

**2010**

**Soft Red Winter Wheat Cooperative Nurseries**

**5-State Advanced & Preliminary  
Mason-Dixon  
Gulf Atlantic Wheat Nursery**

**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 was 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*

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

## 2010 5-State Advanced & Preliminary Nurseries

### Entry List

Nursery	Entry	Sample Name	Pedigree	Source
5-St Adv	1	MO080864		
5-St Adv	2	MO081320		
5-St Adv	3	MO081378		
5-St Adv	4	MO081652		
5-St Adv	5	Bess		
5-St Adv	6	IL06-7034		
5-St Adv	7	IL06-13072		
5-St Adv	8	IL06-13721		
5-St Adv	9	IL06-14262		
5-St Adv	10	IL00-8530		
5-St Adv	11	0175A1-31-4-3		
5-St Adv	12	053A1-2-5-3		
5-St Adv	13	0527A1-9-9-4		
5-St Adv	14	0570A1-2-39-5		
5-St Adv	15	05219A1-9-2		
5-St Adv	16	OH06-180-57		
5-St Adv	17	OH06-190-29		
5-St Adv	18	OH06-197-61		
5-St Adv	19	OH05-101-1		
5-St Adv	20	Malabar		
5-St Adv	21	KY02C-1058-02		
5-St Adv	22	KY02C-1114-03		
5-St Adv	23	KY03C-1192-40		
5-St Adv	24	KY03C-1136-07		
5-St Adv	25	Pembroke		
5-St Pre	1	MO080103		
5-St Pre	2	MO080422		
5-St Pre	3	MO081535		
5-St Pre	4	MO081699		
5-St Pre	5	Bess		
5-St Pre	6	IL06-7550		
5-St Pre	7	IL06-25634		
5-St Pre	8	IL06-23571		
5-St Pre	9	IL06-31053		
5-St Pre	10	IL00-8530		
5-St Pre	11	058RA1-5-6-1		
5-St Pre	12	059A1-2-6-4		
5-St Pre	13	0527A1-9-9-2		
5-St Pre	14	0570A1-2-58		
5-St Pre	15	05219A1-9-10		
5-St Pre	16	OH06-228-73		
5-St Pre	17	OH06-158-50		
5-St Pre	18	OH06-159-6		
5-St Pre	19	OH06-95-15		
5-St Pre	20	Malabar		
5-St Pre	21	KY02C-2219-04		
5-St Pre	22	KY02C-1004-32		
5-St Pre	23	KY03C-1192-18		
5-St Pre	24	KY03C-1237-39		
5-St Pre	25	Pembroke		

## 2010 5-State Advanced & Preliminary Nurseries

### Summary of all Markers

Nursery	Entry	Sample Name	Rht1-	Rht2-	Rht8	Ppd-D1a	Fhb	Fhb 2DL-	Fhb 5A		Fhb 5A
			B1b	D1b			Ernie	Wuhan1/ W14	Ernie	Ning 7840	
5-St Adv	1	MO080864	yes	no	no	no	no	no	no	no	no
5-St Adv	2	MO081320	yes	no	no	no	no	no	no	het?	no
5-St Adv	3	MO081378	yes	no	no	no	no	no	no	no	no
5-St Adv	4	MO081652	het	no	no	yes	no	no	no	no	no
5-St Adv	5	Bess	yes	no	no	no	no	no	no	no	no
5-St Adv	6	IL06-7034	yes	no	no	no	no	no	no	no	no
5-St Adv	7	IL06-13072	yes	no	no	no	no	no	no	no	no
5-St Adv	8	IL06-13721	yes	no	no	no	no	no	no	no	no
5-St Adv	9	IL06-14262	yes	no	no	no	no	no	no	no	no
5-St Adv	10	IL00-8530	yes	no	no	no	no	no	no	yes	no
5-St Adv	11	0175A1-31-4-3	yes	no	no	yes	no	het?	no	no	no
5-St Adv	12	053A1-2-5-3	yes	no	no	yes	no	no	no	no	no
5-St Adv	13	0527A1-9-9-4	yes	no	no	yes	no	no	no	het?	no
5-St Adv	14	0570A1-2-39-5	yes	no	no	yes	no	no	no	yes?	no
5-St Adv	15	05219A1-9-2	yes	no	no	no	no	no	no	no	no
5-St Adv	16	OH06-180-57	no	no	yes	yes	no	no	no	no	no
5-St Adv	17	OH06-190-29	yes	no	no	yes	no	no	no	no	no
5-St Adv	18	OH06-197-61	yes	no	no	yes	no	no	no	no	no
5-St Adv	19	OH05-101-1	het	no	no	yes	no	no	no	no	no
5-St Adv	20	Malabar	yes	no	no	no	no	yes?	no	yes?	no
5-St Adv	21	KY02C-1058-02	no	yes	no	yes	no	no	no	no	no
5-St Adv	22	KY02C-1114-03	het	het	no	yes	no	no	no	no	no
5-St Adv	23	KY03C-1192-40	no	yes	het	yes	no	no	no	no	no
5-St Adv	24	KY03C-1136-07	nd	nd	no	yes	no	yes	no	no	no
5-St Adv	25	Pembroke	no	yes	no	yes	no	no	no	no	no
5-St Pre	1	MO080103	no	no	no	yes	no	no	no	no	no
5-St Pre	2	MO080422	yes	no	no	yes	no	no	no	no	no
5-St Pre	3	MO081535	yes	no	no	no	no	no	no	no	no
5-St Pre	4	MO081699	het	no	no	yes	no	no	no	no	no
5-St Pre	5	Bess	yes	no	no	no	no	no	no	no	no
5-St Pre	6	IL06-7550	nd	nd	no	no	no	no	no	no	no
5-St Pre	7	IL06-25634	yes	no	no	no	no	no	no	no	no
5-St Pre	8	IL06-23571	yes	no	yes	yes	no	no	no	no	no
5-St Pre	9	IL06-31053	yes	no	no	no	no	yes	no	no	no
5-St Pre	10	IL00-8530	yes	no	no	no	no	no	no	no	no
5-St Pre	11	058RA1-5-6-1	yes	no	no	no	no	no	no	no	no
5-St Pre	12	059A1-2-6-4	yes	no	no	no	no	no	no	no	no
5-St Pre	13	0527A1-9-9-2	yes	no	no	yes	no	no	no	no	no
5-St Pre	14	0570A1-2-58	yes	nd	no	yes	no	no	no	yes?	no
5-St Pre	15	05219A1-9-10	yes	no	no	no	no	no	no	no	no
5-St Pre	16	OH06-228-73	yes	no	no	yes	no	no	no	no	no
5-St Pre	17	OH06-158-50	yes	no	no	no	no	no	no	no	no
5-St Pre	18	OH06-159-6	yes	no	no	yes	no	no	no	no	no
5-St Pre	19	OH06-95-15	yes	no	no	het	no	no	no	no	no
5-St Pre	20	Malabar	yes	no	no	no	no	yes?	no	yes?	no
5-St Pre	21	KY02C-2219-04	no	yes	no	no	no	no	no	no	no
5-St Pre	22	KY02C-1004-32	yes	yes	no	yes	no	no	no	het?	no
5-St Pre	23	KY03C-1192-18	no	yes	yes	yes	no	no	no	no	no
5-St Pre	24	KY03C-1237-39	yes	no	no	yes	no	no	no	no	no
5-St Pre	25	Pembroke	no	yes	no	yes	no	no	no	no	no

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

"nd" = not determined or lack of amplification

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

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All numbers are size in base pairs of amplified fragments

Target alleles are in **bold or italics**

## 2010 5-State Advanced & Preliminary Nurseries

### Summary of all Markers

Nursery	Entry	Sample Name	Yr17/ Lr34/ Sr24/ Lr37/ Yr18/ Sr2 Sr36 Lr24 Sr38 Pm38					1RS	H13	H9	Bdv2/3	Bx7 over- expressing	Glu-D1	Glu-A1
			Sr2	Sr36	Lr24	Sr38	Pm38							
5-St Adv	1	MO080864	no	no	no	yes	no	non-1RS	no	no	no	no	2+12	Ax1 or null
5-St Adv	2	MO081320	no	no	no	no	no	non-1RS	no	no	no	no	het?	Ax1 or null
5-St Adv	3	MO081378	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax1 or null
5-St Adv	4	MO081652	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax2*
5-St Adv	5	Bess	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax1 or null
5-St Adv	6	IL06-7034	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax2*
5-St Adv	7	IL06-13072	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax2*
5-St Adv	8	IL06-13721	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax2*
5-St Adv	9	IL06-14262	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax2*
5-St Adv	10	IL00-8530	no	no	no	no	no	non-1RS	no	no	no	no	het?	Ax2*
5-St Adv	11	0175A1-31-4-3	no	het	no	no	no	1RS:1BL	no	no	no	no	het?	Ax1 or null
5-St Adv	12	053A1-2-5-3	no	no	no	yes	no	non-1RS	no	no	yes	no	5+10	Ax2*
5-St Adv	13	0527A1-9-9-4	no	no	no	yes	no	1RS:1BL	no	yes	het	no	het?	Ax1 or null
5-St Adv	14	0570A1-2-39-5	no	yes	no	no	no	1RS:1BL	no	no	yes	no	5+10	Ax1 or null
5-St Adv	15	05219A1-9-2	no	yes	no	no	no	1RS:1BL	no	no	yes	yes	5+10	Ax1 or null
5-St Adv	16	OH06-180-57	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax1 or null
5-St Adv	17	OH06-190-29	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax1 or null
5-St Adv	18	OH06-197-61	no	no	no	no	no	non-1RS	no	no	no	yes	2+12	Ax1 or null
5-St Adv	19	OH05-101-1	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax1 or null
5-St Adv	20	Malabar	no	no	no	no	no	non-1RS	no	no	no	no	het	Ax1 or null
5-St Adv	21	KY02C-1058-02	no	no	no	no	no	1RS:1BL	no	no	no	no	5+10	Ax2*
5-St Adv	22	KY02C-1114-03	no	no	no	no	no	1RS:1BL	no	no	no	no	het?	Ax2*
5-St Adv	23	KY03C-1192-40	no	no	no	no	no	non-1RS	no	no	no	yes	5+10	Ax1 or null
5-St Adv	24	KY03C-1136-07	no	no	no	no	no	1RS:1BL	no	no	no	no	2+12	Ax1 or null
5-St Adv	25	Pembroke	no	no	no	no	no	non-1RS	no	no	no	yes	2+12	Ax2*
5-St Pre	1	MO080103	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax2*
5-St Pre	2	MO080422	no	no	no	no	no	1RS:1BL	no	no	no	no	het	Ax1 or null
5-St Pre	3	MO081535	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax1 or null
5-St Pre	4	MO081699	no	no	no	no	yes	non-1RS	no	no	no	no	het	het
5-St Pre	5	Bess	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax1 or null
5-St Pre	6	IL06-7550	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax2*
5-St Pre	7	IL06-25634	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax1 or null
5-St Pre	8	IL06-23571	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax2*
5-St Pre	9	IL06-31053	no	no	yes	no	no	non-1RS	no	no	no	no	5+10	Ax1 or null
5-St Pre	10	IL00-8530	no	no	no	no	no	non-1RS	no	no	no	no	5+10	Ax2*
5-St Pre	11	058RA1-5-6-1	no	het	no	no	no	1RS:1BL	no	no	het	het	2+12	Ax1 or null
5-St Pre	12	059A1-2-6-4	no	yes	no	no	no	1RS:1BL	no	no	yes	yes	het?	Ax1 or null
5-St Pre	13	0527A1-9-9-2	no	no	no	yes	no	1RS:1BL	no	no	yes	no	2+12	Ax1 or null
5-St Pre	14	0570A1-2-58	no	yes	no	no	no	1RS:1BL	no	no	yes	no	2+12	Ax1 or null
5-St Pre	15	05219A1-9-10	no	yes	no	yes	no	non-1RS	no	no	yes	het	het?	Ax1 or null
5-St Pre	16	OH06-228-73	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax2*
5-St Pre	17	OH06-158-50	no	no	no	no	no	non-1RS	no	no	no	yes	2+12	Ax1 or null
5-St Pre	18	OH06-159-6	no	no	no	yes	no	non-1RS	no	no	no	yes	het	Ax1 or null
5-St Pre	19	OH06-95-15	no	no	no	yes?	no	non-1RS	no	no	no	no	5+10	Ax2*
5-St Pre	20	Malabar	no	no	no	no	no	non-1RS	no	no	no	no	het	Ax1 or null
5-St Pre	21	KY02C-2219-04	no	no	no	no	no	1RS:1BL	no	no	no	no	5+10	Ax2*
5-St Pre	22	KY02C-1004-32	no	no	no	no	no	non-1RS	no	no	no	het	5+10	het
5-St Pre	23	KY03C-1192-18	no	no	no	no	no	non-1RS	no	no	no	yes	5+10	Ax1 or null
5-St Pre	24	KY03C-1237-39	no	no	no	no	no	non-1RS	no	no	no	no	2+12	Ax2*
5-St Pre	25	Pembroke	no	no	no	no	no	non-1RS	no	no	no	yes	2+12	Ax2*

"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 was 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**

## Dwarfing genes & Photoperiod insensitivity

2010

Nursery	Entry	Sample Name	Rht1K	Rht2K	Rht1-B1b	Rht2-D1b	gwm261	gwm261	Rht8	Ppd	Ppd	Ppd-D1a
5-St Adv	1	MO080864	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	2	MO081320	<b>Allele Y</b>	Allele X	yes	no	173	201	no		414	no
5-St Adv	3	MO081378	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	4	MO081652	<b>Both Alleles</b>	Allele X	het	no	173	201	no	<b>283</b>		<b>yes</b>
5-St Adv	5	Bess	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	6	IL06-7034	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	7	IL06-13072	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	8	IL06-13721	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	9	IL06-14262	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	10	IL00-8530	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	11	0175A1-31-4-3	<b>Allele Y</b>	Allele X	yes	no	173		no	<b>283</b>		<b>yes</b>
5-St Adv	12	053A1-2-5-3	<b>Allele Y</b>	Allele X	yes	no	201		no	<b>283</b>		<b>yes</b>
5-St Adv	13	0527A1-9-9-4	<b>Allele Y</b>	Allele X	yes	no	173		no	<b>283</b>		<b>yes</b>
5-St Adv	14	0570A1-2-39-5	<b>Allele Y</b>	Allele X	yes	no	173	201	no	<b>283</b>		<b>yes</b>
5-St Adv	15	05219A1-9-2	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Adv	16	OH06-180-57	<b>Allele X</b>	Allele X	no	no	<b>192</b>		<b>yes</b>	<b>283</b>		<b>yes</b>
5-St Adv	17	OH06-190-29	<b>Allele Y</b>	Allele X	yes	no	173		no	<b>283</b>		<b>yes</b>
5-St Adv	18	OH06-197-61	<b>Allele Y</b>	Allele X	yes	no	163		no	<b>283</b>		<b>yes</b>
5-St Adv	19	OH05-101-1	<b>Both Alleles</b>	Allele X	het	no	163		no	<b>283</b>		<b>yes</b>
5-St Adv	20	Malabar	<b>Allele Y</b>	Allele X	yes	no	163		no		414	no
5-St Adv	21	KY02C-1058-02	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201		no	<b>283</b>		<b>yes</b>
5-St Adv	22	KY02C-1114-03	<b>Both Alleles</b>	<b>Both Alleles</b>	het	het	163	173	no	<b>283</b>		<b>yes</b>
5-St Adv	23	KY03C-1192-40	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163	<b>192</b>	<b>het</b>	<b>283</b>		<b>yes</b>
5-St Adv	24	KY03C-1136-07	nd	nd	nd	nd	163		no	<b>283</b>		<b>yes</b>
5-St Adv	25	Pembroke	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173		no	<b>283</b>		<b>yes</b>
5-St Pre	1	MO080103	Allele X	Allele X	no	no	201		no	<b>283</b>		<b>yes</b>
5-St Pre	2	MO080422	<b>Allele Y</b>	Allele X	yes	no	173		no	<b>283</b>		<b>yes</b>
5-St Pre	3	MO081535	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	4	MO081699	<b>Both Alleles</b>	Allele X	het	no	163	201	no	<b>283</b>		<b>yes</b>
5-St Pre	5	Bess	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	6	IL06-7550	nd	nd	nd	nd	173		no		414	no
5-St Pre	7	IL06-25634	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	8	IL06-23571	<b>Allele Y</b>	Allele X	yes	no	<b>192</b>		<b>yes</b>	<b>283</b>		<b>yes</b>
5-St Pre	9	IL06-31053	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	10	IL00-8530	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	11	058RA1-5-6-1	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	12	059A1-2-6-4	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	13	0527A1-9-9-2	<b>Allele Y</b>	Allele X	yes	no	173		no	<b>283</b>		<b>yes</b>
5-St Pre	14	0570A1-2-58	<b>Allele Y</b>	nd	yes	nd	173	201	no	<b>283</b>		<b>yes</b>
5-St Pre	15	05219A1-9-10	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	16	OH06-228-73	<b>Allele Y</b>	Allele X	yes	no	201		no	<b>283</b>		<b>yes</b>
5-St Pre	17	OH06-158-50	<b>Allele Y</b>	Allele X	yes	no	173		no		414	no
5-St Pre	18	OH06-159-6	<b>Allele Y</b>	Allele X	yes	no	173		no	<b>283</b>		<b>yes</b>
5-St Pre	19	OH06-95-15	<b>Allele Y</b>	Allele X	yes	no	173		no	<b>283</b>	414	<b>het</b>
5-St Pre	20	Malabar	<b>Allele Y</b>	Allele X	yes	no	163		no		414	no
5-St Pre	21	KY02C-2219-04	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201		no		414	no
5-St Pre	22	KY02C-1004-32	<b>Allele Y</b>	<b>Allele Y</b>	yes	<b>yes</b>	163	173	no	<b>283</b>		<b>yes</b>
5-St Pre	23	KY03C-1192-18	Allele X	<b>Allele Y</b>	no	<b>yes</b>	<b>192</b>		<b>yes</b>	<b>283</b>		<b>yes</b>
5-St Pre	24	KY03C-1237-39	<b>Allele Y</b>	Allele X	yes	no	163		no	<b>283</b>		<b>yes</b>
5-St Pre	25	Pembroke	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173		no	<b>283</b>		<b>yes</b>

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

"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 was 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**

# FHB QTLs

2010

Nursery	Entry	Sample Name	umn10	umn10	gwm533	gwm533	gwm533	Fhb1
5-St Adv	1	MO080864	229		146			no
5-St Adv	2	MO081320	236		118			no
5-St Adv	3	MO081378	229		146	155		no
5-St Adv	4	MO081652	229		118	146	155	no
5-St Adv	5	Bess	236		118			no
5-St Adv	6	IL06-7034	229		146	155		no
5-St Adv	7	IL06-13072	229		146	155		no
5-St Adv	8	IL06-13721	229		146	152.9		no
5-St Adv	9	IL06-14262	229		146	155		no
5-St Adv	10	IL00-8530	229	236	118	146	155	no
5-St Adv	11	0175A1-31-4-3	229	236	118	146	155	no
5-St Adv	12	053A1-2-5-3	236					no
5-St Adv	13	0527A1-9-9-4	236		118			no
5-St Adv	14	0570A1-2-39-5	236		118			no
5-St Adv	15	05219A1-9-2	236		118			no
5-St Adv	16	OH06-180-57	236		118			no
5-St Adv	17	OH06-190-29	236		118			no
5-St Adv	18	OH06-197-61	236		128			no
5-St Adv	19	OH05-101-1	236		118			no
5-St Adv	20	Malabar	236		128			no
5-St Adv	21	KY02C-1058-02	236		118			no
5-St Adv	22	KY02C-1114-03	236		118			no
5-St Adv	23	KY03C-1192-40	236		118			no
5-St Adv	24	KY03C-1136-07	236		118			no
5-St Adv	25	Pembroke	236		118			no
5-St Pre	1	MO080103	229		146	155		no
5-St Pre	2	MO080422	229	236	118	146	155	no
5-St Pre	3	MO081535	236		118			no
5-St Pre	4	MO081699	229	236	118	146	155	no
5-St Pre	5	Bess	236		118			no
5-St Pre	6	IL06-7550	229		146	155		no
5-St Pre	7	IL06-25634	229		146	155		no
5-St Pre	8	IL06-23571	229		146	155		no
5-St Pre	9	IL06-31053	229		146	155		no
5-St Pre	10	IL00-8530	229	236	118	146	155	no
5-St Pre	11	058RA1-5-6-1	236		118			no
5-St Pre	12	059A1-2-6-4	229	236	118	146	155	no
5-St Pre	13	0527A1-9-9-2	236		118			no
5-St Pre	14	0570A1-2-58	236		118			no
5-St Pre	15	05219A1-9-10	236		118			no
5-St Pre	16	OH06-228-73	229		146	155		no
5-St Pre	17	OH06-158-50	229		146			no
5-St Pre	18	OH06-159-6	236					no
5-St Pre	19	OH06-95-15	229	236	117.8	146	155	no
5-St Pre	20	Malabar	236		128			no
5-St Pre	21	KY02C-2219-04	236					no
5-St Pre	22	KY02C-1004-32	229	236	146	155		no
5-St Pre	23	KY03C-1192-18	236		128			no
5-St Pre	24	KY03C-1237-39	229		118			no
5-St Pre	25	Pembroke	236		118			no

"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 was 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*

**FHB QTLs**

2010

Nursery	Entry	Sample Name	gwm	gwm	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	Fhb
			<b>285</b>	<b>285</b>	<b>612</b>	<b>612</b>	<b>612</b>	<b>307</b>	<b>307</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>418</b>	<b>418</b>	<b>418</b>	<b>471</b>	<b>471</b>	<b>471</b>	<b>471</b>
5-St Adv	1	MO080864	250		287	289		139		151			271		177	216		no	
5-St Adv	2	MO081320	<b>246</b>		285	287		139		151			<b>262</b>	271	177	216		no	
5-St Adv	3	MO081378	226		283	<b>285</b>		141	139	151	161		265	271	177	216		no	
5-St Adv	4	MO081652	250	<b>246</b>	281	283		<b>141</b>		<b>153</b>			<b>262</b>	271	179	216		no	
5-St Adv	5	Bess	<b>246</b>		287	289		139		151			271		177	216		no	
5-St Adv	6	IL06-7034	<b>246</b>		287	289		<b>141</b>		<b>153</b>			271		177	216		no	
5-St Adv	7	IL06-13072	<b>246</b>		287	289		<b>141</b>		<b>153</b>			271		177	216		no	
5-St Adv	8	IL06-13721	250		283	<b>285</b>		<b>141</b>		162			271		177	216		no	
5-St Adv	9	IL06-14262	<b>246</b>		287	289		139		151			271		177	216		no	
5-St Adv	10	IL00-8530	219		283	<b>285</b>		<b>141</b>		<b>153</b>			271		177	216		no	
5-St Adv	11	0175A1-31-4-3		<b>246</b>	283	<b>285</b>		<b>141</b>		151	155		<b>262</b>	269	273	177	214	216	het?
5-St Adv	12	053A1-2-5-3	221		267			143		155			<b>262</b>		177	216		no	
5-St Adv	13	0527A1-9-9-4		222	271	273	281	141	143	149	149	155	<b>262</b>	271	177	214	216	no	
5-St Adv	14	0570A1-2-39-5	219		267			143		155			<b>262</b>		177	214	216	no	
5-St Adv	15	05219A1-9-2	<b>246</b>		277	279		141	143	155	161		271		177	216		no	
5-St Adv	16	OH06-180-57	226		283	<b>285</b>		143		149			260	262	177	220		no	
5-St Adv	17	OH06-190-29			279	281		143		149	<b>153</b>		260	271	177	216	220	no	
5-St Adv	18	OH06-197-61	219		267			143		158			<b>262</b>		177	216		no	
5-St Adv	19	OH05-101-1	<b>246</b>		273	275		143		<b>153</b>			271		177	216		no	
5-St Adv	20	Malabar	219		283	<b>285</b>		<b>141</b>		149			<b>262</b>		177	<b>260</b>		yes?	
5-St Adv	21	KY02C-1058-02	226		279	281		<b>141</b>		161			271		177	216		no	
5-St Adv	22	KY02C-1114-03	221		287	289		143		149			260	269	218			no	
5-St Adv	23	KY03C-1192-40	<b>246</b>		271	273	279	143		151			260	269	177	216		no	
5-St Adv	24	KY03C-1136-07	226		283	<b>285</b>		143		149	<b>153</b>		<b>262</b>		179	<b>260</b>		yes	
5-St Adv	25	Pembroke			287	289		143		149			269		177	216		no	
5-St Pre	1	MO080103	219		279	281		<b>141</b>		<b>153</b>			<b>262</b>		179	216		no	
5-St Pre	2	MO080422	219	<b>246</b>	277	279	<b>285</b>	141	143	153	156		<b>262</b>	271	177	216		no	
5-St Pre	3	MO081535	219	<b>246</b>	281	283		139	143	151	153		<b>262</b>	271	177	216	<b>260</b>	no	
5-St Pre	4	MO081699	250	<b>246</b>	281	283		<b>141</b>		153	156		<b>262</b>		179	216		no	
5-St Pre	5	Bess	<b>246</b>		287	289		139		151			271		177	216		no	
5-St Pre	6	IL06-7550	<b>246</b>		283	<b>285</b>		<b>141</b>		162			271		177	216		no	
5-St Pre	7	IL06-25634	219		283	<b>285</b>		<b>141</b>		162			271		177	216		no	
5-St Pre	8	IL06-23571	<b>246</b>		279	281		<b>141</b>		156			271		179	216		no	
5-St Pre	9	IL06-31053	<b>246</b>		283	<b>285</b>		<b>141</b>		<b>153</b>			<b>262</b>		177	<b>260</b>		yes	
5-St Pre	10	IL00-8530	250		283	<b>285</b>		<b>141</b>		<b>153</b>			271		177	216		no	
5-St Pre	11	058RA1-5-6-1	219		287	289		139		151			271		177	216		no	
5-St Pre	12	059A1-2-6-4	221		285	287				156			271		177	214		no	
5-St Pre	13	0527A1-9-9-2	222		271	273		<b>141</b>		149			271		177	214		no	
5-St Pre	14	0570A1-2-58	219		267	279	281	143		156			<b>262</b>		177	214	216	no	
5-St Pre	15	05219A1-9-10	219	221	285	287		<b>141</b>		156	162		<b>262</b>	271	177	214	216	no	
5-St Pre	16	OH06-228-73	219		273	275		143		<b>153</b>			271		177	216		no	
5-St Pre	17	OH06-158-50	219		267	273		143		<b>153</b>			271		177	216		no	
5-St Pre	18	OH06-159-6	219	222	267			143		160			<b>262</b>		179	216		no	
5-St Pre	19	OH06-95-15	<b>246</b>		273	275		141	143	<b>153</b>			<b>262</b>	271	179	216		no	
5-St Pre	20	Malabar	226		283	<b>285</b>		<b>141</b>		149			<b>262</b>		177	<b>260</b>		yes?	
5-St Pre	21	KY02C-2219-04	221		287	289		143		151			260		179	220		no	
5-St Pre	22	KY02C-1004-32	221		271	273	287	143		149	151		<b>262</b>	269	177	214	218	220	no
5-St Pre	23	KY03C-1192-18	226		271	273		143		149			269		177	216		no	
5-St Pre	24	KY03C-1237-39	226		287	289		143		149			<b>262</b>		177	216		no	
5-St Pre	25	Pembroke			287	289		143		149			269		177	216		no	

