Report on the 2005-06 Preliminary (PNUWWSN) and Advanced (NUWWSN) Northern Uniform Winter Wheat Scab Nurseries

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INTRODUCTION

The PNUWWSN and NUWWSN test the Fusarium Head Blight resistance of primarily soft red winter wheat adapted to the northern areas of North America. There are a few hard and white wheat entries. Each test is conducted in multiple locations with more data collected for the NUWWSN than the PNUWWSN.

ENTRIES

There were 34 lines and 4 checks in the PNUWWSN (Table 1). The lines were from 8 breeding programs. There were 54 lines and 4 checks in the NUWWSN (Table 1). The lines were from 14 breeding programs.

LOCATIONS

The PNUWWSN entries were evaluated in 10 field locations and two GH tests. The NUWWSN entries were successfully evaluated in 15 locations and three greenhouse tests (Table 2).

TRAITS

Data was collected on heading date (HD), height (HGT), disease severity (SEV), disease incidence (INC), disease index (IND), kernel rating (KR), percent scabby seed (PSS), ISK, and DON (Table 2). Severity was also assessed in the greenhouse assays (GH). Some groups collected additional data that are summarized and described separately. The USDA Soft Wheat Quality lab performed quality analyses (Table 2) on all entries in both tests using grain from locations where the entries were grown without inoculation and thus had minimal scab.

ANALYSIS

All cooperators sent entry means (not raw data) with some summary statistics from their trials. These means and statistics are presented in the appropriate tables and no additional within-location analyses were performed. The entry means from individual locations were used to analyze results over tests. We used the LSMEANS option in PROC GLM of SAS to calculate the means over locations even though the data was generally quite balanced. ANOVAs (model: trait = genotype + environment) were conducted for each trait and the genotype x environment mean square (residual or error in this model) was used as the error term to calculate a LSD (0.05) for entry means over environment. There was no test for significance for the genotype x environment interaction (GEI) effect.

Correlations were calculated between all traits using entry means averaged over all appropriate locations. Additional correlation of INC, SEV, and IND with HD and HGT were conducted for each location

RESULTS

Entry and location effect was significant for all traits in the PNUWWSN and the NUWWSN. The genotype x environment interaction was likely quite important for SEV, IND, and DON in both tests as shown by the small ratio of genotype to GEI sum of squares and the large portion of total SS attributed to GEI (Table 4). Using the same criteria, GEI appeared important for INC and PSS in the NUWWSN. It would appear that much of the GEI for SEV and IND is attributed to the varying relationship between HD and these traits over locations. In the NUWWSN, the correlation of HD with IND ranged from 0.31 to -0.85, the correlation of SEV with HD ranged from 0.45 to -0.61, and the correlation of INC with HD ranged from 0.44 to -0.74 (Table 5). When average over all location, HD was not significantly associated with SEV in the NUWWSN or with any trait except PSS in the PNUWWSN (Table 6).

Table 1. Entries in the 2005-06 PNUWWSN and NUWWSN

NAME	**PNUWWSN** PEDIGREE
ERNIE	Moderate resistant check
TRUMAN	Most resistant check
FREEDOM	Moderate resistant check
PIONEER 2545	Susceptible check
IL00-8641	IL89-1687 // IL90-6364 / IL93-2489
IL01-16170	IL95-934 / Goldfield_
IL02-18146	Pioneer 25R26 / IL9634-24437 // IL94-1653
IL02-19463	Patton / Cardinal // IL96-2550
IL02-7735	IL94-1653 / IL96-6472
MSU E1009	MSU Line DC076/PIONEER_2555
OH01-6167	OH530/OH585/OH498/34586-20-1
OH01-7653	HOPEWELL/OH601
OH02-15978	PATTERSON/HOPEWELL
OH02-5512	OH569/OH615
OH776	OH513/OH515
P.011034A1-3	9895C1/981251E1//92145E8
P.011035A1-71	981128A1/981477A1//92145E8
P.011050A1-13	981269B1/981251E1//INW0101
P.011099A1-2	92145E8//9388A2/98133A4
P.011151B1-93	INW0101//98135C8/9672B1
RCAT 32/35B	Ruby/Frontana # 1/AC Ron//25R18/AC Ron
RCATAkos2290	Zu-Rst
RCAT F13	Maringa x Akos 2196
RCAT TF174/1c	AC Ron x 25R18
VA05W-464	96W-348/P92823A1-1-4-4-5)//McCORMICK
VA05W-510	Roane / Pion 2684//OH 552
VA05W-517	Roane / Ernie//McCORMICK,F6
VA05W-673	Roane*2//W14/Roane,BC3F4
VA05W-681	Roane*2//Futai8944/Roane/3/Roane,BC3F4
M00-3904-9	89D-8096/89D*4763
M02-2152	CLEMENS//SAVANNAH/FL8643-G13-G5
M02*2518	BRADLEY/Pio2552
M03-3002	Winter/Winter FHB bulk population
KY98c-1161-03	Patterson/2540//2552
KY98c-1305-02	Shiloh/2552//2568
KY98c-1169-06	Patterson/2568//2552
KY98c-1164-04	Patterson/2540//25R26
KY98c-1470-02	VA92-51-12/Kristy//2540

