

2013

Marker Reports for all Alleles

Eastern Regional Nurseries

**Northern Uniform Winter Wheat Scab Nursery
Preliminary Northern Uniform Winter Wheat Scab Nursery
Uniform Southern FHB Nursery**

Eastern Regional Small Grains Genotyping Lab

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USDA-ARS

Notes

"nd" = not determined or lack of amplification

if marker is dominant, samples with no amplification are left blank 2008-2010; in 2011-2013 dominant markers are indicated with **

"?" 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
HEX? = not quite a Y allele; FAM? = not quite an X allele
Target alleles are in **bold or bold italics**

NT = marker Not Tested on those samples

Rht-B1b = dwarfing allele; Rht-B1a = tall allele

Rht-D1b = dwarfing allele; RhtD1a = tall allele

Ppd-D1a = photoperiod insensitive; Ppd-D1b = photosensitive allele

Ppd-B1a = photoperiod insensitive for either Chinese Spring [CS] or Sonora 64/Timstein [S64]; null = photosensitive allele

Ppd-A1a = photoperiod insensitive allele Ppd-A1a.1 in Japanese winter wheat cultivar Chikokukomugi; Ppd-A1b = photosensitive allele

vrn-A1 = short vernalization allele

vrn-B1 = short vernalization allele - in 2013 wmc75 for vrn-B1 was replaced by a SNP marker with the short vernalization allele present in AGS2000 which identifies fewer lines as having the short vern allele

Vrn-D1a = spring type; vrn-D1 = winter type

in 2013 - KASP markers for the Fhb QTL on 3BL reported in Massey were identified (thought to be the same as the one in Ernie) and are reported in a new column as **Fhb_Massey_3BL** following the **Fhb Ernie 3Bc** column. The new markers have been integrated with the old markers in the order of their chromosome location

in 2013 - the columns **Fhb 5A Ernie & Fhb 5A Ning7840** were combined into a single column **Fhb_5A**

Lr34/Yr18 - lines identified as **Lr34/Yr18** are checked with Lr34Jagger marker - presence of Jagger allele reported as nonfunctional-Lr34/Yr18

Lr9 - Y:Y? were reported as 'no' for Lr9 based on correlation of data from Jim Kolmer at the Cereal Disease Lab

Tsn1 = susceptibility to the necrotrophic effector SnToxA involved in development of Stagonospora leaf blotch and tan spot. This is a dominant marker since the gene is deleted in lines that are not susceptible.

in 2013 - **Texture** = **Pina-D1** is **pina-D1a_soft**; D1b = hard and **Pinb-D1** is **pinb_D1_soft**; D1b = hard
previously Texture was pina_taqman(AlleleX) = hard; **pinb D1a-b_taqman(AlleleY) = D1a_soft**; **pinb D1a-d_taqman(AlleleX) = D1a_soft**

* pedigrees, contributors and other notes that were available, are at the far right side of the tables

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Entry Lists of Regional Nurseries

Summary of Marker Data

All Marker Data

Dwarfing, Photoperiod Insensitive & Vernalization alleles

FHB QTLs

Leaf, Stem & Stripe Rusts and Powdery Mildew

Rye Translocations, Hessian Fly, Barley Yellow Dwarf Virus, Soil Borne Mosaic Virus, Stagonospora Leaf Blotch and Tan Spot

Quality Traits - Glutenins, Pre-Harvest sprouting, Hardness & Mill Quality (Sucrose Synthase)

Kernel Color

2013 Cooperative Scab Nurseries

Year	Nursery	Entry	Sample_Name	Contributor
2013	NUWWSN	1	Ernie	Clay Sneller
2013	NUWWSN	2	Freedom	Clay Sneller
2013	NUWWSN	3	Pioneer2545	Clay Sneller
2013	NUWWSN	4	NY07104-141	COR
2013	NUWWSN	5	NY99069-WC	COR
2013	NUWWSN	6	NY99045-3110	COR
2013	NUWWSN	7	NY99056-161	COR
2013	NUWWSN	8	KWS 009	KWS
2013	NUWWSN	9	KWS 010	KWS
2013	NUWWSN	10	KWS 013	KWS
2013	NUWWSN	11	KWS 014	KWS
2013	NUWWSN	12	LCS10727	LIM
2013	NUWWSN	13	LCS13531	LIM
2013	NUWWSN	14	LCS19228	LIM
2013	NUWWSN	15	LCS19707	LIM
2013	NUWWSN	16	F0013R	MSU
2013	NUWWSN	17	F0065	MSU
2013	NUWWSN	18	F1003R	MSU
2013	NUWWSN	19	F1029	MSU
2013	NUWWSN	20	TRUMAN	UMO
2013	NUWWSN	21	OH07-263-3	OSU
2013	NUWWSN	22	OH08-172-42	OSU
2013	NUWWSN	23	OH08-269-58	OSU
2013	NUWWSN	24	05247A1-7-7-3-1 (PUR-1)	PUR
2013	NUWWSN	25	05287A1-1-13 (PUR-2)	PUR
2013	NUWWSN	26	0762A1-2-8 (PUR-3)	PUR
2013	NUWWSN	27	05247A1-7-3-120 (PUR-4)	PUR
2013	NUWWSN	28	05264A1-1-3-33 (PUR-5)	PUR
2013	NUWWSN	29	MH07-7474	SYN
2013	NUWWSN	30	MA08-8036#	SYN
2013	NUWWSN	31	M10-1659	SYN
2013	NUWWSN	32	M10-1615	SYN
2013	NUWWSN	33	M10*1307#	SYN
2013	NUWWSN	34	IL06-23571	UIL
2013	NUWWSN	35	IL07-19334	UIL
2013	NUWWSN	36	IL07-20728	UIL
2013	NUWWSN	37	IL07-20743	UIL
2013	NUWWSN	38	KY05C-1369-13-7-3	UKY
2013	NUWWSN	39	KY05C-1020-2-19-1	UKY
2013	NUWWSN	40	KY05C-1600-92-9-5	UKY
2013	NUWWSN	41	KY05C-1051-37-18-5	UKY
2013	NUWWSN	42	KY05C-1105-43-10-3	UKY
2013	NUWWSN	43	MD05W10208-12-16	UMD
2013	NUWWSN	44	MDC07026-12-42	UMD
2013	NUWWSN	45	MDC07027-12-12	UMD
2013	NUWWSN	46	MDC07027-12-24	UMD
2013	NUWWSN	47	MO111134	UMO
2013	NUWWSN	48	MO111359	UMO
2013	NUWWSN	49	MO110719	UMO
2013	NUWWSN	50	MO100647	UMO
2013	NUWWSN	51	Bakhsh24	UNE
2013	NUWWSN	52	Bakhsh33	UNE
2013	NUWWSN	53	Bakhsh35	UNE
2013	NUWWSN	54	NW10401	UNE
2013	NUWWSN	55	NE06607	UNE
2013	NUWWSN	56	VA09W-188WS	VAT
2013	NUWWSN	57	VA08MAS-369	VAT
2013	NUWWSN	58	VA10W-123	VAT
2013	NUWWSN	59	VA11W-FHB39	VAT
2013	NUWWSN	60	VA11W-FHB40	VAT

Year	Nursery	Entry	Sample_Name	Contributor
2013	PNUWWSN	1	TRUMAN	Clay Sneller
2013	PNUWWSN	2	ERNIE	Clay Sneller
2013	PNUWWSN	3	FREEDOM	Clay Sneller
2013	PNUWWSN	4	PIONEER2545	Clay Sneller
2013	PNUWWSN	5	KWS 015	KWS
2013	PNUWWSN	6	KWS 008	KWS
2013	PNUWWSN	7	KWS 011	KWS
2013	PNUWWSN	8	KWS 012	KWS
2013	PNUWWSN	9	KWS 016	KWS
2013	PNUWWSN	10	KWS 017	KWS
2013	PNUWWSN	11	KWS 019	KWS
2013	PNUWWSN	12	F1012	MSU
2013	PNUWWSN	13	F1014	MSU
2013	PNUWWSN	14	OH07-264-35	OSU
2013	PNUWWSN	15	OH08-99-50	OSU
2013	PNUWWSN	16	OH08-207-33	OSU
2013	PNUWWSN	17	OH08-99-41	OSU
2013	PNUWWSN	18	OH08-155-16	OSU
2013	PNUWWSN	19	OH08-182-4	OSU
2013	PNUWWSN	20	0722A1-1-7 (PUR-6)	PUR
2013	PNUWWSN	21	05247A1-7-3-27 (PUR-7)	PUR
2013	PNUWWSN	22	082A1-55-4 (PUR-8)	PUR
2013	PNUWWSN	23	0858A1-33-2 (PUR-9)	PUR
2013	PNUWWSN	24	0527A1-9-15-181 (PUR-10)	PUR
2013	PNUWWSN	25	IL08-22206	UIL
2013	PNUWWSN	26	IL08-8844	UIL
2013	PNUWWSN	27	IL09-3259	UIL
2013	PNUWWSN	28	IL09-3264	UIL
2013	PNUWWSN	29	IL09-15973	UIL
2013	PNUWWSN	30	IL09-24328	UIL
2013	PNUWWSN	31	KY06C-1003-140-3-3	UKY
2013	PNUWWSN	32	KY05C-1113-47-9-3	UKY
2013	PNUWWSN	33	KY05C-1105-44-15-1	UKY
2013	PNUWWSN	34	KY05C-1105-42-14-1	UKY
2013	PNUWWSN	35	KY05C-1033-31-15-1	UKY
2013	PNUWWSN	36	MO111495	UMO
2013	PNUWWSN	37	MO111491	UMO
2013	PNUWWSN	38	MO111409	UMO
2013	PNUWWSN	39	MO110799	UMO
2013	PNUWWSN	40	MO110767	UMO
2013	PNUWWSN	41	MO111585	UMO
2013	PNUWWSN	42	VA11W-FHB4	VAT
2013	PNUWWSN	43	VA11W-FHB13	VAT
2013	PNUWWSN	44	VA11W-FHB38	VAT
2013	PNUWWSN	45	VA11W-FHB71	VAT
2013	PNUWWSN	46	OH08-180-48	OSU

