

**2010**

**Uniform Eastern Soft White Winter Wheat Nursery**

**Marker Report**

**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*

Rht1K = Allele Y = yes(dwarfing); Rht2K = Allele Y = yes(dwarfing)

Ppd-D1a = photoperiod insensitive = yes

**2010 Uniform Eastern Soft White Winter Wheat Nursery**  
**Entry List**

<b>Nursery</b>	<b>Entry</b>	<b>Sample Name</b>	<b>Pedigree</b>	<b>Source</b>	<b>Note</b>
UESWWWN	UESW 1	Superior		Etienne	Check
UESWWWN	UESW 2	Augusta		Lewis	Check
UESWWWN	UESW 3	E3024		Lewis	Retest
UESWWWN	UESW 4	E6019A		Lewis	New
UESWWWN	UESW 5	E2041		Lewis	New
UESWWWN	UESW 6	E6045		Lewis	New
UESWWWN	UESW 7	NY103-208-7263	Cayuga/Caledonia	Sorrells	Retest
UESWWWN	UESW 8	NY103-21-9183	Cayuga/Caledonia	Sorrells	Retest
UESWWWN	UESW 9	NY103-226-9195	Cayuga/Caledonia	Sorrells	Retest
UESWWWN	UESW 10	Jensen	MD286-21/Harus	Sorrells	Retest
UESWWWN	UESW 11	Cal4PHS-10	Caledonia/Cayuga//Caledonia 4-10 (BC1F4select)	Sorrells	Retest
UESWWWN	UESW 12	NY03180FHB-10	NY7387/Caledonia//Caledonia-2///Caledonia 9-10 (BC2F4select)	Sorrells	Retest
UESWWWN	UESW 13	Cayuga	Clark'sCream /Geneva/Geneva	Sorrells	Check
UESWWWN	UESW 14	TW435_025		Etienne	Retest
UESWWWN	UESW 15	TW531-003		Etienne	Retest
UESWWWN	UESW 16	TW528-003		Etienne	New
UESWWWN	UESW 17	TW532-078		Etienne	New
UESWWWN	UESW 18	TWF507-013		Etienne	New
UESWWWN	UESW 19	SE00_10286-7	PION25W60/TW96286	Fioritto	New
UESWWWN	UESW 20	SE00_10303-35	PION25W60/CALEDONIA	Fioritto	New
UESWWWN	UESW 21	SE00_10277-12	CALEDONIA/TW93213	Fioritto	New
UESWWWN	UESW 22	SE00_10279-3	TW96286/TW94109	Fioritto	New
UESWWWN	UESW 23	X00_1648	P2510//PSR-W71/KSH3463	Moreno	New
UESWWWN	UESW 24	RCDH-19_21		Tamburic	New
UESWWWN	UESW 25	W1062		Fogleman	Check

**2010 Uniform Eastern Soft White Winter Wheat Nursery**  
**Summary of all Markers**

Nursery	Entry	Sample Name	Rht			Ppd-D1a	Fhb			Fhb 5A	
			B1b	D1b	Rht8		Ernie	3Bc	W14	Ernie	Ning 7840
UESWWWN	UESW 1	Superior	no	yes	no	no	no	no	no	no	no
UESWWWN	UESW 2	Augusta	no	yes	no	no	no	no	no	no	no
UESWWWN	UESW 3	E3024	no	yes	no	no	yes	no	no	no	no
UESWWWN	UESW 4	E6019A	no	yes	no	yes	no	no	no	no	no
UESWWWN	UESW 5	E2041	no	yes	no	yes	no	no	no	no	no
UESWWWN	UESW 6	E6045	no	yes	no	no	no	no	no	no	no
UESWWWN	UESW 7	NY103-208-7263	no	yes	no	no	no	no	no	no	no
UESWWWN	UESW 8	NY103-21-9183	no	no	no	no	no	no	no	no	no
UESWWWN	UESW 9	NY103-226-9195	no	no	no	no	no	no	no	no	no
UESWWWN	UESW 10	Jensen	no	nd	no	no	no	no	no	no	no
UESWWWN	UESW 11	Cal4PHS-10	no	yes	no	no	no	no	no	no	no
UESWWWN	UESW 12	NY03180FHB-10	no	yes	no	no	het	no	no	no	no
UESWWWN	UESW 13	Cayuga	no	no	no	no	no	no	no	no	no
UESWWWN	UESW 14	TW435_025	no	yes	no	yes	no	no	no	no	no
UESWWWN	UESW 15	TW531-003	yes	no	no	nd	no	no	no	no	no
UESWWWN	UESW 16	TW528-003	no	yes	no	no	no	no	no	no	no
UESWWWN	UESW 17	TW532-078	no	yes	no	no	no	no	no	no	no
UESWWWN	UESW 18	TWF507-013	no	no	no	no	no	no	no	no	no
UESWWWN	UESW 19	SE00_10286-7	no	no	no	yes	no	no	no	het?	no
UESWWWN	UESW 20	SE00_10303-35	nd	het	no	nd	no	no	no	yes?	no
UESWWWN	UESW 21	SE00_10277-12	no	yes	no	no	no	no	no	no	no
UESWWWN	UESW 22	SE00_10279-3	no	het	no	het	no	no	no	no	no
UESWWWN	UESW 23	X00_1648	yes	no	no	no	no	no	no	no	no
UESWWWN	UESW 24	RCDH-19_21	no	het	no	no	no	no	no	no	no
UESWWWN	UESW 25	W1062	no	yes	no	no	no	no	no	no	no