Note: The PNUWWSN was designed to have 38 entries. We did not receive seed for one entry (# 21) until after we had shipped all the seed. Each cooperator filled the plots that were to be assigned to entry 21 with their own germplasm. That data was omitted from all analyses.

NAME	**NUWWSN** PEDIGREE
ERNIE	Moderate resistant check
TRUMAN	Most resistant check
FREEDOM	Moderate resistant check
PIONEER 2545	Susceptible check
IL00-8061	P8138I1-16-5-50/Foster//IL93-2489
IL00-8109	P8138I1-16-5-50/Foster//IL93-2489
IL00-8530	IL89-1687 // IL90-6364 / IL93-2489
IL01-11445	IL87-2834-1 / IL95-678
IL01-11934	IL90-6364 / IL94-1909
MSU Line E0001	CLKS_CREAM/MSU LINE D1277
MSU Line E2017	MSU Line D3913/MSU Line D0331
MSU Line E2041	PIONEER_2555/MSU_Line D3743
MSU Line E2042	MSU Line D3743 /PIONEER_2555
MV 6-82	PIO2643/MSY*3/BALKAN//SAL
NE02465	NE95685 (=MO11785/NE87619//NE88492)
NE02584	KS92H363-2
NE03490	WI90-540W/NE93554 (=NE82419/ARAPAHOE)
NH01046	WINDSTAR
NI02425	NE94654 (ARAPAHOE 2*/ABILENE)
OH02-12678	FOSTER/HOPEWELL//OH581/OH569
OH02-12686	FOSTER/HOPEWELL//OH581/OH569
OH02-13567	OH581/IN83127E1-24-5-2-1-31//5088B-D-32-1/OH601
OH02-7217	P92118B4-2/OH561
OH904	ZM10782/FREEDOM//30584-37-2/VA91-54-219
P.0128A1-36	92829A1/Patton/3/Goldfield/X117//Roane/92145
P.0172A1-12	INW9811/Ernie//92823/Ernie/3/92829/Patton
P.0175A1-44	92807A1/92145A2//Freedom/3/INW0411
P.01931A1-5	981227A1/981518//9895/INW0304
P.01946A1-16	981477/981128//INW0304/981250A1
RCAT 202D/ 1	Freedom x Harding
RCAT 32/157	Ruby/Frontana # 1/AC Ron//25R18/AC Ron
RCAT Akos 2234	Ttj-81.F379
RCAT TF 203/2	AC Ron x 25R18
RCAT19/4c	AC Morley x 25R18
VA04W-563	Roane//FUTAI 8946/Roane,BC1F6
VA04W-592	Roane//Er-Mai 9/Roane,BC1F6
VA05W-417	ROANE/3/NING7840/CK9904//PION2552,F7
VA05W-421	ROANE/3/NING7840/CK9904//PION2552,F7
VA05W-452	IL 94-1909/SISSON"S"
M01-4377	Coker 9663/VA91-54-219
COKER 9553	89M-4035A/Pio2580
KY97c-0554-4-6	VA94-54-549/Roane//Kristy
KY97c-0540-1-2	Coker9803/L910097//2552
KY 97c-0388-5-2	2552/VA94-52-25//Pochahontas
KY97c-0304-26-10	Kristy/2628//2540
KY97c-0277-1-8	Foster/VA94-54-549//2552
KS03HW12-6-5	97HW29/97HW131//96HW100-5
KS970085-9-15	HBK0935-125-5-2/VBF0589-1//X960103
MO050101	MO11769/Madison
MO050143	MO11769/Madison
MO050132	MO11769/Madison
MO050194	MO12278/Pioneer2552
MO050207	MO11769/Madison
NY93285-9161	
NY92237-1-sp-9173	
NY94022-9093	
NY93285-9147	
NY93285-9179	