Year	Nursery	Entry	Sample_Name	Contributor
2013	USFHBN	1	ERNIE	Paul Murphy
2013	USFHBN	2	COKER9835	Paul Murphy
2013	USFHBN	3	BESS	Paul Murphy
2013	USFHBN	4	JAMESTOWN	Paul Murphy
2013	USFHBN	5	MD03W61-11-3	Paul Murphy
2013	USFHBN	6	ARS07-1214	Paul Murphy
2013	USFHBN	7	ARS09-367	Paul Murphy
2013	USFHBN	8	ARS09-446	Paul Murphy
2013	USFHBN	9	ARS09-643	Paul Murphy
2013	USFHBN	10	LA05102C-1-2	Paul Murphy
2013	USFHBN	11	LA05102C-8-8	Paul Murphy
2013	USFHBN	12	NC09-20986 (Fhb1)	Paul Murphy
2013	USFHBN	13	AR00260-2-2	Paul Murphy
2013	USFHBN	14	AR01044-1-1	Paul Murphy
2013	USFHBN	15	AR01110-3-1	Paul Murphy
2013	USFHBN	16	AR01178-1-1	Paul Murphy
2013	USFHBN	17	ARGE05-1229-2-1	Paul Murphy
2013	USFHBN	18	ARGE07-1339-10-5-8	Paul Murphy
2013	USFHBN	19	ARGE07-1374-17-5-4	Paul Murphy
2013	USFHBN	20	ARGE07-1374-17-8-5	Paul Murphy
2013	USFHBN	21	ARS07-1073	Paul Murphy
2013	USFHBN	22	ARS09-082	Paul Murphy
2013	USFHBN	23	ARS09-228	Paul Murphy
2013	USFHBN	24	ARS09-745	Paul Murphy
2013	USFHBN	25	GA04494-12ES33	Paul Murphy
2013	USFHBN	26	GA051477-12ES27	Paul Murphy
2013	USFHBN	27	GA051477-12ES28	Paul Murphy
2013	USFHBN	28	GA051477-12ES29	Paul Murphy
2013	USFHBN	29	GA051477-12ES32	Paul Murphy
2013	USFHBN	30	GANC8170-12DH7	Paul Murphy
2013	USFHBN	31	GANC8248-12DH1	Paul Murphy
2013	USFHBN	32	GANCZ4-12DH21	Paul Murphy
2013	USFHBN	33	LA05079F-P05	Paul Murphy
2013	USFHBN	34	LA06069E-P01	Paul Murphy
2013	USFHBN	35	LA06149C-P7	Paul Murphy
2013	USFHBN	36	LA07085CW-P4	Paul Murphy
2013	USFHBN	37	LA07178C-44	Paul Murphy
2013	USFHBN	38	LCS19227	Paul Murphy
2013	USFHBN	39	LCS15963	Paul Murphy
2013	USFHBN	40	M10-1615	Paul Murphy
2013	USFHBN	41	M10-1659	Paul Murphy
2013	USFHBN	42	MD04W249-11-12	Paul Murphy
2013	USFHBN	43	MD04W249-11-7	Paul Murphy
2013	USFHBN	44	MD07W272-11-5	Paul Murphy
2013	USFHBN	45	MD08-26-H2-7-12-21	Paul Murphy
2013	USFHBN	46	MD08-26-H2-7-12-9	Paul Murphy
2013	USFHBN	47	MDNC8248-64	Paul Murphy
2013	USFHBN	48	MH07-7474	Paul Murphy
2013	USFHBN	49	NC09-20768	Paul Murphy
2013	USFHBN	50	NC09-22352	Paul Murphy
2013	USFHBN	51	NC10-25212	Paul Murphy
2013	USFHBN	52	NC8170-4-3	Paul Murphy
2013	USFHBN	53	NC8170-45-2	Paul Murphy
2013	USFHBN	54	NC8840-19	Paul Murphy
2013	USFHBN	55	VA10W-112	Paul Murphy
2013	USFHBN	56	VA10W-118	Paul Murphy
2013	USFHBN	57	VA10W-119	Paul Murphy
2013	USFHBN	58	VA11W-FHB110	Paul Murphy
2013	USFHBN	59	VA11WFHB57	Paul Murphy
2013	USFHBN	60	VA11W-FHB60	Paul Murphy
2013	USFHBN	61	VA11W-FHB61	Paul Murphy
2013	USFHBN	62	VA11W-FHB75	Paul Murphy

2013 Cooperative Scab Nurseries				Dwarfing alleles		
Year	Nursery	Entry	Sample_Name	Rht-B1	Rht-D1	Rht8c
				Rht-B1b_het	Rht-D1b_het	
2013	NUWWSN	1	Ernie			no
2013	NUWWSN	2	Freedom	Rht-B1b	Rht-D1a	no
2013	NUWWSN	3	Pioneer2545	Rht-B1a	Rht-D1b	no
2013	NUWWSN	4	NY07104-141	Rht-B1a	Rht-D1b	no
2013	NUWWSN	5	NY99069-WC	Rht-B1a	Rht-D1b	no
2013	NUWWSN	6	NY99045-3110	Rht-B1a	Rht-D1b	no
2013	NUWWSN	7	NY99056-161	Rht-B1a	Rht-D1b	no
2013	NUWWSN	8	KWS 009	Rht-B1a	Rht-D1b	nd
2013	NUWWSN	9	KWS 010	Rht-B1b	Rht-D1a	no
2013	NUWWSN	10	KWS 013	Rht-B1a	Rht-D1b	no
2013	NUWWSN	11	KWS 014	Rht-B1a	Rht-D1b	no
2013	NUWWSN	12	LCS10727	Rht-B1b	Rht-D1a	no
2013	NUWWSN	13	LCS13531	Rht-B1b	Rht-D1a	no
2013	NUWWSN	14	LCS19228	Rht-B1a	Rht-D1b	no
2013	NUWWSN	15	LCS19707	Rht-B1a	Rht-D1b	no
2013	NUWWSN	16	F0013R	Rht-B1a	Rht-D1b	no
2013	NUWWSN	17	F0065	Rht-B1a	Rht-D1b	Rht8c
2013	NUWWSN	18	F1003R	Rht-B1b	Rht-D1a	no
2013	NUWWSN	19	F1029	Rht-B1a	Rht-D1b	no
2013	NUWWSN	20	TRUMAN	Rht-B1b	Rht-D1a	no
2013	NUWWSN	21	OH07-263-3	Rht-B1a	Rht-D1a	no
2013	NUWWSN	22	OH08-172-42	Rht-B1b	Rht-D1a	no
2013	NUWWSN	23	OH08-269-58	Rht-B1b	Rht-D1a	Rht8c
2013	NUWWSN	24	05247A1-7-7-3-1 (PUR-1)	Rht-B1b	Rht-D1a	no
2013	NUWWSN	25	05287A1-1-13 (PUR-2)	Rht-B1b	Rht-D1a	no
2013	NUWWSN	26	0762A1-2-8 (PUR-3)	Rht-B1b	Rht-D1a	nd
2013	NUWWSN	27	05247A1-7-3-120 (PUR-4)	Rht-B1b	Rht-D1a	no
2013	NUWWSN	28	05264A1-1-3-33 (PUR-5)	Rht-B1b	Rht-D1a	no
2013	NUWWSN	29	MH07-7474	Rht-B1b	Rht-D1a	no
2013	NUWWSN	30	MA08-8036#	Rht-B1a	Rht-D1a	no
2013	NUWWSN	31	M10-1659	Rht-B1a	Rht-D1a	no
2013	NUWWSN	32	M10-1615	Rht-B1b	Rht-D1a	no
2013	NUWWSN	33	M10*1307#	Rht-B1b	Rht-D1a	no
2013	NUWWSN	34	IL06-23571	Rht-B1b	Rht-D1a	Rht8c
2013	NUWWSN	35	IL07-19334	Rht-B1b	Rht-D1a	no
2013	NUWWSN	36	IL07-20728	Rht-B1b	Rht-D1a	no
2013	NUWWSN	37	IL07-20743	Rht-B1a	Rht-D1a	no
2013	NUWWSN	38	KY05C-1369-13-7-3	Rht-B1a	Rht-D1b	no
2013	NUWWSN	39	KY05C-1020-2-19-1	Rht-B1b	Rht-D1a	no
2013	NUWWSN	40	KY05C-1600-92-9-5	Rht-B1a	Rht-D1b	no
2013	NUWWSN	41	KY05C-1051-37-18-5	Rht-B1a	Rht-D1b	no
2013	NUWWSN	42	KY05C-1105-43-10-3	Rht-B1b	Rht-D1a	no
2013	NUWWSN	43	MD05W10208-12-16	Rht-B1a	Rht-D1b	no
2013	NUWWSN	44	MDC07026-12-42	Rht-B1a	Rht-D1b	no
2013	NUWWSN	45	MDC07027-12-12	Rht-B1a	Rht-D1b	no
2013	NUWWSN	46	MDC07027-12-24	Rht-B1a	Rht-D1b	no
2013	NUWWSN	47	MO111134	Rht-B1b	Rht-D1a	no
2013	NUWWSN	48	MO111359	Rht-B1b	Rht-D1a	no
2013	NUWWSN	49	MO110719	Rht-B1b	Rht-D1a	no
2013	NUWWSN	50	MO100647	Rht-B1a	Rht-D1a	nd
2013	NUWWSN	51	Bakhsh24	Rht-B1b	Rht-D1a	no
2013	NUWWSN	52	Bakhsh33	Rht-B1b	Rht-D1a	no
2013	NUWWSN	53	Bakhsh35	Rht-B1b	Rht-D1a	no
2013	NUWWSN	54	NW10401	Rht-B1b	Rht-D1a	no
2013	NUWWSN	55	NE06607	Rht-B1b	Rht-D1a	no
2013	NUWWSN	56	VA09W-188WS	Rht-B1a	Rht-D1b	no
2013	NUWWSN	57	VA08MAS-369	Rht-B1a	Rht-D1b	no
2013	NUWWSN	58	VA10W-123	Rht-B1a	Rht-D1b	no
2013	NUWWSN	59	VA11W-FHB39	Rht-B1b	Rht-D1a	no
2013	NUWWSN	60	VA11W-FHB40	Rht-B1b	Rht-D1a	no