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Target alleles are in **bold or italics**



## FHB QTLs

2010

Nursery	Entry	Sample Name									Fhb 2DL- Wuhan1/ W14
			cfid233	cfid233	cfid233	gwm539	gwm539	gwm539	gwm608	gwm608	
5-St Adv	1	MO080864	288	290		137	161		162		no
5-St Adv	2	MO081320	288	290		139			154		no
5-St Adv	3	MO081378	288	290		137			162		no
5-St Adv	4	MO081652	280			137			150		no
5-St Adv	5	Bess	288	290		137			162		no
5-St Adv	6	IL06-7034	278	288		137			150		no
5-St Adv	7	IL06-13072	288	290		137			<b>152</b>		no
5-St Adv	8	IL06-13721	288	290		<b>124</b>	137		<b>152</b>		no
5-St Adv	9	IL06-14262	278			<b>124</b>			150		no
5-St Adv	10	IL00-8530	280			<b>124</b>			150		no
5-St Adv	11	0175A1-31-4-3	271			137	141		150		no
5-St Adv	12	053A1-2-5-3	278			161			150		no
5-St Adv	13	0527A1-9-9-4	286	288		137			nd		no
5-St Adv	14	0570A1-2-39-5	271			<b>124</b>			156		no
5-St Adv	15	05219A1-9-2	<b>276</b>	278		139			150		no
5-St Adv	16	OH06-180-57	280			137			156		no
5-St Adv	17	OH06-190-29	272			137			158		no
5-St Adv	18	OH06-197-61	271			133			156		no
5-St Adv	19	OH05-101-1	271			133			156		no
5-St Adv	20	Malabar	271			155			150		no
5-St Adv	21	KY02C-1058-02	278	280		137			156		no
5-St Adv	22	KY02C-1114-03	271			133	137		156		no
5-St Adv	23	KY03C-1192-40	271			131			156		no
5-St Adv	24	KY03C-1136-07	271	280		137			156		no
5-St Adv	25	Pembroke	271			133			156		no
5-St Pre	1	MO080103	282	284		137			150		no
5-St Pre	2	MO080422	278	288	290	137	161		150	154	no
5-St Pre	3	MO081535	288	290		137			162		no
5-St Pre	4	MO081699	280	288		137			150	162	no
5-St Pre	5	Bess	288	290		137			162		no
5-St Pre	6	IL06-7550	288	290		137			<b>152</b>		no
5-St Pre	7	IL06-25634	288	290		<b>124</b>			<b>152</b>		no
5-St Pre	8	IL06-23571	282	284		137			150		no
5-St Pre	9	IL06-31053	288	290		124			162		no
5-St Pre	10	IL00-8530	280			<b>124</b>			150		no
5-St Pre	11	058RA1-5-6-1	<b>276</b>			139			150	156	no
5-St Pre	12	059A1-2-6-4	278	288	290	139	158	161	150		no
5-St Pre	13	0527A1-9-9-2	278			139			150		no
5-St Pre	14	0570A1-2-58	270	288	290	161			<b>152</b>	156	no
5-St Pre	15	05219A1-9-10	278			139			150		no
5-St Pre	16	OH06-228-73	272			137			158		no
5-St Pre	17	OH06-158-50	271			137			150		no
5-St Pre	18	OH06-159-6	271			<b>124</b>			150		no
5-St Pre	19	OH06-95-15	nd			nd			150		no
5-St Pre	20	Malabar	271			155			150		no
5-St Pre	21	KY02C-2219-04	278	280		139			156		no
5-St Pre	22	KY02C-1004-32	270	282	284	137			156	158	no
5-St Pre	23	KY03C-1192-18	271			131			156		no
5-St Pre	24	KY03C-1237-39	271			131			156		no
5-St Pre	25	Pembroke	271			133			156		no

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# FHB QTLs

2010

Nursery	Entry	Sample Name											<i>Fhb 5A</i>			
			<b>gwm 304</b>	<b>gwm 304</b>	<b>wmc 705</b>	<b>wmc 705</b>	<b>wmc 705</b>	<b>barc 117</b>	<b>barc 117</b>	<b>barc 186</b>	<b>barc 186</b>	<b>gwm 156</b>	<b>gwm 156</b>	<b>Fhb 5A Ernie</b>	<b>Ning 7840</b>	
5-St Adv	1	MO080864	198		135	162	164	217	<b>221</b>	<b>203</b>		283	<b>312</b>	no	no	
5-St Adv	2	MO081320	198	<b>220</b>	<b>135</b>	162	164	217	<b>221</b>	<b>203</b>			<b>312</b>	het?	no	
5-St Adv	3	MO081378	198		162	164		217		<b>203</b>			<b>312</b>	no	no	
5-St Adv	4	MO081652	198		162	164		217		<b>203</b>		283	318	no	no	
5-St Adv	5	Bess	198		162	164		217		<b>203</b>			<b>312</b>	no	no	
5-St Adv	6	IL06-7034	198		160	162		217		<b>203</b>			318	no	no	
5-St Adv	7	IL06-13072	198		160	162		217		<b>203</b>			292	no	no	
5-St Adv	8	IL06-13721	198		162	164		217		<b>203</b>			316	no	no	
5-St Adv	9	IL06-14262	211		131			226		<b>212</b>			<b>312</b>	no	no	
5-St Adv	10	IL00-8530	<b>220</b>		<b>135</b>			<b>221</b>		<b>203</b>			<b>312</b>	yes	no	
5-St Adv	11	0175A1-31-4-3	<b>216</b>		133	139		<b>221</b>		<b>203</b>	<b>212</b>	283		no	no	
5-St Adv	12	053A1-2-5-3	198		162	164		217		<b>203</b>			283	no	no	
5-St Adv	13	0527A1-9-9-4	<b>216</b>	<b>220</b>	<b>135</b>			<b>221</b>		<b>203</b>	<b>212</b>	283	<b>312</b>	het?	no	
5-St Adv	14	0570A1-2-39-5	<b>220</b>		<b>135</b>			<b>221</b>		<b>203</b>			283	yes?	no	
5-St Adv	15	05219A1-9-2	201		139			217		<b>203</b>			<b>312</b>	316	no	no
5-St Adv	16	OH06-180-57	<b>216</b>		nd			<b>221</b>		<b>212</b>			283	no	no	
5-St Adv	17	OH06-190-29	199		133			217		<b>203</b>			292	no	no	
5-St Adv	18	OH06-197-61	<b>216</b>		nd			<b>221</b>		<b>212</b>			283	no	no	
5-St Adv	19	OH05-101-1	198		139	160	162	217		<b>203</b>	<b>212</b>	292	<b>312</b>	no	no	
5-St Adv	20	Malabar	<b>220</b>		<b>135</b>			<b>221</b>		<b>203</b>			283	yes?	no	
5-St Adv	21	KY02C-1058-02	198		160	162		217		<b>203</b>			283	no	no	
5-St Adv	22	KY02C-1114-03	198		133	162	164	217		<b>203</b>			285	no	no	
5-St Adv	23	KY03C-1192-40	198		162	164		217		<b>203</b>			283	292	no	no
5-St Adv	24	KY03C-1136-07	198		160	162		217		<b>203</b>			283	no	no	
5-St Adv	25	Pembroke	198		162	164		217		<b>203</b>			283	no	no	
5-St Pre	1	MO080103	198		162	164		217		<b>203</b>			318	no	no	
5-St Pre	2	MO080422	198	211	137	162	164	217	<b>221</b>	<b>203</b>	<b>212</b>	<b>312</b>		no	no	
5-St Pre	3	MO081535	211		137			<b>221</b>		<b>203</b>	<b>212</b>	<b>312</b>		no	no	
5-St Pre	4	MO081699	198	<b>216</b>	162	164		217	<b>221</b>	<b>203</b>	<b>212</b>	318		no	no	
5-St Pre	5	Bess	198		162	164		217		<b>203</b>			<b>312</b>	no	no	
5-St Pre	6	IL06-7550	198		162	164		217		<b>203</b>			283	no	no	
5-St Pre	7	IL06-25634	198		162	164		217		<b>203</b>			316	no	no	
5-St Pre	8	IL06-23571	214		133			224		<b>212</b>			285	no	no	
5-St Pre	9	IL06-31053	198		162	164		217		<b>203</b>			<b>312</b>	no	no	
5-St Pre	10	IL00-8530	<b>220</b>		<b>135</b>			<b>221</b>		<b>203</b>			<b>312</b>	no	no	
5-St Pre	11	058RA1-5-6-1	201		135	139		217	<b>221</b>	<b>203</b>			<b>312</b>	no	no	
5-St Pre	12	059A1-2-6-4	211		139			<b>221</b>		<b>212</b>			<b>312</b>	no	no	
5-St Pre	13	0527A1-9-9-2	<b>216</b>		nd			<b>221</b>		<b>212</b>			<b>312</b>	no	no	
5-St Pre	14	0570A1-2-58	<b>220</b>		<b>135</b>			<b>221</b>		<b>203</b>			283	yes?	no	
5-St Pre	15	05219A1-9-10	201		139			217		<b>203</b>			283	<b>312</b>	no	no
5-St Pre	16	OH06-228-73	nd		139			217		<b>212</b>			<b>312</b>	no	no	
5-St Pre	17	OH06-158-50	198		162	164		217		<b>203</b>			<b>312</b>	no	no	
5-St Pre	18	OH06-159-6	198		162	164		217		<b>203</b>			<b>312</b>	no	no	
5-St Pre	19	OH06-95-15	198		162	164		217		<b>203</b>		292	<b>312</b>	no	no	
5-St Pre	20	Malabar	<b>220</b>		<b>135</b>			<b>221</b>		<b>203</b>			283	yes?	no	
5-St Pre	21	KY02C-2219-04	198		<b>169</b>	162		217		<b>203</b>			292	no	no	
5-St Pre	22	KY02C-1004-32	198	<b>220</b>	<b>135</b>	162	164	217	<b>221</b>	<b>203</b>			283	<b>312</b>	het?	no
5-St Pre	23	KY03C-1192-18	198		162	164		217		<b>203</b>			283	no	no	
5-St Pre	24	KY03C-1237-39	214		133			224		<b>212</b>			318	no	no	
5-St Pre	25	Pembroke	198		162	164		217		<b>203</b>			283	no	no	

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

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Target alleles are in **bold or italics**

## Leaf, Stripe & Stem Rusts

2010

Nursery	Entry	Sample Name	Sr2	wmc	wmc	wmc	Sr36	barc	barc	Sr24/	ventriup	Yr17/	CsLv	CsLv	Lr34/
				477	477	477		71	71	Lr24		Lr37/		34	
5-St Adv	1	MO080864	no	167			no	112		no	<b>256</b>	<b>yes</b>	235		no
5-St Adv	2	MO081320	no	167			no	112		no		no	235		no
5-St Adv	3	MO081378	no	167			no	112		no		no	235		no
5-St Adv	4	MO081652	no	163	167		no	104	112	no		no	235		no
5-St Adv	5	Bess	no	167			no	112		no		no	235		no
5-St Adv	6	IL06-7034	no	163			no	104		no		no	235		no
5-St Adv	7	IL06-13072	no	165			no	92		no		no	235		no
5-St Adv	8	IL06-13721	no	165			no	92		no		no	235		no
5-St Adv	9	IL06-14262	no	163			no	104		no		no	235		no
5-St Adv	10	IL00-8530	no	167			no	104		no		no	235		no
5-St Adv	11	0175A1-31-4-3	no	160	167	<b>185</b>	<b>het</b>	104	112	no		no	235		no
5-St Adv	12	053A1-2-5-3	no	160	165		no	104		no	<b>256</b>	<b>yes</b>	235		no
5-St Adv	13	0527A1-9-9-4	no	165	167		no	104		no	<b>256</b>	<b>yes</b>	235		no
5-St Adv	14	0570A1-2-39-5	no	<b>185</b>			<b>yes</b>	104		no		no	235		no
5-St Adv	15	05219A1-9-2	no	<b>185</b>			<b>yes</b>	104		no		no	235		no
5-St Adv	16	OH06-180-57	no	167			no	104		no		no	235		no
5-St Adv	17	OH06-190-29	no	165			no	104		no		no	235		no
5-St Adv	18	OH06-197-61	no	167			no	104		no		no	235		no
5-St Adv	19	OH05-101-1	no	165			no	104		no		no	235		no
5-St Adv	20	Malabar	no	160			no	104		no		no	235		no
5-St Adv	21	KY02C-1058-02	no	165	167		no	104		no		no	235		no
5-St Adv	22	KY02C-1114-03	no	160	167		no	104	112	no		no	235		no
5-St Adv	23	KY03C-1192-40	no	160	165		no	104		no		no	235		no
5-St Adv	24	KY03C-1136-07	no	160			no	104		no		no	235		no
5-St Adv	25	Pembroke	no	160			no	104		no		no	235		no
5-St Pre	1	MO080103	no	163			no	104		no		no	235		no
5-St Pre	2	MO080422	no	167			no	112		no		no	235		no
5-St Pre	3	MO081535	no	167			no	112		no		no	235		no
5-St Pre	4	MO081699	no	163	167		no	104	112	no		no	<b>154</b>	235	<b>yes</b>
5-St Pre	5	Bess	no	167			no	112		no		no	235		no
5-St Pre	6	IL06-7550	no	165			no	92		no		no	235		no
5-St Pre	7	IL06-25634	no	165			no	104		no		no	235		no
5-St Pre	8	IL06-23571	no	160			no	104		no		no	235		no
5-St Pre	9	IL06-31053	no	167			no	<b>87</b>	104	<b>yes</b>		no	235		no
5-St Pre	10	IL00-8530	no	167			no	104		no		no	235		no
5-St Pre	11	058RA1-5-6-1	no	163	<b>185</b>		<b>het</b>	112		no		no	235		no
5-St Pre	12	059A1-2-6-4	no	<b>185</b>			<b>yes</b>	104		no		no	235		no
5-St Pre	13	0527A1-9-9-2	no	165			no	112		no	<b>256</b>	<b>yes</b>	235		no
5-St Pre	14	0570A1-2-58	no	<b>185</b>			<b>yes</b>	104		no		no	235		no
5-St Pre	15	05219A1-9-10	no	<b>185</b>			<b>yes</b>	104		no	<b>256</b>	<b>yes</b>	235		no
5-St Pre	16	OH06-228-73	no	165			no	104		no		no	235		no
5-St Pre	17	OH06-158-50	no	167			no	104		no		no	235		no
5-St Pre	18	OH06-159-6	no	163			no	104		no	<b>256</b>	<b>yes</b>	235		no
5-St Pre	19	OH06-95-15	no	165			no	104		no	<b>256?</b>	<b>yes?</b>	235		no
5-St Pre	20	Malabar	no	160			no	104		no		no	235		no
5-St Pre	21	KY02C-2219-04	no	165			no	104		no		no	235		no
5-St Pre	22	KY02C-1004-32	no	160	167		no	104	112	no		no	235		no
5-St Pre	23	KY03C-1192-18	no	160			no	104		no		no	235		no
5-St Pre	24	KY03C-1237-39	no	167			no	104		no		no	235		no
5-St Pre	25	Pembroke	no	160			no	104		no		no	235		no

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Target alleles are in **bold or italics**

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

2010

Nursery	Entry	Sample Name	scm9	1RS	cfcd132	H13	cfa2153	cfa2153	H9	Bdv	Bdv	Bdv2/3
5-St Adv	1	MO080864		non-1RS	114	no	219		no	184		no
5-St Adv	2	MO081320		non-1RS	114	no	219		no	184		no
5-St Adv	3	MO081378		non-1RS	114	no	219		no	184		no
5-St Adv	4	MO081652		non-1RS	114	no	194		no	184		no
5-St Adv	5	Bess		non-1RS	114	no	219		no	184		no
5-St Adv	6	IL06-7034		non-1RS	114	no	201		no	184		no
5-St Adv	7	IL06-13072		non-1RS	114	no	191		no	184		no
5-St Adv	8	IL06-13721		non-1RS	114	no	194	201	no	184		no
5-St Adv	9	IL06-14262		non-1RS	114	no	194		no	184		no
5-St Adv	10	IL00-8530		non-1RS	114	no	194		no	184		no
5-St Adv	11	0175A1-31-4-3	<b>206</b>	<b>1RS:1BL</b>	114	no	194		no	184		no
5-St Adv	12	053A1-2-5-3		non-1RS	114	no	201		no	<b>199</b>		<b>yes</b>
5-St Adv	13	0527A1-9-9-4	<b>206</b>	<b>1RS:1BL</b>	114	no	<b>179</b>	201	<b>yes</b>	184	<b>199</b>	<b>het</b>
5-St Adv	14	0570A1-2-39-5	<b>206</b>	<b>1RS:1BL</b>	114	no	201		no	<b>199</b>		<b>yes</b>
5-St Adv	15	05219A1-9-2	<b>206</b>	<b>1RS:1BL</b>	114	no	201		no	<b>199</b>		<b>yes</b>
5-St Adv	16	OH06-180-57		non-1RS	114	no	194	201	no	184		no
5-St Adv	17	OH06-190-29		non-1RS	114	no	201		no	184		no
5-St Adv	18	OH06-197-61		non-1RS	114	no	194	211	no	184		no
5-St Adv	19	OH05-101-1		non-1RS	114	no	201		no	184		no
5-St Adv	20	Malabar		non-1RS	114	no	194		no	184		no
5-St Adv	21	KY02C-1058-02	<b>206</b>	<b>1RS:1BL</b>	114	no	194		no	184		no
5-St Adv	22	KY02C-1114-03	<b>206</b>	<b>1RS:1BL</b>	114	no	197	201	no	184		no
5-St Adv	23	KY03C-1192-40		non-1RS	114	no	191	201	no	184		no
5-St Adv	24	KY03C-1136-07	<b>206</b>	<b>1RS:1BL</b>	114	no	201		no	184		no
5-St Adv	25	Pembroke		non-1RS	114	no	201		no	184		no
5-St Pre	1	MO080103		non-1RS	114	no	194		no	184		no
5-St Pre	2	MO080422	<b>206</b>	<b>1RS:1BL</b>	114	no	194	219	no	184		no
5-St Pre	3	MO081535		non-1RS	114	no	203	219	no	184		no
5-St Pre	4	MO081699		non-1RS	114	no	194		no	184		no
5-St Pre	5	Bess		non-1RS	114	no	219		no	184		no
5-St Pre	6	IL06-7550		non-1RS	114	no	201		no	184		no
5-St Pre	7	IL06-25634		non-1RS	114	no	201		no	184		no
5-St Pre	8	IL06-23571		non-1RS	114	no	199		no	184		no
5-St Pre	9	IL06-31053		non-1RS	114	no	194		no	184		no
5-St Pre	10	IL00-8530		non-1RS	114	no	194		no	184		no
5-St Pre	11	058RA1-5-6-1	<b>206</b>	<b>1RS:1BL</b>	114	no	201		no	184	<b>199</b>	<b>het</b>
5-St Pre	12	059A1-2-6-4	<b>206</b>	<b>1RS:1BL</b>	114	no	194	201	no	<b>199</b>		<b>yes</b>
5-St Pre	13	0527A1-9-9-2	<b>206</b>	<b>1RS:1BL</b>	114	no	181		no	<b>199</b>		<b>yes</b>
5-St Pre	14	0570A1-2-58	<b>206</b>	<b>1RS:1BL</b>	114	no	201		no	<b>199</b>		<b>yes</b>
5-St Pre	15	05219A1-9-10		non-1RS	114	no	194	201	no	<b>199</b>		<b>yes</b>
5-St Pre	16	OH06-228-73		non-1RS	114	no	194	201	no	184		no
5-St Pre	17	OH06-158-50		non-1RS	114	no	211		no	184		no
5-St Pre	18	OH06-159-6		non-1RS	114	no	201		no	184		no
5-St Pre	19	OH06-95-15		non-1RS	114	no	201		no	184		no
5-St Pre	20	Malabar		non-1RS	114	no	194		no	184		no
5-St Pre	21	KY02C-2219-04	<b>206</b>	<b>1RS:1BL</b>	114	no	194		no	184		no
5-St Pre	22	KY02C-1004-32		non-1RS	114	no	194	205	no	184		no
5-St Pre	23	KY03C-1192-18		non-1RS	114	no	211		no	184		no
5-St Pre	24	KY03C-1237-39		non-1RS	114	no	205		no	184		no
5-St Pre	25	Pembroke		non-1RS	114	no	201		no	184		no

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## Quality Traits

2010

Nursery	Entry	Sample Name	Bx7oe	Bx7oe	Bx7 over-expressing	Umn25	Umn25	UMN26	UMN26	Glu-D1	Umn19	Umn19	Glu-A1
5-St Adv	1	MO080864	404		no		295		409	2+12		359	Ax1 or null
5-St Adv	2	MO081320	404		no		295	392	409	het?		359	Ax1 or null
5-St Adv	3	MO081378	404		no	277		392		5+10		359	Ax1 or null
5-St Adv	4	MO081652	404		no	277		392		5+10	341		Ax2*
5-St Adv	5	Bess	404		no		295		409	2+12		359	Ax1 or null
5-St Adv	6	IL06-7034	404		no	277		392		5+10	341		Ax2*
5-St Adv	7	IL06-13072	404		no	277		392		5+10	341		Ax2*
5-St Adv	8	IL06-13721	404		no	277		392		5+10	341		Ax2*
5-St Adv	9	IL06-14262	404		no	277		392		5+10	341		Ax2*
5-St Adv	10	IL00-8530	404		no	277		392	409	het?	341		Ax2*
5-St Adv	11	0175A1-31-4-3	404		no		295	392	409	het?		359	Ax1 or null
5-St Adv	12	053A1-2-5-3	404		no	277		392		5+10	341		Ax2*
5-St Adv	13	0527A1-9-9-4	404		no		295	392	409	het?		359	Ax1 or null
5-St Adv	14	0570A1-2-39-5	404		no	277		392		5+10		359	Ax1 or null
5-St Adv	15	05219A1-9-2		448	yes	277		392		5+10		359	Ax1 or null
5-St Adv	16	OH06-180-57	404		no		295		409	2+12		359	Ax1 or null
5-St Adv	17	OH06-190-29	404		no		295		409	2+12		359	Ax1 or null
5-St Adv	18	OH06-197-61		448	yes		295		409	2+12		359	Ax1 or null
5-St Adv	19	OH05-101-1	404		no	277		392		5+10		359	Ax1 or null
5-St Adv	20	Malabar	404		no	277	295	392	409	het		359	Ax1 or null
5-St Adv	21	KY02C-1058-02	404		no	277		392		5+10	341		Ax2*
5-St Adv	22	KY02C-1114-03	404		no		295	392	409	het?	341		Ax2*
5-St Adv	23	KY03C-1192-40		448	yes	277		392		5+10		359	Ax1 or null
5-St Adv	24	KY03C-1136-07	404		no		295		409	2+12		359	Ax1 or null
5-St Adv	25	Pembroke		448	yes		295		409	2+12	341		Ax2*
5-St Pre	1	MO080103	404		no	277		392		5+10	341		Ax2*
5-St Pre	2	MO080422	404		no	277	295	392	409	het		359	Ax1 or null
5-St Pre	3	MO081535	404		no		295		409	2+12		359	Ax1 or null
5-St Pre	4	MO081699	404		no	277	295	392	409	het	341	359	het
5-St Pre	5	Bess	404		no		295		409	2+12		359	Ax1 or null
5-St Pre	6	IL06-7550	404		no		295		409	2+12	341		Ax2*
5-St Pre	7	IL06-25634	404		no		295		409	2+12		359	Ax1 or null
5-St Pre	8	IL06-23571	404		no		295		409	2+12	341		Ax2*
5-St Pre	9	IL06-31053	404		no	277		392		5+10		359	Ax1 or null
5-St Pre	10	IL00-8530	404		no	277		392		5+10	341		Ax2*
5-St Pre	11	058RA1-5-6-1	404	448	het		295		409	2+12		359	Ax1 or null
5-St Pre	12	059A1-2-6-4		448	yes		295	392	409	het?		359	Ax1 or null
5-St Pre	13	0527A1-9-9-2	404		no		295		409	2+12		359	Ax1 or null
5-St Pre	14	0570A1-2-58	404		no		295		409	2+12		359	Ax1 or null
5-St Pre	15	05219A1-9-10	404	448	het	277		392	409	het?		359	Ax1 or null
5-St Pre	16	OH06-228-73	404		no		295		409	2+12	341		Ax2*
5-St Pre	17	OH06-158-50		448	yes		295		409	2+12		359	Ax1 or null
5-St Pre	18	OH06-159-6		448	yes	277	295	392	409	het		359	Ax1 or null
5-St Pre	19	OH06-95-15	404		no	277		392		5+10	341		Ax2*
5-St Pre	20	Malabar	404		no	277	295			het		359	Ax1 or null
5-St Pre	21	KY02C-2219-04	404		no	277		392		5+10	341		Ax2*
5-St Pre	22	KY02C-1004-32	404	448	het	277		392		5+10	341	359	het
5-St Pre	23	KY03C-1192-18		448	yes	277		392		5+10		359	Ax1 or null
5-St Pre	24	KY03C-1237-39	404		no		295		409	2+12	341		Ax2*
5-St Pre	25	Pembroke		448	yes		295		409	2+12	341		Ax2*

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All numbers are size in base pairs of amplified fragments

