dixon	5	KY01C-1002-07	yes	no	no	yes	no	no	no
Mason-Dixon	6	KY01C-1002-12	yes	no	no	het	no	no	het
Mason-Dixon	7	KY01C-1088-19	no	yes	no	yes	no	no	yes
Mason-Dixon	8	KY01C-1159-11	yes	no	no	het	no	no	no
Mason-Dixon	9	KY01C-1159-12	yes	no	het	no	no	no	het
Mason-Dixon	10	KY01C-1177-06	no	yes	no	yes	no	no	no
Mason-Dixon	11	KY01C-1346-06	no	yes	no	yes	no	no	yes
Mason-Dixon	12	KY01C-1531-06	no	yes	no	yes	no	no	no
Mason-Dixon	13	KY01C-1531-13	no	yes	no	yes	no	no	no
Mason-Dixon	14	KY01C-1537-05	no	yes	no	yes	no	no	yes
Mason-Dixon	15	KY01C-1070-02	no	no	no	yes	no	no	no
Mason-Dixon	16	KY01C-1159-02	yes	no	no	yes	no	no	no
Mason-Dixon	17	KY01C-1159-03	yes	no	no	yes	no	no	no
Mason-Dixon	18	KY00C-2697-04	yes?	yes?	no	no	no	no	no
Mason-Dixon	19	KY00C-2059-04	no	yes	no	yes	no	no	no
Mason-Dixon	20	KY00C-2515-02	no	yes	no	no	no	no	no
Mason-Dixon	21	KY00C-2567-01	no	yes	no	yes	no	no	no
Mason-Dixon	22	KY00C-2175-10	no	yes	no	yes	no	no	yes
Mason-Dixon	23	KY00C-2053-19	no	yes	no	yes	no	no	no
Mason-Dixon	24	KY00C-2255-06	no	yes	no	yes	no	no	yes
Mason-Dixon	25	MD02W125-08-6	no	yes	no	yes	no	no	het
Mason-Dixon	26	MD02W135-08-2	no	yes	no	no	no	no	no
Mason-Dixon	27	MD02W135-08-4	no	yes	no	no	no	no	no
Mason-Dixon	28	MD02W135-08-9	no	yes	no	no	no	no	no
Mason-Dixon	29	MD02W135-08-11	no	yes	no	yes	no	no	no
Mason-Dixon	30	MDKY-25-08-6	no	yes	no	yes	no	no	no
Mason-Dixon	31	MDKY-25-08-7	no	yes	yes	yes	no	no	no
Mason-Dixon	32	MD01W255-08-1	no	yes	no	no	no	no	no
Mason-Dixon	33	MD01W270-08-11	no	yes	no	no	no	no	no
Mason-Dixon	34	MD01W270-08-12	no	yes	no	yes	no	no	no
Mason-Dixon	35	MD01W28-08-11	no	yes	no	no	no	no	no
Mason-Dixon	36	MD01W28-08-14	no	yes	no	no	no	no	no
Mason-Dixon	37	MD01W28-08-16	no	yes	no	no	no	no	no
Mason-Dixon	38	MD01W28-08-17	no	yes	no	no	no	no	no
Mason-Dixon	39	MD00W16-08-3	no	yes	no	yes	no	no	no
Mason-Dixon	40	MD00W16-08-4	no	yes	no	yes	no	no	no
Mason-Dixon	41	MD00W16-08-5	no	yes	no	yes	no	no	no
Mason-Dixon	42	MD00W16-08-10	no	yes	no	yes	no	no	no
Mason-Dixon	43	MD00W389-08-4	no	yes	no	yes	no	no	no
Mason-Dixon	44	MD00W389-08-6	no	yes	yes	yes	no	no	no
Mason-Dixon	45	VA03W-412	no	yes	no	yes	no	no	no
Mason-Dixon	46	VA04W-90	no	yes	no	het	no	no	het
Mason-Dixon	47	VA04W-259	no	yes	no	yes	no	no	no
Mason-Dixon	48	VA04W-306	no	yes	no	yes	no	no	no
Mason-Dixon	49	VA05W-151	no	yes	no	no	no	no	no
Mason-Dixon	50	VA05W-414	no	yes	no	yes	no	no	no
Mason-Dixon	51	VA05W-139	no	yes	no	yes	no	no	no
Mason-Dixon	52	VA06W-6	no	yes	no	no	no	no	no
Mason-Dixon	53	VA06W-93	no	yes	no	het	no	no	no
Mason-Dixon	54	VA06W-194	no	yes	no	yes	no	no	no
Mason-Dixon	55	VA06W-256	no	yes	no	het	no	no	no
Mason-Dixon	56	VA06W-423	no	yes	no	no	no	no	no
Mason-Dixon	57	VA04W-92	yes	no	no	yes	no	no	no
Mason-Dixon	58	VA06W-412	no	yes	no	het	no	no	no
Mason-Dixon	59	VA07W-27	no	yes	no	no	no	no	no
Mason-Dixon	60	VA07W-83	no	yes	no	no	no	no	no
Mason-Dixon	61	VA07W-138	no	yes	no	het	no	no	no
Mason-Dixon	62	VA07W-214	no	yes	no	yes	no	no	yes
Mason-Dixon	63	VA07W-347	no	yes	no	yes	no	no	no
Mason-Dixon	64	VA07W-415	no	yes	no	yes	no	no	no