2013 Cooperative Scab Nurseries

Year	Nursery	Entry	Sample Name	Dwarfing alleles		
				Rht-B1	Rht-D1	Rht8c
2013	USFHBN	1	ERNIE	Rht-B1b	Rht-D1a	no
2013	USFHBN	2	COKER9835	Rht-B1a	Rht-D1b	no
2013	USFHBN	3	BESS	Rht-B1b_het	Rht-D1b_het	no
2013	USFHBN	4	JAMESTOWN	Rht-B1a	Rht-D1b	no
2013	USFHBN	5	MD03W61-11-3	Rht-B1a	Rht-D1b	no
2013	USFHBN	6	ARS07-1214	Rht-B1b	Rht-D1a	no
2013	USFHBN	7	ARS09-367	Rht-B1b	Rht-D1a	no
2013	USFHBN	8	ARS09-446	Rht-B1a	Rht-D1a	no
2013	USFHBN	9	ARS09-643	Rht-B1a	Rht-D1b	no
2013	USFHBN	10	LA05102C-1-2	Rht-B1b_het	Rht-D1a	no
2013	USFHBN	11	LA05102C-8-8	Rht-B1a	Rht-D1a	no
2013	USFHBN	12	NC09-20986 (Fhb1)	Rht-B1b	Rht-D1a	no
2013	USFHBN	13	AR00260-2-2	Rht-B1a	Rht-D1b	no
2013	USFHBN	14	AR01044-1-1	Rht-B1b	Rht-D1a	no
2013	USFHBN	15	AR01110-3-1	Rht-B1b	Rht-D1a	no
2013	USFHBN	16	AR01178-1-1	Rht-B1b	Rht-D1a	no
2013	USFHBN	17	ARGE05-1229-2-1	Rht-B1b	Rht-D1a	no
2013	USFHBN	18	ARGE07-1339-10-5-8	Rht-B1b_het	Rht-D1a	no
2013	USFHBN	19	ARGE07-1374-17-5-4	Rht-B1a	Rht-D1b	no
2013	USFHBN	20	ARGE07-1374-17-8-5	Rht-B1a	Rht-D1b	no
2013	USFHBN	21	ARS07-1073	Rht-B1a	Rht-D1b	no
2013	USFHBN	22	ARS09-082	Rht-B1a	Rht-D1b	no
2013	USFHBN	23	ARS09-228	Rht-B1a	Rht-D1a	Rht8c
2013	USFHBN	24	ARS09-745	Rht-B1a	Rht-D1b	no
2013	USFHBN	25	GA04494-12ES33	Rht-B1a	Rht-D1b	no
2013	USFHBN	26	GA051477-12ES27	Rht-B1a	Rht-D1b	no
2013	USFHBN	27	GA051477-12ES28	Rht-B1a	Rht-D1b	no
2013	USFHBN	28	GA051477-12ES29	Rht-B1a	Rht-D1b	no
2013	USFHBN	29	GA051477-12ES32	Rht-B1a	Rht-D1b	no
2013	USFHBN	30	GANC8170-12DH7	Rht-B1a	Rht-D1b	no
2013	USFHBN	31	GANC8248-12DH1	Rht-B1a	Rht-D1b	no
2013	USFHBN	32	GANCZ4-12DH21	Rht-B1a	Rht-D1b	no
2013	USFHBN	33	LA05079F-P05	Rht-B1b	Rht-D1a	no
2013	USFHBN	34	LA06069E-P01	Rht-B1a	Rht-D1b	no
2013	USFHBN	35	LA06149C-P7	Rht-B1a	Rht-D1b	no
2013	USFHBN	36	LA07085CW-P4	Rht-B1a	Rht-D1b	no
2013	USFHBN	37	LA07178C-44	Rht-B1a	Rht-D1b	no
2013	USFHBN	38	LCS19227	Rht-B1a	Rht-D1b	no
2013	USFHBN	39	LCS15963	Rht-B1b	Rht-D1a	no
2013	USFHBN	40	M10-1615	Rht-B1b	Rht-D1a	nd
2013	USFHBN	41	M10-1659	Rht-B1a	Rht-D1a	no
2013	USFHBN	42	MD04W249-11-12	Rht-B1a	Rht-D1b	no
2013	USFHBN	43	MD04W249-11-7	Rht-B1a	Rht-D1b	no
2013	USFHBN	44	MD07W272-11-5	Rht-B1a	Rht-D1b	no
2013	USFHBN	45	MD08-26-H2-7-12-21	Rht-B1a	Rht-D1b	no
2013	USFHBN	46	MD08-26-H2-7-12-9	Rht-B1a	Rht-D1b	no
2013	USFHBN	47	MDNC8248-64	Rht-B1a	Rht-D1b	no
2013	USFHBN	48	MH07-7474	Rht-B1b	Rht-D1a	no
2013	USFHBN	49	NC09-20768	Rht-B1a	Rht-D1b	no
2013	USFHBN	50	NC09-22352	Rht-B1b	Rht-D1a	Rht8c
2013	USFHBN	51	NC10-25212	Rht-B1a	Rht-D1a	no
2013	USFHBN	52	NC8170-4-3	Rht-B1a	Rht-D1b	no
2013	USFHBN	53	NC8170-45-2	Rht-B1a	Rht-D1b	no
2013	USFHBN	54	NC8840-19	Rht-B1a	Rht-D1a	no
2013	USFHBN	55	VA10W-112	Rht-B1a	Rht-D1b	no
2013	USFHBN	56	VA10W-118	Rht-B1a	Rht-D1b	no
2013	USFHBN	57	VA10W-119	Rht-B1a	Rht-D1b	no
2013	USFHBN	58	VA11W-FHB110	Rht-B1b	Rht-D1a	no
2013	USFHBN	59	VA11WFHB57	Rht-B1b_het	Rht-D1a	no
2013	USFHBN	60	VA11W-FHB60	Rht-B1a	Rht-D1b	no
2013	USFHBN	61	VA11W-FHB61	Rht-B1a	Rht-D1b	no
2013	USFHBN	62	VA11W-FHB75	Rht-B1b	Rht-D1a	no

2013 Cooperative Scab Nurseries				Photoperiod Insensitivity alleles			Vernalization alleles		
Year	Nursery	Entry	Sample_Name	Ppd-D1	Ppd-B1	Ppd-A1	vrn-A1	vrn-B1	Vrn-D1
2013	NUWWSN	1	Ernie	Ppd-D1a_het	Ppd-B1a_S64_insens	Ppd-A1a.1_het	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	2	Freedom	Ppd-D1b	null	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	3	Pioneer2545	Ppd-D1a_het	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	4	NY07104-141	Ppd-D1b	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	5	NY99069-WC	Ppd-D1b	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	6	NY99045-3110	Ppd-D1b	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	7	NY99056-161	Ppd-D1a_het	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	8	KWS 009	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1_het	vrn-B1	vrn-D1
2013	NUWWSN	9	KWS 010	Ppd-D1b	Ppd-B1a_CS_insens	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	10	KWS 013	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	11	KWS 014	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	12	LCS10727	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	13	LCS13531	Ppd-D1b	null	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	14	LCS19228	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	15	LCS19707	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	16	F0013R	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	17	F0065	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	18	F1003R	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	19	F1029	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	20	TRUMAN	Ppd-D1b	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	21	OH07-263-3	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	22	OH08-172-42	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	23	OH08-269-58	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	24	05247A1-7-7-3-1 (PUR-1)	Ppd-D1a_het	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	25	05287A1-1-13 (PUR-2)	Ppd-D1a_het	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	26	0762A1-2-8 (PUR-3)	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	27	05247A1-7-3-120 (PUR-4)	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	28	05264A1-1-3-33 (PUR-5)	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	29	MH07-7474	Ppd-D1a_het	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	30	MA08-8036#	Ppd-D1a_insens	null	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	31	M10-1659	Ppd-D1b	null	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	NUWWSN	32	M10-1615	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	33	M10*1307#	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	34	IL06-23571	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	35	IL07-19334	Ppd-D1a_het	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	36	IL07-20728	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	37	IL07-20743	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	38	KY05C-1369-13-7-3	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	39	KY05C-1020-2-19-1	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	40	KY05C-1600-92-9-5	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	41	KY05C-1051-37-18-5	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	42	KY05C-1105-43-10-3	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	43	MD05W10208-12-16	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	44	MDC07026-12-42	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	45	MDC07027-12-12	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	46	MDC07027-12-24	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	47	MO111134	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	48	MO111359	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	49	MO110719	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	50	MO100647	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	51	Bakhsh24	Ppd-D1b	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	52	Bakhsh33	Ppd-D1b	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	53	Bakhsh35	Ppd-D1b	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	54	NW10401	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	55	NE06607	Ppd-D1b	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	56	VA09W-188WS	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	57	VA08MAS-369	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	NUWWSN	58	VA10W-123	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	NUWWSN	59	VA11W-FHB39	Ppd-D1b	Ppd-B1a_CS_insens	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	NUWWSN	60	VA11W-FHB40	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1