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

Ppd-D1a = photoperiod insensitive = yes

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**Summary of all Markers**

Nursery	Entry	Sample Name	Yr17/ Lr34/			1RS	H H		Bdv	Bx7 over-expressing	Glu-D1 Glu-A1		PHS Cayuga
			Sr 2	Sr 36	Sr24/ Lr24		Lr37/ Sr38	Yr18/ Pm38			13	9	
UESWWWN	UESW 1	Superior	no	no	no	no	no	no	no	no	<b>2+12</b>	Ax1 or null	yes?
UESWWWN	UESW 2	Augusta	no	no	no	no	no	no	no	no	2+12	Ax1 or null	yes
UESWWWN	UESW 3	E3024	no	no	no	no	no	no	no	no	2+12	Ax2*	no
UESWWWN	UESW 4	E6019A	no	no	no	no	no	no	no	no	2+12	Ax2*	no
UESWWWN	UESW 5	E2041	no	no	no	no	no	no	yes	no	2+12	Ax2*	no
UESWWWN	UESW 6	E6045	no	no	no	no	no	no	no	no	2+12	Ax2*	no
UESWWWN	UESW 7	NY103-208-7263	no	no	no	no	no	no	no	no	2+12	Ax2*	yes
UESWWWN	UESW 8	NY103-21-9183	no	no	no	no	no	no	no	no	2+12	Ax1 or null	yes
UESWWWN	UESW 9	NY103-226-9195	no	no	no	no	no	no	no	no	2+12	Ax2*	no
UESWWWN	UESW 10	Jensen	no	no	no	no	no	no	no	no	2+12	Ax1 or null	no
UESWWWN	UESW 11	Cal4PHS-10	no	no	no	no	no	no	no	no	2+12	Ax2*	yes?
UESWWWN	UESW 12	NY03180FHB-10	no	no	no	no	no	no	no	no	2+12	Ax2*	no
UESWWWN	UESW 13	Cayuga	no	no	no	no	no	no	no	no	<b>2+12</b>	Ax1 or null	yes
UESWWWN	UESW 14	TW435_025	no	no	no	no	no	no	no	no	2+12	Ax1 or null	yes?
UESWWWN	UESW 15	TW531-003	no	no	no	no	no	no	no	no	<b>2+12</b>	Ax2*	no
UESWWWN	UESW 16	TW528-003	no	no	no	no	no	no	no	no	2+12	Ax2*	no
UESWWWN	UESW 17	TW532-078	no	no	no	no	no	no	no	no	2+12	Ax1 or null	yes?
UESWWWN	UESW 18	TWF507-013	no	no	no	no	no	no	no	no	2+12	Ax1 or null	no
UESWWWN	UESW 19	SE00_10286-7	no	no	no	no	no	no	no	no	2+12	het	no
UESWWWN	UESW 20	SE00_10303-35	no	no	no	no	no	no	no	no	2+12	Ax2*	no
UESWWWN	UESW 21	SE00_10277-12	no	no	no	no	no	no	no	no	het	Ax2*	no
UESWWWN	UESW 22	SE00_10279-3	no	no	no	no	no	no	no	no	2+12	Ax1 or null	no
UESWWWN	UESW 23	X00_1648	no	yes	no	no	no	no	no	no	2+12	Ax2*	no
UESWWWN	UESW 24	RCDH-19_21	no	no	no	no	no	no	no	no	2+12	Ax1 or null	no
UESWWWN	UESW 25	W1062	no	no	no	no	no	no	no	no	<b>5+10</b>	Ax2*	no