## 2009 Mason-Dixon

### Summary of all Markers

Nursery	Entry	Sample Name	Sr24/ Yr17/Lr37/ Lr34/Yr18/				1RS	H13	H9	Bdv2/3	Bx7 over-expressing	Glu-D1
			Sr36	Lr24	Sr38	Pm38						
Mason-Dixon	1	25R47	no	no	yes	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	2	Branson	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	3	Pioneer25R15	no	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	4	Tribute	no	yes	no	no	1RS:1AL	no	no	no	no	5+10
Mason-Dixon	5	KY01C-1002-07	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	6	KY01C-1002-12	no	no	no	het	1RS:1BL	no	no	no	no	het
Mason-Dixon	7	KY01C-1088-19	no	no	no	no	non-1RS	no	no	no	no	het
Mason-Dixon	8	KY01C-1159-11	no	no	no	no	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	9	KY01C-1159-12	no	no	no	no	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	10	KY01C-1177-06	no	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	11	KY01C-1346-06	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	12	KY01C-1531-06	no	no	no	no	1RS:1AL	no	nd	no	no	2+12
Mason-Dixon	13	KY01C-1531-13	no	no	no	no	1RS:1AL	no	nd	no	no	2+12
Mason-Dixon	14	KY01C-1537-05	no	no	no	no	1RS:1AL	no	nd	no	het	5+10
Mason-Dixon	15	KY01C-1070-02	yes	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	16	KY01C-1159-02	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	17	KY01C-1159-03	no	no	no	no	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	18	KY00C-2697-04	no	no	no	no	1RS:1AL	no	no	no	no	2+12
Mason-Dixon	19	KY00C-2059-04	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	20	KY00C-2515-02	yes	no	no	no	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	21	KY00C-2567-01	no	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	22	KY00C-2175-10	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	23	KY00C-2053-19	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	24	KY00C-2255-06	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	25	MD02W125-08-6	no	yes	no	no	1RS:1AL	no	nd	no	no	2+12
Mason-Dixon	26	MD02W135-08-2	no	no	no	no	1RS:1BL 1RS:1AL	no	nd	no	no	2+12
Mason-Dixon	27	MD02W135-08-4	yes	yes	no	no	1RS:1AL	no	no	no	no	2+12
Mason-Dixon	28	MD02W135-08-9	no	no	no	no	1RS:1BL 1RS:1AL	no	no	no	no	2+12
Mason-Dixon	29	MD02W135-08-11	yes	no	no	no	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	30	MDKY-25-08-6	no	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	31	MDKY-25-08-7	no	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	32	MD01W255-08-1	no	yes	no	no	1RS:1AL	no	nd	no	no	het
Mason-Dixon	33	MD01W270-08-11	yes	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	34	MD01W270-08-12	yes	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	35	MD01W28-08-11	no	no	no	no	1RS:1BL	no	no	no	no	5+10
Mason-Dixon	36	MD01W28-08-14	no	no	no	no	1RS:1BL	no	no	no	no	5+10
Mason-Dixon	37	MD01W28-08-16	no	no	no	no	1RS:1BL	no	no	no	no	5+10
Mason-Dixon	38	MD01W28-08-17	no	no	no	no	1RS:1BL	no	no	no	no	5+10
Mason-Dixon	39	MD00W16-08-3	no	no	no	no	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	40	MD00W16-08-4	no	no	no	yes	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	41	MD00W16-08-5	no	no	no	no	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	42	MD00W16-08-10	no	no	no	no	1RS:1BL	no	het	no	het	het
Mason-Dixon	43	MD00W389-08-4	yes	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	44	MD00W389-08-6	yes	no	no	no	1RS:1BL	no	no	no	no	het
Mason-Dixon	45	VA03W-412	no	no	no	no	1RS:1BL	no	no	no	no	2+12
Mason-Dixon	46	VA04W-90	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	47	VA04W-259	yes	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	48	VA04W-306	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	49	VA05W-151	het	yes	no	no	1RS:1AL	no	no	no	no	2+12
Mason-Dixon	50	VA05W-414	yes	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	51	VA05W-139	no	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	52	VA06W-6	no	no	no	no	1RS:1BL	no	no	no	no	5+10
Mason-Dixon	53	VA06W-93	yes	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	54	VA06W-194	no	yes	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	55	VA06W-256	no	yes	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	56	VA06W-423	het	no	yes	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	57	VA04W-92	yes	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	58	VA06W-412	no	yes	no	no	1RS:1AL	no	no	no	no	5+10
Mason-Dixon	59	VA07W-27	no	no	no	no	1RS:1BL	no	no	no	no	5+10
Mason-Dixon	60	VA07W-83	yes	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	61	VA07W-138	no	no	no	no	1RS:1AL	no	nd	no	no	5+10
Mason-Dixon	62	VA07W-214	no	no	no	no	non-1RS	no	no	no	no	2+12
Mason-Dixon	63	VA07W-347	no	no	no	no	non-1RS	no	no	no	no	5+10
Mason-Dixon	64	VA07W-415	no	no	yes	no	non-1RS	yes	no	no	no	2+12