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

## **2010 Mason-Dixon**

### **Entry List**

<b>Nursery</b>	<b>Entry</b>	<b>Sample Name</b>	<b>Pedigree</b>	<b>Source</b>
Mason-Dixon	1	Pioneer25R47		
Mason-Dixon	2	Branson		
Mason-Dixon	3	Pioneer25R15		
Mason-Dixon	4	Tribute		
Mason-Dixon	5	KY02C-1058-02		
Mason-Dixon	6	KY02C-1114-03		
Mason-Dixon	7	KY03C-1192-40		
Mason-Dixon	8	KY03C-1136-07		
Mason-Dixon	9	KY03C-1192-09		
Mason-Dixon	10	KY03C-1237-33		
Mason-Dixon	11	KY02C-2219-04		
Mason-Dixon	12	KY02C-1004-32		
Mason-Dixon	13	KY03C-1192-18		
Mason-Dixon	14	KY03C-1136-11		
Mason-Dixon	15	KY03C-1136-12		
Mason-Dixon	16	KY02C-1002-06		
Mason-Dixon	17	KY02C-2200-03		
Mason-Dixon	18	KY03C-1136-15		
Mason-Dixon	19	KY03C-1237-32		
Mason-Dixon	20	KY02C-2200-15		
Mason-Dixon	21	KY03C-1237-39		
Mason-Dixon	22	KY02C-2200-04		
Mason-Dixon	23	MD03-69-15		
Mason-Dixon	24	MD03W91-09-2		
Mason-Dixon	25	MD03W91-09-6		
Mason-Dixon	26	MD03W91-09-8		
Mason-Dixon	27	MD03W59-09-9		
Mason-Dixon	28	MD03W-09-1		
Mason-Dixon	29	MD03W61-09-2		
Mason-Dixon	30	MD03W61-09-7		
Mason-Dixon	31	MD03W61-09-11		
Mason-Dixon	32	MD03W61-09-12		
Mason-Dixon	33	MD03W61-09-16		
Mason-Dixon	34	MD03W62-09-1		
Mason-Dixon	35	MD03W62-09-6		
Mason-Dixon	36	MD03W665-09-1		
Mason-Dixon	37	MD03W665-09-2		
Mason-Dixon	38	MD03W665-09-6		
Mason-Dixon	39	MD02W135-09-2		
Mason-Dixon	40	MD02W135-08-10		

## **2010 Mason-Dixon**

### **Entry List**

<b>Nursery</b>	<b>Entry</b>	<b>Sample Name</b>	<b>Pedigree</b>	<b>Source</b>
Mason-Dixon	41	MD02W17-08-3		
Mason-Dixon	42	MD02W17-08-6		
Mason-Dixon	43	VA06W-412		
Mason-Dixon	44	VA07W-138		
Mason-Dixon	45	VA06W-558		
Mason-Dixon	46	VA05W-70		
Mason-Dixon	47	VA06W-44		
Mason-Dixon	48	VA06W-146		
Mason-Dixon	49	VA08W-92		
Mason-Dixon	50	VA08W-165		
Mason-Dixon	51	VA08W-176		
Mason-Dixon	52	VA08W-193		
Mason-Dixon	53	VA08W-196		
Mason-Dixon	54	VA08W-223		
Mason-Dixon	55	VA08W-232		
Mason-Dixon	56	VA08W-286		
Mason-Dixon	57	VA08W-294		
Mason-Dixon	58	VA08W-295		
Mason-Dixon	59	VA07W-569		
Mason-Dixon	60	VA07W-594		
Mason-Dixon	61	VA07W-601		
Mason-Dixon	62	VA06W-612		
Mason-Dixon	63	ARS05-0277		
Mason-Dixon	64	ARS05-0282		
Mason-Dixon	65	ARS05-0286		
Mason-Dixon	66	ARS05-0426		
Mason-Dixon	67	ARS05-0443		
Mason-Dixon	68	ARS05-0444		
Mason-Dixon	69	ARS07-0095		
Mason-Dixon	70	ARS07-0203		
Mason-Dixon	71	ARS07-0211		
Mason-Dixon	72	ARS07-0221		
Mason-Dixon	73	ARS07-0245		
Mason-Dixon	74	ARS07-0250		
Mason-Dixon	75	ARS07-0331		
Mason-Dixon	76	ARS07-0386		
Mason-Dixon	77	ARS07-0407		
Mason-Dixon	78	ARS07-0543		
Mason-Dixon	79	ARS07-0607		
Mason-Dixon	80	ARS07-0723		
Mason-Dixon	81	ARS07-0740		
Mason-Dixon	82	ARS07-1226		

## 2010 Mason-Dixon

### Summary of all Markers

Nursery	Entry	Sample Name	Rht1- B1b	Rht2- D1b	Rht8	Ppd-D1a	Fhb		Fhb 2DL-		Fhb 5A Ernie	Fhb 5A Ning7840
							Ernie	3Bc	Wuhan1/ W14	Ernie		
Mason-Dixon	1	Pioneer25R47	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	2	Branson	<b>yes</b>	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	3	Pioneer25R15	<b>yes</b>	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	4	Tribute	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	5	KY02C-1058-02	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	6	KY02C-1114-03	no	<b>yes</b>	no	<b>het</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	7	KY03C-1192-40	<b>het</b>	<b>het</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	8	KY03C-1136-07	no	<b>yes</b>	no	<b>yes</b>	no	<b>yes</b>	no	no	no	<i>no</i>
Mason-Dixon	9	KY03C-1192-09	no	<b>yes</b>	no	<b>yes</b>	no	no	no	<b>yes?</b>	no	<i>no</i>
Mason-Dixon	10	KY03C-1237-33	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	11	KY02C-2219-04	no	<b>het</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	12	KY02C-1004-32	<b>yes</b>	no	<b>het</b>	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	13	KY03C-1192-18	no	<b>yes</b>	<b>yes</b>	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	14	KY03C-1136-11	<b>het</b>	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	15	KY03C-1136-12	no	<b>yes</b>	no	<b>yes</b>	no	<b>yes?</b>	no	no	no	<i>no</i>
Mason-Dixon	16	KY02C-1002-06	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	17	KY02C-2200-03	<b>yes</b>	no	<b>yes</b>	<b>yes</b>	no	<b>yes?</b>	no	no	no	<i>no</i>
Mason-Dixon	18	KY03C-1136-15	no	<b>yes</b>	no	<b>yes</b>	<b>yes</b>	no	no	no	no	<i>no</i>
Mason-Dixon	19	KY03C-1237-32	<b>yes</b>	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	20	KY02C-2200-15	<b>yes</b>	no	<b>yes</b>	<b>yes</b>	no	<b>yes?</b>	no	no	no	<i>no</i>
Mason-Dixon	21	KY03C-1237-39	<b>yes</b>	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	22	KY02C-2200-04	<b>yes</b>	no	<b>yes</b>	<b>yes</b>	<b>yes</b>	<b>yes?</b>	no	no	no	<i>no</i>
Mason-Dixon	23	MD03-69-15	no	<b>yes</b>	no	<b>yes</b>	<b>yes</b>	no	<b>het?</b>	no	no	<i>no</i>
Mason-Dixon	24	MD03W91-09-2	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	25	MD03W91-09-6	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	26	MD03W91-09-8	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	27	MD03W59-09-9	<b>yes</b>	no	<b>het</b>	<b>yes</b>	<b>het</b>	no	no	no	no	<i>no</i>
Mason-Dixon	28	MD03W-09-1	no	<b>yes</b>	no	<b>yes</b>	<b>yes</b>	no	no	no	no	<i>no</i>
Mason-Dixon	29	MD03W61-09-2	no	nd	no	<b>yes</b>	<b>yes</b>	no	no	no	no	<i>no</i>
Mason-Dixon	30	MD03W61-09-7	no	<b>yes</b>	no	<b>yes</b>	<b>yes</b>	no	no	no	no	<i>no</i>
Mason-Dixon	31	MD03W61-09-11	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	32	MD03W61-09-12	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	33	MD03W61-09-16	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	34	MD03W62-09-1	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	35	MD03W62-09-6	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	36	MD03W665-09-1	no	nd	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	37	MD03W665-09-2	no	nd	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	38	MD03W665-09-6	nd	nd	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	39	MD02W135-09-2	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	40	MD02W135-08-10	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

"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 was 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**



## 2010 Mason-Dixon

### Summary of all Markers

Nursery	Entry	Sample Name	Rht1- B1b	Rht2- D1b	Rht8	Ppd-D1a	Fhb		Fhb 2DL-		Fhb 5A Ernie	Fhb 5A Ning7840
							Ernie	3Bc	Wuhan1/ W14	Ernie		
Mason-Dixon	41	MD02W17-08-3	no	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	42	MD02W17-08-6	no	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	43	VA06W-412	no	nd	no	<b>het</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	44	VA07W-138	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	45	VA06W-558	<b>yes</b>	no	no	no	no	no	no	<b>yes?</b>	no	<i>no</i>
Mason-Dixon	46	VA05W-70	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	47	VA06W-44	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	48	VA06W-146	<b>yes</b>	no	no	<b>yes</b>	no	no	no	<b>?</b>	no	<i>no</i>
Mason-Dixon	49	VA08W-92	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	50	VA08W-165	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	51	VA08W-176	no	<b>yes</b>	no	no	no	no	no	<b>het?</b>	no	<i>no</i>
Mason-Dixon	52	VA08W-193	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	53	VA08W-196	no	<b>yes</b>	no	no	no	no	no	<b>yes</b>	no	<i>no</i>
Mason-Dixon	54	VA08W-223	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	55	VA08W-232	no	<b>yes</b>	no	<b>yes</b>	no	no	no	<b>yes</b>	no	<i>no</i>
Mason-Dixon	56	VA08W-286	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	57	VA08W-294	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	58	VA08W-295	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	59	VA07W-569	no	<b>het</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	60	VA07W-594	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	61	VA07W-601	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	62	VA06W-612	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	63	ARS05-0277	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	64	ARS05-0282	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	65	ARS05-0286	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	66	ARS05-0426	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	67	ARS05-0443	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	68	ARS05-0444	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	69	ARS07-0095	<b>het</b>	no	no	no	no	no	no	<b>het</b>	no	<i>no</i>
Mason-Dixon	70	ARS07-0203	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	71	ARS07-0211	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	72	ARS07-0221	no	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	73	ARS07-0245	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	74	ARS07-0250	no	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	75	ARS07-0331	<b>yes</b>	no	<b>het</b>	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	76	ARS07-0386	no	no	<b>yes</b>	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	77	ARS07-0407	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	78	ARS07-0543	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	79	ARS07-0607	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
Mason-Dixon	80	ARS07-0723	no	<b>het</b>	<b>het</b>	no	no	no	no	<b>het?</b>	no	<i>no</i>
Mason-Dixon	81	ARS07-0740	<b>yes</b>	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
Mason-Dixon	82	ARS07-1226	no	<b>yes</b>	no	<b>yes</b>	no	no	no	<b>yes</b>	no	<i>no</i>

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

"nd" = not determined or lack of amplification

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Target alleles are in **bold or italics**

## 2010 Mason-Dixon

### Summary of all Markers

Nursery	Entry	Sample Name	Yr17/ Lr34/ Sr24/ Lr37/ Yr18/ Sr2 Sr36 Lr24 Sr38 Pm38					1RS	H13	H9	Bdv 2/3	Bx7 over- expressing	Glu-D1	Glu-A1
			Sr2	Sr36	Lr24	Sr38	Pm38							
Mason-Dixon	1	Pioneer25R47	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	2	Branson	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	3	Pioneer25R15	no	no	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	4	Tribute	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	5	KY02C-1058-02	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	6	KY02C-1114-03	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	7	KY03C-1192-40	no	no	no	no	no	non-1RS	no	no	no	<b>het</b>	<b>het?</b>	<b>Ax1 or null</b>
Mason-Dixon	8	KY03C-1136-07	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	9	KY03C-1192-09	no	no	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	10	KY03C-1237-33	no	no	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	11	KY02C-2219-04	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	12	KY02C-1004-32	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	13	KY03C-1192-18	no	no	no	no	no	non-1RS	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	14	KY03C-1136-11	no	no	no	no	no	non-1RS	no	no	no	no	<b>het</b>	<b>Ax1 or null</b>
Mason-Dixon	15	KY03C-1136-12	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	16	KY02C-1002-06	no	<b>yes</b>	no	no	no	<b>1RS:1AL</b>	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	17	KY02C-2200-03	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	18	KY03C-1136-15	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	19	KY03C-1237-32	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	20	KY02C-2200-15	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	21	KY03C-1237-39	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	22	KY02C-2200-04	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	23	MD03-69-15	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	24	MD03W91-09-2	no	no	<b>yes</b>	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	25	MD03W91-09-6	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	26	MD03W91-09-8	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	27	MD03W59-09-9	no	no	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	28	MD03W-09-1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>het</b>	<b>Ax1 or null</b>
Mason-Dixon	29	MD03W61-09-2	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	30	MD03W61-09-7	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	31	MD03W61-09-11	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	32	MD03W61-09-12	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	<b>het</b>	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	33	MD03W61-09-16	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	34	MD03W62-09-1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	<b>yes</b>	<b>5+10</b>	<b>het</b>
Mason-Dixon	35	MD03W62-09-6	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	36	MD03W665-09-1	no	<b>yes</b>	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	37	MD03W665-09-2	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	38	MD03W665-09-6	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	39	MD02W135-09-2	no	no	no	no	no	<b>1RS:1BL, 1RS:1AL</b>	no	nd	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	40	MD02W135-08-10	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>2+12</b>	<b>Ax2*</b>

"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 was 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**

## 2010 Mason-Dixon

### Summary of all Markers

Nursery	Entry	Sample Name	Yr17/ Lr34/ Sr24/ Lr37/ Yr18/ Sr2 Sr36 Lr24 Sr38 Pm38					1RS	H13	H9	Bdv 2/3	Bx7 over- expressing	Glu-D1	Glu-A1
			Sr2	Sr36	Lr24	Sr38	Pm38							
Mason-Dixon	41	MD02W17-08-3	no	no	no	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	42	MD02W17-08-6	no	no	no	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	43	VA06W-412	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	44	VA07W-138	no	no	no	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	45	VA06W-558	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	46	VA05W-70	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	47	VA06W-44	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	48	VA06W-146	no	no	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	49	VA08W-92	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	50	VA08W-165	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	51	VA08W-176	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	52	VA08W-193	no	no	no	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	53	VA08W-196	no	no	no	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>het</b>	<b>het</b>
Mason-Dixon	54	VA08W-223	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>het</b>
Mason-Dixon	55	VA08W-232	no	no	no	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>2+12</b>	<b>het</b>
Mason-Dixon	56	VA08W-286	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	57	VA08W-294	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	58	VA08W-295	no	no	<b>yes</b>	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	59	VA07W-569	no	no	no	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>2+12</b>	<b>het</b>
Mason-Dixon	60	VA07W-594	no	<b>yes</b>	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	61	VA07W-601	no	<b>het</b>	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>het</b>
Mason-Dixon	62	VA06W-612	no	no	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	63	ARS05-0277	no	<b>het</b>	no	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	64	ARS05-0282	no	<b>yes</b>	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	65	ARS05-0286	no	<b>yes</b>	no	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
Mason-Dixon	66	ARS05-0426	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	67	ARS05-0443	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	68	ARS05-0444	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	69	ARS07-0095	no	no	no	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	70	ARS07-0203	no	<b>yes</b>	no	<b>yes</b>	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	71	ARS07-0211	no	<b>het</b>	no	<b>yes</b>	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	72	ARS07-0221	no	<b>yes</b>	no	<b>yes</b>	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>het</b>
Mason-Dixon	73	ARS07-0245	no	no	no	<b>yes</b>	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	74	ARS07-0250	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	no	<b>het</b>	<b>Ax2*</b>
Mason-Dixon	75	ARS07-0331	no	no	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>het</b>
Mason-Dixon	76	ARS07-0386	no	<b>yes</b>	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	77	ARS07-0407	no	<b>yes</b>	no	<b>yes</b>	no	non-1RS	<b>het</b>	no	no	no	<b>2+12</b>	<b>Ax2*</b>
Mason-Dixon	78	ARS07-0543	no	no	no	no	no	non-1RS	<b>yes</b>	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
Mason-Dixon	79	ARS07-0607	no	<b>yes</b>	no	no	no	non-1RS	<b>het</b>	no	no	no	<b>5+10</b>	<b>het</b>
Mason-Dixon	80	ARS07-0723	no	<b>yes</b>	<b>yes</b>	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
Mason-Dixon	81	ARS07-0740	no	<b>yes</b>	no	no	<b>yes</b>	non-1RS	no	no	no	no	<b>2+12</b>	<b>het</b>
Mason-Dixon	82	ARS07-1226	no	<b>yes</b>	<b>yes</b>	no	no	non-1RS	no	nd	no	no	<b>het</b>	<b>Ax2*</b>

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

"?" indicates that markers may not be diagnostic or data was 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**

## Dwarfing genes & Photoperiod insensitivity

2010

Nursery	Entry	Sample Name	Rht1K	Rht2K	Rht1-		gwm 261	gwm 261	gwm 261	Rht8	Ppd	Ppd	Ppd-D1a
					B1b	Rht2-D1b							
Mason-Dixon	1	Pioneer25R47	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	2	Branson	<b>Allele Y</b>	Allele X	yes	no	173			no	283		yes
Mason-Dixon	3	Pioneer25R15	<b>Allele Y</b>	Allele X	yes	no	201			no	283		yes
Mason-Dixon	4	Tribute	Allele X	<b>Allele Y</b>	no	yes	201			no		414	no
Mason-Dixon	5	KY02C-1058-02	Allele X	<b>Allele Y</b>	no	yes	201			no	283		yes
Mason-Dixon	6	KY02C-1114-03	Allele X	<b>Allele Y</b>	no	yes	163	173		no	283	414	het
Mason-Dixon	7	KY03C-1192-40	<b>Both Alleles</b>	<b>Both Alleles</b>	het	het	163	201		no	283		yes
Mason-Dixon	8	KY03C-1136-07	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	9	KY03C-1192-09	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	10	KY03C-1237-33	<b>Allele Y</b>	Allele X	yes	no	163			no		414	no
Mason-Dixon	11	KY02C-2219-04	Allele X	<b>Both Alleles</b>	no	het	201			no		414	no
Mason-Dixon	12	KY02C-1004-32	<b>Allele Y</b>	Allele X	yes	no	173	<b>192</b>	201	het	283		yes
Mason-Dixon	13	KY03C-1192-18	Allele X	<b>Allele Y</b>	no	yes	<b>192</b>			yes	283		yes
Mason-Dixon	14	KY03C-1136-11	<b>Both Alleles</b>	<b>Allele Y</b>	het	yes	163			no	283		yes
Mason-Dixon	15	KY03C-1136-12	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	16	KY02C-1002-06	<b>Allele Y</b>	Allele X	yes	no	201			no		414	no
Mason-Dixon	17	KY02C-2200-03	<b>Allele Y</b>	Allele X	yes	no	<b>192</b>			yes	283		yes
Mason-Dixon	18	KY03C-1136-15	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	19	KY03C-1237-32	<b>Allele Y</b>	Allele X	yes	no	201			no	283		yes
Mason-Dixon	20	KY02C-2200-15	<b>Allele Y</b>	Allele X	yes	no	<b>192</b>			yes	283		yes
Mason-Dixon	21	KY03C-1237-39	<b>Allele Y</b>	Allele X	yes	no	163	201		no	283		yes
Mason-Dixon	22	KY02C-2200-04	<b>Allele Y</b>	Allele X	yes	no	<b>192</b>			yes	283		yes
Mason-Dixon	23	MD03-69-15	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	24	MD03W91-09-2	Allele X	<b>Allele Y</b>	no	yes	173			no	283		yes
Mason-Dixon	25	MD03W91-09-6	Allele X	<b>Allele Y</b>	no	yes	173			no	283		yes
Mason-Dixon	26	MD03W91-09-8	Allele X	<b>Allele Y</b>	no	yes	173			no	283		yes
Mason-Dixon	27	MD03W59-09-9	<b>Allele Y</b>	Allele X	yes	no	<b>192</b>	201		het	283		yes
Mason-Dixon	28	MD03W-09-1	Allele X	<b>Allele Y</b>	no	yes	201			no	283		yes
Mason-Dixon	29	MD03W61-09-2	Allele X	nd	no	nd	201			no	283		yes
Mason-Dixon	30	MD03W61-09-7	Allele X	<b>Allele Y</b>	no	yes	163	201		no	283		yes
Mason-Dixon	31	MD03W61-09-11	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	32	MD03W61-09-12	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	33	MD03W61-09-16	Allele X	<b>Allele Y</b>	no	yes	163			no	283		yes
Mason-Dixon	34	MD03W62-09-1	Allele X	<b>Allele Y</b>	no	yes	201			no	283		yes
Mason-Dixon	35	MD03W62-09-6	Allele X	<b>Allele Y</b>	no	yes	201			no	283		yes
Mason-Dixon	36	MD03W665-09-1	Allele X	nd	no	nd	201			no	283		yes
Mason-Dixon	37	MD03W665-09-2	Allele X	nd	no	nd	201			no	283		yes
Mason-Dixon	38	MD03W665-09-6	nd	nd	nd	nd	201			no		414	no
Mason-Dixon	39	MD02W135-09-2	Allele X	<b>Allele Y</b>	no	yes	173			no		414	no
Mason-Dixon	40	MD02W135-08-10	Allele X	<b>Allele Y</b>	no	yes	201			no	283		yes

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

"nd" = not determined or lack of amplification

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Target alleles are in **bold or italics**

## Dwarfing genes & Photoperiod insensitivity

2010

Nursery	Entry	Sample Name	Rht1K	Rht2K	Rht1-		gwm 261	gwm 261	gwm 261	Rht8	Ppd	Ppd	Ppd-D1a
					B1b	Rht2-D1b							
Mason-Dixon	41	MD02W17-08-3	Allele X	Allele X	no	no	163			no	<b>283</b>		<b>yes</b>
Mason-Dixon	42	MD02W17-08-6	Allele X	Allele X	no	no	163			no	<b>283</b>		<b>yes</b>
Mason-Dixon	43	VA06W-412	Allele X	nd	no	nd	173	201		no	<b>283</b>	414	<b>het</b>
Mason-Dixon	44	VA07W-138	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no		414	no
Mason-Dixon	45	VA06W-558	<b>Allele Y</b>	Allele X	<b>yes</b>	no	173			no		414	no
Mason-Dixon	46	VA05W-70	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no		414	no
Mason-Dixon	47	VA06W-44	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173			no	<b>283</b>		<b>yes</b>
Mason-Dixon	48	VA06W-146	<b>Allele Y</b>	Allele X	<b>yes</b>	no	173			no	<b>283</b>		<b>yes</b>
Mason-Dixon	49	VA08W-92	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>		<b>yes</b>
Mason-Dixon	50	VA08W-165	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no		414	no
Mason-Dixon	51	VA08W-176	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173			no		414	no
Mason-Dixon	52	VA08W-193	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no		414	no
Mason-Dixon	53	VA08W-196	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	203		no		414	no
Mason-Dixon	54	VA08W-223	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>		<b>yes</b>
Mason-Dixon	55	VA08W-232	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>		<b>yes</b>
Mason-Dixon	56	VA08W-286	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163			no		414	no
Mason-Dixon	57	VA08W-294	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no		414	no
Mason-Dixon	58	VA08W-295	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no		414	no
Mason-Dixon	59	VA07W-569	Allele X	<b>Both Alleles</b>	no	<b>het</b>	173			no		414	no
Mason-Dixon	60	VA07W-594	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163	173		no		414	no
Mason-Dixon	61	VA07W-601	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163			no		414	no
Mason-Dixon	62	VA06W-612	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173			no		414	no
Mason-Dixon	63	ARS05-0277	<b>Allele Y</b>	Allele X	<b>yes</b>	no	201			no		414	no
Mason-Dixon	64	ARS05-0282	<b>Allele Y</b>	Allele X	<b>yes</b>	no	201			no		414	no
Mason-Dixon	65	ARS05-0286	<b>Allele Y</b>	Allele X	<b>yes</b>	no	163			no		414	no
Mason-Dixon	66	ARS05-0426	<b>Allele Y</b>	Allele X	<b>yes</b>	no	209			no		414	no
Mason-Dixon	67	ARS05-0443	<b>Allele Y</b>	Allele X	<b>yes</b>	no	209			no		414	no
Mason-Dixon	68	ARS05-0444	<b>Allele Y</b>	Allele X	<b>yes</b>	no	209			no		414	no
Mason-Dixon	69	ARS07-0095	<b>Both Alleles</b>	Allele X	<b>het</b>	no	173			no		414	no
Mason-Dixon	70	ARS07-0203	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>		<b>yes</b>
Mason-Dixon	71	ARS07-0211	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	201		no		414	no
Mason-Dixon	72	ARS07-0221	Allele X	Allele X	no	no	173			no	<b>283</b>		<b>yes</b>
Mason-Dixon	73	ARS07-0245	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no		414	no
Mason-Dixon	74	ARS07-0250	Allele X	Allele X	no	no	163	173		no	<b>283</b>		<b>yes</b>
Mason-Dixon	75	ARS07-0331	<b>Allele Y</b>	Allele X	<b>yes</b>	no	173	<b>192</b>		<b>het</b>		414	no
Mason-Dixon	76	ARS07-0386	Allele X	Allele X	no	no	<b>192</b>			<b>yes</b>	<b>283</b>		<b>yes</b>
Mason-Dixon	77	ARS07-0407	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no		414	no
Mason-Dixon	78	ARS07-0543	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173			no		414	no
Mason-Dixon	79	ARS07-0607	<b>Allele Y</b>	Allele X	<b>yes</b>	no	201			no		414	no
Mason-Dixon	80	ARS07-0723	Allele X	<b>Both Alleles</b>	no	<b>het</b>	173	<b>192</b>		<b>het</b>		414	no
Mason-Dixon	81	ARS07-0740	<b>Allele Y</b>	Allele X	<b>yes</b>	no	163	173		no	<b>283</b>		<b>yes</b>
Mason-Dixon	82	ARS07-1226	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163			no	<b>283</b>		<b>yes</b>