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**Dwarfing genes & Photoperiod insensitivity**  
2010

Nursery	Entry	Sample Name	Rht1K	Rht2K	Rht1- B1b	Rht2- D1b	gwm 261	Rht8	Ppd	Ppd	Ppd-D1a
UESWWWN	UESW 1	Superior	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 2	Augusta	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 3	E3024	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 4	E6019A	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	<b>283</b>	<b>yes</b>	
UESWWWN	UESW 5	E2041	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163	no	<b>283</b>	<b>yes</b>	
UESWWWN	UESW 6	E6045	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 7	NY103-208-7263	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 8	NY103-21-9183	Allele X	Allele X	no	no	173	no	414	no	
UESWWWN	UESW 9	NY103-226-9195	Allele X	Allele X	no	no	173	no	414	no	
UESWWWN	UESW 10	Jensen	Allele X	nd	no	nd	173	no	414	no	
UESWWWN	UESW 11	Cal4PHS-10	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 12	NY03180FHB-10	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 13	Cayuga	Allele X	Allele X	no	no	173	no	414	no	
UESWWWN	UESW 14	TW435_025	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163	no	<b>283</b>	<b>yes</b>	
UESWWWN	UESW 15	TW531-003	<b>Allele Y</b>	Allele X	<b>yes</b>	no	163	no	nd	nd	
UESWWWN	UESW 16	TW528-003	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 17	TW532-078	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 18	TWF507-013	Allele X	Allele X	no	no	173	no	414	no	
UESWWWN	UESW 19	SE00_10286-7	Allele X	Allele X	no	no	173	no	<b>283</b>	<b>yes</b>	
UESWWWN	UESW 20	SE00_10303-35	nd	<b>Both Alleles</b>	nd	<b>het</b>	173	no	nd	nd	
UESWWWN	UESW 21	SE00_10277-12	Allele X	<b>Allele Y</b>	no	<b>yes</b>	173	no	414	no	
UESWWWN	UESW 22	SE00_10279-3	Allele X	<b>Both Alleles</b>	no	<b>het</b>	173	no	<b>283</b>	414 <b>het</b>	
UESWWWN	UESW 23	X00_1648	<b>Allele Y</b>	Allele X	<b>yes</b>	no	173	no	414	no	
UESWWWN	UESW 24	RCDH-19_21	Allele X	<b>Both Alleles</b>	no	<b>het</b>	173	no	414	no	
UESWWWN	UESW 25	W1062	Allele X	<b>Allele Y</b>	no	<b>yes</b>	163	no	414	no	

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**FHB QTLs**  
**2010**

Nursery	Entry	Sample Name	umn10	umn10	gwm533	gwm533	Fhb1
UESWWWN	UESW 1	Superior	236		118		no
UESWWWN	UESW 2	Augusta	236		118		no
UESWWWN	UESW 3	E3024	<b>239</b>		<b>140</b>		<b>yes</b>
UESWWWN	UESW 4	E6019A	236		118		no
UESWWWN	UESW 5	E2041	236		118		no
UESWWWN	UESW 6	E6045	236		118		no
UESWWWN	UESW 7	NY103-208-7263	236		118		no
UESWWWN	UESW 8	NY103-21-9183	236		118		no
UESWWWN	UESW 9	NY103-226-9195	236		118		no
UESWWWN	UESW 10	Jensen	236		118		no
UESWWWN	UESW 11	Cal4PHS-10	236		118		no
UESWWWN	UESW 12	NY03180FHB-10	236	<b>239</b>	118	<b>144</b>	<b>het</b>
UESWWWN	UESW 13	Cayuga	236		118		no
UESWWWN	UESW 14	TW435_025	236		nd		no
UESWWWN	UESW 15	TW531-003	229		146	155	no
UESWWWN	UESW 16	TW528-003	236		118		no
UESWWWN	UESW 17	TW532-078	236		118		no
UESWWWN	UESW 18	TWF507-013	236		118		no
UESWWWN	UESW 19	SE00_10286-7	236		118		no
UESWWWN	UESW 20	SE00_10303-35	236		118		no
UESWWWN	UESW 21	SE00_10277-12	236		118		no
UESWWWN	UESW 22	SE00_10279-3	236		118		no
UESWWWN	UESW 23	X00_1648	236		118		no
UESWWWN	UESW 24	RCDH-19_21	236		118		no
UESWWWN	UESW 25	W1062	236		118		no