2013 Cooperative Scab Nurseries			Photoperiod Insensitivity alleles			Vernalization alleles			
Year	Nursery	Entry	Sample_Name	Ppd-D1	Ppd-B1	Ppd-A1	vrn-A1	vrn-B1	Vrn-D1
2013	USFHBN	1	ERNIE	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	2	COKER9835	Ppd-D1a_insens	null	Ppd-A1b	vrn-A1	vrn-B1_short	vrn-D1
2013	USFHBN	3	BESS	Ppd-D1a_het	**	Ppd-A1a.1_het	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	4	JAMESTOWN	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	5	MD03W61-11-3	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	6	ARS07-1214	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	7	ARS09-367	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	8	ARS09-446	Ppd-D1b	Ppd-B1a_CS_insens	Ppd-A1b	vrn-A1	vrn-B1_short	vrn-D1
2013	USFHBN	9	ARS09-643	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1_short	vrn-D1
2013	USFHBN	10	LA05102C-1-2	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1a.1_insens	vrn-A1_het	vrn-B1_het	vrn-D1
2013	USFHBN	11	LA05102C-8-8	Ppd-D1a_insens	null	Ppd-A1a.1_insens	vrn-A1	vrn-B1_short	vrn-D1
2013	USFHBN	12	NC09-20986 (Fhb1)	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	13	AR00260-2-2	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	14	AR01044-1-1	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1_short	vrn-D1
2013	USFHBN	15	AR01110-3-1	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	16	AR01178-1-1	Ppd-D1a_insens	**	nd	vrn-A1_het	vrn-B1	vrn-D1
2013	USFHBN	17	ARGE05-1229-2-1	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	18	ARGE07-1339-10-5-8	Ppd-D1b	Ppd-B1a_CS_insens	nd	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	19	ARGE07-1374-17-5-4	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	20	ARGE07-1374-17-8-5	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1a.1_het	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	21	ARS07-1073	Ppd-D1b	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1_short	vrn-D1
2013	USFHBN	22	ARS09-082	Ppd-D1a_insens	null	nd	vrn-A1	vrn-B1_short	vrn-D1
2013	USFHBN	23	ARS09-228	Ppd-D1a_insens	Ppd-B1a_CS_insens	nd	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	24	ARS09-745	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	25	GA04494-12ES33	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	26	GA051477-12ES27	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	27	GA051477-12ES28	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	28	GA051477-12ES29	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	29	GA051477-12ES32	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1_het	vrn-D1
2013	USFHBN	30	GANC8170-12DH7	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	31	GANC8248-12DH1	Ppd-D1a_insens	null	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	32	GANCZ4-12DH21	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	33	LA05079F-P05	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1_het	vrn-D1
2013	USFHBN	34	LA06069E-P01	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	35	LA06149C-P7	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1_short	vrn-D1
2013	USFHBN	36	LA07085CW-P4	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1a.1_insens	?	vrn-B1	vrn-D1
2013	USFHBN	37	LA07178C-44	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	38	LCS19227	Ppd-D1b	**	nd	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	39	LCS15963	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	40	M10-1615	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	41	M10-1659	Ppd-D1b	null	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	42	MD04W249-11-12	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1a.1_het	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	43	MD04W249-11-7	Ppd-D1a_insens	Ppd-B1a_CS_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	44	MD07W272-11-5	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	45	MD08-26-H2-7-12-21	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	46	MD08-26-H2-7-12-9	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	47	MDNC8248-64	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	48	MH07-7474	Ppd-D1b	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	49	NC09-20768	Ppd-D1a_insens	null	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	50	NC09-22352	Ppd-D1b	Ppd-B1a_CS_insens	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	51	NC10-25212	Ppd-D1b	null	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	52	NC8170-4-3	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	53	NC8170-45-2	Ppd-D1a_insens	**	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	54	NC8840-19	Ppd-D1a_insens	null	Ppd-A1a.1_insens	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	55	VA10W-112	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	56	VA10W-118	Ppd-D1a_insens	Ppd-B1a_S64_insens	nd	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	57	VA10W-119	Ppd-D1a_insens	**	Ppd-A1b	vrn-A1	vrn-B1	vrn-D1
2013	USFHBN	58	VA11W-FHB110	Ppd-D1a_insens	Ppd-B1a_CS_insens	nd	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	59	VA11WFHB57	Ppd-D1b	null	Ppd-A1a.1_insens	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	60	VA11W-FHB60	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1	vrn-B1_short	vrn-D1
2013	USFHBN	61	VA11W-FHB61	Ppd-D1a_insens	Ppd-B1a_S64_insens	Ppd-A1b	vrn-A1_short	vrn-B1	vrn-D1
2013	USFHBN	62	VA11W-FHB75	Ppd-D1a_insens	**	nd	vrn-A1_short	vrn-B1	vrn-D1

2013 Cooperative Scab Nurseries			Fusarium Head Blight alleles				
Year	Nursery	Entry	Sample Name	Fhb1	Fhb_Massey_3BL	Fhb_2DL-Wuhan1/W14	Fhb_5A
2013	NUWWSN	1	Ernie	no	Fhb_Massey_3BL_het	no	Fhb_5A_Ernie_het
2013	NUWWSN	2	Freedom	no	Fhb_Massey_3BL	no	no
2013	NUWWSN	3	Pioneer2545	no	no	no	no
2013	NUWWSN	4	NY07104-141	Fhb1	no	no	no
2013	NUWWSN	5	NY99069-WC	no	no	no	no
2013	NUWWSN	6	NY99045-3110	no	no	no	no
2013	NUWWSN	7	NY99056-161	no	no	no	Fhb_5A_Ernie
2013	NUWWSN	8	KWS 009	no	no	no	Fhb_5A_Ernie
2013	NUWWSN	9	KWS 010	no	Fhb_Massey_3BL	no	no
2013	NUWWSN	10	KWS 013	no	no	no	no
2013	NUWWSN	11	KWS 014	no	no	no	no
2013	NUWWSN	12	LCS10727	no	no	no	no
2013	NUWWSN	13	LCS13531	no	Fhb_Massey_3BL	no	no
2013	NUWWSN	14	LCS19228	no	no	no	no
2013	NUWWSN	15	LCS19707	no	no	no	no
2013	NUWWSN	16	F0013R	no	no	no	no
2013	NUWWSN	17	F0065	no	no	no	no
2013	NUWWSN	18	F1003R	Fhb1	no	no	no
2013	NUWWSN	19	F1029	no	no	no	no
2013	NUWWSN	20	TRUMAN	no	no	no	no
2013	NUWWSN	21	OH07-263-3	no	no	no	no
2013	NUWWSN	22	OH08-172-42	no	Fhb_Massey_3BL_het	no	no
2013	NUWWSN	23	OH08-269-58	no	Fhb_Massey_3BL	no	no
2013	NUWWSN	24	05247A1-7-7-3-1 (PUR-1)	no	no	no	Fhb_5A_Ernie
2013	NUWWSN	25	05287A1-1-13 (PUR-2)	no	no	no	Fhb_5A_Ernie
2013	NUWWSN	26	0762A1-2-8 (PUR-3)	Fhb1	no	no	Fhb_5A_Ernie
2013	NUWWSN	27	05247A1-7-3-120 (PUR-4)	no	no	no	no
2013	NUWWSN	28	05264A1-1-3-33 (PUR-5)	no	no	no	no
2013	NUWWSN	29	MH07-7474	no	no	no	no
2013	NUWWSN	30	MA08-8036#	no	Fhb_Massey_3BL	no	no
2013	NUWWSN	31	M10-1659	no	no	no	no
2013	NUWWSN	32	M10-1615	no	no	no	no
2013	NUWWSN	33	M10*1307#	no	no	no	Fhb_5A_Ernie
2013	NUWWSN	34	IL06-23571	no	no	no	no
2013	NUWWSN	35	IL07-19334	no	no	no	Fhb_5A_Ning7840?
2013	NUWWSN	36	IL07-20728	no	no	no	no
2013	NUWWSN	37	IL07-20743	no	no	no	no
2013	NUWWSN	38	KY05C-1369-13-7-3	Fhb1_het	no	no	no
2013	NUWWSN	39	KY05C-1020-2-19-1	Fhb1_het	no	no	no
2013	NUWWSN	40	KY05C-1600-92-9-5	no	no	no	no
2013	NUWWSN	41	KY05C-1051-37-18-5	no	no	no	no
2013	NUWWSN	42	KY05C-1105-43-10-3	no	no	no	no
2013	NUWWSN	43	MD05W10208-12-16	Fhb1	no	no	no
2013	NUWWSN	44	MDC07026-12-42	Fhb1	no	no	Fhb_5A_Ning7840
2013	NUWWSN	45	MDC07027-12-12	Fhb1	no	Fhb_2DL-Wuhan1/W14	Fhb_5A_Ning7840
2013	NUWWSN	46	MDC07027-12-24	Fhb1	no	Fhb_2DL-Wuhan1/W14	Fhb_5A_Ning7840
2013	NUWWSN	47	MO111134	no	no	no	no
2013	NUWWSN	48	MO111359	no	no	no	no
2013	NUWWSN	49	MO110719	no	Fhb_Massey_3BL_het	no	Fhb_5A_Ernie_het
2013	NUWWSN	50	MO100647	no	no	no	nd
2013	NUWWSN	51	Bakhsh24	Fhb1	no	no	no
2013	NUWWSN	52	Bakhsh33	Fhb1	no	no	no
2013	NUWWSN	53	Bakhsh35	Fhb1	no	no	no
2013	NUWWSN	54	NW10401	no	no	no	no
2013	NUWWSN	55	NE06607	no	no	no	no
2013	NUWWSN	56	VA09W-188WS	no	no	no	no
2013	NUWWSN	57	VA08MAS-369	no	no	no	no
2013	NUWWSN	58	VA10W-123	no	no	no	no
2013	NUWWSN	59	VA11W-FHB39	no	no	no	no
2013	NUWWSN	60	VA11W-FHB40	Fhb1	no	no	no