## Dwarfing genes & Photoperiod insensitivity

2009

Nursery	Entry	Sample Name	Rht1-	Rht2-	Rht1-	Rht2-					Ppd	Ppd	Ppd-D1a	
			Taqman	Taqman	B1b	D1b	gwm261	gwm261	gwm261	Rht8				
Mason-Dixon	1	25R47	Allele X	Allele Y	no	yes	165				no	283		yes
Mason-Dixon	2	Branson	Allele Y	Allele X	yes	no	175				no	283		yes
Mason-Dixon	3	Pioneer25R15	Allele Y	Allele X	yes	no	203				no	283		yes
Mason-Dixon	4	Tribute	Allele X	Allele Y	no	yes	203				no		413	no
Mason-Dixon	5	KY01C-1002-07	Allele Y	Allele X	yes	no	195				no	283		yes
Mason-Dixon	6	KY01C-1002-12	Allele Y	Allele X	yes	no	165	175	195		no	283	413	het
Mason-Dixon	7	KY01C-1088-19	Allele X	Allele Y	no	yes	175	203			no	283		yes
Mason-Dixon	8	KY01C-1159-11	Allele Y	Allele X	yes	no	177				no	283	413	het
Mason-Dixon	9	KY01C-1159-12	Allele Y	Allele X	yes	no	177	193			het		413	no
Mason-Dixon	10	KY01C-1177-06	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	11	KY01C-1346-06	Allele X	Allele Y	no	yes	175	205			no	283		yes
Mason-Dixon	12	KY01C-1531-06	Allele X	Allele Y	no	yes	205				no	283		yes
Mason-Dixon	13	KY01C-1531-13	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	14	KY01C-1537-05	Allele X	Allele Y	no	yes	175	203			no	283		yes
Mason-Dixon	15	KY01C-1070-02	Allele X	Allele X	no	no	203				no	283		yes
Mason-Dixon	16	KY01C-1159-02	Allele Y	Allele X	yes	no	175				no	283		yes
Mason-Dixon	17	KY01C-1159-03	Allele Y	Allele X	yes	no	177				no	283		yes
Mason-Dixon	18	KY00C-2697-04	Both Alleles	Both Alleles	yes?	yes?	175	201			no		413	no
Mason-Dixon	19	KY00C-2059-04	Allele X	Allele Y	no	yes	165				no	283		yes
Mason-Dixon	20	KY00C-2515-02	Allele X	Allele Y	no	yes	177	203			no		413	no
Mason-Dixon	21	KY00C-2567-01	Allele X	Allele Y	no	yes	165	203			no	283		yes
Mason-Dixon	22	KY00C-2175-10	Allele X	Allele Y	no	yes	175				no	283		yes
Mason-Dixon	23	KY00C-2053-19	Allele X	Allele Y	no	yes	165				no	283		yes
Mason-Dixon	24	KY00C-2255-06	Allele X	Allele Y	no	yes	165				no	283		yes
Mason-Dixon	25	MD02W125-08-6	Allele X	Allele Y	no	yes	165	175			no	283		yes
Mason-Dixon	26	MD02W135-08-2	Allele X	Allele Y	no	yes	175				no		413	no
Mason-Dixon	27	MD02W135-08-4	Allele X	Allele Y	no	yes	175				no		413	no
Mason-Dixon	28	MD02W135-08-9	Allele X	Allele Y	no	yes	175				no		413	no
Mason-Dixon	29	MD02W135-08-11	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	30	MDKY-25-08-6	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	31	MDKY-25-08-7	Allele X	Allele Y	no	yes	193				yes	283		yes
Mason-Dixon	32	MD01W255-08-1	Allele X	Allele Y	no	yes	165				no		413	no
Mason-Dixon	33	MD01W270-08-11	Allele X	Allele Y	no	yes	175				no		413	no
Mason-Dixon	34	MD01W270-08-12	Allele X	Allele Y	no	yes	201				no	283		yes
Mason-Dixon	35	MD01W28-08-11	Allele X	Allele Y	no	yes	203				no		413	no
Mason-Dixon	36	MD01W28-08-14	Allele X	Allele Y	no	yes	203				no		413	no
Mason-Dixon	37	MD01W28-08-16	Allele X	Allele Y	no	yes	203				no		413	no
Mason-Dixon	38	MD01W28-08-17	Allele X	Allele Y	no	yes	203				no		413	no
Mason-Dixon	39	MD00W16-08-3	Allele X	Allele Y	no	yes	175				no	283		yes
Mason-Dixon	40	MD00W16-08-4	Allele X	Allele Y	no	yes	175				no	283		yes
Mason-Dixon	41	MD00W16-08-5	Allele X	Allele Y	no	yes	175				no	283		yes
Mason-Dixon	42	MD00W16-08-10	Allele X	Allele Y	no	yes	165				no	283		yes
Mason-Dixon	43	MD00W389-08-4	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	44	MD00W389-08-6	Allele X	Allele Y	no	yes	193				yes	283		yes
Mason-Dixon	45	VA03W-412	Allele X	Allele Y	no	yes	175				no	283		yes
Mason-Dixon	46	VA04W-90	Allele X	Allele Y	no	yes	203				no	283	413	het
Mason-Dixon	47	VA04W-259	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	48	VA04W-306	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	49	VA05W-151	Allele X	Allele Y	no	yes	175				no		413	no
Mason-Dixon	50	VA05W-414	Allele X	Allele Y	no	yes	175				no	283		yes
Mason-Dixon	51	VA05W-139	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	52	VA06W-6	Allele X	Allele Y	no	yes	203				no		413	no
Mason-Dixon	53	VA06W-93	Allele X	Allele Y	no	yes	175				no	283	413	het
Mason-Dixon	54	VA06W-194	Allele X	Allele Y	no	yes	203				no	283		yes
Mason-Dixon	55	VA06W-256	Allele X	Allele Y	no	yes	175				no	283	413	het
Mason-Dixon	56	VA06W-423	Allele X	Allele Y	no	yes	175				no		413	no
Mason-Dixon	57	VA04W-92	Allele Y	Allele X	yes	no	203				no	283		yes
Mason-Dixon	58	VA06W-412	Allele X	Allele Y	no	yes	203				no	283	413	het
Mason-Dixon	59	VA07W-27	Allele X	Allele Y	no	yes	203				no		413	no
Mason-Dixon	60	VA07W-83	Allele X	Allele Y	no	yes	203				no		413	no
Mason-Dixon	61	VA07W-138	Allele X	Allele Y	no	yes	203				no	283	413	het
Mason-Dixon	62	VA07W-214	Allele X	Allele Y	no	yes	175	203			no	283		yes
Mason-Dixon	63	VA07W-347	Allele X	Allele Y	no	yes	175	203			no	283		yes
Mason-Dixon	64	VA07W-415	Allele X	Allele Y	no	yes	175				no	283		yes