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

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## FHB QTLs

2010

Nursery	Entry	Sample Name	umn10	umn10	gwm533	gwm533	gwm533	Fhb1
Mason-Dixon	1	Pioneer25R47	236	<b>239</b>	118			no
Mason-Dixon	2	Branson	236		118			no
Mason-Dixon	3	Pioneer25R15	236		118			no
Mason-Dixon	4	Tribute	236		nd			no
Mason-Dixon	5	KY02C-1058-02	236		118			no
Mason-Dixon	6	KY02C-1114-03	236		118			no
Mason-Dixon	7	KY03C-1192-40	236		128	<b>144</b>		no
Mason-Dixon	8	KY03C-1136-07	236		118			no
Mason-Dixon	9	KY03C-1192-09	236		118			no
Mason-Dixon	10	KY03C-1237-33	229		118			no
Mason-Dixon	11	KY02C-2219-04	236		nd			no
Mason-Dixon	12	KY02C-1004-32	229	236	118	146	155	no
Mason-Dixon	13	KY03C-1192-18	236		128			no
Mason-Dixon	14	KY03C-1136-11	236		118			no
Mason-Dixon	15	KY03C-1136-12	236		118			no
Mason-Dixon	16	KY02C-1002-06	236		nd			no
Mason-Dixon	17	KY02C-2200-03	236		118			no
Mason-Dixon	18	KY03C-1136-15	236		118			yes
Mason-Dixon	19	KY03C-1237-32	<b>239</b>		<b>144</b>			no
Mason-Dixon	20	KY02C-2200-15	236		118			no
Mason-Dixon	21	KY03C-1237-39	229		118			no
Mason-Dixon	22	KY02C-2200-04	nd		nd			yes
Mason-Dixon	23	MD03-69-15	<b>239</b>		<b>144</b>			yes
Mason-Dixon	24	MD03W91-09-2	<b>239</b>		<b>144</b>			no
Mason-Dixon	25	MD03W91-09-6	236		nd			no
Mason-Dixon	26	MD03W91-09-8	236		nd			no
Mason-Dixon	27	MD03W59-09-9	236		118			het
Mason-Dixon	28	MD03W-09-1	236	<b>239</b>	118	<b>144</b>		yes
Mason-Dixon	29	MD03W61-09-2	<b>239</b>		<b>144</b>			yes
Mason-Dixon	30	MD03W61-09-7	<b>239</b>		<b>144</b>			yes
Mason-Dixon	31	MD03W61-09-11	<b>239</b>		<b>144</b>			no
Mason-Dixon	32	MD03W61-09-12	236		118			no
Mason-Dixon	33	MD03W61-09-16	236		118			no
Mason-Dixon	34	MD03W62-09-1	236		118			no
Mason-Dixon	35	MD03W62-09-6	236		118			no
Mason-Dixon	36	MD03W665-09-1	236		118			no
Mason-Dixon	37	MD03W665-09-2	236		118			no
Mason-Dixon	38	MD03W665-09-6	236		nd			no
Mason-Dixon	39	MD02W135-09-2	236		128			no
Mason-Dixon	40	MD02W135-08-10	229	236	146	155		no

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

## FHB QTLs

2010

Nursery	Entry	Sample Name	umn10	umn10	gwm533	gwm533	gwm533	Fhb1
Mason-Dixon	41	MD02W17-08-3	236		128			no
Mason-Dixon	42	MD02W17-08-6	236		128			no
Mason-Dixon	43	VA06W-412	229	236	118	146	155	no
Mason-Dixon	44	VA07W-138	229		146	155		no
Mason-Dixon	45	VA06W-558	229		146	155		no
Mason-Dixon	46	VA05W-70	236		nd			no
Mason-Dixon	47	VA06W-44	229		146	155		no
Mason-Dixon	48	VA06W-146	236		118			no
Mason-Dixon	49	VA08W-92	236		nd			no
Mason-Dixon	50	VA08W-165	236		118			no
Mason-Dixon	51	VA08W-176	236		118			no
Mason-Dixon	52	VA08W-193	229	236	118	146	155	no
Mason-Dixon	53	VA08W-196	236		118			no
Mason-Dixon	54	VA08W-223	236		118			no
Mason-Dixon	55	VA08W-232	236		118			no
Mason-Dixon	56	VA08W-286	236		118			no
Mason-Dixon	57	VA08W-294	236		118			no
Mason-Dixon	58	VA08W-295	236		118			no
Mason-Dixon	59	VA07W-569	229	236	146	155		no
Mason-Dixon	60	VA07W-594	236		128			no
Mason-Dixon	61	VA07W-601	229	236	146	155		no
Mason-Dixon	62	VA06W-612	229		155			no
Mason-Dixon	63	ARS05-0277	236		nd			no
Mason-Dixon	64	ARS05-0282	236		nd			no
Mason-Dixon	65	ARS05-0286	236		118			no
Mason-Dixon	66	ARS05-0426	236		nd			no
Mason-Dixon	67	ARS05-0443	236		nd			no
Mason-Dixon	68	ARS05-0444	236		nd			no
Mason-Dixon	69	ARS07-0095	236		118			no
Mason-Dixon	70	ARS07-0203	236		118			no
Mason-Dixon	71	ARS07-0211	236		118			no
Mason-Dixon	72	ARS07-0221	236		118			no
Mason-Dixon	73	ARS07-0245	236		118			no
Mason-Dixon	74	ARS07-0250	236		118			no
Mason-Dixon	75	ARS07-0331	229		146	155		no
Mason-Dixon	76	ARS07-0386	236		118			no
Mason-Dixon	77	ARS07-0407	236		118			no
Mason-Dixon	78	ARS07-0543	236		118			no
Mason-Dixon	79	ARS07-0607	236		118			no
Mason-Dixon	80	ARS07-0723	236		118			no
Mason-Dixon	81	ARS07-0740	236		118			no
Mason-Dixon	82	ARS07-1226	236		nd			no

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## FHB QTLs

2010

Nursery	Entry	Sample Name	gwm	gwm	gwm	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	Fhb	
			285	285	285	612	612	612	307	307	1	1	418	418	471	471	471	471	3Bc	
Mason-Dixon	1	Pioneer25R47	219			<b>285</b>	287		143		160		271		177	216		no		
Mason-Dixon	2	Branson	250				279	281	143		<b>153</b>		<b>262</b>		179	<b>260</b>		no		
Mason-Dixon	3	Pioneer25R15	219				287	289	139		151		269		177	179	216	no		
Mason-Dixon	4	Tribute	219				279	281	<b>141</b>		162		271		179	216		no		
Mason-Dixon	5	KY02C-1058-02	226				279	281	<b>141</b>		162		271		177	216		no		
Mason-Dixon	6	KY02C-1114-03	221				287	289	143		149		269		218			no		
Mason-Dixon	7	KY03C-1192-40	<b>246</b>	226			271	273	nd		151		<b>262</b>	269	177	216		no		
Mason-Dixon	8	KY03C-1136-07	226				283	<b>285</b>	<b>141</b>	143	149	<b>153</b>	<b>262</b>		179	<b>260</b>		yes		
Mason-Dixon	9	KY03C-1192-09	226				287	289	143		149		269		218			no		
Mason-Dixon	10	KY03C-1237-33	226				287	289	143		149		<b>262</b>		177	216		no		
Mason-Dixon	11	KY02C-2219-04	219				287	289	143		151		260		179	220		no		
Mason-Dixon	12	KY02C-1004-32	221	221			271	273	281	<b>141</b>	143	151	156	<b>262</b>	271	177	179	214	216	no
Mason-Dixon	13	KY03C-1192-18	222	226			273	287	289	143		149		269		177	216		no	
Mason-Dixon	14	KY03C-1136-11	<b>246</b>	226	<b>246</b>		281	283		<b>141</b>	143	149		<b>262</b>	271	177	179	216	220	no
Mason-Dixon	15	KY03C-1136-12	219				283	<b>285</b>		<b>141</b>		149		<b>262</b>		179	<b>260</b>		yes?	
Mason-Dixon	16	KY02C-1002-06	<b>246</b>				279	281	143		149		271		177	214		no		
Mason-Dixon	17	KY02C-2200-03	226				283	<b>285</b>	143		149		<b>262</b>		179	<b>260</b>		yes?		
Mason-Dixon	18	KY03C-1136-15	226				283	<b>285</b>	143		<b>153</b>		<b>262</b>		179	<b>260</b>		no		
Mason-Dixon	19	KY03C-1237-32	<b>246</b>				287	289	143		149		<b>262</b>		177	216		no		
Mason-Dixon	20	KY02C-2200-15	226				283	<b>285</b>	143		149		<b>262</b>		179	<b>260</b>		yes?		
Mason-Dixon	21	KY03C-1237-39	<b>246</b>				287	289	143		149		<b>262</b>		177	216		no		
Mason-Dixon	22	KY02C-2200-04	219				283	<b>285</b>	143		149		<b>262</b>		179	<b>260</b>		yes?		
Mason-Dixon	23	MD03-69-15	219	226			287	289	143		149		269		179	216		no		
Mason-Dixon	24	MD03W91-09-2	219				279	281	<b>141</b>		162		271		177	216		no		
Mason-Dixon	25	MD03W91-09-6	219				287	289	<b>141</b>		149	162	269		177	216		no		
Mason-Dixon	26	MD03W91-09-8	219	226			279	281	287	<b>141</b>	143	149	162	269		177	216		no	
Mason-Dixon	27	MD03W59-09-9	226	226			279	281		<b>141</b>	143	151	162	260	271	179	216	220	no	
Mason-Dixon	28	MD03W-09-1	226				287	289	143		149		269		177	218		no		
Mason-Dixon	29	MD03W61-09-2	226				287	289	143		149		269		177	218		no		
Mason-Dixon	30	MD03W61-09-7	226				287	289	143		149		269		177	218		no		
Mason-Dixon	31	MD03W61-09-11	226				287	289	143		149		269	271	177	216		no		
Mason-Dixon	32	MD03W61-09-12	226				287	289	143		149		269		177	216		no		
Mason-Dixon	33	MD03W61-09-16	221				287	289	143		149		269		177	216		no		
Mason-Dixon	34	MD03W62-09-1	221				271	273	143		151		271		177	214		no		
Mason-Dixon	35	MD03W62-09-6	219				271	273	143		151		271		177	214		no		
Mason-Dixon	36	MD03W665-09-1	219				279	281	<b>141</b>		162		271		177	216		no		
Mason-Dixon	37	MD03W665-09-2	219				279	281	<b>141</b>		162		269	271	177	216		no		
Mason-Dixon	38	MD03W665-09-6	219				279	281	139		162		271		177	216		no		
Mason-Dixon	39	MD02W135-09-2	219				279	281	<b>141</b>		149		271		177	216		no		
Mason-Dixon	40	MD02W135-08-10	<b>246</b>	244			279	281	<b>141</b>		149	162	<b>262</b>	271	179	216		no		

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## FHB QTLs

2010

Nursery	Entry	Sample Name	gwm wmc																Fhb Ernie 3Bc
			285	285	285	612	612	612	307	307	1	1	418	418	471	471	471	471	
Mason-Dixon	41	MD02W17-08-3	<b>246</b>			277	279		<b>141</b>		<b>153</b>		260		177	216			no
Mason-Dixon	42	MD02W17-08-6	219			277	279		<b>141</b>		<b>153</b>		260		177	216			no
Mason-Dixon	43	VA06W-412	226			<b>285</b>	287		143		149	162	<b>262</b>	269	179	218			no
Mason-Dixon	44	VA07W-138	219			277	279		<b>141</b>		156		271		217				no
Mason-Dixon	45	VA06W-558	226			277	279		<b>141</b>		156		271		177	217			no
Mason-Dixon	46	VA05W-70	226			287	289		<b>141</b>		149		271		177	215			no
Mason-Dixon	47	VA06W-44	308			287	289		143		149		269		179	217			no
Mason-Dixon	48	VA06W-146	219			283	<b>285</b>		143		160		271		215				no
Mason-Dixon	49	VA08W-92	219			279	281		143		162		271		177	215			no
Mason-Dixon	50	VA08W-165	219			279	281		<b>141</b>		162		269		221				no
Mason-Dixon	51	VA08W-176	226	226		279	281		<b>141</b>	143	149	162	269	271	177	217			no
Mason-Dixon	52	VA08W-193	226			287	289		143		149		269		nd				no
Mason-Dixon	53	VA08W-196	226			287	289	291	<b>141</b>	143	149		269		177	219			no
Mason-Dixon	54	VA08W-223	226			287	289		<b>141</b>		149		269		219				no
Mason-Dixon	55	VA08W-232	219	<b>246</b>		279	281		<b>141</b>	143	<b>153</b>		269	271	217	221			no
Mason-Dixon	56	VA08W-286	219			273	275		143		<b>153</b>		<b>262</b>		179	217			no
Mason-Dixon	57	VA08W-294	219			275	279	282	<b>141</b>		162		269		179	219			no
Mason-Dixon	58	VA08W-295	221			273	275		143		149		269		179	219			no
Mason-Dixon	59	VA07W-569	<b>246</b>	<b>246</b>		279	281		<b>141</b>	143	<b>153</b>	162	<b>262</b>	271	177	217			no
Mason-Dixon	60	VA07W-594	<b>246</b>			276	283	<b>285</b>	<b>141</b>		149		<b>262</b>		217				no
Mason-Dixon	61	VA07W-601	<b>246</b>			281	283		<b>141</b>		<b>153</b>		<b>262</b>	271	177	180	217		no
Mason-Dixon	62	VA06W-612	219			283	<b>285</b>		<b>141</b>		149		<b>262</b>		221				no
Mason-Dixon	63	ARS05-0277	219			279	281		143		149		271		177	215			no
Mason-Dixon	64	ARS05-0282	219			279	281		143		149		271		177	215			no
Mason-Dixon	65	ARS05-0286	<b>246</b>			279	281		143		149		271		177	215			no
Mason-Dixon	66	ARS05-0426	<b>246</b>			287	289		<b>141</b>		<b>153</b>		271		179	215			no
Mason-Dixon	67	ARS05-0443	<b>246</b>			287	289		<b>141</b>		<b>153</b>		271		179	215			no
Mason-Dixon	68	ARS05-0444	226			287	289		<b>141</b>		<b>153</b>		271		179	215			no
Mason-Dixon	69	ARS07-0095	226	238		285	287	290	143		149	156	<b>262</b>	269	177	216	221		no
Mason-Dixon	70	ARS07-0203	226			287	289		143		149		269		177	221			no
Mason-Dixon	71	ARS07-0211	226			277	279		143		149		269		219				no
Mason-Dixon	72	ARS07-0221	226			287	289		143		149		269		179	221			no
Mason-Dixon	73	ARS07-0245	304			287	289		143		149		269	271	177	215			no
Mason-Dixon	74	ARS07-0250	221			267			143		160		<b>262</b>		179	221			no
Mason-Dixon	75	ARS07-0331	219			<b>285</b>	287		<b>141</b>		<b>153</b>		<b>262</b>		177				no
Mason-Dixon	76	ARS07-0386	226			281	283		143		149		<b>262</b>		177	217			no
Mason-Dixon	77	ARS07-0407	219			287	289		143		149		269		221				no
Mason-Dixon	78	ARS07-0543	226			275	277		<b>141</b>		149		<b>262</b>		177	219			no
Mason-Dixon	79	ARS07-0607	<b>246</b>			287	289		<b>141</b>		149		271		177	215			no
Mason-Dixon	80	ARS07-0723	221			283	<b>285</b>		<b>141</b>		156		<b>262</b>		177	215			no
Mason-Dixon	81	ARS07-0740	<b>246</b>	<b>246</b>		283	<b>285</b>		<b>141</b>	143	149	151	<b>262</b>		177	215			no
Mason-Dixon	82	ARS07-1226	nd			287	289		<b>141</b>		151		271		177	215			no

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## FHB QTLs

2010

Nursery	Entry	Sample Name								Fhb 2DL-	
			cfb233	cfb 33	cfb233	gwm539	gwm539	gwm608	gwm608	gwm608	Wuhan1/ W14
Mason-Dixon	1	Pioneer25R47	272	278		133	141	150	156		no
Mason-Dixon	2	Branson	282	284		144		150			no
Mason-Dixon	3	Pioneer25R15	271			133		156			no
Mason-Dixon	4	Tribute	278			135		150			no
Mason-Dixon	5	KY02C-1058-02	280			137		156			no
Mason-Dixon	6	KY02C-1114-03	271			133	137	156			no
Mason-Dixon	7	KY03C-1192-40	271			131		156			no
Mason-Dixon	8	KY03C-1136-07	270	278	280	133	137	156			no
Mason-Dixon	9	KY03C-1192-09	272			137		156			no
Mason-Dixon	10	KY03C-1237-33	271			131		nd			no
Mason-Dixon	11	KY02C-2219-04	278	280		139		156			no
Mason-Dixon	12	KY02C-1004-32	278	282	284	137		150	156		no
Mason-Dixon	13	KY03C-1192-18	271			131		156			no
Mason-Dixon	14	KY03C-1136-11	268	271		133		156			no
Mason-Dixon	15	KY03C-1136-12	271			133		156			no
Mason-Dixon	16	KY02C-1002-06	282	284		135		nd			no
Mason-Dixon	17	KY02C-2200-03	280			131		150			no
Mason-Dixon	18	KY03C-1136-15	278	280		137		156			no
Mason-Dixon	19	KY03C-1237-32	271			131	133	156			no
Mason-Dixon	20	KY02C-2200-15	280			131		150			no
Mason-Dixon	21	KY03C-1237-39	271			131		156			no
Mason-Dixon	22	KY02C-2200-04	280			131		150			no
Mason-Dixon	23	MD03-69-15	271	<b>276</b>		<b>125</b>	133	150	<b>152</b>	156	<b>het?</b>
Mason-Dixon	24	MD03W91-09-2	271			133		156			no
Mason-Dixon	25	MD03W91-09-6	271			133		156			no
Mason-Dixon	26	MD03W91-09-8	271			133		156			no
Mason-Dixon	27	MD03W59-09-9	272			131		156			no
Mason-Dixon	28	MD03W-09-1	271			137		156			no
Mason-Dixon	29	MD03W61-09-2	271			133		156			no
Mason-Dixon	30	MD03W61-09-7	271			133		156			no
Mason-Dixon	31	MD03W61-09-11	271	272	274	133	137	156			no
Mason-Dixon	32	MD03W61-09-12	274			137		156			no
Mason-Dixon	33	MD03W61-09-16	271			137		156			no
Mason-Dixon	34	MD03W62-09-1	286	288		137		156			no
Mason-Dixon	35	MD03W62-09-6	286	288		137		156			no
Mason-Dixon	36	MD03W665-09-1	274			137		156			no
Mason-Dixon	37	MD03W665-09-2	274			137		156			no
Mason-Dixon	38	MD03W665-09-6	274	<b>276</b>	278	135		150	156		no
Mason-Dixon	39	MD02W135-09-2	288	290		137		162			no
Mason-Dixon	40	MD02W135-08-10	278	288	290	135	137	150	162		no

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## FHB QTLs

2010

Nursery	Entry	Sample Name	cf <del>d</del> 233	cf <del>d</del> 233	cf <del>d</del> 233	gwm539	gwm539	gwm608	gwm608	gwm608	Fhb 2DL- Wuhan1/ W14
Mason-Dixon	41	MD02W17-08-3	<b>276</b>			131		158			no
Mason-Dixon	42	MD02W17-08-6	<b>276</b>			131		158	160		no
Mason-Dixon	43	VA06W-412	278			135		150			no
Mason-Dixon	44	VA07W-138	272			131		150			no
Mason-Dixon	45	VA06W-558	280			139		150			no
Mason-Dixon	46	VA05W-70	<b>276</b>	278		135		158			no
Mason-Dixon	47	VA06W-44	272			133		162			no
Mason-Dixon	48	VA06W-146	<b>276</b>	278		135		150	<b>152</b>		no
Mason-Dixon	49	VA08W-92	<b>276</b>	278		139		150			no
Mason-Dixon	50	VA08W-165	272			139		156			no
Mason-Dixon	51	VA08W-176	272			137		156			no
Mason-Dixon	52	VA08W-193	284	286		135		154	156		no
Mason-Dixon	53	VA08W-196	272			135		156			no
Mason-Dixon	54	VA08W-223	272			137		158	162		no
Mason-Dixon	55	VA08W-232	278			nd		150			no
Mason-Dixon	56	VA08W-286	<b>276</b>	278		135		150			no
Mason-Dixon	57	VA08W-294	272			137		150			no
Mason-Dixon	58	VA08W-295	272			137		150			no
Mason-Dixon	59	VA07W-569	282	284		131		150			no
Mason-Dixon	60	VA07W-594	280			124		150			no
Mason-Dixon	61	VA07W-601	278			135		150			no
Mason-Dixon	62	VA06W-612	280	288	290	124		150	162		no
Mason-Dixon	63	ARS05-0277	278			137		158			no
Mason-Dixon	64	ARS05-0282	278			137		158			no
Mason-Dixon	65	ARS05-0286	278			137		158			no
Mason-Dixon	66	ARS05-0426	274			135		<b>152</b>			no
Mason-Dixon	67	ARS05-0443	274			135		<b>152</b>			no
Mason-Dixon	68	ARS05-0444	274			135		<b>152</b>			no
Mason-Dixon	69	ARS07-0095	278	288	290	137		162			no
Mason-Dixon	70	ARS07-0203	272			133		158	162		no
Mason-Dixon	71	ARS07-0211	274	<b>276</b>		137		150			no
Mason-Dixon	72	ARS07-0221	272			133		158			no
Mason-Dixon	73	ARS07-0245	272			131		162			no
Mason-Dixon	74	ARS07-0250	272			133		154			no
Mason-Dixon	75	ARS07-0331	288	290		131		156			no
Mason-Dixon	76	ARS07-0386	282	284		137		150			no
Mason-Dixon	77	ARS07-0407	272			133	137	160			no
Mason-Dixon	78	ARS07-0543	<b>276</b>	278		131	135	156	170		no
Mason-Dixon	79	ARS07-0607	<b>276</b>	278		135		158			no
Mason-Dixon	80	ARS07-0723	274	282	284	139		150			no
Mason-Dixon	81	ARS07-0740	282	284		139		150			no
Mason-Dixon	82	ARS07-1226	280	282		133		150			no

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"?" indicates that markers may not be diagnostic or data was 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*

## FHB QTLs

2010

Nursery	Entry	Sample Name	gwm	gwm	wmc	wmc	wmc	wmc	barc	barc	barc	barc	gwm	gwm	Fhb 5A	Fhb 5A
			304	304	705	705	705	705	117	117	186	186	156	156	Ernie	Ning7840
Mason-Dixon	1	Pioneer25R47	198		162	164			217		<b>203</b>		283	292	no	<i>no</i>
Mason-Dixon	2	Branson	198		160	162			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	3	Pioneer25R15	198		162	164			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	4	Tribute	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	5	KY02C-1058-02	198		161	162			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	6	KY02C-1114-03	198		162	164			217		<b>203</b>		285		no	<i>no</i>
Mason-Dixon	7	KY03C-1192-40	198		133	162	164		217	224	<b>203</b>	<b>212</b>	283		no	<i>no</i>
Mason-Dixon	8	KY03C-1136-07	198		160	162			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	9	KY03C-1192-09	<b>220</b>		<b>135</b>				<b>221</b>		<b>203</b>		309		yes?	<i>no</i>
Mason-Dixon	10	KY03C-1237-33	214		133				224		<b>212</b>		283		no	<i>no</i>
Mason-Dixon	11	KY02C-2219-04	198		160	162			217		<b>203</b>		283	292	no	<i>no</i>
Mason-Dixon	12	KY02C-1004-32	198		133	135	162	164	217	<b>221</b>	<b>203</b>	<b>212</b>	283	292	no	<i>no</i>
Mason-Dixon	13	KY03C-1192-18	198		162	164			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	14	KY03C-1136-11	198		160	162			217	<b>221</b>	<b>203</b>		283	292	no	<i>no</i>
Mason-Dixon	15	KY03C-1136-12	198	<b>216</b>	160	162			217	<b>221</b>	<b>203</b>		283		no	<i>no</i>
Mason-Dixon	16	KY02C-1002-06	198		160	162			217		<b>203</b>		285	<b>312</b>	no	<i>no</i>
Mason-Dixon	17	KY02C-2200-03	198		162	164			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	18	KY03C-1136-15	198		160	162			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	19	KY03C-1237-32	198	214	133	<b>135</b>	162	164	217	224	<b>203</b>	<b>212</b>	283	318	no	<i>no</i>
Mason-Dixon	20	KY02C-2200-15	198		162	164			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	21	KY03C-1237-39	214		133				224		<b>212</b>		318		no	<i>no</i>
Mason-Dixon	22	KY02C-2200-04	198		162	164			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	23	MD03-69-15	198		162	164			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	24	MD03W91-09-2	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	25	MD03W91-09-6	198		162	164			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	26	MD03W91-09-8	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	27	MD03W59-09-9	198		160	162			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	28	MD03W-09-1	198		162	164			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	29	MD03W61-09-2	198		162	164			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	30	MD03W61-09-7	198		162	164			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	31	MD03W61-09-11	198		162	164			217		<b>203</b>		283	<b>312</b>	no	<i>no</i>
Mason-Dixon	32	MD03W61-09-12	198	<b>216</b>	162	164			217	<b>221</b>	<b>203</b>	<b>212</b>	283	<b>312</b>	no	<i>no</i>
Mason-Dixon	33	MD03W61-09-16	198		162	164			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	34	MD03W62-09-1	198		162	164			217		<b>203</b>		312		no	<i>no</i>
Mason-Dixon	35	MD03W62-09-6	198		162	164			217		<b>203</b>		292	<b>312</b>	no	<i>no</i>
Mason-Dixon	36	MD03W665-09-1	198		162	164			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	37	MD03W665-09-2	198		160	162	164		217		<b>203</b>		292	<b>312</b>	no	<i>no</i>
Mason-Dixon	38	MD03W665-09-6	198		162	164			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	39	MD02W135-09-2	198		160	162			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	40	MD02W135-08-10	198		160	162			217		<b>203</b>		285		no	<i>no</i>