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**FHB QTLs**  
**2010**

Nursery	Entry	Sample Name	gwm	gwm	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	wmc	Fhb Ernie	
			285	285	612	612	612	307	307	1	418	418	471	471	471	3Bc
UESWWWN	UESW 1	Superior	217		267			<b>141</b>		160	271		177	217	no	
UESWWWN	UESW 2	Augusta	219		275	277		143		160	269	271	177	217	no	
UESWWWN	UESW 3	E3024	244		283	<b>285</b>		<b>141</b>	<b>153</b>	271			177	217	no	
UESWWWN	UESW 4	E6019A	217		267			<b>141</b>		160	269	271	177	215	no	
UESWWWN	UESW 5	E2041	226		287	289		143		149	269		179	217	no	
UESWWWN	UESW 6	E6045	226		287	289		143		149	269		177	221	no	
UESWWWN	UESW 7	NY103-208-7263	217		267			<b>141</b>		160	269	271	177	215	no	
UESWWWN	UESW 8	NY103-21-9183	217	219	267	273		<b>141</b>	143	160	269	271	177	215	no	
UESWWWN	UESW 9	NY103-226-9195	217		267			<b>141</b>		160	269	271	177	215	no	
UESWWWN	UESW 10	Jensen	221		279	281		143		160	269	271	177	217	no	
UESWWWN	UESW 11	Cal4PHS-10	217		267			<b>141</b>		160	269	271	177	215	217	no
UESWWWN	UESW 12	NY03180FHB-10	217	221	267	279	282	<b>141</b>	143	nd	269	271	177	217	no	
UESWWWN	UESW 13	Cayuga	219		273	275		143		160	269	271	177	217	no	
UESWWWN	UESW 14	TW435_025	226		287	289		143		149	269		177	221	no	
UESWWWN	UESW 15	TW531-003	221		271	273		143		151	271		179	215	no	
UESWWWN	UESW 16	TW528-003	221		267			<b>141</b>		149	271		177	217	no	
UESWWWN	UESW 17	TW532-078	219		267			143		160	271		177	217	no	
UESWWWN	UESW 18	TWF507-013	217		267			<b>141</b>		160	271		177	217	no	
UESWWWN	UESW 19	SE00_10286-7	219		267			<b>141</b>		160	271		177	217	no	
UESWWWN	UESW 20	SE00_10303-35	219		267	279	281	<b>141</b>	143	<b>153</b>	271		177	215	no	
UESWWWN	UESW 21	SE00_10277-12	217		267	271		<b>141</b>		160	271		177	215	no	
UESWWWN	UESW 22	SE00_10279-3	217	219	267			<b>141</b>		160	271		177	217	no	
UESWWWN	UESW 23	X00_1648	219		279	281		143		149	271		177	215	no	
UESWWWN	UESW 24	RCDH-19_21	221		nd			<b>141</b>		151	<b>262</b>		177	217	no	
UESWWWN	UESW 25	W1062	217		267			<b>141</b>		160	269	271	177	215	no	