# FHB QTLs

2009

Nursery	Entry	Sample Name	umn	umn	gwm	gwm	gwm	Fhb1	cfb	cfb	gwm	gwm	gwm	gwm	gwm	Fhb 2DL- Wuhan1/W14
			10	10	533	533	533		233	233	539	539	539	608	608	
Mason-Dixon	1	25R47	236	239	119			yes?	269	278	133	141	150	150		no
Mason-Dixon	2	Branson	236		119			no	284		144			150		no
Mason-Dixon	3	Pioneer25R15	236		119			no	270		133			156		no
Mason-Dixon	4	Tribute	236		nd			no	278	280	135	139		150		no
Mason-Dixon	5	KY01C-1002-07	236		nd			no	284		137			154		no
Mason-Dixon	6	KY01C-1002-12	236		119	162		no	272	278	135			154	158	no
Mason-Dixon	7	KY01C-1088-19	236		119	162		no	272	284	133			158		no
Mason-Dixon	8	KY01C-1159-11	236		nd			no	280		137			156		no
Mason-Dixon	9	KY01C-1159-12	229	236	157			no	280		137	139		156		no
Mason-Dixon	10	KY01C-1177-06	236		119			no	268		137	139		nd		no
Mason-Dixon	11	KY01C-1346-06	236		119			no	272		133			158		no
Mason-Dixon	12	KY01C-1531-06	236		nd			no	272		137			162		no
Mason-Dixon	13	KY01C-1531-13	236		nd			no	272		137			162		no
Mason-Dixon	14	KY01C-1537-05	236		nd			no	270	272	133	135		156		no
Mason-Dixon	15	KY01C-1070-02	236		129			no	284	290	135			154	162	no
Mason-Dixon	16	KY01C-1159-02	236		nd			no	278		137			150		no
Mason-Dixon	17	KY01C-1159-03	229		147	157		no	278		137			150		no
Mason-Dixon	18	KY00C-2697-04	236		119			no	278	290	139			150	162	no
Mason-Dixon	19	KY00C-2059-04	236		119			no	270		133			156	158	no
Mason-Dixon	20	KY00C-2515-02	236		129			no	272	284	144			150	154	no
Mason-Dixon	21	KY00C-2567-01	236		119			no	272		133	137		156		no
Mason-Dixon	22	KY00C-2175-10	236		119			no	272		133			158		no
Mason-Dixon	23	KY00C-2053-19	236		129			no	270		133			156		no
Mason-Dixon	24	KY00C-2255-06	236		119			no	272		133			158		no
Mason-Dixon	25	MD02W125-08-6	236		119			no	272		137			156		no
Mason-Dixon	26	MD02W135-08-2	236		129			no	290		137			162		no
Mason-Dixon	27	MD02W135-08-4	236		129			no	290		137			162		no
Mason-Dixon	28	MD02W135-08-9	236		129			no	290		137			162		no
Mason-Dixon	29	MD02W135-08-11	229	236	147	157		no	278		137			150		no
Mason-Dixon	30	MDKY-25-08-6	236		119			no	272		137			162		no
Mason-Dixon	31	MDKY-25-08-7	236		119			no	272	280	137			156	162	no
Mason-Dixon	32	MD01W255-08-1	236		nd			no	274		135			156	160	no
Mason-Dixon	33	MD01W270-08-11	236		119			no	272		131	137		154		no
Mason-Dixon	34	MD01W270-08-12	236		nd			no	272		137			154		no
Mason-Dixon	35	MD01W28-08-11	236		119			no	272		131			156		no
Mason-Dixon	36	MD01W28-08-14	236		119			no	272		135			156		no
Mason-Dixon	37	MD01W28-08-16	236		119			no	278		137			158		no
Mason-Dixon	38	MD01W28-08-17	236		119			no	278		137			158		no
Mason-Dixon	39	MD00W16-08-3	236		nd			no	278		131			158		no
Mason-Dixon	40	MD00W16-08-4	236		nd			no	280		131			150		no
Mason-Dixon	41	MD00W16-08-5	236		nd			no	278		131			158		no
Mason-Dixon	42	MD00W16-08-10	236		119			no	270	280	126	131		150	156	no
Mason-Dixon	43	MD00W389-08-4	236		119			no	270		137			nd		no
Mason-Dixon	44	MD00W389-08-6	236		119			no	270		137			nd		no
Mason-Dixon	45	VA03W-412	236		119	141		no	286		137	144		154		no
Mason-Dixon	46	VA04W-90	229		157			no	272	280	131			150	156	no
Mason-Dixon	47	VA04W-259	236		119			no	272		131	137		162		no
Mason-Dixon	48	VA04W-306	236		119			no	272		137			162		no
Mason-Dixon	49	VA05W-151	229		147	157		no	272		133			162		no
Mason-Dixon	50	VA05W-414	236		119			no	268	273	137			154		no
Mason-Dixon	51	VA05W-139	236		119			no	272		137			162		no
Mason-Dixon	52	VA06W-6	236		119			no	278		135			150		no
Mason-Dixon	53	VA06W-93	236		nd			no	272		137			154		no
Mason-Dixon	54	VA06W-194	236		119			no	272		131			150	162	no
Mason-Dixon	55	VA06W-256	229	236	119	147	157	no	270		139			nd		no
Mason-Dixon	56	VA06W-423	236		119			no	278		131			152		no
Mason-Dixon	57	VA04W-92	236		119			no	272		139			158		no
Mason-Dixon	58	VA06W-412	236		119			no	278		135			150		no
Mason-Dixon	59	VA07W-27	236		nd			no	278		135			158		no
Mason-Dixon	60	VA07W-83	236		nd			no	278		137			158		no
Mason-Dixon	61	VA07W-138	229	236	119	147	157	no	272		131			150		no
Mason-Dixon	62	VA07W-214	229	236	119	147	157	no	259	272	131			162		no
Mason-Dixon	63	VA07W-347	236		129			no	272		135			150		no
Mason-Dixon	64	VA07W-415	236		119			no	270		135			150		no