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## FHB QTLs

2010

Nursery	Entry	Sample Name	gwm	gwm	wmc	wmc	wmc	wmc	barc	barc	barc	barc	gwm	gwm	Fhb 5A	Fhb 5A
			304	304	705	705	705	705	117	117	186	186	156	156	Ernie	Ning7840
Mason-Dixon	41	MD02W17-08-3	199		<b>135</b>				217		<b>203</b>		286		no	<i>no</i>
Mason-Dixon	42	MD02W17-08-6	199		<b>135</b>				217		<b>203</b>		286		no	<i>no</i>
Mason-Dixon	43	VA06W-412	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	44	VA07W-138	200		133				217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	45	VA06W-558	<b>220</b>		<b>135</b>				<b>220</b>		<b>203</b>		283		yes?	<i>no</i>
Mason-Dixon	46	VA05W-70	198		160	162			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	47	VA06W-44	198		162	164			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	48	VA06W-146	<b>220</b>		ns				<b>221</b>		<b>203</b>		292		?	<i>no</i>
Mason-Dixon	49	VA08W-92	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	50	VA08W-165	198		162	164			217		<b>203</b>		283	292	no	<i>no</i>
Mason-Dixon	51	VA08W-176	198	<b>220</b>	<b>135</b>	160	162		217	<b>221</b>	<b>203</b>		292	<b>313</b>	het?	<i>no</i>
Mason-Dixon	52	VA08W-193	198		160	162			217		<b>203</b>		286		no	<i>no</i>
Mason-Dixon	53	VA08W-196	<b>220</b>		<b>135</b>				<b>221</b>		<b>203</b>		<b>312</b>		yes	<i>no</i>
Mason-Dixon	54	VA08W-223	199		133				217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	55	VA08W-232	<b>220</b>		<b>135</b>				<b>221</b>		<b>203</b>		<b>312</b>		yes	<i>no</i>
Mason-Dixon	56	VA08W-286	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	57	VA08W-294	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	58	VA08W-295	198		161	162			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	59	VA07W-569	198		135	154			217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	60	VA07W-594	199		133				217		<b>203</b>		283		no	<i>no</i>
Mason-Dixon	61	VA07W-601	198		164	166			217		<b>203</b>		283	<b>312</b>	no	<i>no</i>
Mason-Dixon	62	VA06W-612	<b>216</b>		nd				<b>221</b>		<b>212</b>		283		no	<i>no</i>
Mason-Dixon	63	ARS05-0277	199		133				217		<b>203</b>		313		no	<i>no</i>
Mason-Dixon	64	ARS05-0282	199		133				217		<b>203</b>		313		no	<i>no</i>
Mason-Dixon	65	ARS05-0286	nd		133	160	162		217		<b>203</b>		311		no	<i>no</i>
Mason-Dixon	66	ARS05-0426	198		162	164			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	67	ARS05-0443	198		162	164			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	68	ARS05-0444	198		162	164			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	69	ARS07-0095	<b>220</b>		<b>135</b>				217	<b>221</b>	<b>203</b>		280	<b>312</b>	het	<i>no</i>
Mason-Dixon	70	ARS07-0203	198		164	166			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	71	ARS07-0211	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	72	ARS07-0221	198		160	162			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	73	ARS07-0245	198		160	162			217		<b>212</b>		292		no	<i>no</i>
Mason-Dixon	74	ARS07-0250	214		137				<b>221</b>		<b>212</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	75	ARS07-0331	198		162	164			217		<b>203</b>		<b>312</b>		no	<i>no</i>
Mason-Dixon	76	ARS07-0386	201		139				217		<b>212</b>		283		no	<i>no</i>
Mason-Dixon	77	ARS07-0407	199		133				217		<b>203</b>		315		no	<i>no</i>
Mason-Dixon	78	ARS07-0543	198		160	162			217		<b>203</b>		292		no	<i>no</i>
Mason-Dixon	79	ARS07-0607	198		139	160	162		217	<b>221</b>	<b>203</b>	<b>212</b>	<b>312</b>		no	<i>no</i>
Mason-Dixon	80	ARS07-0723	211	<b>220</b>	<b>135</b>	139			<b>221</b>		<b>203</b>		280	<b>312</b>	het?	<i>no</i>
Mason-Dixon	81	ARS07-0740	201		139				217	<b>221</b>	214		283		no	<i>no</i>
Mason-Dixon	82	ARS07-1226	<b>220</b>		<b>135</b>				<b>221</b>		<b>203</b>		<b>312</b>		yes	<i>no</i>

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## Leaf, Stripe & Stem Rusts

2010

Nursery	Entry	Sample Name	Sr2	wmc	wmc	Sr36	barc	barc	barc	barc	Sr24/ Lr24	ventriup	Yr17/ Lr37/ Sr38	CsLv34	CsLv34	Lr34/ Yr18/ Pm38
				477	477		71	71	71	71						
Mason-Dixon	1	Pioneer25R47	no	165		no	104				no		no	235		no
Mason-Dixon	2	Branson	no	160		no	104				no		no	235		no
Mason-Dixon	3	Pioneer25R15	no	165		no	104				no		no	235		no
Mason-Dixon	4	Tribute	no	165		no	<b>87</b>	104			<b>yes</b>		no	235		no
Mason-Dixon	5	KY02C-1058-02	no	165	167	no	104				no		no	235		no
Mason-Dixon	6	KY02C-1114-03	no	167		no	112				no		no	235		no
Mason-Dixon	7	KY03C-1192-40	no	160		no	104				no		no	235		no
Mason-Dixon	8	KY03C-1136-07	no	160		no	104				no		no	235		no
Mason-Dixon	9	KY03C-1192-09	no	167		no	104				no		no	235		no
Mason-Dixon	10	KY03C-1237-33	no	160		no	104				no		no	235		no
Mason-Dixon	11	KY02C-2219-04	no	165		no	104				no		no	235		no
Mason-Dixon	12	KY02C-1004-32	no	167		no	<b>87</b>	112			<b>yes</b>		no	235		no
Mason-Dixon	13	KY03C-1192-18	no	160		no	104				no		no	235		no
Mason-Dixon	14	KY03C-1136-11	no	165	167	no	104				no		no	235		no
Mason-Dixon	15	KY03C-1136-12	no	165		no	104				no		no	235		no
Mason-Dixon	16	KY02C-1002-06	no	<b>185</b>		<b>yes</b>	104	112			no		no	235		no
Mason-Dixon	17	KY02C-2200-03	no	165		no	104				no		no	235		no
Mason-Dixon	18	KY03C-1136-15	no	165		no	104				no		no	235		no
Mason-Dixon	19	KY03C-1237-32	no	160		no	104				no		no	235		no
Mason-Dixon	20	KY02C-2200-15	no	165		no	104				no		no	235		no
Mason-Dixon	21	KY03C-1237-39	no	160	167	no	104				no		no	235		no
Mason-Dixon	22	KY02C-2200-04	no	165		no	104				no		no	235		no
Mason-Dixon	23	MD03-69-15	no	165	167	no	104	112			no		no	235		no
Mason-Dixon	24	MD03W91-09-2	no	167		no	<b>87</b>	104			<b>yes</b>		no	235		no
Mason-Dixon	25	MD03W91-09-6	no	165		no	<b>87</b>	104			<b>yes</b>		no	235		no
Mason-Dixon	26	MD03W91-09-8	no	165		no	<b>87</b>	104			<b>yes</b>		no	235		no
Mason-Dixon	27	MD03W59-09-9	no	167		no	104				no		no	235		no
Mason-Dixon	28	MD03W-09-1	no	167		no	112				no		no	235		no
Mason-Dixon	29	MD03W61-09-2	no	163		no	112				no		no	235		no
Mason-Dixon	30	MD03W61-09-7	no	163		no	112				no		no	235		no
Mason-Dixon	31	MD03W61-09-11	no	167		no	112				no		no	235		no
Mason-Dixon	32	MD03W61-09-12	no	167		no	104				no		no	235		no
Mason-Dixon	33	MD03W61-09-16	no	163		no	112				no		no	235		no
Mason-Dixon	34	MD03W62-09-1	no	163		no	104				no		no	235		no
Mason-Dixon	35	MD03W62-09-6	no	163		no	112				no		no	235		no
Mason-Dixon	36	MD03W665-09-1	no	<b>185</b>		<b>yes</b>	104				no		no	235		no
Mason-Dixon	37	MD03W665-09-2	no	163		no	104				no		no	235		no
Mason-Dixon	38	MD03W665-09-6	no	163		no	104				no		no	235		no
Mason-Dixon	39	MD02W135-09-2	no	165		no	104				no		no	235		no
Mason-Dixon	40	MD02W135-08-10	no	165		no	<b>87</b>	104			<b>yes</b>		no	235		no

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

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## Leaf, Stripe & Stem Rusts

2010

Nursery	Entry	Sample Name	Sr2	wmc	wmc	Sr36	barc	barc	barc	barc	Sr24/ Lr24	ventriup	Yr17/ Lr37/ Sr38	CsLv34	CsLv34	Lr34/ Yr18/ Pm38
				477	477		71	71	71	71	no		no			no
Mason-Dixon	41	MD02W17-08-3	no	165		no	92				no		no	235		no
Mason-Dixon	42	MD02W17-08-6	no	165		no	92				no		no	235		no
Mason-Dixon	43	VA06W-412	no	160	165	no	<b>87</b>	104			yes		no	235		no
Mason-Dixon	44	VA07W-138	no	161		no	104	112			no		no	235		no
Mason-Dixon	45	VA06W-558	no	165		no	82	<b>87</b>	100		yes		no	235		no
Mason-Dixon	46	VA05W-70	no	165		no	82	<b>87</b>	100	104	yes		no	235		no
Mason-Dixon	47	VA06W-44	no	161		no	100	104			no		no	235		no
Mason-Dixon	48	VA06W-146	no	165		no	107	112			no		no	235		no
Mason-Dixon	49	VA08W-92	no	165		no	82	<b>87</b>	100	112	yes		no	235		no
Mason-Dixon	50	VA08W-165	no	165		no	82	<b>87</b>	100	104	yes		no	235		no
Mason-Dixon	51	VA08W-176	no	165	167	no	82	<b>87</b>	100	104	yes		no	235		no
Mason-Dixon	52	VA08W-193	no	165		no	100	104			no		no	235		no
Mason-Dixon	53	VA08W-196	no	163		no	107	112			no		no	235		no
Mason-Dixon	54	VA08W-223	no	161		no	112				no		no	235		no
Mason-Dixon	55	VA08W-232	no	161		no	100	104			no		no	235		no
Mason-Dixon	56	VA08W-286	no	165		no	82	<b>87</b>	100	104	yes		no	235		no
Mason-Dixon	57	VA08W-294	no	161		no	82	<b>87</b>	104		yes		no	235		no
Mason-Dixon	58	VA08W-295	no	160		no	82	<b>87</b>	100	104	yes		no	235		no
Mason-Dixon	59	VA07W-569	no	165		no	100	104			no		no	235		no
Mason-Dixon	60	VA07W-594	no	<b>185</b>		yes	100	104			no		no	235		no
Mason-Dixon	61	VA07W-601	no	160	<b>185</b>	het	100	104			no		no	235		no
Mason-Dixon	62	VA06W-612	no	160		no	100	104			no		no	235		no
Mason-Dixon	63	ARS05-0277	no	160	<b>185</b>	het	92				no		no	235		no
Mason-Dixon	64	ARS05-0282	no	<b>185</b>		yes	<b>87</b>	92			yes		no	235		no
Mason-Dixon	65	ARS05-0286	no	<b>185</b>		yes	92				no		no	235		no
Mason-Dixon	66	ARS05-0426	no	167		no	100	104			no		no	235		no
Mason-Dixon	67	ARS05-0443	no	167		no	96	100			no	<b>256</b>	yes	235		no
Mason-Dixon	68	ARS05-0444	no	167		no	100	104			no	<b>256</b>	yes	235		no
Mason-Dixon	69	ARS07-0095	no	167		no	107	112			no		no	235		no
Mason-Dixon	70	ARS07-0203	no	<b>185</b>		yes	100	104			no	<b>256</b>	yes	235		no
Mason-Dixon	71	ARS07-0211	no	160	<b>185</b>	het	107	112			no	<b>256</b>	yes	235		no
Mason-Dixon	72	ARS07-0221	no	<b>185</b>		yes	100	104			no	<b>256</b>	yes	235		no
Mason-Dixon	73	ARS07-0245	no	160		no	107	112			no	<b>256</b>	yes	235		no
Mason-Dixon	74	ARS07-0250	no	167		no	100	104			no	<b>256</b>	yes	235		no
Mason-Dixon	75	ARS07-0331	no	165		no	100	104			no		no	235		no
Mason-Dixon	76	ARS07-0386	no	<b>185</b>		yes	100	104			no		no	235		no
Mason-Dixon	77	ARS07-0407	no	<b>185</b>		yes	107	112			no	<b>256</b>	yes	235		no
Mason-Dixon	78	ARS07-0543	no	161		no	100	104			no		no	235		no
Mason-Dixon	79	ARS07-0607	no	<b>185</b>		yes	100	104			no		no	235		no
Mason-Dixon	80	ARS07-0723	no	<b>185</b>		yes	82	<b>87</b>	104		yes		no	235		no
Mason-Dixon	81	ARS07-0740	no	<b>185</b>		yes	104	112	116		no		no	<b>154</b>	235	yes
Mason-Dixon	82	ARS07-1226	no	<b>185</b>		yes	82	<b>87</b>	100		yes		no	235		no

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Target alleles are in **bold or italics**

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

2010

Nursery	Entry	Sample Name	scm9	scm9	IRS	cf132	cf132	H13	cfa2153	cfa2153	H9	Bdv	Bdv	Bdv 2/3
Mason-Dixon	1	Pioneer25R47	<b>206</b>		<b>IRS:1BL</b>	114		no	201	211	no	184		no
Mason-Dixon	2	Branson			non-IRS	114		no	219		no	184		no
Mason-Dixon	3	Pioneer25R15			non-IRS	114		no	201		no	184		no
Mason-Dixon	4	Tribute		<b>222</b>	<b>IRS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	5	KY02C-1058-02	<b>206</b>		<b>IRS:1BL</b>	114		no	194		no	184		no
Mason-Dixon	6	KY02C-1114-03			non-IRS	114		no	197		no	184		no
Mason-Dixon	7	KY03C-1192-40			non-IRS	114		no	191	205	no	184		no
Mason-Dixon	8	KY03C-1136-07			non-IRS	114		no	201		no	184		no
Mason-Dixon	9	KY03C-1192-09			non-IRS	114		no	205		no	184		no
Mason-Dixon	10	KY03C-1237-33			non-IRS	114		no	211		no	184		no
Mason-Dixon	11	KY02C-2219-04	<b>206</b>		<b>IRS:1BL</b>	114		no	194		no	184		no
Mason-Dixon	12	KY02C-1004-32		<b>222</b>	<b>IRS:1AL</b>	114		no	194	201	no	184		no
Mason-Dixon	13	KY03C-1192-18			non-IRS	114		no	211		no	184		no
Mason-Dixon	14	KY03C-1136-11			non-IRS	114		no	201		no	184		no
Mason-Dixon	15	KY03C-1136-12			non-IRS	114		no	201		no	184		no
Mason-Dixon	16	KY02C-1002-06		<b>222</b>	<b>IRS:1AL</b>	114		no	191		no	184		no
Mason-Dixon	17	KY02C-2200-03			non-IRS	114		no	201		no	184		no
Mason-Dixon	18	KY03C-1136-15	<b>206</b>		<b>IRS:1BL</b>	114		no	201		no	184		no
Mason-Dixon	19	KY03C-1237-32			non-IRS	114		no	205	211	no	184		no
Mason-Dixon	20	KY02C-2200-15			non-IRS	114		no	201		no	184		no
Mason-Dixon	21	KY03C-1237-39			non-IRS	114		no	205		no	184		no
Mason-Dixon	22	KY02C-2200-04			non-IRS	114		no	201		no	184		no
Mason-Dixon	23	MD03-69-15	<b>206</b>		<b>IRS:1BL</b>	114		no	191		no	184		no
Mason-Dixon	24	MD03W91-09-2			non-IRS	114		no	191		no	184		no
Mason-Dixon	25	MD03W91-09-6		<b>222</b>	<b>IRS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	26	MD03W91-09-8		<b>222</b>	<b>IRS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	27	MD03W59-09-9			non-IRS	114		no	201		no	184		no
Mason-Dixon	28	MD03W-09-1	<b>206</b>		<b>IRS:1BL</b>	114		no	201		no	184		no
Mason-Dixon	29	MD03W61-09-2	<b>206</b>		<b>IRS:1BL</b>	114		no	201		no	184		no
Mason-Dixon	30	MD03W61-09-7	<b>206</b>		<b>IRS:1BL</b>	114		no	201		no	184		no
Mason-Dixon	31	MD03W61-09-11	<b>206</b>		<b>IRS:1BL</b>	114		no	191		no	184		no
Mason-Dixon	32	MD03W61-09-12	<b>206</b>		<b>IRS:1BL</b>	114		no	191	194	no	184		no
Mason-Dixon	33	MD03W61-09-16	<b>206</b>		<b>IRS:1BL</b>	114		no	191		no	184		no
Mason-Dixon	34	MD03W62-09-1	<b>206</b>		<b>IRS:1BL</b>	114		no	191		no	184		no
Mason-Dixon	35	MD03W62-09-6	<b>206</b>		<b>IRS:1BL</b>	114		no	201		no	184		no
Mason-Dixon	36	MD03W665-09-1	<b>206</b>		<b>IRS:1BL</b>	114		no	201		no	184		no
Mason-Dixon	37	MD03W665-09-2	<b>206</b>		<b>IRS:1BL</b>	114		no	201		no	184		no
Mason-Dixon	38	MD03W665-09-6	<b>206</b>		<b>IRS:1BL</b>	114		no	201		no	184		no
Mason-Dixon	39	MD02W135-09-2	<b>206</b>	<b>222</b>	<b>IRS:1BL, IRS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	40	MD02W135-08-10		<b>222</b>	<b>IRS:1AL</b>	114		no	nd		nd	184		no

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

2010

Nursery	Entry	Sample Name	scm9	scm9	IRS	cf132	cf132	H13	cfa2153	cfa2153	H9	Bdv	Bdv	Bdv 2/3
Mason-Dixon	41	MD02W17-08-3		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	42	MD02W17-08-6		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	43	VA06W-412		<b>222</b>	<b>1RS:1AL</b>	114		no	201		no	184		no
Mason-Dixon	44	VA07W-138		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	45	VA06W-558		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	46	VA05W-70		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	47	VA06W-44			non-IRS	114		no	201		no	184		no
Mason-Dixon	48	VA06W-146			non-IRS	114		no	205		no	184		no
Mason-Dixon	49	VA08W-92		<b>222</b>	<b>1RS:1AL</b>	114		no	211	219	no	184		no
Mason-Dixon	50	VA08W-165		<b>222</b>	<b>1RS:1AL</b>	114		no	201		no	184		no
Mason-Dixon	51	VA08W-176		<b>222</b>	<b>1RS:1AL</b>	114		no	205	211	no	184		no
Mason-Dixon	52	VA08W-193		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	53	VA08W-196		<b>222</b>	<b>1RS:1AL</b>	114		no	211		no	184		no
Mason-Dixon	54	VA08W-223			non-IRS	114		no	201		no	184		no
Mason-Dixon	55	VA08W-232		<b>222</b>	<b>1RS:1AL</b>	114		no	201		no	184		no
Mason-Dixon	56	VA08W-286		<b>222</b>	<b>1RS:1AL</b>	114		no	198		no	184		no
Mason-Dixon	57	VA08W-294		<b>222</b>	<b>1RS:1AL</b>	114		no	201		no	184		no
Mason-Dixon	58	VA08W-295			non-IRS	114		no	201		no	184		no
Mason-Dixon	59	VA07W-569		<b>222</b>	<b>1RS:1AL</b>	114		no	193	219	no	184		no
Mason-Dixon	60	VA07W-594	<b>207</b>		<b>1RS:1BL</b>	114		no	193	201	no	184		no
Mason-Dixon	61	VA07W-601			non-IRS	114		no	205		no	184		no
Mason-Dixon	62	VA06W-612			non-IRS	114		no	193	201	no	184		no
Mason-Dixon	63	ARS05-0277		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	64	ARS05-0282		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	65	ARS05-0286		<b>222</b>	<b>1RS:1AL</b>	114		no	nd		nd	184		no
Mason-Dixon	66	ARS05-0426	<b>207</b>		<b>1RS:1BL</b>	114		no	197		no	184		no
Mason-Dixon	67	ARS05-0443	<b>207</b>		<b>1RS:1BL</b>	114		no	197		no	184		no
Mason-Dixon	68	ARS05-0444	<b>207</b>		<b>1RS:1BL</b>	114		no	197		no	184		no
Mason-Dixon	69	ARS07-0095		<b>222</b>	<b>1RS:1AL</b>	114		no	217	219	no	184		no
Mason-Dixon	70	ARS07-0203			non-IRS	114		no	205		no	184		no
Mason-Dixon	71	ARS07-0211			non-IRS	114		no	217	219	no	184		no
Mason-Dixon	72	ARS07-0221			non-IRS	114		no	201		no	184		no
Mason-Dixon	73	ARS07-0245			non-IRS	114		no	201		no	184		no
Mason-Dixon	74	ARS07-0250	<b>207</b>		<b>1RS:1BL</b>	114		no	193		no	184		no
Mason-Dixon	75	ARS07-0331			non-IRS	114		no	191		no	184		no
Mason-Dixon	76	ARS07-0386			non-IRS	114		no	197		no	184		no
Mason-Dixon	77	ARS07-0407			non-IRS	114	<b>152</b>	<b>het</b>	201		no	184		no
Mason-Dixon	78	ARS07-0543			non-IRS	<b>152</b>		<b>yes</b>	199		no	184		no
Mason-Dixon	79	ARS07-0607			non-IRS	114	<b>152</b>	<b>het</b>	201		no	184		no
Mason-Dixon	80	ARS07-0723			non-IRS	114		no	201		no	184		no
Mason-Dixon	81	ARS07-0740			non-IRS	114		no	191		no	184		no
Mason-Dixon	82	ARS07-1226			non-IRS	114		no	nd		nd	184		no

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All numbers are size in base pairs of amplified fragments

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

## Quality Traits

2010

Nursery	Entry	Sample Name	Bx7oe	Bx7oe	Bx7 over-expressing	Umn25	Umn25	UMN26	UMN26	Glu-D1	Umn19	Umn19	Glu-A1
Mason-Dixon	1	Pioneer25R47	404		no		295		409	2+12	341		Ax2*
Mason-Dixon	2	Branson	404		no		295		409	2+12	341		Ax2*
Mason-Dixon	3	Pioneer25R15	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	4	Tribute	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	5	KY02C-1058-02	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	6	KY02C-1114-03	404		no		295		409	2+12	341		Ax2*
Mason-Dixon	7	KY03C-1192-40	404	<b>448</b>	het	277		392	409	het?		359	Ax1 or null
Mason-Dixon	8	KY03C-1136-07	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	9	KY03C-1192-09	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	10	KY03C-1237-33	404		no	277				5+10	341		Ax2*
Mason-Dixon	11	KY02C-2219-04	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	12	KY02C-1004-32		<b>448</b>	yes	277		392		5+10		359	Ax1 or null
Mason-Dixon	13	KY03C-1192-18		<b>448</b>	yes	277		392		5+10		359	Ax1 or null
Mason-Dixon	14	KY03C-1136-11	404		no	277	295	392	409	het		359	Ax1 or null
Mason-Dixon	15	KY03C-1136-12	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	16	KY02C-1002-06		<b>448</b>	yes	277		392		5+10		359	Ax1 or null
Mason-Dixon	17	KY02C-2200-03	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	18	KY03C-1136-15	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	19	KY03C-1237-32	404		no		295		409	2+12	341		Ax2*
Mason-Dixon	20	KY02C-2200-15	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	21	KY03C-1237-39	404		no		295		409	2+12	341		Ax2*
Mason-Dixon	22	KY02C-2200-04	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	23	MD03-69-15	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	24	MD03W91-09-2	404		no	277		392		5+10		359	Ax1 or null
Mason-Dixon	25	MD03W91-09-6	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	26	MD03W91-09-8	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	27	MD03W59-09-9	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	28	MD03W-09-1	404		no	277	295	392	409	het		359	Ax1 or null
Mason-Dixon	29	MD03W61-09-2	404		no	277		392		5+10		359	Ax1 or null
Mason-Dixon	30	MD03W61-09-7	404		no	277		392		5+10		359	Ax1 or null
Mason-Dixon	31	MD03W61-09-11	404		no	277		392		5+10		359	Ax1 or null
Mason-Dixon	32	MD03W61-09-12	404	<b>448</b>	het	277		392		5+10		359	Ax1 or null
Mason-Dixon	33	MD03W61-09-16	404		no	277		392		5+10		359	Ax1 or null
Mason-Dixon	34	MD03W62-09-1		<b>448</b>	yes	277		392		5+10	341	359	het
Mason-Dixon	35	MD03W62-09-6	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	36	MD03W665-09-1	404		no		295		409	2+12		359	Ax1 or null
Mason-Dixon	37	MD03W665-09-2	404		no	277		392		5+10		359	Ax1 or null
Mason-Dixon	38	MD03W665-09-6	404		no	277		392		5+10		359	Ax1 or null
Mason-Dixon	39	MD02W135-09-2	404		no		295		409	2+12	341		Ax2*
Mason-Dixon	40	MD02W135-08-10	404		no		295		409	2+12	341		Ax2*