2013 Cooperative Scab Nurseries				Fusarium Head Blight alleles			
Year	Nursery	Entry	Sample Name	Fhb1	Fhb_Massey_3BL	Fhb_2DL-Wuhan1/W14	Fhb_5A
2013	USFHBN	1	ERNIE	no	Fhb_Massey_3BL	no	Fhb_5A_Ernie
2013	USFHBN	2	COKER9835	no	no	no	no
2013	USFHBN	3	BESS	no	no	no	no
2013	USFHBN	4	JAMESTOWN	no	no	no	no
2013	USFHBN	5	MD03W61-11-3	Fhb1	no	no	no
2013	USFHBN	6	ARS07-1214	no	no	no	no
2013	USFHBN	7	ARS09-367	no	no	no	no
2013	USFHBN	8	ARS09-446	no	no	no	no
2013	USFHBN	9	ARS09-643	no	no	no	no
2013	USFHBN	10	LA05102C-1-2	no	no	Fhb_2DL-Wuhan1/W14_het	no
2013	USFHBN	11	LA05102C-8-8	no	no	no	no
2013	USFHBN	12	NC09-20986 (Fhb1)	Fhb1	no	no	no
2013	USFHBN	13	AR00260-2-2	no	no	no	no
2013	USFHBN	14	AR01044-1-1	no	no	no	no
2013	USFHBN	15	AR01110-3-1	no	Fhb_Massey_3BL	no	no
2013	USFHBN	16	AR01178-1-1	no	no	no	no
2013	USFHBN	17	ARGE05-1229-2-1	no	no	no	no
2013	USFHBN	18	ARGE07-1339-10-5-8	no	no	Fhb_2DL-Wuhan1/W14_het	no
2013	USFHBN	19	ARGE07-1374-17-5-4	no	no	no	no
2013	USFHBN	20	ARGE07-1374-17-8-5	no	no	no	no
2013	USFHBN	21	ARS07-1073	no	no	no	no
2013	USFHBN	22	ARS09-082	no	no	no	no
2013	USFHBN	23	ARS09-228	no	no	no	no
2013	USFHBN	24	ARS09-745	no	no	no	no
2013	USFHBN	25	GA04494-12ES33	no	no	no	Fhb_5A_Ernie
2013	USFHBN	26	GA051477-12ES27	no	no	no	no
2013	USFHBN	27	GA051477-12ES28	no	no	no	no
2013	USFHBN	28	GA051477-12ES29	no	no	no	no
2013	USFHBN	29	GA051477-12ES32	no	no	no	Fhb_5A_Ernie
2013	USFHBN	30	GANC8170-12DH7	no	no	no	Fhb_5A_Ning7840
2013	USFHBN	31	GANC8248-12DH1	no	no	no	no
2013	USFHBN	32	GANCZA-12DH21	no	no	no	no
2013	USFHBN	33	LA05079F-P05	no	no	no	no
2013	USFHBN	34	LA06069E-P01	no	no	no	no
2013	USFHBN	35	LA06149C-P7	no	no	no	no
2013	USFHBN	36	LA07085CW-P4	no	no	no	no
2013	USFHBN	37	LA07178C-44	no	no	no	no
2013	USFHBN	38	LCS19227	no	no	no	no
2013	USFHBN	39	LCS15963	no	no	no	no
2013	USFHBN	40	M10-1615	no	no	no	nd
2013	USFHBN	41	M10-1659	no	no	no	no
2013	USFHBN	42	MD04W249-11-12	no	no	no	no
2013	USFHBN	43	MD04W249-11-7	no	no	no	no
2013	USFHBN	44	MD07W272-11-5	Fhb1	no	no	no
2013	USFHBN	45	MD08-26-H2-7-12-21	Fhb1	no	Fhb_2DL-Wuhan1/W14	Fhb_5A_Ning7840
2013	USFHBN	46	MD08-26-H2-7-12-9	Fhb1	no	Fhb_2DL-Wuhan1/W14	Fhb_5A_Ning7840
2013	USFHBN	47	MDNC8248-64	no	no	no	no
2013	USFHBN	48	MH07-7474	no	no	no	no
2013	USFHBN	49	NC09-20768	no	no	no	no
2013	USFHBN	50	NC09-22352	no	no	no	no
2013	USFHBN	51	NC10-25212	no	no	no	no
2013	USFHBN	52	NC8170-4-3	Fhb1	no	no	no
2013	USFHBN	53	NC8170-45-2	Fhb1	no	no	no
2013	USFHBN	54	NC8840-19	Fhb1	no	no	no
2013	USFHBN	55	VA10W-112	no	no	no	no
2013	USFHBN	56	VA10W-118	no	no	no	no
2013	USFHBN	57	VA10W-119	no	no	no	no
2013	USFHBN	58	VA11W-FHB110	no	Fhb_Massey_3BL_het	no	no
2013	USFHBN	59	VA11WFHB57	no	no	no	no
2013	USFHBN	60	VA11W-FHB60	Fhb1	no	no	no
2013	USFHBN	61	VA11W-FHB61	Fhb1	no	no	no
2013	USFHBN	62	VA11W-FHB75	Fhb1	no	Fhb-2DL-Wuhan1/W14	Fhb_5A_Ning7840?

2013 Cooperative Scab Nurseries			Leaf, Stem and Stripe Rusts & Powdery Mildew alleles						
Year	Nursery	Entry	Sample_Name	Sr2	Sr36	Sr24/Lr24	Yr17/Lr37/Sr38	Lr34/Yr18	Lr9
2013	NUWWSN	1	Ernie	no	mix	Sr24/Lr24	no	no	no
2013	NUWWSN	2	Freedom	no	Sr36	no	no	no	no
2013	NUWWSN	3	Pioneer2545	no	no	no	no	no	no
2013	NUWWSN	4	NY07104-141	no	no	no	no	no	no
2013	NUWWSN	5	NY99069-WC	no	no	no	no	no	no
2013	NUWWSN	6	NY99045-3110	no	no	no	no	no	no
2013	NUWWSN	7	NY99056-161	no	no	no	no	no	no
2013	NUWWSN	8	KWS 009	no	no	no	no	no	no
2013	NUWWSN	9	KWS 010	no	Sr36	no	no	no	no
2013	NUWWSN	10	KWS 013	no	no	no	no	no	no
2013	NUWWSN	11	KWS 014	no	no	Sr24/Lr24	no	no	no
2013	NUWWSN	12	LCS10727	no	no	no	no	no	no
2013	NUWWSN	13	LCS13531	no	Sr36	no	no	no	no
2013	NUWWSN	14	LCS19228	no	no	no	no	no	no
2013	NUWWSN	15	LCS19707	no	no	no	no	no	no
2013	NUWWSN	16	F0013R	no	no	no	no	no	no
2013	NUWWSN	17	F0065	no	no	no	no	no	no
2013	NUWWSN	18	F1003R	no	no	no	no	no	no
2013	NUWWSN	19	F1029	no	no	no	no	no	no
2013	NUWWSN	20	TRUMAN	no	no	no	no	no	no
2013	NUWWSN	21	OH07-263-3	no	no	no	no	no	no
2013	NUWWSN	22	OH08-172-42	no	no	Sr24/Lr24	no	no	no
2013	NUWWSN	23	OH08-269-58	no	no	no	no	no	no
2013	NUWWSN	24	05247A1-7-7-3-1 (PUR-1)	no	no	no	Yr17/Lr37/Sr38	no	no
2013	NUWWSN	25	05287A1-1-13 (PUR-2)	no	Sr36	no	no	no	no
2013	NUWWSN	26	0762A1-2-8 (PUR-3)	no	no	no	Yr17/Lr37/Sr38	no	no
2013	NUWWSN	27	05247A1-7-3-120 (PUR-4)	no	no	no	Yr17/Lr37/Sr38	no	no
2013	NUWWSN	28	05264A1-1-3-33 (PUR-5)	no	Sr36	no	Yr17/Lr37/Sr38	no	no
2013	NUWWSN	29	MH07-7474	no	no	no	no	no	no
2013	NUWWSN	30	MA08-8036#	no	Sr36	no	no	no	Lr9
2013	NUWWSN	31	M10-1659	no	Sr36	no	no	no	Lr9
2013	NUWWSN	32	M10-1615	no	no	no	no	no	no
2013	NUWWSN	33	M10*1307#	no	no	no	no	no	no
2013	NUWWSN	34	IL06-23571	no	no	no	no	no	no
2013	NUWWSN	35	IL07-19334	no	no	no	no	no	no
2013	NUWWSN	36	IL07-20728	no	no	Sr24/Lr24	no	no	no
2013	NUWWSN	37	IL07-20743	no	no	Sr24/Lr24	no	no	no
2013	NUWWSN	38	KY05C-1369-13-7-3	no	no	no	no	no	no
2013	NUWWSN	39	KY05C-1020-2-19-1	no	no	no	no	Lr34/Yr18	no
2013	NUWWSN	40	KY05C-1600-92-9-5	no	no	no	no	no	no
2013	NUWWSN	41	KY05C-1051-37-18-5	no	no	no	no	no	no
2013	NUWWSN	42	KY05C-1105-43-10-3	no	no	no	no	no	no
2013	NUWWSN	43	MD05W10208-12-16	no	Sr36	Sr24/Lr24	no	no	no
2013	NUWWSN	44	MDC07026-12-42	no	no	no	no	no	no
2013	NUWWSN	45	MDC07027-12-12	no	no	no	no	no	no
2013	NUWWSN	46	MDC07027-12-24	no	no	Sr24/Lr24	Yr17/Lr37/Sr38	no	no
2013	NUWWSN	47	MO111134	no	no	no	no	no	no
2013	NUWWSN	48	MO111359	no	no	no	?	no	no
2013	NUWWSN	49	MO110719	no	Sr36_het?	no	no	no	no
2013	NUWWSN	50	MO100647	no	no	no	no	no	no
2013	NUWWSN	51	Bakhsh24	no	no	no	no	Lr34/Yr18	no
2013	NUWWSN	52	Bakhsh33	no	no	Sr24/Lr24	no	no	no
2013	NUWWSN	53	Bakhsh35	no	no	Sr24/Lr24	no	?	no
2013	NUWWSN	54	NW10401	no	no	no	no	Lr34/Yr18	no
2013	NUWWSN	55	NE06607	no	no	no	no	no	no
2013	NUWWSN	56	VA09W-188WS	no	no	no	no	no	no
2013	NUWWSN	57	VA08MAS-369	no	no	Sr24/Lr24	no	no	no
2013	NUWWSN	58	VA10W-123	no	no	no	Yr17/Lr37/Sr38	no	no
2013	NUWWSN	59	VA11W-FHB39	no	Sr36	no	no	no	no
2013	NUWWSN	60	VA11W-FHB40	no	Sr36	no	no	no	no