# FHB QTLs

2009

Nursery	Entry	Sample Name	gwm304	gwm304	wmc705	wmc705	Fhb 5A Ernie
Mason-Dixon	1	25R47	199		164		no
Mason-Dixon	2	Branson	199		162		no
Mason-Dixon	3	Pioneer25R15	199		164		no
Mason-Dixon	4	Tribute	199		162		no
Mason-Dixon	5	KY01C-1002-07	199		164		no
Mason-Dixon	6	KY01C-1002-12	199	<b>220</b>	<b>135</b>	164	<b>het</b>
Mason-Dixon	7	KY01C-1088-19	<b>220</b>		<b>135</b>		<b>yes</b>
Mason-Dixon	8	KY01C-1159-11	203		139		no
Mason-Dixon	9	KY01C-1159-12	215	<b>220</b>	<b>135</b>		<b>het</b>
Mason-Dixon	10	KY01C-1177-06	201		133		no
Mason-Dixon	11	KY01C-1346-06	<b>220</b>		<b>135</b>		<b>yes</b>
Mason-Dixon	12	KY01C-1531-06	201		139		no
Mason-Dixon	13	KY01C-1531-13	201		133		no
Mason-Dixon	14	KY01C-1537-05	199	<b>220</b>	<b>135</b>	162	<b>yes</b>
Mason-Dixon	15	KY01C-1070-02	199		164		no
Mason-Dixon	16	KY01C-1159-02	203		139		no
Mason-Dixon	17	KY01C-1159-03	215		133		no
Mason-Dixon	18	KY00C-2697-04	199	201	133	164	no
Mason-Dixon	19	KY00C-2059-04	199		164		no
Mason-Dixon	20	KY00C-2515-02	199		162		no
Mason-Dixon	21	KY00C-2567-01	201	<b>220</b>	133		no
Mason-Dixon	22	KY00C-2175-10	<b>220</b>		<b>135</b>		<b>yes</b>
Mason-Dixon	23	KY00C-2053-19	199		164		no
Mason-Dixon	24	KY00C-2255-06	<b>220</b>		<b>135</b>		<b>yes</b>
Mason-Dixon	25	MD02W125-08-6	199	<b>220</b>	<b>135</b>	162	<b>het</b>
Mason-Dixon	26	MD02W135-08-2	199		162		no
Mason-Dixon	27	MD02W135-08-4	199		162		no
Mason-Dixon	28	MD02W135-08-9	199		162		no
Mason-Dixon	29	MD02W135-08-11	199		162		no
Mason-Dixon	30	MDKY-25-08-6	201		133		no
Mason-Dixon	31	MDKY-25-08-7	199		162		no
Mason-Dixon	32	MD01W255-08-1	199		162		no
Mason-Dixon	33	MD01W270-08-11	199	201	133	162	no
Mason-Dixon	34	MD01W270-08-12	199		162		no
Mason-Dixon	35	MD01W28-08-11	199		164		no
Mason-Dixon	36	MD01W28-08-14	199		164		no
Mason-Dixon	37	MD01W28-08-16	199		164		no
Mason-Dixon	38	MD01W28-08-17	199		164		no
Mason-Dixon	39	MD00W16-08-3	215		<b>135</b>		no
Mason-Dixon	40	MD00W16-08-4	215		<b>135</b>		no
Mason-Dixon	41	MD00W16-08-5	215		<b>135</b>		no
Mason-Dixon	42	MD00W16-08-10	199		164		no
Mason-Dixon	43	MD00W389-08-4	199		162		no
Mason-Dixon	44	MD00W389-08-6	199		162		no
Mason-Dixon	45	VA03W-412	199		164		no
Mason-Dixon	46	VA04W-90	199	<b>220</b>	<b>135</b>	164	<b>het</b>
Mason-Dixon	47	VA04W-259	201		133		no
Mason-Dixon	48	VA04W-306	199	201	133	162	no
Mason-Dixon	49	VA05W-151	199		nd		no
Mason-Dixon	50	VA05W-414	222		<b>135</b>		no
Mason-Dixon	51	VA05W-139	199		164		no
Mason-Dixon	52	VA06W-6	199		162		no
Mason-Dixon	53	VA06W-93	199		162		no
Mason-Dixon	54	VA06W-194	201		133		no
Mason-Dixon	55	VA06W-256	199		162		no
Mason-Dixon	56	VA06W-423	199		164		no
Mason-Dixon	57	VA04W-92	199		164		no
Mason-Dixon	58	VA06W-412	199		162		no
Mason-Dixon	59	VA07W-27	199		162		no
Mason-Dixon	60	VA07W-83	199		162		no
Mason-Dixon	61	VA07W-138	201		133		no
Mason-Dixon	62	VA07W-214	201	<b>220</b>	<b>135</b>		<b>yes</b>
Mason-Dixon	63	VA07W-347	199		162		no
Mason-Dixon	64	VA07W-415	201		133		no