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**FHB QTLs**  
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Nursery	Entry	Sample Name	cfd233	cfd233	gwm539	gwm 539	gwm608	gwm608	Fhb 2DL- Wuhan1/ W14
UESWWWN	UESW 1	Superior	<b>276</b>	278	135		150		no
UESWWWN	UESW 2	Augusta	278		141		150		no
UESWWWN	UESW 3	E3024	271		133		154		no
UESWWWN	UESW 4	E6019A	274		137		154		no
UESWWWN	UESW 5	E2041	<b>276</b>	278	141		156		no
UESWWWN	UESW 6	E6045	282	286	137	141	154		no
UESWWWN	UESW 7	NY103-208-7263	274		139		154		no
UESWWWN	UESW 8	NY103-21-9183	286	288	141		<b>152</b>	154	no
UESWWWN	UESW 9	NY103-226-9195	286	288	141		<b>152</b>		no
UESWWWN	UESW 10	Jensen	<b>276</b>	278	141		<b>152</b>		no
UESWWWN	UESW 11	Cal4PHS-10	274		139		154		no
UESWWWN	UESW 12	NY03180FHB-10	274	280	139		<b>152</b>	154	no
UESWWWN	UESW 13	Cayuga	286	288	141		<b>152</b>		no
UESWWWN	UESW 14	TW435_025	278	280	<b>125</b>		156		no
UESWWWN	UESW 15	TW531-003	278	280	151		150		no
UESWWWN	UESW 16	TW528-003	<b>276</b>	278	135		150		no
UESWWWN	UESW 17	TW532-078	272	274	<b>125</b>		150		no
UESWWWN	UESW 18	TWF507-013	274		135		150		no
UESWWWN	UESW 19	SE00_10286-7	272		131	176	<b>152</b>		no
UESWWWN	UESW 20	SE00_10303-35	286	288	137		154		no
UESWWWN	UESW 21	SE00_10277-12	263		<b>125</b>		154		no
UESWWWN	UESW 22	SE00_10279-3	271		170	159	<b>152</b>		no
UESWWWN	UESW 23	X00_1648	274		<b>125</b>		158		no
UESWWWN	UESW 24	RCDH-19_21	<b>276</b>	278	141		150		no
UESWWWN	UESW 25	W1062	<b>276</b>	278	146		154		no

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**FHB QTLs**  
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Nursery	Entry	Sample Name	gwm304	gwm304	wmc705	wmc705	barc117	barc117	barc186	<i>Fhb 5A</i>	
										5A Ernie	<i>Ning 7840</i>
UESWWWN	UESW 1	Superior	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 2	Augusta	201		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 3	E3024	199		<b>135</b>		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 4	E6019A	224		137		<b>221</b>		<b>212</b>	no	<i>no</i>
UESWWWN	UESW 5	E2041	197		160		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 6	E6045	199		135		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 7	NY103-208-7263	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 8	NY103-21-9183	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 9	NY103-226-9195	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 10	Jensen	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 11	Cal4PHS-10	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 12	NY03180FHB-10	199		133	<b>135</b>	217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 13	Cayuga	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 14	TW435_025	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 15	TW531-003	213		133		224		<b>212</b>	no	<i>no</i>
UESWWWN	UESW 16	TW528-003	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 17	TW532-078	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 18	TWF507-013	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 19	SE00_10286-7	200	<b>221</b>	133	<b>135</b>	217	<b>221</b>	<b>203</b>	<b>het?</b>	<i>no</i>
UESWWWN	UESW 20	SE00_10303-35	<b>221</b>		<b>135</b>		217	<b>221</b>	<b>203</b>	<b>yes?</b>	<i>no</i>
UESWWWN	UESW 21	SE00_10277-12	199		137	139	217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 22	SE00_10279-3	199		133		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 23	X00_1648	198		160	162	217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 24	RCDH-19_21	201		141		217		<b>203</b>	no	<i>no</i>
UESWWWN	UESW 25	W1062	199		<b>135</b>		217		<b>203</b>	no	<i>no</i>

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## Leaf, Stripe & Stem Rusts