2013 Cooperative Scab Nurseries			Leaf, Stem and Stripe Rusts & Powdery Mildew alleles						
Year	Nursery	Entry	Sample_Name	Sr2	Sr36	Sr24/Lr24	Yr17/Lr37/Sr38	Lr34/Yr18	Lr9
2013	USFHBN	1	ERNIE	no	Sr36	no	no	no	no
2013	USFHBN	2	COKER9835	no	Sr36	no	no	no	Lr9
2013	USFHBN	3	BESS	no	no	no	no	no	no
2013	USFHBN	4	JAMESTOWN	no	no	no	no	no	no
2013	USFHBN	5	MD03W61-11-3	no	no	no	no	no	no
2013	USFHBN	6	ARS07-1214	no	no	Sr24/Lr24	no	no	no
2013	USFHBN	7	ARS09-367	no	no	Sr24/Lr24	no	no	no
2013	USFHBN	8	ARS09-446	no	Sr36	no	no	no	no
2013	USFHBN	9	ARS09-643	no	no	no	?	no	no
2013	USFHBN	10	LA05102C-1-2	no	Sr36?	no	no	no	no
2013	USFHBN	11	LA05102C-8-8	no	Sr36	no	no	no	no
2013	USFHBN	12	NC09-20986 (Fhb1)	no	no	no	Yr17/Lr37/Sr38	no	no
2013	USFHBN	13	AR00260-2-2	no	no	no	no	no	no
2013	USFHBN	14	AR01044-1-1	no	no	Sr24/Lr24	Yr17/Lr37/Sr38	no	no
2013	USFHBN	15	AR01110-3-1	no	no	no	no	no	no
2013	USFHBN	16	AR01178-1-1	no	no	no	no	no	no
2013	USFHBN	17	ARGE05-1229-2-1	no	no	no	no	no	no
2013	USFHBN	18	ARGE07-1339-10-5-8	no	Sr36_het?	no	no	no	no
2013	USFHBN	19	ARGE07-1374-17-5-4	no	Sr36	no	?	no	no
2013	USFHBN	20	ARGE07-1374-17-8-5	no	Sr36	no	no	no	Lr9
2013	USFHBN	21	ARS07-1073	no	no	no	no	no	no
2013	USFHBN	22	ARS09-082	no	Sr36	no	no	no	Lr9
2013	USFHBN	23	ARS09-228	no	Sr36	no	no	no	no
2013	USFHBN	24	ARS09-745	no	no	no	Yr17/Lr37/Sr38	no	no
2013	USFHBN	25	GA04494-12ES33	no	no	no	Yr17/Lr37/Sr38	no	no
2013	USFHBN	26	GA051477-12ES27	no	no	no	no	no	no
2013	USFHBN	27	GA051477-12ES28	no	no	no	no	no	no
2013	USFHBN	28	GA051477-12ES29	no	no	no	no	no	no
2013	USFHBN	29	GA051477-12ES32	no	no	no	no	no	no
2013	USFHBN	30	GANC8170-12DH7	no	no	no	Yr17/Lr37/Sr38	no	no
2013	USFHBN	31	GANC8248-12DH1	no	Sr36	no	no	no	no
2013	USFHBN	32	GANCZ4-12DH21	no	no	no	nd	no	no
2013	USFHBN	33	LA05079F-P05	no	no	no	no	no	no
2013	USFHBN	34	LA06069E-P01	no	no	no	no	no	no
2013	USFHBN	35	LA06149C-P7	no	no	no	no	no	no
2013	USFHBN	36	LA07085CW-P4	no	Sr36_het?	no	Yr17/Lr37/Sr38_het	no	no
2013	USFHBN	37	LA07178C-44	no	no	no	no	no	Lr9
2013	USFHBN	38	LCS19227	no	no	no	no	no	no
2013	USFHBN	39	LCS15963	no	no	no	no	no	Lr9
2013	USFHBN	40	M10-1615	no	no	no	no	no	no
2013	USFHBN	41	M10-1659	no	Sr36	no	no	no	Lr9
2013	USFHBN	42	MD04W249-11-12	no	no	no	no	no	no
2013	USFHBN	43	MD04W249-11-7	no	no	no	no	no	no
2013	USFHBN	44	MD07W272-11-5	no	no	no	no	no	no
2013	USFHBN	45	MD08-26-H2-7-12-21	no	no	Sr24/Lr24	Yr17/Lr37/Sr38	no	no
2013	USFHBN	46	MD08-26-H2-7-12-9	no	no	Sr24/Lr24	Yr17/Lr37/Sr38	no	no
2013	USFHBN	47	MDNC8248-64	no	no	no	no	no	no
2013	USFHBN	48	MH07-7474	no	no	no	no	no	no
2013	USFHBN	49	NC09-20768	no	Sr36	no	no	no	no
2013	USFHBN	50	NC09-22352	no	Sr36	no	no	no	no
2013	USFHBN	51	NC10-25212	no	Sr36	no	no	?	Lr9
2013	USFHBN	52	NC8170-4-3	no	no	no	no	no	no
2013	USFHBN	53	NC8170-45-2	no	no	no	no	no	no
2013	USFHBN	54	NC8840-19	no	Sr36	no	no	no	no
2013	USFHBN	55	VA10W-112	no	no	no	Yr17/Lr37/Sr38	no	no
2013	USFHBN	56	VA10W-118	no	no	nd	Yr17/Lr37/Sr38	no	no
2013	USFHBN	57	VA10W-119	no	no	no	no	no	no
2013	USFHBN	58	VA11W-FHB110	no	Sr36	nd	no	no	Lr9
2013	USFHBN	59	VA11WFHB57	no	Sr36	no	no	no	Lr9
2013	USFHBN	60	VA11W-FHB60	no	no	no	no	no	no
2013	USFHBN	61	VA11W-FHB61	no	no	no	no	no	no
2013	USFHBN	62	VA11W-FHB75	no	Sr36	no	no	no	no