# Leaf, Stripe & Stem Rusts

2009

Nursery	Entry	Sample Name	wmc	wmc	Sr36	barc	barc	barc	Sr24/Lr24	ventriup	Yr17/Lr37/	cslv	cslv	Lr34	Lr34	Lr34/Yr18/
			477	477		71	71	71			Sr38	34	34			Pm38
Mason-Dixon	1	25R47	167		no	105			no	<b>256</b>	<b>yes</b>	235	515			no
Mason-Dixon	2	Branson	162		no	105			no		no	235	515			no
Mason-Dixon	3	Pioneer25R15	167		no	102			no		no	235	515			no
Mason-Dixon	4	Tribute	167		no	<b>87</b>	105		<b>yes</b>		no	235	515			no
Mason-Dixon	5	KY01C-1002-07	162		no	105			no		no	235	515			no
Mason-Dixon	6	KY01C-1002-12	162	169	no	105	112		no		no	<b>155</b>	235	<b>510</b>	515	<b>het</b>
Mason-Dixon	7	KY01C-1088-19	169		no	105			no		no	235	515			no
Mason-Dixon	8	KY01C-1159-11	162	169	no	105			no		no	235	515			no
Mason-Dixon	9	KY01C-1159-12	162	169	no	105			no		no	235	515			no
Mason-Dixon	10	KY01C-1177-06	162		no	105			no		no	235	515			no
Mason-Dixon	11	KY01C-1346-06	162	169	no	105			no		no	235	515			no
Mason-Dixon	12	KY01C-1531-06	167		no	105			no		no	235	515			no
Mason-Dixon	13	KY01C-1531-13	167		no	105			no		no	235	515			no
Mason-Dixon	14	KY01C-1537-05	162	167	no	105	112		no		no	235	515			no
Mason-Dixon	15	KY01C-1070-02	<b>187</b>		<b>yes</b>	105			no		no	235	515			no
Mason-Dixon	16	KY01C-1159-02	162		no	105	112		no		no	235	515			no
Mason-Dixon	17	KY01C-1159-03	169		no	105			no		no	235	515			no
Mason-Dixon	18	KY00C-2697-04	162	167	no	112			no		no	235	515			no
Mason-Dixon	19	KY00C-2059-04	169		no	105			no		no	235	515			no
Mason-Dixon	20	KY00C-2515-02	<b>187</b>		<b>yes</b>	105			no		no	235	515			no
Mason-Dixon	21	KY00C-2567-01	169		no	105			no		no	235	515			no
Mason-Dixon	22	KY00C-2175-10	169		no	105			no		no	235	515			no
Mason-Dixon	23	KY00C-2053-19	169		no	105			no		no	235	515			no
Mason-Dixon	24	KY00C-2255-06	169		no	105			no		no	235	515			no
Mason-Dixon	25	MD02W125-08-6	169		no	<b>87</b>	105		<b>yes</b>		no	235	515			no
Mason-Dixon	26	MD02W135-08-2	167		no	105			no		no	235	515			no
Mason-Dixon	27	MD02W135-08-4	<b>187</b>		<b>yes</b>	<b>87</b>	105		<b>yes</b>		no	235	515			no
Mason-Dixon	28	MD02W135-08-9	167		no	105			no		no	235	515			no
Mason-Dixon	29	MD02W135-08-11	<b>187</b>		<b>yes</b>	105			no		no	235	515			no
Mason-Dixon	30	MDKY-25-08-6	162		no	112			no		no	235	515			no
Mason-Dixon	31	MDKY-25-08-7	162		no	112			no		no	235	515			no
Mason-Dixon	32	MD01W255-08-1	167		no	<b>87</b>	105		<b>yes</b>		no	235	515			no
Mason-Dixon	33	MD01W270-08-11	<b>187</b>		<b>yes</b>	112			no		no	235	515			no
Mason-Dixon	34	MD01W270-08-12	<b>187</b>		<b>yes</b>	112			no		no	235	515			no
Mason-Dixon	35	MD01W28-08-11	165		no	112			no		no	235	515			no
Mason-Dixon	36	MD01W28-08-14	165		no	105	112		no		no	235	515			no
Mason-Dixon	37	MD01W28-08-16	165		no	105	112		no		no	235	515			no
Mason-Dixon	38	MD01W28-08-17	165		no	105	112		no		no	235	515			no
Mason-Dixon	39	MD00W16-08-3	167		no	105			no		no	235	515			no
Mason-Dixon	40	MD00W16-08-4	167		no	105			no		no	<b>155</b>	<b>510</b>			<b>yes</b>
Mason-Dixon	41	MD00W16-08-5	167		no	105			no		no	<b>155</b>	235	515		no
Mason-Dixon	42	MD00W16-08-10	162	167	no	112			no		no	235	515			no
Mason-Dixon	43	MD00W389-08-4	<b>187</b>		<b>yes</b>	112			no		no	235	515			no
Mason-Dixon	44	MD00W389-08-6	<b>187</b>		<b>yes</b>	105	112		no		no	235	515			no
Mason-Dixon	45	VA03W-412	162		no	105			no		no	235	515			no
Mason-Dixon	46	VA04W-90	165		no	105			no		no	235	515			no
Mason-Dixon	47	VA04W-259	<b>187</b>		<b>yes</b>	105	112		no		no	235	515			no
Mason-Dixon	48	VA04W-306	162		no	112			no		no	235	515			no
Mason-Dixon	49	VA05W-151	162	<b>187</b>	<b>het</b>	<b>87</b>	105		<b>yes</b>		no	235	515			no
Mason-Dixon	50	VA05W-414	<b>187</b>		<b>yes</b>	112			no		no	235	515			no
Mason-Dixon	51	VA05W-139	162		no	105			no		no	235	515			no
Mason-Dixon	52	VA06W-6	165		no	112			no		no	235	515			no
Mason-Dixon	53	VA06W-93	<b>187</b>		<b>yes</b>	105			no		no	235	515			no
Mason-Dixon	54	VA06W-194	167		no	<b>87</b>	105	112	<b>yes</b>		no	235	515			no
Mason-Dixon	55	VA06W-256	167		no	<b>87</b>	105	112	<b>yes</b>		no	235	515			no
Mason-Dixon	56	VA06W-423	162	<b>187</b>	<b>het</b>	105			no	<b>256</b>	<b>yes</b>	235	515			no
Mason-Dixon	57	VA04W-92	<b>187</b>		<b>yes</b>	105			no		no	235	515			no
Mason-Dixon	58	VA06W-412	167		no	<b>87</b>	105		<b>yes</b>		no	235	515			no
Mason-Dixon	59	VA07W-27	167		no	105			no		no	235	515			no
Mason-Dixon	60	VA07W-83	<b>187</b>		<b>yes</b>	105			no		no	235	515			no
Mason-Dixon	61	VA07W-138	162		no	105	112		no		no	235	515			no
Mason-Dixon	62	VA07W-214	167		no	105			no		no	235	515			no
Mason-Dixon	63	VA07W-347	165		no	105			no		no	235	515			no
Mason-Dixon	64	VA07W-415	169		no	112			no	<b>256</b>	<b>yes</b>	235	515			no