2010

Nursery	Entry #	Sample Name	Sr2	wmc			barc		Sr24/ Lr24	ventriup	Yr17/ Lr37/ Sr38	CsLv34	Lr34/ Yr18/ Pm38
				477	wmc 477	Sr36	71	71					
UESWWWN	UESW 1	Superior	no	165		no	100	104	no		no	235	no
UESWWWN	UESW 2	Augusta	no	160		no	100	104	no		no	235	no
UESWWWN	UESW 3	E3024	no	161		no	107	112	no		no	235	no
UESWWWN	UESW 4	E6019A	no	167		no	100	104	no		no	235	no
UESWWWN	UESW 5	E2041	no	161		no	100	104	no		no	235	no
UESWWWN	UESW 6	E6045	no	165		no	100	104	no		no	235	no
UESWWWN	UESW 7	NY103-208-7263	no	167		no	100	104	no		no	235	no
UESWWWN	UESW 8	NY103-21-9183	no	167		no	100	104	no		no	235	no
UESWWWN	UESW 9	NY103-226-9195	no	167		no	100	104	no		no	235	no
UESWWWN	UESW 10	Jensen	no	167		no	100	104	no		no	235	no
UESWWWN	UESW 11	Cal4PHS-10	no	167		no	100	104	no		no	235	no
UESWWWN	UESW 12	NY03180FHB-10	no	161		no	100	104	no		no	235	no
UESWWWN	UESW 13	Cayuga	no	167		no	100	104	no		no	235	no
UESWWWN	UESW 14	TW435_025	no	165		no	100	104	no		no	235	no
UESWWWN	UESW 15	TW531-003	no	165		no	100	104	no		no	235	no
UESWWWN	UESW 16	TW528-003	no	160		no	100	104	no		no	235	no
UESWWWN	UESW 17	TW532-078	no	165		no	100	104	no		no	235	no
UESWWWN	UESW 18	TWF507-013	no	165		no	100	104	no		no	235	no
UESWWWN	UESW 19	SE00_10286-7	no	160	167	no	107	112	no		no	235	no
UESWWWN	UESW 20	SE00_10303-35	no	167		no	100	104	no		no	235	no
UESWWWN	UESW 21	SE00_10277-12	no	160	165	no	100	104	no		no	235	no
UESWWWN	UESW 22	SE00_10279-3	no	160	167	no	104	112	no		no	235	no
UESWWWN	UESW 23	X00_1648	no	<b>185</b>		<b>yes</b>	100	104	no		no	235	no
UESWWWN	UESW 24	RCDH-19_21	no	165		no	104	116	no		no	235	no
UESWWWN	UESW 25	W1062	no	161		no	100	104	no		no	235	no

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**Rye Translocation -- Hessian Fly -- Barley Yellow Dwarf Virus**  
**2010**

Nursery	Entry	Sample Name	scm9	1RS	cf132	H13	cfa2153	H9	Bdv	Bdv2/3
UESWWWN	UESW 1	Superior		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 2	Augusta		non-1RS	114	no	177	no	184	no
UESWWWN	UESW 3	E3024		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 4	E6019A		non-1RS	114	no	189	no	184	no
UESWWWN	UESW 5	E2041		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 6	E6045		non-1RS	114	no	201	no	184	no
UESWWWN	UESW 7	NY103-208-7263		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 8	NY103-21-9183		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 9	NY103-226-9195		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 10	Jensen		non-1RS	114	no	177	no	184	no
UESWWWN	UESW 11	Cal4PHS-10		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 12	NY03180FHB-10		non-1RS	114	no	201	no	184	no
UESWWWN	UESW 13	Cayuga		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 14	TW435_025		non-1RS	114	no	189	no	184	no
UESWWWN	UESW 15	TW531-003	<b>207</b>	<b>1RS:1BL</b>	114	no	167	no	184	no
UESWWWN	UESW 16	TW528-003		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 17	TW532-078		non-1RS	114	no	175	no	184	no
UESWWWN	UESW 18	TWF507-013	<b>207</b>	<b>1RS:1BL</b>	114	no	197	no	184	no
UESWWWN	UESW 19	SE00_10286-7	<b>222</b>	<b>1RS:1AL</b>	114	no	201	no	184	no
UESWWWN	UESW 20	SE00_10303-35		non-1RS	114	no	201	no	184	no
UESWWWN	UESW 21	SE00_10277-12		non-1RS	114	no	201	no	184	no
UESWWWN	UESW 22	SE00_10279-3		non-1RS	114	no	193	no	184	no
UESWWWN	UESW 23	X00_1648		non-1RS	114	no	201	no	184	no
UESWWWN	UESW 24	RCDH-19_21		non-1RS	114	no	197	no	184	no
UESWWWN	UESW 25	W1062		non-1RS	114	no	201	no	184	no

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**Quality Traits**  
**2010**