2013 Cooperative Scab Nurseries			Rye Translocations	Hessian Fly		BYDV	SBMV	SnToxA	
Year	Nursery	Entry	Sample_Name	IRS	H13	H9	Bdv2/3	Sbm1	Tsn1
2013	USFHBN	1	ERNIE	non-IRS	no	no	no	no	no
2013	USFHBN	2	COKER9835	non-IRS	no	no	no	no	no
2013	USFHBN	3	BESS	non-IRS	no	no	no	Sbm1	Tsn1
2013	USFHBN	4	JAMESTOWN	non-IRS	no	no	no	no	no
2013	USFHBN	5	MD03W61-11-3	IRS:IBL	no	no	no	no	no
2013	USFHBN	6	ARS07-1214	non-IRS	no	no	no	no	no
2013	USFHBN	7	ARS09-367	non-IRS	no	no	no	no	no
2013	USFHBN	8	ARS09-446	non-IRS	no	no	no	no	no
2013	USFHBN	9	ARS09-643	IRS:1AL	no	nd	no	no	no
2013	USFHBN	10	LA05102C-1-2	IRS:IBL	no	no	no	no	no
2013	USFHBN	11	LA05102C-8-8	non-IRS	no	no	no	no	no
2013	USFHBN	12	NC09-20986 (Fhb1)	non-IRS	H13	no	no	no	no
2013	USFHBN	13	AR00260-2-2	non-IRS	no	no	no	no	no
2013	USFHBN	14	AR01044-1-1	non-IRS	no	no	no	no	no
2013	USFHBN	15	AR01110-3-1	non-IRS	no	no	no	no	no
2013	USFHBN	16	AR01178-1-1	non-IRS	no	no	no	no	no
2013	USFHBN	17	ARGE05-1229-2-1	non-IRS	no	no	no	no	no
2013	USFHBN	18	ARGE07-1339-10-5-8	IRS:1AL	no	nd	no	Sbm1	Tsn1
2013	USFHBN	19	ARGE07-1374-17-5-4	non-IRS	no	no	no	no	no
2013	USFHBN	20	ARGE07-1374-17-8-5	non-IRS	no	no	no	no	no
2013	USFHBN	21	ARS07-1073	IRS:1AL	no	nd	no	no	no
2013	USFHBN	22	ARS09-082	non-IRS	no	no	no	no	no
2013	USFHBN	23	ARS09-228	non-IRS	nd	nd	no	no	no
2013	USFHBN	24	ARS09-745	non-IRS	no	no	no	Sbm1	Tsn1
2013	USFHBN	25	GA04494-12ES33	non-IRS	no	no	no	no	no
2013	USFHBN	26	GA051477-12ES27	non-IRS	no	no	no	no	no
2013	USFHBN	27	GA051477-12ES28	non-IRS	no	no	no	no	no
2013	USFHBN	28	GA051477-12ES29	non-IRS	no	no	no	no	no
2013	USFHBN	29	GA051477-12ES32	non-IRS	no	no	no	no	no
2013	USFHBN	30	GANC8170-12DH7	IRS:IBL	no	no	no	no	no
2013	USFHBN	31	GANC8248-12DH1	non-IRS	no	no	no	no	no
2013	USFHBN	32	GANCZA-12DH21	IRS:1AL	no	nd	no	no	no
2013	USFHBN	33	LA05079F-P05	non-IRS	no	no	no	no	no
2013	USFHBN	34	LA06069E-P01	non-IRS	no	no	no	no	no
2013	USFHBN	35	LA06149C-P7	non-IRS	no	no	no	no	no
2013	USFHBN	36	LA07085CW-P4	non-IRS	no	no	no	no	no
2013	USFHBN	37	LA07178C-44	non-IRS	no	no	no	no	no
2013	USFHBN	38	LCS19227	non-IRS	no	no	no	no	no
2013	USFHBN	39	LCS15963	non-IRS	no	no	no	no	no
2013	USFHBN	40	M10-1615	non-IRS	nd	no	no	no	no
2013	USFHBN	41	M10-1659	non-IRS	no	no	no	no	no
2013	USFHBN	42	MD04W249-11-12	IRS:IBL	no	no	no	no	no
2013	USFHBN	43	MD04W249-11-7	IRS:IBL	no	no	no	no	no
2013	USFHBN	44	MD07W272-11-5	IRS:IBL	no	no	no	no	no
2013	USFHBN	45	MD08-26-H2-7-12-21	non-IRS	no	no	no	Sbm1	Tsn1
2013	USFHBN	46	MD08-26-H2-7-12-9	non-IRS	no	no	no	Sbm1	Tsn1
2013	USFHBN	47	MDNC8248-64	IRS:1AL	no	nd	no	no	no
2013	USFHBN	48	MH07-7474	non-IRS	no	no	no	no	no
2013	USFHBN	49	NC09-20768	non-IRS	no	no	no	no	no
2013	USFHBN	50	NC09-22352	IRS:IBL	no	no	no	Sbm1	Tsn1
2013	USFHBN	51	NC10-25212	non-IRS	no	no	no	no	no
2013	USFHBN	52	NC8170-4-3	non-IRS	no	no	no	no	no
2013	USFHBN	53	NC8170-45-2	non-IRS	no	no	no	no	no
2013	USFHBN	54	NC8840-19	non-IRS	no	no	no	no	no
2013	USFHBN	55	VA10W-112	non-IRS	H13_het	no	no	Sbm1	Tsn1
2013	USFHBN	56	VA10W-118	non-IRS	no	nd	no	Sbm1	Tsn1
2013	USFHBN	57	VA10W-119	non-IRS	H13	no	no	Sbm1	Tsn1
2013	USFHBN	58	VA11W-FHB110	non-IRS	no	no	no	no	no
2013	USFHBN	59	VA11WFHB57	IRS:IBL	no	no	no	no	no
2013	USFHBN	60	VA11W-FHB60	IRS:IBL	no	no	no	no	no
2013	USFHBN	61	VA11W-FHB61	non-IRS	no	no	no	no	no
2013	USFHBN	62	VA11W-FHB75	IRS:IBL	no	nd	no	no	no

2013 Cooperative Scab Nurseries				Glutenin alleles			Mill Quality
Year	Nursery	Entry	Sample_Name	Glu-B1	Glu-D1	Glu-A1	Sucrose_Synthase
2013	NUWWSN	1	Ernie	no	2+12	het	TaSus2-2B_het
2013	NUWWSN	2	Freedom	no	2+12	het	TaSus2-2B
2013	NUWWSN	3	Pioneer2545	no	het	Ax2*	no
2013	NUWWSN	4	NY07104-141	no	2+12	Ax1_or_null	no
2013	NUWWSN	5	NY99069-WC	no	2+12	Ax1_or_null	no
2013	NUWWSN	6	NY99045-3110	no	2+12	Ax1_or_null	no
2013	NUWWSN	7	NY99056-161	no	2+12	Ax1_or_null	no
2013	NUWWSN	8	KWS 009	no	5+10	Ax2*	no
2013	NUWWSN	9	KWS 010	no	5+10	Ax1_or_null	TaSus2-2B
2013	NUWWSN	10	KWS 013	no	2+12	Ax1_or_null	no
2013	NUWWSN	11	KWS 014	no	2+12	Ax2*	no
2013	NUWWSN	12	LCS10727	no	5+10	Ax2*	no
2013	NUWWSN	13	LCS13531	no	5+10	het	TaSus2-2B
2013	NUWWSN	14	LCS19228	no	het	Ax1_or_null	no
2013	NUWWSN	15	LCS19707	no	2+12	Ax2*	no
2013	NUWWSN	16	F0013R	no	2+12	Ax2*	no
2013	NUWWSN	17	F0065	no	5+10	Ax2*	no
2013	NUWWSN	18	F1003R	no	5+10	Ax2*	no
2013	NUWWSN	19	F1029	no	2+12	Ax2*	no
2013	NUWWSN	20	TRUMAN	no	2+12	Ax1_or_null	no
2013	NUWWSN	21	OH07-263-3	no	5+10	Ax2*	no
2013	NUWWSN	22	OH08-172-42	no	5+10	Ax2*	no
2013	NUWWSN	23	OH08-269-58	no	2+12	Ax2*	no
2013	NUWWSN	24	05247A1-7-7-3-1 (PUR-1)	Bx7oe	2+12	Ax2*	no
2013	NUWWSN	25	05287A1-1-13 (PUR-2)	Bx7oe_het	het	Ax1_or_null	TaSus2-2B
2013	NUWWSN	26	0762A1-2-8 (PUR-3)	Bx7oe	2+12	Ax1_or_null	TaSus2-2B
2013	NUWWSN	27	05247A1-7-3-120 (PUR-4)	Bx7oe	2+12	Ax2*	no
2013	NUWWSN	28	05264A1-1-3-33 (PUR-5)	no	2+12	Ax1_or_null	TaSus2-2B
2013	NUWWSN	29	MH07-7474	no	5+10	Ax1_or_null	no
2013	NUWWSN	30	MA08-8036#	no	2+12	Ax2*	TaSus2-2B
2013	NUWWSN	31	M10-1659	no	5+10	Ax1_or_null	TaSus2-2B
2013	NUWWSN	32	M10-1615	no	2+12	Ax2*	no
2013	NUWWSN	33	M10*1307#	no	2+12	Ax2*	no
2013	NUWWSN	34	IL06-23571	no	2+12	Ax2*	no
2013	NUWWSN	35	IL07-19334	no	5+10	Ax2*	no
2013	NUWWSN	36	IL07-20728	no	2+12	Ax2*	no
2013	NUWWSN	37	IL07-20743	no	2+12	Ax2*	no
2013	NUWWSN	38	KY05C-1369-13-7-3	Bx7oe_het	2+12	Ax2*	no
2013	NUWWSN	39	KY05C-1020-2-19-1	no	5+10	Ax2*	no
2013	NUWWSN	40	KY05C-1600-92-9-5	Bx7oe	2+12	Ax2*	no
2013	NUWWSN	41	KY05C-1051-37-18-5	no	2+12	Ax2*	no
2013	NUWWSN	42	KY05C-1105-43-10-3	no	5+10	Ax2*	no
2013	NUWWSN	43	MD05W10208-12-16	no	5+10	Ax1_or_null	TaSus2-2B
2013	NUWWSN	44	MDC07026-12-42	no	2+12	Ax2*	no
2013	NUWWSN	45	MDC07027-12-12	no	2+12	Ax2*	no
2013	NUWWSN	46	MDC07027-12-24	no	2+12	Ax2*	no
2013	NUWWSN	47	MO111134	no	2+12	Ax1_or_null	no
2013	NUWWSN	48	MO111359	no	2+12	Ax1_or_null	no
2013	NUWWSN	49	MO110719	no	2+12	Ax1_or_null	TaSus2-2B_het
2013	NUWWSN	50	MO100647	no	nd	nd	no
2013	NUWWSN	51	Bakhsh24	no	het	Ax2*	no
2013	NUWWSN	52	Bakhsh33	no	5+10	Ax2*	no
2013	NUWWSN	53	Bakhsh35	no	2+12	Ax2*	no
2013	NUWWSN	54	NW10401	Bx7oe	het	Ax2*	no
2013	NUWWSN	55	NE06607	no	5+10	Ax2*	no
2013	NUWWSN	56	VA09W-188WS	no	2+12	Ax2*	no
2013	NUWWSN	57	VA08MAS-369	no	5+10	Ax2*	no
2013	NUWWSN	58	VA10W-123	no	2+12	Ax2*	no
2013	NUWWSN	59	VA11W-FHB39	no	2+12	Ax2*	TaSus2-2B
2013	NUWWSN	60	VA11W-FHB40	no	2+12	Ax1_or_null	TaSus2-2B