**Rye Translocation -- Hessian Fly -- Barley Yellow Dwarf Virus**

2009

Nursery	Entry	Sample Name	scm9		IRS	cfd		cfa		H9	Bdv3	Bdv3	Bdv2/3
			scm9	scm9		132	H13	2153	2153				
Mason-Dixon	1	25R47			non-IRS	116	no	212		no	185		no
Mason-Dixon	2	Branson			non-IRS	116	no	220		no	185		no
Mason-Dixon	3	Pioneer25R15			non-IRS	116	no	203		no	185		no
Mason-Dixon	4	Tribute		224	IRS:1AL	116	no	213		no	185		no
Mason-Dixon	5	KY01C-1002-07			non-IRS	116	no	195		no	185		no
Mason-Dixon	6	KY01C-1002-12	208		IRS:IBL	116	no	193	203	no	185		no
Mason-Dixon	7	KY01C-1088-19			non-IRS	116	no	203		no	185		no
Mason-Dixon	8	KY01C-1159-11	208		IRS:IBL	116	no	195		no	185		no
Mason-Dixon	9	KY01C-1159-12	208		IRS:IBL	116	no	195	201	no	185		no
Mason-Dixon	10	KY01C-1177-06			non-IRS	116	no	203		no	185		no
Mason-Dixon	11	KY01C-1346-06			non-IRS	116	no	203		no	185		no
Mason-Dixon	12	KY01C-1531-06		224	IRS:1AL	116	no	nd		nd	185		no
Mason-Dixon	13	KY01C-1531-13		224	IRS:1AL	116	no	nd		nd	185		no
Mason-Dixon	14	KY01C-1537-05		224	IRS:1AL	116	no	nd		nd	185		no
Mason-Dixon	15	KY01C-1070-02			non-IRS	116	no	203		no	185		no
Mason-Dixon	16	KY01C-1159-02			non-IRS	116	no	195		no	185		no
Mason-Dixon	17	KY01C-1159-03	208		IRS:IBL	116	no	195		no	185		no
Mason-Dixon	18	KY00C-2697-04		224	IRS:1AL	116	no	220		no	185	187	no
Mason-Dixon	19	KY00C-2059-04			non-IRS	116	no	203		no	185		no
Mason-Dixon	20	KY00C-2515-02	208		IRS:IBL	116	no	201		no	185		no
Mason-Dixon	21	KY00C-2567-01			non-IRS	116	no	203		no	185	187	no
Mason-Dixon	22	KY00C-2175-10			non-IRS	116	no	203		no	185		no
Mason-Dixon	23	KY00C-2053-19			non-IRS	116	no	212		no	185		no
Mason-Dixon	24	KY00C-2255-06			non-IRS	116	no	203		no	185		no
Mason-Dixon	25	MD02W125-08-6		224	IRS:1AL	116	no	nd		nd	185		no
Mason-Dixon	26	MD02W135-08-2	208	224	IRS:1BL IRS:1AL	116	no	nd		nd	185		no
Mason-Dixon	27	MD02W135-08-4		224	IRS:1AL	116	no	221		no	185		no
Mason-Dixon	28	MD02W135-08-9	208	224	IRS:1BL IRS:1AL	116	no	203		no	185		no
Mason-Dixon	29	MD02W135-08-11	208		IRS:IBL	116	no	207		no	185		no
Mason-Dixon	30	MDKY-25-08-6			non-IRS	116	no	203		no	185		no
Mason-Dixon	31	MDKY-25-08-7			non-IRS	116	no	203		no	185		no
Mason-Dixon	32	MD01W255-08-1		224	IRS:1AL	116	no	nd		nd	185		no
Mason-Dixon	33	MD01W270-08-11			non-IRS	116	no	201	207	no	185		no
Mason-Dixon	34	MD01W270-08-12			non-IRS	116	no	201		no	185		no
Mason-Dixon	35	MD01W28-08-11	208		IRS:IBL	116	no	203		no	185		no
Mason-Dixon	36	MD01W28-08-14	208		IRS:IBL	116	no	203		no	185		no
Mason-Dixon	37	MD01W28-08-16	208		IRS:IBL	116	no	203		no	185		no
Mason-Dixon	38	MD01W28-08-17	208		IRS:IBL	116	no	203		no	185		no
Mason-Dixon	39	MD00W16-08-3	208		IRS:IBL	116	no	207		no	185		no
Mason-Dixon	40	MD00W16-08-4	208		IRS:IBL	116	no	207		no	185		no
Mason-Dixon	41	MD00W16-08-5	208		IRS:IBL	116	no	207		no	185		no
Mason-Dixon	42	MD00W16-08-10	208		IRS:IBL	116	no	181	203	het	185		no
Mason-Dixon	43	MD00W389-08-4			non-IRS	116	no	203		no	185		no
Mason-Dixon	44	MD00W389-08-6	208		IRS:IBL	116	no	201	203	no	185		no
Mason-Dixon	45	VA03W-412	208		IRS:IBL	116	no	203	212	no	185		no
Mason-Dixon	46	VA04W-90			non-IRS	116	no	195	212	no	185		no
Mason-Dixon	47	VA04W-259			non-IRS	116	no	207		no	185		no
Mason-Dixon	48	VA04W-306			non-IRS	116	no	201		no	185		no
Mason-Dixon	49	VA05W-151		224	IRS:1AL	116	no	203		no	185		no
Mason-Dixon	50	VA05W-414			non-IRS	116	no	191		no	185		no
Mason-Dixon	51	VA05W-139			non-IRS	116	no	203		no	185		no
Mason-Dixon	52	VA06W-6	208		IRS:IBL	116	no	203		no	185		no
Mason-Dixon	53	VA06W-93			non-IRS	116	no	203		no	185		no
Mason-Dixon	54	VA06W-194			non-IRS	116	no	203		no	185	187	no
Mason-Dixon	55	VA06W-256			non-IRS	116	no	201		no	185		no
Mason-Dixon	56	VA06W-423			non-IRS	116	no	203		no	185		no
Mason-Dixon	57	VA04W-92			non-IRS	116	no	195	207	no	185		no
Mason-Dixon	58	VA06W-412		224	IRS:1AL	116	no	203		no	185		no
Mason-Dixon	59	VA07W-27	208		IRS:IBL	116	no	203		no	185		no
Mason-Dixon	60	VA07W-83			non-IRS	116	no	207		no	185		no
Mason-Dixon	61	VA07W-138		224	IRS:1AL	116	no	nd		nd	185		no
Mason-Dixon	62	VA07W-214			non-IRS	116	no	203		no	185		no
Mason-Dixon	63	VA07W-347			non-IRS	116	no	203		no	185		no
Mason-Dixon	64	VA07W-415			non-IRS	153	yes	203		no	185		no