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## Quality Traits

2010

Nursery	Entry	Sample Name	Bx7oe	Bx7oe	Bx7 over-expressing	Umn25	Umn25	UMN26	UMN26	Glu-D1	Umn19	Umn19	Glu-A1
Mason-Dixon	41	MD02W17-08-3	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	42	MD02W17-08-6	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	43	VA06W-412	404		no	277		392		5+10	341		Ax2*
Mason-Dixon	44	VA07W-138	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	45	VA06W-558	404		no		300		409	2+12	340		Ax2*
Mason-Dixon	46	VA05W-70	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	47	VA06W-44	404		no		293		409	2+12	340		Ax2*
Mason-Dixon	48	VA06W-146	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	49	VA08W-92	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	50	VA08W-165	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	51	VA08W-176	404		no		293		409	2+12	340		Ax2*
Mason-Dixon	52	VA08W-193	404		no		293		409	2+12	340		Ax2*
Mason-Dixon	53	VA08W-196	404		no	275	293	392		het	340	358	het
Mason-Dixon	54	VA08W-223	404		no		293		409	2+12	340	358	het
Mason-Dixon	55	VA08W-232	404		no		293		409	2+12	340	358	het
Mason-Dixon	56	VA08W-286		448	yes	275		392		5+10	340		Ax2*
Mason-Dixon	57	VA08W-294	404		no		300		409	2+12	340		Ax2*
Mason-Dixon	58	VA08W-295	404		no		293		409	2+12	340		Ax2*
Mason-Dixon	59	VA07W-569	404		no		293		409	2+12	340	358	het
Mason-Dixon	60	VA07W-594	404		no	275		392		5+10		358	Ax1 or null
Mason-Dixon	61	VA07W-601	404		no		293		409	2+12	340	358	het
Mason-Dixon	62	VA06W-612	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	63	ARS05-0277	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	64	ARS05-0282	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	65	ARS05-0286	404		no	275		392		5+10	340		Ax2*
Mason-Dixon	66	ARS05-0426	404		no	275		392		5+10		358	Ax1 or null
Mason-Dixon	67	ARS05-0443	404		no	275		392		5+10		358	Ax1 or null
Mason-Dixon	68	ARS05-0444	404		no	275		392		5+10		358	Ax1 or null
Mason-Dixon	69	ARS07-0095	404		no	275		392		5+10		358	Ax1 or null
Mason-Dixon	70	ARS07-0203	404		no		293		409	2+12		358	Ax1 or null
Mason-Dixon	71	ARS07-0211	404		no		293		409	2+12		358	Ax1 or null
Mason-Dixon	72	ARS07-0221	404		no		293		409	2+12	340	358	het
Mason-Dixon	73	ARS07-0245	404		no		293		409	2+12	340		Ax2*
Mason-Dixon	74	ARS07-0250	404		no	275	293	392	409	het	340		Ax2*
Mason-Dixon	75	ARS07-0331	404		no	275		392		5+10	340	358	het
Mason-Dixon	76	ARS07-0386	404		no		293		409	2+12	340		Ax2*
Mason-Dixon	77	ARS07-0407	404		no		293		409	2+12	340		Ax2*
Mason-Dixon	78	ARS07-0543	404		no	275		392		5+10		358	Ax1 or null
Mason-Dixon	79	ARS07-0607	404		no	275		392		5+10	340	358	het
Mason-Dixon	80	ARS07-0723	404		no		293		409	2+12		358	Ax1 or null
Mason-Dixon	81	ARS07-0740	404		no		300		409	2+12	340	358	het
Mason-Dixon	82	ARS07-1226	404		no	275	293	392	409	het	340		Ax2*

"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 was 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**

## 2010 Gulf Atlantic Wheat Nursery

### Entry List

Nursery	Entry	Sample Name	Pedigree	Source
GAWN	1001	LA02006E239	NC98-24710(HFL)/AGS2000,F1//PIO26R61	
GAWN	1002	SCW010025G1	SC957755)/SC967725(F2-H14,H15.H7,H8)//PI531193(FHB)	
GAWN	1003	LA04089D-P10	LA03205(P26R61/LA95361)/AGS2060	
GAWN	1004	USG3555	Check	
GAWN	1005	GA02178-9E25	GA941238 / AGS 2485	
GAWN	1006	GA021087-9LE33	PIO26R61 / AGS 2010	
GAWN	1007	VA08W-196	AGS2000/USG3706 // DOMINION	
GAWN	1008	SCW010025H1	SC957755)/SC967725(F2-H14,H15.H7,H8)//PI531193(FHB)	
GAWN	1009	SCW010025K1	SC957755)/SC967725(F2-H14,H15.H7,H8)//PI531193(FHB)	
GAWN	1010	SCTX98-27-J1	VA94-54-479/ A93*7162	
GAWN	1011	AR99016-1-2	AR584A-3-1/Sabbe	
GAWN	1012	AR00134-3-4	Coker9663 / Pat	
GAWN	1013	VA08W-176	KY96C-0079-5 / McCORMICK,F8	
GAWN	1014	VA08W-165	VA00W-366]/TRIBUTE,F8	
GAWN	1015	NC07-24445	USG 3209 / NC98-26541	
GAWN	1016	SCLA99049D-E1-J1	FL931339AS/87167D8-10-2,F1//NC96BGTA5	
GAWN	1017	VA08W-286	PIONEER 25R38(STRONG GLUTEN SRW)/ TRIBUTE,F8	
GAWN	1018	NC07-21020	NC96-13155 / ROANE // Tribute	
GAWN	1019	AR00255-16-1	Roane/ LA9070G45-3-3-1	
GAWN	1020	NC07-21172	NC96-13965 / C9184 // P2643	
GAWN	1021	SCW010025T1	SC957755)/SC967725(F2-H14,H15.H7,H8)//PI531193(FHB)	
GAWN	1022	LA01069D-23-4-4	INW9811 (H13)/PIO26R61	
GAWN	1023	SS8641	Check	
GAWN	1024	AR99263-7-1	P92118B4-2/Jaypee	
GAWN	1025	NC04-20417	P92118 (SN) / VA94-52-25 // NC96BGTD2	
GAWN	1026	AR00082-13-2	Pat/AR647-1-6	
GAWN	1027	LA01139D-56-7-3	LA841/LA422//PIO26R61	
GAWN	1028	VA06W-146	RENWOOD 3260"S" )/ LA9070G45-3-3-1	
GAWN	1029	GA03564-9EE42	SS8641 /4/ AGS2000*3 // PIO2684 / *3 AGS 2000 /3/ AGS 2000	
GAWN	1030	GA001142-9E23	GA931520 / PIO 26R61	
GAWN	1031	VA08W-295	SS 520)/ VA99W-188 //TRIBUTE,F8	
GAWN	1032	AR99015-3-1	AR584A-3-1/AR 494	
GAWN	1033	AR00196-10-1	OK91P648-41/ Sabbe	
GAWN	1034	AR99160-4-1B	Ernie/ PI 590277// Ernie	
GAWN	1035	AR00039-5-2	AR684-22-1-1/Sabbe	
GAWN	1036	LA95135	CL850643/PIO2548//C9877,90239A29-1-X/3/,8644A3-3-2-P2,F302/C762	
GAWN	1037	VA08W-223	GF90524E1]/ USG3706[ // SS520,F8	
GAWN	1038	AGS2060	Check	
GAWN	1039	GA021338-9EE11	PIO26R38/GA941238//AGS 2000	
GAWN	1040	LA01034D-42-3-C	LA94214D200(PIO2684/CK9663)/LA841	

## 2010 Gulf Atlantic Wheat Nursery

### Entry List

Nursery	Entry	Sample Name	Pedigree	Source
GAWN	1041	SCTX98-20-J10	LA87107-08-10-2/ P88288C1-6-1-2	
GAWN	1042	SCW010025G2	SC957755)/SC967725(F2-H14,H15.H7,H8)//PI531193(FHB)	
GAWN	1043	LA01059D-127-3-2	GA92412-15-5-4/LA841	
GAWN	1044	VA08W-193	AGS2000/USG3706 // DOMINION	
GAWN	1045	NC07-23880	P26R24 / VA97W-375 // NC96-13965	
GAWN	1046	GA03060-9E29	AGS 2000 *3 / GA 84202 (LR37)	
GAWN	1047	NC06-20359	NC96-13848 / B951008 // NC96-14629	
GAWN	1048	VA08W-92	RENWOOD 3260"S" )/ LA9070G45-3-3-1// TRIBUTE	
GAWN	1049	AR00090-1-1	Pat/ Pioneer 2684	
GAWN	1050	NC06-22003	NC95CLB-14543 / REN 3260 // NC96-14629	
GAWN	1051	SCW010025D1	SC957755)/SC967725(F2-H14,H15.H7,H8)//PI531193(FHB)	
GAWN	1052	NC07-20850	UW85-1352 / C9704 // NC96-13155	
GAWN	1053	FL03169D-58	Pioneer 26R61/GA 951079 A25(881130 / GORE)	
GAWN	1054	LA02150E-35	NC99-13022/LA9354D9-3-1(T63/8512A8-(IDEO)//C762/PU791907A7-3)	
GAWN	1055	VA07W-415	VA98W-895[/ GA881130LE5://VA98W-627RS)/ CK9803],F9	
GAWN	1056	LA02007E227	NC98-24710(HFL)/LA422,F1//VA98W-590	
GAWN	1057	GA001142-9E24	GA931520 / PIO 26R61	
GAWN	1058	LA01145D-123-5-C	LA841/U1254-6-2-7//LA841	
GAWN	1059	VA08W-294	SS 520)/ VA99W-188 //TRIBUTE,F7	
GAWN	1060	GA021338-9E15	PIO26R38/GA941238//AGS 2000	
GAWN	1061	SCW010025L1	SC957755)/SC967725(F2-H14,H15.H7,H8)//PI531193(FHB)	
GAWN	1062	LA02015E201	VA99W-169/PIO26R61,F1//LA94242D4-4(VA92-54-104/MOREY SIB)	
GAWN	1063	NC07-24337	NC98-24710 / NC98-26541	
GAWN	1064	NC07-22432	NC96-14094 / P26R24 // Tribute	
GAWN	1065	GA021338-9E4	PIO26R38/GA941238//AGS 2000	
GAWN	1066	GA02343-9LE5	AGS 2000 *3 / GA 941433 // GA 931520 / AGS 2000	
GAWN	1067	VA08W-232	GF921221E16/McCORMICK"S")// VA99W-200[	
GAWN	1068	NC07-22517	Tribute / NC98-25380 // NC96-13155	
GAWN	1069	AR98097-4-1	Pioneer 26R46/COKER 9803	
GAWN	1070	GA011446-9LE35	GA941365-D23 / GA 941238-E34	
GAWN	1071	GA021245-9E16	FL93024-1 / PIO26R61 // AGS 2485	
GAWN	1072	AR00036-5-1	Sabbe/ USG3209	
GAWN	1073	SCLA01111C-J7	P26R61/FUTAI8944	
GAWN	1074	NC07-25169	Tribute / NC98-25380 // NC96-13155	
GAWN	1075	SCTX98-27-J7	VA94-54-479/ A93*7162	

## 2010 Gulf Atlantic Wheat Nursery

### Summary of all Markers

Nursery	Entry	Sample Name	Rht1-			Ppd-D1a	Fhb				
			B1b	Rht2-D1b	Rht8		Fhb1	Ernie 3Bc	Fhb 2DL- Wuhan1/ W14	Fhb 5A Ernie	Fhb 5A <i>Ning7840</i>
GAWN	1001	LA02006E239	no	yes	no	no	no	no	no	no	no
GAWN	1002	SCW010025G1	no	yes	no	no	no	no	no	no	no
GAWN	1003	LA04089D-P10	yes	no	no	no	no	no	no	no	no
GAWN	1004	USG3555	no	yes	no	yes	<b>False positive</b>	yes	no	no	no
GAWN	1005	GA02178-9E25	no	yes	no	yes	no	no	no	no	no
GAWN	1006	GA021087-9LE33	no	yes	no	yes	no	no	no	no	no
GAWN	1007	VA08W-196	no	yes	no	no	no	no	no	yes	no
GAWN	1008	SCW010025H1	no	yes	no	no	no	no	no	no	no
GAWN	1009	SCW010025K1	no	yes	no	no	no	no	no	no	no
GAWN	1010	SCTX98-27-J1	no	yes	no	no	no	yes	no	no	no
GAWN	1011	AR99016-1-2	no	no	yes	no	no	no	no	no	no
GAWN	1012	AR00134-3-4	yes	no	no	yes	no	no	no	no	no
GAWN	1013	VA08W-176	no	yes	no	no	no	no	no	no	no
GAWN	1014	VA08W-165	no	yes	no	no	no	no	no	no	no
GAWN	1015	NC07-24445	no	yes	yes	yes	no	yes	no	no	no
GAWN	1016	SCLA99049D-E1-J1	no	yes	no	no	no	no	no	no	no
GAWN	1017	VA08W-286	no	nd	no	no	no	no	no	no	no
GAWN	1018	NC07-21020	no	yes	no	no	no	no	no	no	no
GAWN	1019	AR00255-16-1	no	yes	no	yes	no	no	no	no	no
GAWN	1020	NC07-21172	no	yes	no	no	no	no	no	no	no
GAWN	1021	SCW010025T1	no	yes	no	no	no	no	no	no	no
GAWN	1022	LA01069D-23-4-4	no	yes	no	yes	no	no	no	no	no
GAWN	1023	SS8641	no	yes	no	yes	no	no	no	no	no
GAWN	1024	AR99263-7-1	yes	no	no	no	no	no	no	no	no
GAWN	1025	NC04-20417	nd	nd	no	yes	no	no	no	no	no
GAWN	1026	AR00082-13-2	yes	no	no	yes	no	no	no	no	no
GAWN	1027	LA01139D-56-7-3	no	yes	no	yes	no	no	no	no	no
GAWN	1028	VA06W-146	yes	het	no	yes	no	no	no	no	no
GAWN	1029	GA03564-9EE42	no	yes	no	no	no	no	no	no	no
GAWN	1030	GA001142-9E23	no	yes	no	yes	no	no	no	no	no
GAWN	1031	VA08W-295	no	yes	no	no	no	no	no	no	no
GAWN	1032	AR99015-3-1	no	no	no	yes	no	no	no	no	no
GAWN	1033	AR00196-10-1	no	nd	no	yes	no	no	no	no	no
GAWN	1034	AR99160-4-1B	nd	no	no	no	no	yes	no	no	no
GAWN	1035	AR00039-5-2	yes	no	no	yes	no	no	no	no	no
GAWN	1036	LA95135	no	yes	no	no	no	no	no	no	no
GAWN	1037	VA08W-223	no	yes	no	yes	no	no	no	no	no
GAWN	1038	AGS2060	no	no	no	no	no	no	no	no	no
GAWN	1039	GA021338-9EE11	no	yes	no	no	no	no	no	no	no
GAWN	1040	LA01034D-42-3-C	no	yes	yes	yes	no	no	no	no	no

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

"nd" = not determined or lack of amplification

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

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All numbers are size in base pairs of amplified fragments

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

## 2010 Gulf Atlantic Wheat Nursery

### Summary of all Markers

Nursery	Entry	Sample Name	Rht1-			Ppd-D1a	Fhb					
			B1b	Rht2-D1b	Rht8		Fhb1	Ernie 3Bc	Fhb 2DL- Wuhan1/ W14	Fhb 5A Ernie	Fhb 5A <i>Ning7840</i>	
GAWN	1041	SCTX98-20-J10	<b>yes</b>	nd	no	no	no	no	no	no	no	<i>no</i>
GAWN	1042	SCW010025G2	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1043	LA01059D-127-3-2	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
GAWN	1044	VA08W-193	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1045	NC07-23880	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1046	GA03060-9E29	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1047	NC06-20359	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1048	VA08W-92	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1049	AR00090-1-1	no	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1050	NC06-22003	no	<b>yes</b>	no	<b>yes</b>	<b>yes</b>	no	no	no	no	<i>no</i>
GAWN	1051	SCW010025D1	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1052	NC07-20850	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1053	FL03169D-58	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1054	LA02150E-35	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1055	VA07W-415	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1056	LA02007E227	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1057	GA001142-9E24	no	<b>yes</b>	no	<b>het</b>	no	no	no	<b>het?</b>	no	<i>no</i>
GAWN	1058	LA01145D-123-5-C	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1059	VA08W-294	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1060	GA021338-9E15	no	<b>yes</b>	no	<b>het</b>	no	no	no	no	no	<i>no</i>
GAWN	1061	SCW010025L1	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1062	LA02015E201	no	<b>yes</b>	<b>yes</b>	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1063	NC07-24337	nd	<b>yes</b>	<b>yes</b>	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1064	NC07-22432	no	<b>yes</b>	no	<b>het</b>	no	no	no	no	no	<i>no</i>
GAWN	1065	GA021338-9E4	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1066	GA02343-9LE5	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1067	VA08W-232	no	<b>yes</b>	no	<b>yes</b>	no	no	no	?	no	<i>no</i>
GAWN	1068	NC07-22517	no	<b>yes</b>	no	no	no	no	no	<b>yes?</b>	no	<i>no</i>
GAWN	1069	AR98097-4-1	no	<b>yes</b>	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1070	GA011446-9LE35	<b>yes</b>	no	no	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1071	GA021245-9E16	no	<b>yes</b>	no	<b>het</b>	no	no	no	no	no	<i>no</i>
GAWN	1072	AR00036-5-1	<b>yes</b>	no	no	no	no	no	no	no	no	<i>no</i>
GAWN	1073	SCLA01111C-J7	no	<b>yes</b>	<b>het</b>	<b>yes</b>	no	no	no	no	no	<i>no</i>
GAWN	1074	NC07-25169	no	<b>yes</b>	no	no	no	no	no	no	no	<i>no</i>
GAWN	1075	SCTX98-27-J7	no	<b>yes</b>	no	no	no	<b>yes</b>	no	no	no	<i>no</i>

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## 2010 Gulf Atlantic Wheat Nursery

### Summary of all Markers

Nursery	Entry	Sample Name	Yr17/ Lr34/ Lr37/ Yr18/ Pm38					1RS	H13	H9	Bdv2/3	Bx7 over- expressing	Glu-D1	Glu-A1
			Sr2	Sr36	Sr24/ Lr24	Sr38	Pm38							
GAWN	1001	LA02006E239	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1002	SCW010025G1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1003	LA04089D-P10	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax2*</b>
GAWN	1004	USG3555	no	<b>yes</b>	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1005	GA02178-9E25	no	no	no	<b>yes</b>	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1006	GA021087-9LE33	no	no	no	<b>yes</b>	no	non-1RS	<b>yes</b>	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1007	VA08W-196	no	no	no	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>het</b>	<b>Ax1 or null</b>
GAWN	1008	SCW010025H1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1009	SCW010025K1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1010	SCTX98-27-J1	no	<b>yes</b>	no	<b>yes</b>	no	non-1RS	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax1 or null</b>
GAWN	1011	AR99016-1-2	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1012	AR00134-3-4	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1013	VA08W-176	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1014	VA08W-165	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1015	NC07-24445	no	<b>yes</b>	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
GAWN	1016	SCLA99049D-E1-J1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1017	VA08W-286	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	<b>yes</b>	<b>5+10</b>	<b>Ax2*</b>
GAWN	1018	NC07-21020	no	<b>yes</b>	no	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1019	AR00255-16-1	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1020	NC07-21172	no	<b>yes</b>	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1021	SCW010025T1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1022	LA01069D-23-4-4	no	no	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1023	SS8641	no	no	no	<b>yes</b>	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1024	AR99263-7-1	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1025	NC04-20417	no	<b>yes</b>	no	no	no	non-1RS	<b>yes</b>	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1026	AR00082-13-2	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1027	LA01139D-56-7-3	no	<b>yes</b>	no	<b>yes</b>	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
GAWN	1028	VA06W-146	no	no	<b>yes</b>	no	no	<b>1RS:1AL?</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1029	GA03564-9EE42	no	no	no	<b>yes</b>	no	<b>1RS:1AL</b>	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1030	GA001142-9E23	no	no	no	<b>yes</b>	no	non-1RS	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax2*</b>
GAWN	1031	VA08W-295	no	no	<b>yes</b>	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1032	AR99015-3-1	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1033	AR00196-10-1	no	no	<b>yes</b>	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1034	AR99160-4-1B	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1035	AR00039-5-2	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1036	LA95135	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1037	VA08W-223	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>het</b>
GAWN	1038	AGS2060	no	<b>yes</b>	<b>yes</b>	<b>yes</b>	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1039	GA021338-9EE11	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax1 or null</b>
GAWN	1040	LA01034D-42-3-C	no	<b>het</b>	no	no	no	<b>1RS:1AL</b>	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax2*</b>

"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 was 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**



## 2010 Gulf Atlantic Wheat Nursery

### Summary of all Markers

Nursery	Entry	Sample Name	Yr17/ Lr34/ Sr24/ Lr37/ Yr18/ Sr2 Sr36 Lr24 Sr38 Pm38					1RS	H13	H9	Bdv2/3	Bx7 over- expressing	Glu-D1	Glu-A1
			Sr2	Sr36	Lr24	Sr38	Pm38							
GAWN	1041	SCTX98-20-J10	no	<b>het</b>	no	<b>yes</b>	no	non-1RS	no	no	no	no	<b>het</b>	<b>het</b>
GAWN	1042	SCW010025G2	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1043	LA01059D-127-3-2	no	no	no	no	no	non-1RS	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax1 or null</b>
GAWN	1044	VA08W-193	no	no	no	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1045	NC07-23880	no	<b>yes</b>	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1046	GA03060-9E29	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	no	<b>het</b>	<b>Ax1 or null</b>
GAWN	1047	NC06-20359	no	<b>yes</b>	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1048	VA08W-92	no	no	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1049	AR00090-1-1	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1050	NC06-22003	no	<b>yes</b>	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>het</b>
GAWN	1051	SCW010025D1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1052	NC07-20850	no	<b>yes</b>	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1053	FL03169D-58	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	<b>yes</b>	no	no	<b>yes</b>	<b>2+12</b>	<b>Ax2*</b>
GAWN	1054	LA02150E-35	no	no	<b>yes</b>	<b>yes</b>	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1055	VA07W-415	no	no	no	<b>yes</b>	no	non-1RS	<b>yes</b>	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1056	LA02007E227	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1057	GA001142-9E24	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	no	<b>het</b>	<b>Ax1 or null</b>
GAWN	1058	LA01145D-123-5-C	no	no	no	no	no	non-1RS	no	no	no	<b>yes</b>	<b>2+12</b>	<b>Ax2*</b>
GAWN	1059	VA08W-294	no	no	no	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1060	GA021338-9E15	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>het</b>
GAWN	1061	SCW010025L1	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1062	LA02015E201	no	no	<b>yes</b>	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1063	NC07-24337	no	<b>yes</b>	no	no	no	non-1RS	<b>yes</b>	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1064	NC07-22432	no	<b>yes</b>	no	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1065	GA021338-9E4	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1066	GA02343-9LE5	no	no	no	no	no	<b>1RS:1BL</b>	no	no	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1067	VA08W-232	no	no	no	no	no	<b>1RS:1AL</b>	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1068	NC07-22517	no	<b>yes</b>	<b>yes</b>	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1069	AR98097-4-1	no	<b>yes</b>	no	no	no	non-1RS	no	no	no	no	<b>5+10</b>	<b>Ax2*</b>
GAWN	1070	GA011446-9LE35	no	no	no	no	no	<b>1RS:1BL</b>	<b>het</b>	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1071	GA021245-9E16	no	no	no	<b>yes</b>	no	<b>1RS:1BL</b>	no	no	no	<b>het</b>	<b>het</b>	<b>het</b>
GAWN	1072	AR00036-5-1	no	no	no	no	no	non-1RS	no	no	no	no	<b>2+12</b>	<b>Ax1 or null</b>
GAWN	1073	SCLA01111C-J7	no	no	no	no	no	non-1RS	no	no	no	<b>yes</b>	<b>2+12</b>	<b>het</b>
GAWN	1074	NC07-25169	no	<b>yes</b>	<b>yes</b>	no	no	<b>1RS:1AL</b>	no	nd	no	no	<b>2+12</b>	<b>Ax2*</b>
GAWN	1075	SCTX98-27-J7	no	<b>yes</b>	no	<b>yes</b>	no	non-1RS	no	no	no	<b>yes</b>	<b>5+10</b>	<b>Ax1 or null</b>

"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 was 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**

## Dwarfing genes & Photoperiod insensitivity

2010

Nursery	Entry	Sample Name	Rht1K	Rht2K	Rht1-B1b	Rht2-D1b	gwm261	gwm261	gwm261	Rht8	Ppd	Ppd	Ppd-D1a
GAWN	1001	LA02006E239	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163			no	414	no	
GAWN	1002	SCW010025G1	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1003	LA04089D-P10	<b>Allele Y</b>	Allele X	<b>yes</b>	no	201			no	414	no	
GAWN	1004	USG3555	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>	<b>yes</b>	
GAWN	1005	GA02178-9E25	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>	<b>yes</b>	
GAWN	1006	GA021087-9LE33	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>	<b>yes</b>	
GAWN	1007	VA08W-196	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173			no	414	no	
GAWN	1008	SCW010025H1	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1009	SCW010025K1	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1010	SCTX98-27-J1	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1011	AR99016-1-2	Allele X	Allele X	no	no	<b>192</b>			<b>yes</b>	414	no	
GAWN	1012	AR00134-3-4	<b>Allele Y</b>	Allele X	<b>yes</b>	no	173			no	<b>283</b>	<b>yes</b>	
GAWN	1013	VA08W-176	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163	173		no	414	no	
GAWN	1014	VA08W-165	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1015	NC07-24445	Allele X	<b>Allele Y</b>	no	<b>yes</b>	<b>192</b>			<b>yes</b>	<b>283</b>	<b>yes</b>	
GAWN	1016	SCLA99049D-E1-J1	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163			no	414	no	
GAWN	1017	VA08W-286	Allele X	nd	no	nd	163			no	414	no	
GAWN	1018	NC07-21020	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1019	AR00255-16-1	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163			no	<b>283</b>	<b>yes</b>	
GAWN	1020	NC07-21172	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1021	SCW010025T1	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1022	LA01069D-23-4-4	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>	<b>yes</b>	
GAWN	1023	SS8641	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>	<b>yes</b>	
GAWN	1024	AR99263-7-1	<b>Allele Y</b>	Allele X	<b>yes</b>	no	173			no	414	no	
GAWN	1025	NC04-20417	nd	nd	nd	nd	201			no	<b>283</b>	<b>yes</b>	
GAWN	1026	AR00082-13-2	<b>Allele Y</b>	Allele X	<b>yes</b>	no	173			no	<b>283</b>	<b>yes</b>	
GAWN	1027	LA01139D-56-7-3	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163			no	<b>283</b>	<b>yes</b>	
GAWN	1028	VA06W-146	<b>Allele Y</b>	<b>Both Alleles</b>	<b>yes</b>	<b>het</b>	173	201		no	<b>283</b>	<b>yes</b>	
GAWN	1029	GA03564-9EE42	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1030	GA001142-9E23	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>	<b>yes</b>	
GAWN	1031	VA08W-295	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1032	AR99015-3-1	Allele X	Allele X	no	no	173			no	<b>283</b>	<b>yes</b>	
GAWN	1033	AR00196-10-1	Allele X	nd	no	nd	163	173		no	<b>283</b>	<b>yes</b>	
GAWN	1034	AR99160-4-1B	nd	Allele X	nd	no	173			no	414	no	
GAWN	1035	AR00039-5-2	<b>Allele Y</b>	Allele X	<b>yes</b>	no	173			no	<b>283</b>	<b>yes</b>	
GAWN	1036	LA95135	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163			no	414	no	
GAWN	1037	VA08W-223	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	<b>283</b>	<b>yes</b>	
GAWN	1038	AGS2060	Allele X	Allele X	no	no	201			no	414	no	
GAWN	1039	GA021338-9EE11	Allele X	<b>Allele Y</b>	no	<b>yes</b>	201			no	414	no	
GAWN	1040	LA01034D-42-3-C	Allele X	<b>Allele Y</b>	no	<b>yes</b>	<b>192</b>			<b>yes</b>	<b>283</b>	<b>yes</b>	