2013 Cooperative Scab Nurseries				Glutenin alleles			Mill Quality
Year	Nursery	Entry	Sample_Name	Glu-B1	Glu-D1	Glu-A1	Sucrose_Synthase
2013	USFHBN	1	ERNIE	no	2+12	Ax1_or_null	TaSUS2-2B
2013	USFHBN	2	COKER9835	no	2+12	Ax2*	TaSUS2-2B
2013	USFHBN	3	BESS	no	het	Ax1_or_null	no
2013	USFHBN	4	JAMESTOWN	no	2+12	Ax2*	no
2013	USFHBN	5	MD03W61-11-3	no	5+10	Ax1_or_null	no
2013	USFHBN	6	ARS07-1214	no	5+10	Ax1_or_null	no
2013	USFHBN	7	ARS09-367	no	5+10	Ax1_or_null	no
2013	USFHBN	8	ARS09-446	no	5+10	Ax2*	TaSUS2-2B
2013	USFHBN	9	ARS09-643	Bx7oe_het	2+12	Ax2*	no
2013	USFHBN	10	LA05102C-1-2	no	het	Ax2*	TaSUS2-2B
2013	USFHBN	11	LA05102C-8-8	no	2+12	Ax2*	TaSUS2-2B
2013	USFHBN	12	NC09-20986 (Fhb1)	no	2+12	Ax2*	no
2013	USFHBN	13	AR00260-2-2	no	5+10	Ax2*	no
2013	USFHBN	14	AR01044-1-1	no	2+12	Ax1_or_null	TaSUS2-2B
2013	USFHBN	15	AR01110-3-1	no	5+10	Ax2*	no
2013	USFHBN	16	AR01178-1-1	Bx7oe	5+10	Ax1_or_null	no
2013	USFHBN	17	ARGE05-1229-2-1	no	5+10	Ax1_or_null	no
2013	USFHBN	18	ARGE07-1339-10-5-8	no	2+12	het	TaSUS2-2B_het
2013	USFHBN	19	ARGE07-1374-17-5-4	no	2+12	Ax2*	TaSUS2-2B
2013	USFHBN	20	ARGE07-1374-17-8-5	no	2+12	Ax1_or_null	TaSUS2-2B
2013	USFHBN	21	ARS07-1073	no	2+12	Ax2*	no
2013	USFHBN	22	ARS09-082	no	5+10	Ax1_or_null	TaSUS2-2B
2013	USFHBN	23	ARS09-228	no	5+10	Ax1_or_null	TaSUS2-2B
2013	USFHBN	24	ARS09-745	no	2+12	Ax2*	no
2013	USFHBN	25	GA04494-12ES33	no	2+12	Ax2*	no
2013	USFHBN	26	GA051477-12ES27	no	2+12	Ax2*	no
2013	USFHBN	27	GA051477-12ES28	no	2+12	Ax2*	no
2013	USFHBN	28	GA051477-12ES29	no	2+12	Ax2*	no
2013	USFHBN	29	GA051477-12ES32	no	2+12	Ax2*	no
2013	USFHBN	30	GANC8170-12DH7	no	5+10	Ax2*	no
2013	USFHBN	31	GANC8248-12DH1	no	2+12	Ax1_or_null	TaSUS2-2B
2013	USFHBN	32	GANCZ4-12DH21	no	2+12	Ax1_or_null	no
2013	USFHBN	33	LA05079F-P05	no	2+12	Ax1_or_null	no
2013	USFHBN	34	LA06069E-P01	no	2+12	Ax1_or_null	no
2013	USFHBN	35	LA06149C-P7	no	2+12	Ax2*	no
2013	USFHBN	36	LA07085CW-P4	no	2+12	Ax2*	TaSUS2-2B_het
2013	USFHBN	37	LA07178C-44	no	2+12	het	no
2013	USFHBN	38	LCS19227	no	het	Ax1_or_null	no
2013	USFHBN	39	LCS15963	no	5+10	Ax1_or_null	no
2013	USFHBN	40	M10-1615	no	2+12	Ax2*	no
2013	USFHBN	41	M10-1659	no	5+10	Ax1_or_null	TaSUS2-2B
2013	USFHBN	42	MD04W249-11-12	no	2+12	Ax1_or_null	no
2013	USFHBN	43	MD04W249-11-7	no	2+12	Ax1_or_null	no
2013	USFHBN	44	MD07W272-11-5	no	het	Ax2*	no
2013	USFHBN	45	MD08-26-H2-7-12-21	no	2+12	Ax2*	no
2013	USFHBN	46	MD08-26-H2-7-12-9	no	2+12	Ax2*	no
2013	USFHBN	47	MDNC8248-64	no	2+12	Ax2*	no
2013	USFHBN	48	MH07-7474	no	5+10	Ax1_or_null	no
2013	USFHBN	49	NC09-20768	no	2+12	Ax2*	TaSUS2-2B
2013	USFHBN	50	NC09-22352	no	5+10	Ax1_or_null	TaSUS2-2B
2013	USFHBN	51	NC10-25212	no	5+10	Ax1_or_null	TaSUS2-2B
2013	USFHBN	52	NC8170-4-3	no	5+10	Ax2*	no
2013	USFHBN	53	NC8170-45-2	no	5+10	Ax2*	no
2013	USFHBN	54	NC8840-19	no	2+12	Ax1_or_null	TaSUS2-2B
2013	USFHBN	55	VA10W-112	no	2+12	Ax2*	no
2013	USFHBN	56	VA10W-118	no	2+12	Ax2*	no
2013	USFHBN	57	VA10W-119	no	2+12	Ax2*	no
2013	USFHBN	58	VA11W-FHB110	no	2+12	het	TaSUS2-2B
2013	USFHBN	59	VA11WFHB57	no	5+10	Ax1_or_null	TaSUS2-2B
2013	USFHBN	60	VA11W-FHB60	no	2+12	Ax1_or_null	no
2013	USFHBN	61	VA11W-FHB61	no	2+12	Ax2*	no
2013	USFHBN	62	VA11W-FHB75	no	2+12	Ax1_or_null	TaSUS2-2B

2013 Cooperative Scab Nurseries				Kernel Color genes				
Year	Nursery	Entry	Sample_Name	Tamby10-A1	Tamby10_Nor17	Tamby10-B1	Tamby10-D1	Combined_Color
2013	USFHBN	1	ERNIE	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	2	COKER9835	r-A1_white	R-A1	R-B1	R-D1	rr RR RR
2013	USFHBN	3	BESS	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	4	JAMESTOWN	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	5	MD03W61-11-3	r-A1_white	R-A1	R-B1	R-D1	rr RR RR
2013	USFHBN	6	ARS07-1214	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	7	ARS09-367	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	8	ARS09-446	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	9	ARS09-643	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	10	LA05102C-1-2	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	11	LA05102C-8-8	R-A1	R-A1	R-B1	r-D1_white	RR RR rr
2013	USFHBN	12	NC09-20986 (Fhb1)	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	13	AR00260-2-2	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	14	AR01044-1-1	R-A1	R-A1	R-B1	r-D1_white	RR RR rr
2013	USFHBN	15	AR01110-3-1	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	16	AR01178-1-1	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	17	ARGE05-1229-2-1	R-A1	R-A1	r-B1_het	r-D1_white	RR Rr rr
2013	USFHBN	18	ARGE07-1339-10-5-8	r-A1_white	R-A1	r-B1_white	R-D1	rr rr RR
2013	USFHBN	19	ARGE07-1374-17-5-4	r-A1_het	R-A1	r-B1_white	R-D1	Rr rr RR
2013	USFHBN	20	ARGE07-1374-17-8-5	r-A1_het	R-A1	r-B1_white	R-D1	Rr rr RR
2013	USFHBN	21	ARS07-1073	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	22	ARS09-082	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	23	ARS09-228	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	24	ARS09-745	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	25	GA04494-12ES33	R-A1	R-A1	R-B1	r-D1_white	RR RR rr
2013	USFHBN	26	GA051477-12ES27	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	27	GA051477-12ES28	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	28	GA051477-12ES29	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	29	GA051477-12ES32	r-A1_white	R-A1	r-B1_white	R-D1	rr rr RR
2013	USFHBN	30	GANC8170-12DH7	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	31	GANC8248-12DH1	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	32	GANCZA-12DH21	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	33	LA05079F-P05	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	34	LA06069E-P01	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	35	LA06149C-P7	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	36	LA07085CW-P4	r-A1_het	R-A1	R-B1	R-D1	Rr RR RR
2013	USFHBN	37	LA07178C-44	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	38	LCS19227	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	39	LCS15963	R-A1	R-A1	R-B1	r-D1_white	RR RR rr
2013	USFHBN	40	M10-1615	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	41	M10-1659	R-A1	R-A1	R-B1	r-D1_white	RR RR rr
2013	USFHBN	42	MD04W249-11-12	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	43	MD04W249-11-7	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	44	MD07W272-11-5	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	45	MD08-26-H2-7-12-21	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	46	MD08-26-H2-7-12-9	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	47	MDNC8248-64	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	48	MH07-7474	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	49	NC09-20768	r-A1_white	R-A1	r-B1_white	R-D1	rr rr RR
2013	USFHBN	50	NC09-22352	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	51	NC10-25212	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	52	NC8170-4-3	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	53	NC8170-45-2	R-A1	R-A1	R-B1	R-D1	RR RR RR
2013	USFHBN	54	NC8840-19	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	55	VA10W-112	r-A1_white	R-A1	r-B1_white	R-D1	rr rr RR
2013	USFHBN	56	VA10W-118	r-A1_white	R-A1	r-B1_white	R-D1	rr rr RR
2013	USFHBN	57	VA10W-119	R-A1	R-A1	r-B1_white	r-D1_white	RR rr rr
2013	USFHBN	58	VA11W-FHB110	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	59	VA11WFHB57	R-A1	R-A1	r-B1_white	R-D1	RR rr RR
2013	USFHBN	60	VA11W-FHB60	r-A1_white	R-A1	R-B1	R-D1	rr RR RR
2013	USFHBN	61	VA11W-FHB61	r-A1_white	R-A1	r-B1_white	R-D1	rr rr RR
2013	USFHBN	62	VA11W-FHB75	R-A1	R-A1	r-B1_white	R-D1	RR rr RR