# Quality Traits

2009

Nursery	Entry	Sample Name	bx7oe	bx7oe	Bx7 over-expressing	umn25	umn25	umn26	umn26	Glu-D1
Mason-Dixon	1	25R47	403		no		293		407	2+12
Mason-Dixon	2	Branson	403		no		293		407	2+12
Mason-Dixon	3	Pioneer25R15	403		no	275		390		5+10
Mason-Dixon	4	Tribute	403		no	275		390		5+10
Mason-Dixon	5	KY01C-1002-07	403		no		293		407	2+12
Mason-Dixon	6	KY01C-1002-12	403		no	275	293	390	407	het
Mason-Dixon	7	KY01C-1088-19	403		no	275	293	390	407	het
Mason-Dixon	8	KY01C-1159-11	403		no	275			407	2+12
Mason-Dixon	9	KY01C-1159-12	403		no	275			407	2+12
Mason-Dixon	10	KY01C-1177-06	403		no	275		390		5+10
Mason-Dixon	11	KY01C-1346-06	403		no		293		407	2+12
Mason-Dixon	12	KY01C-1531-06	403		no		293		407	2+12
Mason-Dixon	13	KY01C-1531-13	403		no		293		407	2+12
Mason-Dixon	14	KY01C-1537-05	403	448	het	275		390		5+10
Mason-Dixon	15	KY01C-1070-02	403		no		293		407	2+12
Mason-Dixon	16	KY01C-1159-02	403		no		293		407	2+12
Mason-Dixon	17	KY01C-1159-03	403		no		293		407	2+12
Mason-Dixon	18	KY00C-2697-04	403		no		293		407	2+12
Mason-Dixon	19	KY00C-2059-04	403		no		293		407	2+12
Mason-Dixon	20	KY00C-2515-02	403		no		293		407	2+12
Mason-Dixon	21	KY00C-2567-01	403		no	275		390		5+10
Mason-Dixon	22	KY00C-2175-10	403		no		293		407	2+12
Mason-Dixon	23	KY00C-2053-19	403		no		293		407	2+12
Mason-Dixon	24	KY00C-2255-06	403		no		293		407	2+12
Mason-Dixon	25	MD02W125-08-6	403		no		293		407	2+12
Mason-Dixon	26	MD02W135-08-2	403		no		293		407	2+12
Mason-Dixon	27	MD02W135-08-4	403		no		293		407	2+12
Mason-Dixon	28	MD02W135-08-9	403		no		293		407	2+12
Mason-Dixon	29	MD02W135-08-11	403		no		293		407	2+12
Mason-Dixon	30	MDKY-25-08-6	403		no	275		390		5+10
Mason-Dixon	31	MDKY-25-08-7	403		no	275		390		5+10
Mason-Dixon	32	MD01W255-08-1	403		no	275	293	390	407	het
Mason-Dixon	33	MD01W270-08-11	403		no		293		407	2+12
Mason-Dixon	34	MD01W270-08-12	403		no		293		407	2+12
Mason-Dixon	35	MD01W28-08-11	403		no	275		390		5+10
Mason-Dixon	36	MD01W28-08-14	403		no	275		390		5+10
Mason-Dixon	37	MD01W28-08-16	403		no	275		390		5+10
Mason-Dixon	38	MD01W28-08-17	403		no	275		390		5+10
Mason-Dixon	39	MD00W16-08-3	403		no		293		407	2+12
Mason-Dixon	40	MD00W16-08-4	403		no		293		407	2+12
Mason-Dixon	41	MD00W16-08-5	403		no		293		407	2+12
Mason-Dixon	42	MD00W16-08-10	403	448	het	275	293	390	407	het
Mason-Dixon	43	MD00W389-08-4	403		no	275		390		5+10
Mason-Dixon	44	MD00W389-08-6	403		no	275	293	390	407	het
Mason-Dixon	45	VA03W-412	403		no		293		407	2+12
Mason-Dixon	46	VA04W-90	403		no		293		407	2+12
Mason-Dixon	47	VA04W-259	403		no		293		407	2+12
Mason-Dixon	48	VA04W-306	403		no		293		407	2+12
Mason-Dixon	49	VA05W-151	403		no		293		407	2+12
Mason-Dixon	50	VA05W-414	403		no		293		407	2+12
Mason-Dixon	51	VA05W-139	403		no	275		390		5+10
Mason-Dixon	52	VA06W-6	403		no	275		390		5+10
Mason-Dixon	53	VA06W-93	403		no		293		407	2+12
Mason-Dixon	54	VA06W-194	403		no		293		407	2+12
Mason-Dixon	55	VA06W-256	403		no		293		407	2+12
Mason-Dixon	56	VA06W-423	403		no	275		390		5+10
Mason-Dixon	57	VA04W-92	403		no		293		407	2+12
Mason-Dixon	58	VA06W-412	403		no	275		390		5+10
Mason-Dixon	59	VA07W-27	403		no	275		390		5+10
Mason-Dixon	60	VA07W-83	403		no	275		390		5+10
Mason-Dixon	61	VA07W-138	403		no	275		390		5+10
Mason-Dixon	62	VA07W-214	403		no		293		407	2+12
Mason-Dixon	63	VA07W-347	403		no	275		390		5+10
Mason-Dixon	64	VA07W-415	403		no		293		407	2+12