Nursery	Entry	Sample Name	Bx7oe	Bx7 over-expressing	Umn25	Umn25	UMN26	UMN26	Glu-D1	Umn19	Umn19	Glu-A1
UESWWWN	UESW 1	Superior	404	no		<b>300</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 2	Augusta	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 3	E3024	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 4	E6019A	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 5	E2041	<b>448</b>	<b>yes</b>		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 6	E6045	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 7	NY103-208-7263	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 8	NY103-21-9183	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 9	NY103-226-9195	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 10	Jensen	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 11	Cal4PHS-10	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 12	NY03180FHB-10	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 13	Cayuga	404	no		<b>300</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 14	TW435_025	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 15	TW531-003	404	no		<b>300</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 16	TW528-003	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 17	TW532-078	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 18	TWF507-013	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 19	SE00_10286-7	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>	<b>358</b>	<b>het</b>
UESWWWN	UESW 20	SE00_10303-35	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 21	SE00_10277-12	404	no		<b>300</b>	<b>392</b>	<b>409</b>	<b>het</b>	<b>341</b>		<b>Ax2*</b>
UESWWWN	UESW 22	SE00_10279-3	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 23	X00_1648	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>	<b>340</b>		<b>Ax2*</b>
UESWWWN	UESW 24	RCDH-19_21	404	no		<b>293</b>		<b>409</b>	<b>2+12</b>		<b>358</b>	<b>Ax1 or null</b>
UESWWWN	UESW 25	W1062	404	no	<b>275</b>		<b>392</b>		<b>5+10</b>	<b>340</b>		<b>Ax2*</b>

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**Pre-harvest Sprouting**  
**2010**

Nursery	Entry	Sample Name	Barc55	gwm429	gwm429	gwm429	wmc474	PHS Cayuga
UESWWWN	UESW 1	Superior	<b>132</b>	208	237	<b>298</b>	<b>135</b>	yes?
UESWWWN	UESW 2	Augusta	<b>132</b>	208	<b>298</b>		<b>135</b>	yes
UESWWWN	UESW 3	E3024	128	208	<b>298</b>		131	no
UESWWWN	UESW 4	E6019A	128	206	237	296	131	no
UESWWWN	UESW 5	E2041	<b>132</b>	212	237	302	139	no
UESWWWN	UESW 6	E6045	<b>132</b>	237	292		131	no
UESWWWN	UESW 7	NY103-208-7263	<b>132</b>	208	<b>298</b>		<b>135</b>	yes
UESWWWN	UESW 8	NY103-21-9183	<b>132</b>	208	<b>298</b>		<b>135</b>	yes
UESWWWN	UESW 9	NY103-226-9195	128	210	300		<b>135</b>	no
UESWWWN	UESW 10	Jensen	128	237	292		<b>135</b>	no
UESWWWN	UESW 11	Cal4PHS-10	<b>132</b>	210	237	300	<b>135</b>	yes?
UESWWWN	UESW 12	NY03180FHB-10	128	210	237	300	131	no
UESWWWN	UESW 13	Cayuga	<b>132</b>	208	<b>298</b>		<b>135</b>	yes
UESWWWN	UESW 14	TW435_025	<b>132</b>	208	237	<b>298</b>	<b>135</b>	yes?
UESWWWN	UESW 15	TW531-003	128	208	<b>298</b>		131	no
UESWWWN	UESW 16	TW528-003	128	208	<b>298</b>		131	no
UESWWWN	UESW 17	TW532-078	<b>132</b>	208	237	<b>298</b>	<b>135</b>	yes?
UESWWWN	UESW 18	TWF507-013	<b>132</b>	210	300		<b>135</b>	no
UESWWWN	UESW 19	SE00_10286-7	128	210	237	300	131	no
UESWWWN	UESW 20	SE00_10303-35	<b>132</b>	210	237	300	<b>135</b>	no
UESWWWN	UESW 21	SE00_10277-12	128	210	237	300	131	no
UESWWWN	UESW 22	SE00_10279-3	128	210	237	300	131	no
UESWWWN	UESW 23	X00_1648	<b>132</b>	222	237	312	126	no
UESWWWN	UESW 24	RCDH-19_21	128	208	<b>298</b>		133	no
UESWWWN	UESW 25	W1062	128	210	237	300	131	no

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