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

"nd" = not determined or lack of amplification

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

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## Dwarfing genes & Photoperiod insensitivity

2010

Nursery	Entry	Sample Name	Rht1K	Rht2K	Rht1-		gwm261	gwm261	gwm261	Rht8	Ppd	Ppd	Ppd-D1a
					B1b	Rht2-D1b							
GAWN	1041	SCTX98-20-J10	<b>Allele Y</b>	nd	yes	nd	173	201		no	414	no	
GAWN	1042	SCW010025G2	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1043	LA01059D-127-3-2	<b>Allele Y</b>	Allele X	yes	no	173			no	414	no	
GAWN	1044	VA08W-193	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1045	NC07-23880	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1046	GA03060-9E29	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1047	NC06-20359	Allele X	<b>Allele Y</b>	no	yes	201			no	<b>283</b>		yes
GAWN	1048	VA08W-92	Allele X	<b>Allele Y</b>	no	yes	201			no	<b>283</b>		yes
GAWN	1049	AR00090-1-1	Allele X	Allele X	no	no	173			no	<b>283</b>		yes
GAWN	1050	NC06-22003	Allele X	<b>Allele Y</b>	no	yes	173			no	<b>283</b>		yes
GAWN	1051	SCW010025D1	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1052	NC07-20850	Allele X	<b>Allele Y</b>	no	yes	163			no	<b>283</b>		yes
GAWN	1053	FL03169D-58	Allele X	<b>Allele Y</b>	no	yes	201			no	<b>283</b>		yes
GAWN	1054	LA02150E-35	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1055	VA07W-415	Allele X	<b>Allele Y</b>	no	yes	173			no	<b>283</b>		yes
GAWN	1056	LA02007E227	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1057	GA001142-9E24	Allele X	<b>Allele Y</b>	no	yes	173	201		no	<b>283</b>	414	het
GAWN	1058	LA01145D-123-5-C	Allele X	<b>Allele Y</b>	no	yes	196			no	<b>283</b>		yes
GAWN	1059	VA08W-294	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1060	GA021338-9E15	Allele X	<b>Allele Y</b>	no	yes	201			no	<b>283</b>	414	het
GAWN	1061	SCW010025L1	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1062	LA02015E201	Allele X	<b>Allele Y</b>	no	yes	<b>192</b>			yes	<b>283</b>		yes
GAWN	1063	NC07-24337	nd	<b>Allele Y</b>	nd	yes	<b>192</b>			yes	<b>283</b>		yes
GAWN	1064	NC07-22432	Allele X	<b>Allele Y</b>	no	yes	201			no	<b>283</b>	414	het
GAWN	1065	GA021338-9E4	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1066	GA02343-9LE5	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1067	VA08W-232	Allele X	<b>Allele Y</b>	no	yes	201			no	<b>283</b>		yes
GAWN	1068	NC07-22517	Allele X	<b>Allele Y</b>	no	yes	163			no	414	no	
GAWN	1069	AR98097-4-1	Allele X	<b>Allele Y</b>	no	yes	163			no	<b>283</b>		yes
GAWN	1070	GA011446-9LE35	<b>Allele Y</b>	Allele X	yes	no	201			no	<b>283</b>		yes
GAWN	1071	GA021245-9E16	Allele X	<b>Allele Y</b>	no	yes	201			no	<b>283</b>	414	het
GAWN	1072	AR00036-5-1	<b>Allele Y</b>	Allele X	yes	no	173			no	414	no	
GAWN	1073	SCLA01111C-J7	Allele X	<b>Allele Y</b>	no	yes	<b>192</b>	201		het	<b>283</b>		yes
GAWN	1074	NC07-25169	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	
GAWN	1075	SCTX98-27-J7	Allele X	<b>Allele Y</b>	no	yes	201			no	414	no	

Rht1-B1b = dwarf = yes; Rht2-D1b = dwarf = yes

Ppd-D1a = photoperiod insensitive = yes

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All numbers are size in base pairs of amplified fragments

Target alleles are in **bold or italics**

## FHB QTLs

2010

Nursery	Entry	Sample Name	umn10	umn10	gwm533	gwm533	gwm533	Fhb1
GAWN	1001	LA02006E239	236		118			no
GAWN	1002	SCW010025G1	236		118			no
GAWN	1003	LA04089D-P10	236		118			no
GAWN	1004	USG3555	236	<b>239</b>	118	<b>140</b>		<b>False positive</b>
GAWN	1005	GA02178-9E25	236		118			no
GAWN	1006	GA021087-9LE33	236		118			no
GAWN	1007	VA08W-196	236		118			no
GAWN	1008	SCW010025H1	236		118			no
GAWN	1009	SCW010025K1	236		118			no
GAWN	1010	SCTX98-27-J1	236		118			no
GAWN	1011	AR99016-1-2	236		142			no
GAWN	1012	AR00134-3-4	236		118			no
GAWN	1013	VA08W-176	236		118			no
GAWN	1014	VA08W-165	236		118			no
GAWN	1015	NC07-24445	236		118			no
GAWN	1016	SCLA99049D-E1-J1	236		118			no
GAWN	1017	VA08W-286	236		118			no
GAWN	1018	NC07-21020	236		118			no
GAWN	1019	AR00255-16-1	236		118			no
GAWN	1020	NC07-21172	236		128			no
GAWN	1021	SCW010025T1	236		118			no
GAWN	1022	LA01069D-23-4-4	236		118			no
GAWN	1023	SS8641	236		118			no
GAWN	1024	AR99263-7-1	236		118			no
GAWN	1025	NC04-20417	236		118			no
GAWN	1026	AR00082-13-2	236		118			no
GAWN	1027	LA01139D-56-7-3	236		118			no
GAWN	1028	VA06W-146	236		118			no
GAWN	1029	GA03564-9EE42	236		118			no
GAWN	1030	GA001142-9E23	236		118			no
GAWN	1031	VA08W-295	236		nd			no
GAWN	1032	AR99015-3-1	236		nd			no
GAWN	1033	AR00196-10-1	236		128			no
GAWN	1034	AR99160-4-1B	236		118			no
GAWN	1035	AR00039-5-2	236		118			no
GAWN	1036	LA95135	236		118			no
GAWN	1037	VA08W-223	236		118			no
GAWN	1038	AGS2060	236		118			no
GAWN	1039	GA021338-9EE11	236		nd			no
GAWN	1040	LA01034D-42-3-C	236		118			no

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

## FHB QTLs

2010

Nursery	Entry	Sample Name	umn10	umn10	gwm533	gwm533	gwm533	Fhb1
GAWN	1041	SCTX98-20-J10	236		118			no
GAWN	1042	SCW010025G2	236		118			no
GAWN	1043	LA01059D-127-3-2	236		118			no
GAWN	1044	VA08W-193	229	236	118	146	155	no
GAWN	1045	NC07-23880	236		128			no
GAWN	1046	GA03060-9E29	236		118			no
GAWN	1047	NC06-20359	236		118			no
GAWN	1048	VA08W-92	236		nd			no
GAWN	1049	AR00090-1-1	236		118			no
GAWN	1050	NC06-22003	<b>239</b>		<b>140</b>			<b>yes</b>
GAWN	1051	SCW010025D1	236		118			no
GAWN	1052	NC07-20850	236		118			no
GAWN	1053	FL03169D-58	236		118			no
GAWN	1054	LA02150E-35	236		118			no
GAWN	1055	VA07W-415	236		118			no
GAWN	1056	LA02007E227	229		146	155		no
GAWN	1057	GA001142-9E24	236		118			no
GAWN	1058	LA01145D-123-5-C	236		118			no
GAWN	1059	VA08W-294	236		118			no
GAWN	1060	GA021338-9E15	236		118			no
GAWN	1061	SCW010025L1	236		118			no
GAWN	1062	LA02015E201	229		146	155		no
GAWN	1063	NC07-24337	229	236	118	146	155	no
GAWN	1064	NC07-22432	236		118			no
GAWN	1065	GA021338-9E4	236		118			no
GAWN	1066	GA02343-9LE5	236		118			no
GAWN	1067	VA08W-232	236		118			no
GAWN	1068	NC07-22517	236		118			no
GAWN	1069	AR98097-4-1	236		118			no
GAWN	1070	GA011446-9LE35	236		118			no
GAWN	1071	GA021245-9E16	236		118			no
GAWN	1072	AR00036-5-1	236		118			no
GAWN	1073	SCLA01111C-J7	229	236	118	146		no
GAWN	1074	NC07-25169	236		nd			no
GAWN	1075	SCTX98-27-J7	236		118			no

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## FHB QTLs

2010

Nursery	Entry	Sample Name	gwm	gwm	gwm	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	Fhb	
			<b>285</b>	<b>285</b>	<b>285</b>	<b>612</b>	<b>612</b>	<b>612</b>	<b>307</b>	<b>307</b>	<b>1</b>	<b>1</b>	<b>418</b>	<b>418</b>	<b>471</b>	<b>471</b>	<b>471</b>	Ernie 3Bc
GAWN	1001	LA02006E239	226	<b>246</b>		279	281		<b>141</b>	143	149		269		177	217	no	
GAWN	1002	SCW010025G1	226			287	289		<b>141</b>		149		269	271	177	215	no	
GAWN	1003	LA04089D-P10	226			283	<b>285</b>		143		149		269		177	219	no	
GAWN	1004	USG3555	<b>246</b>			283	<b>285</b>		<b>141</b>		<b>153</b>		<b>262</b>		179	<b>260</b>	yes	
GAWN	1005	GA02178-9E25	226			287	289		<b>141</b>		149		269	271	177	221	no	
GAWN	1006	GA021087-9LE33	221			271	273		143		151		269	271	215		no	
GAWN	1007	VA08W-196	226			287	289	292	<b>141</b>	143	149	<b>153</b>	<b>262</b>	269	177	219	no	
GAWN	1008	SCW010025H1	226			287	289	292	<b>141</b>		149		271		177	215	no	
GAWN	1009	SCW010025K1	226			287	289	292	<b>141</b>		149		271		177	215	no	
GAWN	1010	SCTX98-27-J1	<b>246</b>			283	<b>285</b>		<b>141</b>		<b>153</b>		<b>262</b>		<b>260</b>		yes	
GAWN	1011	AR99016-1-2	219	226		275	277	289	<b>141</b>	143	151	160	271		177	217	no	
GAWN	1012	AR00134-3-4	nd			279	281		144		157		271		177	215	217	no
GAWN	1013	VA08W-176	219	226		279	281		<b>141</b>	143	149	162	269	271	177	217	no	
GAWN	1014	VA08W-165	219			279	281		<b>141</b>		162		269		221		no	
GAWN	1015	NC07-24445	<b>246</b>			283	<b>285</b>		<b>141</b>		<b>153</b>		<b>262</b>		<b>260</b>		yes	
GAWN	1016	SCLA99049D-E1-J1	226			287	289		<b>141</b>		149		260		177	217	no	
GAWN	1017	VA08W-286	219			273	275		143		<b>153</b>		<b>262</b>		179	217	no	
GAWN	1018	NC07-21020	<b>246</b>			279	281		<b>141</b>		<b>153</b>		<b>262</b>		177	179	217	no
GAWN	1019	AR00255-16-1	226			287	289		143		149		269		179	221	no	
GAWN	1020	NC07-21172	221			287	289		143		149		269		215		no	
GAWN	1021	SCW010025T1	226			287	289		<b>141</b>		149		271		177	215	no	
GAWN	1022	LA01069D-23-4-4	219			279	281		<b>141</b>		162		271		177	215	no	
GAWN	1023	SS8641	219			275	277		<b>141</b>		149		269		217		no	
GAWN	1024	AR99263-7-1	219			279	281		143		156		271		179	217	no	
GAWN	1025	NC04-20417	219	226		281	287	289	<b>141</b>	143	149	162	269	271	177	217	no	
GAWN	1026	AR00082-13-2	nd			287	289		144		15		271		179	215	no	
GAWN	1027	LA01139D-56-7-3	221			277	279		143		162		271		177	217	no	
GAWN	1028	VA06W-146	219	226	308	283	<b>285</b>		143		160		271		215	217	no	
GAWN	1029	GA03564-9EE42	219			275	277		<b>141</b>		149		269		217		no	
GAWN	1030	GA001142-9E23	221			nd			144		149		269	271	177	217	no	
GAWN	1031	VA08W-295	219			273	275		143		149		269		179	219	no	
GAWN	1032	AR99015-3-1	219	226		277	279	282	<b>141</b>	143	151		260		221		no	
GAWN	1033	AR00196-10-1	226			280	287	289	<b>141</b>	143	149	151	269	271	177	214	221	no
GAWN	1034	AR99160-4-1B	<b>246</b>			283	<b>285</b>		<b>141</b>		<b>153</b>		<b>262</b>		177	<b>260</b>	yes	
GAWN	1035	AR00039-5-2	219			277	279	287	<b>141</b>		151	157	260	271	177	214	221	no
GAWN	1036	LA95135	226			279	281		143		149		260		177	221	no	
GAWN	1037	VA08W-223	226			287	289		<b>141</b>		149		269		219		no	
GAWN	1038	AGS2060	219			279	281		143		149	160	269	271	177	215	no	
GAWN	1039	GA021338-9EE11	226			276	287	289	<b>141</b>		149		269	271	177	215	no	
GAWN	1040	LA01034D-42-3-C	nd			nd			<b>141</b>		149		269		221		no	

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## FHB QTLs

2010

Nursery	Entry	Sample Name	gwm	gwm	gwm	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	Fhb	
			<b>285</b>	<b>285</b>	<b>285</b>	<b>612</b>	<b>612</b>	<b>612</b>	<b>307</b>	<b>307</b>	<b>1</b>	<b>1</b>	<b>418</b>	<b>418</b>	<b>471</b>	<b>471</b>	<b>471</b>	Ernie 3Bc
GAWN	1041	SCTX98-20-J10	219	226		<b>285</b>	287	290	<b>141</b>	143	149	162	269	271	177	217	no	
GAWN	1042	SCW010025G2	226			287	289		<b>141</b>		149		269	271	177	215	no	
GAWN	1043	LA01059D-127-3-2	230			281	283	<b>286</b>	<b>141</b>		149		269		177	217	no	
GAWN	1044	VA08W-193	226			287	289		143		149		269		215		no	
GAWN	1045	NC07-23880	226			287	289		143		149		269		177	217	no	
GAWN	1046	GA03060-9E29	226			287	289		<b>141</b>		149		269	271	177	215	no	
GAWN	1047	NC06-20359	<b>246</b>			279	281		143		149		269	271	177	215	no	
GAWN	1048	VA08W-92	219			279	281		143		162		269	271	177	215	no	
GAWN	1049	AR00090-1-1	226			287	289		143		149		269		221		no	
GAWN	1050	NC06-22003	219			279	281		143		150		269		221		no	
GAWN	1051	SCW010025D1	226			287	289		<b>141</b>		149		269	271	177	215	no	
GAWN	1052	NC07-20850	226			287	289		143		149		269		221		no	
GAWN	1053	FL03169D-58	206	230		273	275		144		149		269		177	221	no	
GAWN	1054	LA02150E-35	226			287	289		143		149		269		177	221	no	
GAWN	1055	VA07W-415	219	226		275	277	287	<b>141</b>	143	149		nd		177	217	no	
GAWN	1056	LA02007E227	226			277	279		143		162		271		179	217	no	
GAWN	1057	GA001142-9E24	217	226		273	275		<b>141</b>	143	149		271		177	217	no	
GAWN	1058	LA01145D-123-5-C	226			287	289		143		149		269		217		no	
GAWN	1059	VA08W-294	219			275	279	281	<b>141</b>		162		269		219		no	
GAWN	1060	GA021338-9E15	221	226		273	275	287	<b>141</b>	143	149	151	271		177	215	no	
GAWN	1061	SCW010025L1	226			287	289		<b>141</b>		149		271		177	215	no	
GAWN	1062	LA02015E201	219	221		279	281		<b>141</b>		162		271		179	217	no	
GAWN	1063	NC07-24337	217			273	275		<b>141</b>	143	149		<b>262</b>		217		no	
GAWN	1064	NC07-22432	219	226		279	281	287	<b>141</b>	143	149	162	269	271	179	219	221	no
GAWN	1065	GA021338-9E4	226			287	289		<b>141</b>		149		271		177	221	no	
GAWN	1066	GA02343-9LE5	221			nd			143		160		<b>262</b>		177	215	no	
GAWN	1067	VA08W-232	<b>246</b>			279	281		<b>141</b>		<b>153</b>		271		177	217	no	
GAWN	1068	NC07-22517	221			nd			<b>141</b>		149		271		179	219	no	
GAWN	1069	AR98097-4-1	226			283	<b>285</b>		143		149		269		221		no	
GAWN	1070	GA011446-9LE35	219			275	277		<b>141</b>		149		<b>262</b>		179	217	no	
GAWN	1071	GA021245-9E16	226			273	275	287	<b>141</b>	143	149		<b>262</b>	271	177	215	no	
GAWN	1072	AR00036-5-1	219			279	281		<b>141</b>		156		<b>262</b>		177	221	no	
GAWN	1073	SCLA01111C-J7	217	221		271	273	275	<b>141</b>	143	151		<b>262</b>	271	177	215	217	no
GAWN	1074	NC07-25169	221			nd			<b>141</b>		149		271		177	215	no	
GAWN	1075	SCTX98-27-J7	<b>246</b>			283	<b>285</b>		<b>141</b>		<b>153</b>		<b>262</b>		<b>260</b>		<b>yes</b>	

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## FHB QTLs

2010

Nursery	Entry	Sample Name	cfb233	cfb233	cfb233	gwm539	gwm539	gwm608	gwm608	Fhb 2DL- Wuhan1/ W14
GAWN	1001	LA02006E239	<b>276</b>	278		135		158		no
GAWN	1002	SCW010025G1	<b>276</b>	278		135		158		no
GAWN	1003	LA04089D-P10	286	288		135		156		no
GAWN	1004	USG3555	272			137		154		no
GAWN	1005	GA02178-9E25	272	280		131		150	162	no
GAWN	1006	GA021087-9LE33	<b>276</b>	278		131		170		no
GAWN	1007	VA08W-196	272			135		156		no
GAWN	1008	SCW010025H1	<b>276</b>	278		135		158		no
GAWN	1009	SCW010025K1	<b>276</b>	278		135		158		no
GAWN	1010	SCTX98-27-J1	271	272		139		154	156	no
GAWN	1011	AR99016-1-2	288	290		124	137	162		no
GAWN	1012	AR00134-3-4	271			139		<b>152</b>		no
GAWN	1013	VA08W-176	272	<b>276</b>		137		150	156	no
GAWN	1014	VA08W-165	272			137		156		no
GAWN	1015	NC07-24445	272			137		154		no
GAWN	1016	SCLA99049D-E1-J1	272			137		nd		no
GAWN	1017	VA08W-286	<b>276</b>	278		135		150		no
GAWN	1018	NC07-21020	278	280		135		150		no
GAWN	1019	AR00255-16-1	278	280		<b>125</b>		150		no
GAWN	1020	NC07-21172	278	280		153		150		no
GAWN	1021	SCW010025T1	<b>276</b>	278		135		158		no
GAWN	1022	LA01069D-23-4-4	286	288		137		156		no
GAWN	1023	SS8641	<b>276</b>	278		131		170		no
GAWN	1024	AR99263-7-1	278	280		131		150		no
GAWN	1025	NC04-20417	271			131		150		no
GAWN	1026	AR00082-13-2	272	278	280	131	133	150	158	no
GAWN	1027	LA01139D-56-7-3	286	288		137		156		no
GAWN	1028	VA06W-146	278			135		150		no
GAWN	1029	GA03564-9EE42	<b>276</b>	278		131		170		no
GAWN	1030	GA001142-9E23	286	288		137		156		no
GAWN	1031	VA08W-295	272			137		150		no
GAWN	1032	AR99015-3-1	288	290		131		162		no
GAWN	1033	AR00196-10-1	278	288	290	131	137	160	162	no
GAWN	1034	AR99160-4-1B	288	290		131		162		no
GAWN	1035	AR00039-5-2	273	288	290	131		158	162	no
GAWN	1036	LA95135	272			131		162		no
GAWN	1037	VA08W-223	272			137		158	162	no
GAWN	1038	AGS2060	<b>276</b>	278		137		158		no
GAWN	1039	GA021338-9EE11	<b>276</b>	278		135		158		no
GAWN	1040	LA01034D-42-3-C	<b>276</b>	278		139		150		no

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



## FHB QTLs

2010

Nursery	Entry	Sample Name	cf <del>d</del> 233	cf <del>d</del> 233	cf <del>d</del> 233	gwm 539	gwm 539	gwm 608	gwm 608	Fhb 2DL- Wuhan1/ W14
GAWN	1041	SCTX98-20-J10	272			135		154		no
GAWN	1042	SCW010025G2	<b>276</b>	278		135		158		no
GAWN	1043	LA01059D-127-3-2	288	290		139		156		no
GAWN	1044	VA08W-193	284	286		135		154	156	no
GAWN	1045	NC07-23880	278	280		153		150		no
GAWN	1046	GA03060-9E29	272	278		131		158	162	no
GAWN	1047	NC06-20359	271	272		131		156		no
GAWN	1048	VA08W-92	<b>276</b>	278		139		150		no
GAWN	1049	AR00090-1-1	272			133		158		no
GAWN	1050	NC06-22003	<b>276</b>	278		159	161	150		no
GAWN	1051	SCW010025D1	<b>276</b>	278		135	137	158		no
GAWN	1052	NC07-20850	278	280		153		150		no
GAWN	1053	FL03169D-58	272	286		131	137	156	162	no
GAWN	1054	LA02150E-35	278			133		158		no
GAWN	1055	VA07W-415	268	271		135		150		no
GAWN	1056	LA02007E227	nd			177		150		no
GAWN	1057	GA001142-9E24	280	282		133		156	158	no
GAWN	1058	LA01145D-123-5-C	271			157		156		no
GAWN	1059	VA08W-294	<b>276</b>	278		135		150		no
GAWN	1060	GA021338-9E15	278	280		137		158		no
GAWN	1061	SCW010025L1	280	282		133		158		no
GAWN	1062	LA02015E201	280	282		133		162		no
GAWN	1063	NC07-24337	<b>276</b>	278		135		156	158	no
GAWN	1064	NC07-22432	278			131		150		no
GAWN	1065	GA021338-9E4	272	278	286	133		158		no
GAWN	1066	GA02343-9LE5	272	274		133		158		no
GAWN	1067	VA08W-232	272			137		150		no
GAWN	1068	NC07-22517	<b>276</b>	278		135		150		no
GAWN	1069	AR98097-4-1	<b>276</b>	278		135		158		no
GAWN	1070	GA011446-9LE35	272			131	133	150		no
GAWN	1071	GA021245-9E16	272			131		156		no
GAWN	1072	AR00036-5-1	278	280		131		150		no
GAWN	1073	SCLA01111C-J7	272			133		156	158	no
GAWN	1074	NC07-25169	<b>276</b>	278		159	161	150		no
GAWN	1075	SCTX98-27-J7	272			137		154		no

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## FHB QTLs

2010

Nursery	Entry	Sample Name	gwm	gwm	gwm	wmc	wmc	wmc	barc	barc	barc	barc	gwm	gwm	Fhb 5A	Fhb 5A
			304	304	304	705	705	705	117	117	186	186	156	156	Ernie	Ning7840
GAWN	1001	LA02006E239	198			160	162		217		<b>203</b>		292	<b>312</b>	no	no
GAWN	1002	SCW010025G1	198			160	162		217		<b>203</b>			<b>312</b>	no	no
GAWN	1003	LA04089D-P10	199			133			217		<b>203</b>		292		no	no
GAWN	1004	USG3555	198			162	164		217		<b>203</b>			<b>312</b>	no	no
GAWN	1005	GA02178-9E25	198			162	164		217		<b>203</b>		283		no	no
GAWN	1006	GA021087-9LE33	199			133			217		<b>203</b>		316		no	no
GAWN	1007	VA08W-196	<b>220</b>			<b>135</b>			<b>221</b>		<b>203</b>			<b>312</b>	yes	no
GAWN	1008	SCW010025H1	198			160	162		217		<b>203</b>			<b>312</b>	no	no
GAWN	1009	SCW010025K1	198			160	162		217		<b>203</b>			<b>312</b>	no	no
GAWN	1010	SCTX98-27-J1	198	202		141	162	164	217		<b>203</b>		292	<b>312</b>	no	no
GAWN	1011	AR99016-1-2	201			139			217		<b>203</b>			<b>312</b>	no	no
GAWN	1012	AR00134-3-4	201			141			217		<b>203</b>		292	298	no	no
GAWN	1013	VA08W-176	198			<b>135</b>	160	162	217		<b>203</b>		292		no	no
GAWN	1014	VA08W-165	198			162	164		217		<b>203</b>		283	292	no	no
GAWN	1015	NC07-24445	198			162	164		217		<b>203</b>			<b>312</b>	no	no
GAWN	1016	SCLA99049D-E1-J1	198			160	162		217		<b>203</b>			<b>312</b>	no	no
GAWN	1017	VA08W-286	198			160	162		217		<b>203</b>		292		no	no
GAWN	1018	NC07-21020	198			162	164		217		<b>203</b>		283		no	no
GAWN	1019	AR00255-16-1	198			162	164		217		<b>203</b>		283		no	no
GAWN	1020	NC07-21172	198			160	162		217		<b>203</b>		292		no	no
GAWN	1021	SCW010025T1	198			160	162		217		<b>203</b>			<b>312</b>	no	no
GAWN	1022	LA01069D-23-4-4	211			139			<b>221</b>		<i>212</i>			<b>312</b>	no	no
GAWN	1023	SS8641	198			162	164		217		<b>203</b>		283		no	no
GAWN	1024	AR99263-7-1	<b>216</b>			158			<b>221</b>		<i>212</i>		292		no	no
GAWN	1025	NC04-20417	198			162	164		217		<b>203</b>		283		no	no
GAWN	1026	AR00082-13-2	198			162	164		217		<b>203</b>		292	<b>312</b>	no	no
GAWN	1027	LA01139D-56-7-3	198			160	162		217		<b>203</b>		292		no	no
GAWN	1028	VA06W-146	<b>220</b>			126			<b>221</b>		<b>203</b>		292		no	no
GAWN	1029	GA03564-9EE42	198			162	164		217		<b>203</b>		283		no	no
GAWN	1030	GA001142-9E23	199			133			217		<b>203</b>		292		no	no
GAWN	1031	VA08W-295	198			160	162		217		<b>203</b>			<b>312</b>	no	no
GAWN	1032	AR99015-3-1	198			160	162		217		<b>203</b>			<b>312</b>	no	no
GAWN	1033	AR00196-10-1	201	<b>221</b>		139			<b>221</b>		<b>203</b>	<i>212</i>	315		no	no
GAWN	1034	AR99160-4-1B	198			160	162		217		<b>203</b>		292		no	no
GAWN	1035	AR00039-5-2	198			162	164		217		<b>203</b>		292	<b>312</b>	no	no
GAWN	1036	LA95135	198			160	162		217		<b>203</b>		292		no	no
GAWN	1037	VA08W-223	199			133			217		<b>203</b>			<b>312</b>	no	no
GAWN	1038	AGS2060	199			133			217		<b>203</b>		292		no	no
GAWN	1039	GA021338-9EE11	198			160	162		217		<b>203</b>			<b>312</b>	no	no
GAWN	1040	LA01034D-42-3-C	198			160	162		217		<b>203</b>			<b>312</b>	no	no

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## FHB QTLs

2010

Nursery	Entry	Sample Name	gwm	gwm	gwm	wmc	wmc	wmc	barc	barc	barc	barc	gwm	gwm	Fhb 5A	Fhb 5A
			304	304	304	705	705	705	117	117	186	186	156	156	Ernie	Ning7840
GAWN	1041	SCTX98-20-J10	201			141			217		214		292		no	no
GAWN	1042	SCW010025G2	198			160	162		217		<b>203</b>		<b>312</b>		no	no
GAWN	1043	LA01059D-127-3-2	198			160	162		217		<b>203</b>		292		no	no
GAWN	1044	VA08W-193	198			160	162		217		<b>203</b>		286		no	no
GAWN	1045	NC07-23880	198			162	164		217		<b>203</b>		292		no	no
GAWN	1046	GA03060-9E29	198			160	162		217		<b>203</b>		<b>312</b>		no	no
GAWN	1047	NC06-20359	198			162	164		217		<b>203</b>		283		no	no
GAWN	1048	VA08W-92	198			160	162		217		<b>203</b>		292		no	no
GAWN	1049	AR00090-1-1	199			133			217		<b>203</b>		285	<b>312</b>	no	no
GAWN	1050	NC06-22003	201			139			217		<i>212</i>		<b>312</b>		no	no
GAWN	1051	SCW010025D1	198			160	162		217		<b>203</b>		<b>312</b>		no	no
GAWN	1052	NC07-20850	198			133	160	162	217	224	<b>203</b>	<i>212</i>	285	292	no	no
GAWN	1053	FL03169D-58	199			133			217		<b>203</b>	<i>212</i>	292	316	no	no
GAWN	1054	LA02150E-35	199			133			217		<b>203</b>		285	<b>312</b>	no	no
GAWN	1055	VA07W-415	199			133			217		<b>203</b>		285	<b>312</b>	no	no
GAWN	1056	LA02007E227	198			162	164		217		<b>203</b>		nd		no	no
GAWN	1057	GA001142-9E24	197	199	<b>220</b>	133	<b>135</b>	162	217	<b>221</b>	<b>203</b>		nd		het?	no
GAWN	1058	LA01145D-123-5-C	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1059	VA08W-294	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1060	GA021338-9E15	198	201		139	160	162	217		<b>203</b>		nd		no	no
GAWN	1061	SCW010025L1	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1062	LA02015E201	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1063	NC07-24337	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1064	NC07-22432	198			162	164		217		<b>203</b>		nd		no	no
GAWN	1065	GA021338-9E4	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1066	GA02343-9LE5	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1067	VA08W-232	<b>220</b>			<b>135</b>			<b>221</b>		<b>203</b>		nd		?	no
GAWN	1068	NC07-22517	221	<b>220</b>		<b>135</b>			<b>221</b>		<b>203</b>		nd		yes?	no
GAWN	1069	AR98097-4-1	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1070	GA011446-9LE35	201			141			217		214		nd		no	no
GAWN	1071	GA021245-9E16	nd			nd			217		<b>203</b>		nd		no	no
GAWN	1072	AR00036-5-1	198			162	164		217		<b>203</b>		nd		no	no
GAWN	1073	SCLA01111C-J7	198			160	162	164	217		<b>203</b>		nd		no	no
GAWN	1074	NC07-25169	198			160	162		217		<b>203</b>		nd		no	no
GAWN	1075	SCTX98-27-J7	198			162	164		217		<b>203</b>		nd		no	no

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## Leaf, Stripe & Stem Rusts

2010

Nursery	Entry	Sample Name	Sr2	wmc	wmc	Sr36	barc	barc	barc	barc	barc	Sr24/	ventriup	Yr17/	CsLv34	Lr34/
				477	477		71	71	71	71	71	Lr24		Lr37/		Yr18/
GAWN	1001	LA02006E239	no	163		no	104	112				no		no	235	no
GAWN	1002	SCW010025G1	no	163		no	107	112				no		no	235	no
GAWN	1003	LA04089D-P10	no	160		no	100	104				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1004	USG3555	no	<b>185</b>		<b>yes</b>	100	104				no		no	235	no
GAWN	1005	GA02178-9E25	no	160		no	100	104				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1006	GA021087-9LE33	no	167		no	107	112				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1007	VA08W-196	no	163		no	104	107	112			no		no	235	no
GAWN	1008	SCW010025H1	no	163		no	107	112				no		no	235	no
GAWN	1009	SCW010025K1	no	163		no	107	112				no		no	235	no
GAWN	1010	SCTX98-27-J1	no	<b>185</b>		<b>yes</b>	100	104				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1011	AR99016-1-2	no	165		no	104	116				no		no	235	no
GAWN	1012	AR00134-3-4	no	160		no	100	104				no		no	235	no
GAWN	1013	VA08W-176	no	165		no	82	<b>87</b>	100	104		<b>yes</b>		no	235	no
GAWN	1014	VA08W-165	no	165		no	82	<b>87</b>	100	104		<b>yes</b>		no	235	no
GAWN	1015	NC07-24445	no	<b>185</b>		<b>yes</b>	100	104				no		no	235	no
GAWN	1016	SCLA99049D-E1-J1	no	163		no	107	112				no		no	235	no
GAWN	1017	VA08W-286	no	165		no	82	<b>87</b>	100	104		<b>yes</b>		no	235	no
GAWN	1018	NC07-21020	no	<b>185</b>		<b>yes</b>	100	104				no		no	235	no
GAWN	1019	AR00255-16-1	no	163		no	92					no		no	235	no
GAWN	1020	NC07-21172	no	<b>185</b>		<b>yes</b>	100	104				no		no	235	no
GAWN	1021	SCW010025T1	no	163		no	107	112				no		no	235	no
GAWN	1022	LA01069D-23-4-4	no	167		no	112					no		no	235	no
GAWN	1023	SS8641	no	167		no	100	104				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1024	AR99263-7-1	no	161		no	100	104				no		no	235	no
GAWN	1025	NC04-20417	no	<b>185</b>		<b>yes</b>	100	104				no		no	235	no
GAWN	1026	AR00082-13-2	no	167		no	107	112				no		no	235	no
GAWN	1027	LA01139D-56-7-3	no	<b>185</b>		<b>yes</b>	107	112				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1028	VA06W-146	no	165		no	<b>87</b>	104	112			<b>yes</b>		no	235	no
GAWN	1029	GA03564-9EE42	no	167		no	107	112				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1030	GA001142-9E23	no	167		no	107	112				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1031	VA08W-295	no	160		no	82	<b>87</b>	100	104		<b>yes</b>		no	235	no
GAWN	1032	AR99015-3-1	no	165		no	100	104				no		no	235	no
GAWN	1033	AR00196-10-1	no	167		no	82	<b>87</b>	92	100	104	<b>yes</b>		no	235	no
GAWN	1034	AR99160-4-1B	no	167		no	107	112				no		no	235	no
GAWN	1035	AR00039-5-2	no	165	167	no	96	100				no		no	235	no
GAWN	1036	LA95135	no	160		no	100	104				no		no	235	no
GAWN	1037	VA08W-223	no	160		no	107	112				no		no	235	no
GAWN	1038	AGS2060	no	<b>185</b>		<b>yes</b>	82	<b>87</b>	100	112		<b>yes</b>	<b>256</b>	<b>yes</b>	235	no
GAWN	1039	GA021338-9EE11	no	160		no	107	112				no	<b>256</b>	<b>yes</b>	235	no
GAWN	1040	LA01034D-42-3-C	no	165	<b>185</b>	<b>het</b>	107	112				no		no	235	no

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## Leaf, Stripe & Stem Rusts

2010

Nursery	Entry	Sample Name	Sr2	wmc	wmc	Sr36	barc	barc	barc	barc	barc	Sr24/ Lr24	ventriup	Yr17/ Lr37/ Sr38	CsLv34	Lr34/ Yr18/ Pm38
				477	477		71	71	71	71	71	no		no		no
GAWN	1041	SCTX98-20-J10	no	167	<b>185</b>	het	100	104	112			no	<b>256</b>	yes	235	no
GAWN	1042	SCW010025G2	no	163		no	107	112				no		no	235	no
GAWN	1043	LA01059D-127-3-2	no	160		no	100	104				no		no	235	no
GAWN	1044	VA08W-193	no	165		no	100	104				no		no	235	no
GAWN	1045	NC07-23880	no	<b>185</b>		yes	96	100				no		no	235	no
GAWN	1046	GA03060-9E29	no	163		no	100	104	112			no	<b>256</b>	yes	235	no
GAWN	1047	NC06-20359	no	<b>185</b>		yes	107	112				no		no	235	no
GAWN	1048	VA08W-92	no	165		no	82	<b>87</b>	100	112		yes		no	235	no
GAWN	1049	AR00090-1-1	no	160		no	100	104				no		no	235	no
GAWN	1050	NC06-22003	no	<b>185</b>		yes	107	112				no		no	235	no
GAWN	1051	SCW010025D1	no	163		no	107	112				no		no	235	no
GAWN	1052	NC07-20850	no	<b>185</b>		yes	100	104				no		no	235	no
GAWN	1053	FL03169D-58	no	167		no	96	100				no	<b>256</b>	yes	235	no
GAWN	1054	LA02150E-35	no	160		no	82	<b>87</b>	100	112		yes	<b>256</b>	yes	235	no
GAWN	1055	VA07W-415	no	167		no	107	112				no	<b>256</b>	yes	235	no
GAWN	1056	LA02007E227	no	165		no	100	104				no		no	235	no
GAWN	1057	GA001142-9E24	no	160	167	no	104	112				no	<b>256</b>	yes	235	no
GAWN	1058	LA01145D-123-5-C	no	160		no	107	112				no		no	235	no
GAWN	1059	VA08W-294	no	160	165	no	100	104				no		no	235	no
GAWN	1060	GA021338-9E15	no	160	167	no	107	112				no		no	235	no
GAWN	1061	SCW010025L1	no	163		no	107	112				no		no	235	no
GAWN	1062	LA02015E201	no	160		no	82	<b>87</b>	100	104		yes		no	235	no
GAWN	1063	NC07-24337	no	<b>185</b>		yes	100	104				no		no	235	no
GAWN	1064	NC07-22432	no	<b>185</b>		yes	100	104	112			no		no	235	no
GAWN	1065	GA021338-9E4	no	160		no	107	112				no	<b>256</b>	yes	235	no
GAWN	1066	GA02343-9LE5	no	163		no	107	112				no		no	235	no
GAWN	1067	VA08W-232	no	160	165	no	100	104				no		no	235	no
GAWN	1068	NC07-22517	no	<b>185</b>		yes	82	<b>87</b>	100	104		yes		no	235	no
GAWN	1069	AR98097-4-1	no	<b>185</b>		yes	107	112				no		no	235	no
GAWN	1070	GA011446-9LE35	no	165		no	100	104	112			no		no	235	no
GAWN	1071	GA021245-9E16	no	160		no	107	112				no	<b>256</b>	yes	235	no
GAWN	1072	AR00036-5-1	no	167		no	100	104				no		no	235	no
GAWN	1073	SCLA01111C-J7	no	160	167	no	104	112				no		no	235	no
GAWN	1074	NC07-25169	no	<b>185</b>		yes	82	<b>87</b>	100	104		yes		no	235	no
GAWN	1075	SCTX98-27-J7	no	<b>185</b>		yes	100	104				no	<b>256</b>	yes	235	no

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

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All numbers are size in base pairs of amplified fragments

Target alleles are in **bold or italics**

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

2010

Nursery	Entry	Sample Name	scm9	IRS	cf132	cf132	H13	cfa2153	cfa2153	H9	Bdv	Bdv2/3
GAWN	1001	LA02006E239	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1002	SCW010025G1	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1003	LA04089D-P10	207	<b>IRS:1BL</b>	114		no	193		no	184	no
GAWN	1004	USG3555	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1005	GA02178-9E25		non-IRS	114		no	199		no	184	no
GAWN	1006	GA021087-9LE33		non-IRS	<b>152</b>		<b>yes</b>	201		no	184	no
GAWN	1007	VA08W-196	222	<b>IRS:1AL</b>	114		no	201		no	184	no
GAWN	1008	SCW010025H1	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1009	SCW010025K1	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1010	SCTX98-27-J1		non-IRS	114		no	201		no	184	no
GAWN	1011	AR99016-1-2		non-IRS	114		no	201		no	184	no
GAWN	1012	AR00134-3-4		non-IRS	114		no	203	219	no	184	no
GAWN	1013	VA08W-176	222	<b>IRS:1AL</b>	114		no	201		no	184	no
GAWN	1014	VA08W-165	222	<b>IRS:1AL</b>	114		no	nd		nd	184	no
GAWN	1015	NC07-24445		non-IRS	114		no	201		no	184	no
GAWN	1016	SCLA99049D-E1-J1	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1017	VA08W-286	222	<b>IRS:1AL</b>	114		no	nd		nd	184	no
GAWN	1018	NC07-21020	222	<b>IRS:1AL</b>	114		no	nd		nd	184	no
GAWN	1019	AR00255-16-1		non-IRS	114		no	193		no	184	no
GAWN	1020	NC07-21172		non-IRS	114		no	193		no	184	no
GAWN	1021	SCW010025T1	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1022	LA01069D-23-4-4		non-IRS	114		no	201		no	184	no
GAWN	1023	SS8641		non-IRS	114		no	201		no	184	no
GAWN	1024	AR99263-7-1		non-IRS	114		no	217	219	no	184	no
GAWN	1025	NC04-20417		non-IRS	<b>152</b>		<b>yes</b>	201		no	184	no
GAWN	1026	AR00082-13-2		non-IRS	114		no	203		no	184	no
GAWN	1027	LA01139D-56-7-3		non-IRS	114		no	191		no	184	no
GAWN	1028	VA06W-146	222?	<b>IRS:1AL?</b>	114		no	205	209	no	184	no
GAWN	1029	GA03564-9EE42	222	<b>IRS:1AL</b>	114		no	201		no	184	no
GAWN	1030	GA001142-9E23		non-IRS	114		no	199		no	184	no
GAWN	1031	VA08W-295		non-IRS	114		no	201		no	184	no
GAWN	1032	AR99015-3-1		non-IRS	114		no	201		no	184	no
GAWN	1033	AR00196-10-1	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1034	AR99160-4-1B		non-IRS	114		no	193		no	184	no
GAWN	1035	AR00039-5-2		non-IRS	114		no	201		no	184	no
GAWN	1036	LA95135		non-IRS	114		no	199		no	184	no
GAWN	1037	VA08W-223		non-IRS	114		no	201		no	184	no
GAWN	1038	AGS2060		non-IRS	114		no	193		no	184	no
GAWN	1039	GA021338-9EE11	207	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1040	LA01034D-42-3-C	222	<b>IRS:1AL</b>	114		no	201		no	184	no

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

2010

Nursery	Entry	Sample Name	scm9	IRS	cf132	cf132	H13	cfa2153	cfa2153	H9	Bdv	Bdv2/3
GAWN	1041	SCTX98-20-J10		non-IRS	114		no	201		no	184	no
GAWN	1042	SCW010025G2	<b>207</b>	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1043	LA01059D-127-3-2		non-IRS	114		no	201		no	184	no
GAWN	1044	VA08W-193	<b>222</b>	<b>IRS:1AL</b>	114		no	201		no	184	no
GAWN	1045	NC07-23880		non-IRS	114		no	201		no	184	no
GAWN	1046	GA03060-9E29	<b>207</b>	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1047	NC06-20359		non-IRS	114		no	201		no	184	no
GAWN	1048	VA08W-92	<b>222</b>	<b>IRS:1AL</b>	114		no	194	219	no	184	no
GAWN	1049	AR00090-1-1		non-IRS	114		no	205		no	184	no
GAWN	1050	NC06-22003	<b>207</b>	<b>IRS:1BL</b>	114		no	194	201	no	184	no
GAWN	1051	SCW010025D1	<b>207</b>	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1052	NC07-20850		non-IRS	114		no	197		no	184	no
GAWN	1053	FL03169D-58	<b>207</b>	<b>IRS:1BL</b>	<b>152</b>		<b>yes</b>	191	201	no	184	no
GAWN	1054	LA02150E-35		non-IRS	114		no	201		no	184	no
GAWN	1055	VA07W-415		non-IRS	<b>152</b>		<b>yes</b>	201		no	184	no
GAWN	1056	LA02007E227		non-IRS	114		no	201		no	184	no
GAWN	1057	GA001142-9E24	<b>207</b>	<b>IRS:1BL</b>	114		no	199		no	184	no
GAWN	1058	LA01145D-123-5-C		non-IRS	114		no	201		no	184	no
GAWN	1059	VA08W-294	<b>222</b>	<b>IRS:1AL</b>	114		no	nd		nd	184	no
GAWN	1060	GA021338-9E15	<b>207</b>	<b>IRS:1BL</b>	114		no	199	201	no	184	no
GAWN	1061	SCW010025L1	<b>207</b>	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1062	LA02015E201		non-IRS	114		no	201		no	184	no
GAWN	1063	NC07-24337		non-IRS	<b>152</b>		<b>yes</b>	193	201	no	184	no
GAWN	1064	NC07-22432	<b>222</b>	<b>IRS:1AL</b>	114		no	205		no	184	no
GAWN	1065	GA021338-9E4	<b>207</b>	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1066	GA02343-9LE5	<b>207</b>	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1067	VA08W-232	<b>222</b>	<b>IRS:1AL</b>	114		no	201		no	184	no
GAWN	1068	NC07-22517		non-IRS	114		no	205		no	184	no
GAWN	1069	AR98097-4-1		non-IRS	114		no	201		no	184	no
GAWN	1070	GA011446-9LE35	<b>207</b>	<b>IRS:1BL</b>	114	<b>152</b>	<b>het</b>	193		no	182	no
GAWN	1071	GA021245-9E16	<b>207</b>	<b>IRS:1BL</b>	114		no	201		no	184	no
GAWN	1072	AR00036-5-1		non-IRS	114		no	201		no	184	no
GAWN	1073	SCLA01111C-J7		non-IRS	114		no	201		no	184	no
GAWN	1074	NC07-25169	<b>222</b>	<b>IRS:1AL</b>	114		no	nd		nd	184	no
GAWN	1075	SCTX98-27-J7		non-IRS	114		no	201		no	184	no

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## Quality Traits

2010

Nursery	Entry	Sample Name	Bx7oe	Bx7oe	Bx7 over- expressing	Umn25	Umn25	UMN26	UMN26	Glu-D1	Umn19	Umn19	Glu-A1
GAWN	1001	LA02006E239	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1002	SCW010025G1	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1003	LA04089D-P10		<b>448</b>	yes	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1004	USG3555	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1005	GA02178-9E25	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1006	GA021087-9LE33	404		no		<b>300</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		Ax2*
GAWN	1007	VA08W-196	404		no	<b>275</b>	<b>293</b>	<b>392</b>	<b>409</b>	het		<b>358</b>	Ax1 or null
GAWN	1008	SCW010025H1	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1009	SCW010025K1	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1010	SCTX98-27-J1		<b>448</b>	yes	<b>275</b>		<b>392</b>		5+10		<b>358</b>	Ax1 or null
GAWN	1011	AR99016-1-2	404		no		<b>293</b>		<b>409</b>	2+12		<b>358</b>	Ax1 or null
GAWN	1012	AR00134-3-4	404		no		<b>293</b>		<b>409</b>	2+12		<b>358</b>	Ax1 or null
GAWN	1013	VA08W-176	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1014	VA08W-165	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1015	NC07-24445	404		no	<b>275</b>		<b>392</b>		5+10		<b>358</b>	Ax1 or null
GAWN	1016	SCLA99049D-E1-J1	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1017	VA08W-286		<b>448</b>	yes	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1018	NC07-21020	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1019	AR00255-16-1	404		no		<b>300</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	Ax1 or null
GAWN	1020	NC07-21172	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1021	SCW010025T1	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1022	LA01069D-23-4-4	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1023	SS8641	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1024	AR99263-7-1	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1025	NC04-20417	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1026	AR00082-13-2	404		no		<b>293</b>		<b>409</b>	2+12		<b>358</b>	Ax1 or null
GAWN	1027	LA01139D-56-7-3	404		no	<b>275</b>		<b>392</b>		5+10		<b>358</b>	Ax1 or null
GAWN	1028	VA06W-146	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1029	GA03564-9EE42	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1030	GA001142-9E23		<b>448</b>	yes	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1031	VA08W-295	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>		Ax2*
GAWN	1032	AR99015-3-1	404		no		<b>293</b>		<b>409</b>	2+12		<b>358</b>	Ax1 or null
GAWN	1033	AR00196-10-1	404		no		<b>293</b>		<b>409</b>	2+12		<b>358</b>	Ax1 or null
GAWN	1034	AR99160-4-1B	404		no		<b>293</b>		<b>409</b>	2+12		<b>358</b>	Ax1 or null
GAWN	1035	AR00039-5-2	404		no		<b>293</b>		<b>409</b>	2+12		<b>358</b>	Ax1 or null
GAWN	1036	LA95135	404		no		<b>300</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	Ax1 or null
GAWN	1037	VA08W-223	404		no		<b>293</b>		<b>409</b>	2+12	<b>340</b>	<b>358</b>	het
GAWN	1038	AGS2060	404		no	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*
GAWN	1039	GA021338-9EE11	404		no	<b>275</b>		<b>392</b>		5+10		<b>358</b>	Ax1 or null
GAWN	1040	LA01034D-42-3-C		<b>448</b>	yes	<b>275</b>		<b>392</b>		5+10	<b>340</b>		Ax2*

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Target alleles are in **bold or italics**



## Quality Traits

2010

Nursery	Entry	Sample Name	Bx7oe	Bx7oe	Bx7 over- expressing	Umn25	Umn25	UMN26	UMN26	Glu-D1	Umn19	Umn19	Glu-A1
GAWN	1041	SCTX98-20-J10	404		no	275	293	392		het	340	358	het
GAWN	1042	SCW010025G2	404		no	275		392		5+10	340		Ax2*
GAWN	1043	LA01059D-127-3-2		<b>448</b>	yes	275		392		5+10		358	Ax1 or null
GAWN	1044	VA08W-193	404		no		293		409	2+12	340		Ax2*
GAWN	1045	NC07-23880	404		no		293		409	2+12	340		Ax2*
GAWN	1046	GA03060-9E29	404		no	275	293	392		het		358	Ax1 or null
GAWN	1047	NC06-20359	404		no		293		409	2+12	340		Ax2*
GAWN	1048	VA08W-92	404		no	275		392		5+10	340		Ax2*
GAWN	1049	AR00090-1-1	404		no		293		409	2+12	340		Ax2*
GAWN	1050	NC06-22003	404		no		293		409	2+12	340	358	het
GAWN	1051	SCW010025D1	404		no	275		392		5+10	340		Ax2*
GAWN	1052	NC07-20850	404		no		293		409	2+12	340		Ax2*
GAWN	1053	FL03169D-58		<b>448</b>	yes		293		409	2+12	340		Ax2*
GAWN	1054	LA02150E-35	404		no	275		392		5+10	340		Ax2*
GAWN	1055	VA07W-415	404		no		293		409	2+12	340		Ax2*
GAWN	1056	LA02007E227	404		no		293		409	2+12	340		Ax2*
GAWN	1057	GA001142-9E24	404		no	275	293	392	409	het		359	Ax1 or null
GAWN	1058	LA01145D-123-5-C		<b>448</b>	yes		293		409	2+12	340		Ax2*
GAWN	1059	VA08W-294	404		no		300		409	2+12	340		Ax2*
GAWN	1060	GA021338-9E15	404		no	275		392		5+10	340	358	het
GAWN	1061	SCW010025L1	404		no	275		392		5+10	340		Ax2*
GAWN	1062	LA02015E201	404		no		293		409	2+12	340		Ax2*
GAWN	1063	NC07-24337	404		no	275		392		5+10	340		Ax2*
GAWN	1064	NC07-22432	404		no	275		392		5+10	341		Ax2*
GAWN	1065	GA021338-9E4	404		no			392		5+10	340		Ax2*
GAWN	1066	GA02343-9LE5	404		no		293		409	2+12	340		Ax2*
GAWN	1067	VA08W-232	404		no		293		409	2+12		358	Ax1 or null
GAWN	1068	NC07-22517	404		no		293		409	2+12		358	Ax1 or null
GAWN	1069	AR98097-4-1	404		no	275		392		5+10	340		Ax2*
GAWN	1070	GA011446-9LE35	404		no		293		409	2+12		358	Ax1 or null
GAWN	1071	GA021245-9E16	404	<b>448</b>	het	275	293		409	het	340	358	het
GAWN	1072	AR00036-5-1	404		no		293		409	2+12		359	Ax1 or null
GAWN	1073	SCLA01111C-J7		<b>448</b>	yes		293		409	2+12	340	358	het
GAWN	1074	NC07-25169	404		no		293		409	2+12	340		Ax2*
GAWN	1075	SCTX98-27-J7		<b>448</b>	yes	275		392		5+10		358	Ax1 or null

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