Table 2. Cooperators in 2006 PNUWWSN and NUWWSN

ILURB	NUWWSN + PNUWWSN		
INSTITUTE:	University of Illinois	FERTILIZER:	40 lbs N/A preplant, no spring topdress
COOPERATOR(S):	Fred Kolb and Eric Brucker	IRR./MISTING METHOD:	overhead misting 3 times per 24 hour period, about 45 minutes each time
TEST LOCATION:	Urbana, IL	INOCULATION METHOD:	355lbs/acre of infected corn spawn spread - split over three dates (4/10, 4/21, 5/2)
PLOT SIZE:	single 3' row	PRECIP DURING GRAIN FILL:	
REPS:	Three	AVG. TEMP. DURING GRAIN FILL:	
SEEDING DATE:	10/5/2005	DATE/FEEKES WHEN RATED:	June 9 - 19, 2006
HARVEST DATE:	6/30/2006	COMMENTS:	

INBRO	NUWWSN + PNUWWSN		
INSTITUTE:	AgriPro® COKER®	FERTILIZER:	90 #/A N, spring app.
COOPERATOR(S):	J.B. Fogleman jr., Vonderwell, J.D., and Glover, C.E.	IRR./MISTING METHOD:	Riser sprinkler
TEST LOCATION:	Brookston, IN	INOCULATION METHOD:	Grain spawn
PLOT SIZE:	Single 1 M row	PRECIP DURING GRAIN FILL:	0.5"
REPS:	2	AVG. TEMP. DURING GRAIN FILL:	85-90 OF
SEEDING DATE:	10/27/2006	DATE/FEEKES WHEN RATED:	6/19/2006
HARVEST DATE:		COMMENTS:	Standing water during winter reduced stand density significantly unevenly within reps, reducing the uniformity of favorable colonization conditions.

INWLA	NUWWSN + PNUWWSN		
INSTITUTE:	Purdue University	FERTILIZER:	9/21/2005, into disced corn residue
COOPERATOR(S):	Herb Ohm	IRR./MISTING METHOD:	misted 3 h late afternoons, 3h early mornings, as needed to keep residue/soil moist
TEST LOCATION:	West Lafayette	INOCULATION METHOD:	point inoculation at flowering, 10 spikes (for severity) and natural (for incidence)
PLOT SIZE:	4' x 4'	PRECIP DURING GRAIN FILL:	ample
REPS:	2	AVG. TEMP. DURING GRAIN FILL:	typically 65-70 F night; 70-80s F day
SEEDING DATE:	9/21/2005, into disced corn residue	DATE/FEEKES WHEN RATED:	Severity: 25 d after inoculation. Incidence: 25 to 30 d after heading.
HARVEST DATE:	June 26 and 30, 2006	COMMENTS:	Temperatures generally cool, natural infection apparent late in grain fill.

KSMAN	NUWWSN		
INSTITUTE:	Kansas State University	FERTILIZER:	
COOPERATOR(S):	W. W. Bockus and M. A. Davis	IRR./MISTING METHOD:	Overhead sprinklers from 9:00 p.m. to 6:00 a.m.
TEST LOCATION:	Manhattan, KS	INOCULATION METHOD:	Colonized corn grains (8 g/ft^2 total) applied April 1, April 15, and May 1
PLOT SIZE:	Single rows, 7.5 feet long, 20 inches apart	PRECIP DURING GRAIN FILL:	
REPS:	4	AVG. TEMP. DURING GRAIN FILL:	
SEEDING DATE:	10/4/2005	DATE/FEEKES WHEN RATED:	4 rating dates (May 27, May 30, June 2, and June 5)
HARVEST DATE:	6/21/2006	COMMENTS:	FHB index was rated four times; however, many cultivars had matured by the second and third ratings; therefore, Avg. FHB scores are from first two ratings

KYLEX	NUWWSN + PNUWWSN		
INSTITUTE:	University of Kentucky	FERTILIZER:	110# N split app.
COOPERATOR(S):	Nicki Mundell and Dave VanSanford	IRR./MISTING METHOD:	Overhead- Evening/ Early Morning Mist
TEST LOCATION:	Lexington, KY	INOCULATION METHOD:	Scabby corn
PLOT SIZE:	2 rows, 4 ft long	PRECIP DURING GRAIN FILL:	5.52
REPS:	2	AVG. TEMP. DURING GRAIN FILL:	67
SEEDING DATE:	10/14/2005	DATE/FEEKES WHEN RATED:	10.5
HARVEST DATE:	6/26/2006	COMMENTS:	Rating was done 24 days post anthesis.

KYPRI	NUWWSN + PNUWWSN		
INSTITUTE:	University of Kentucky	FERTILIZER:	95# N. split app.
COOPERATOR(S):	Nicki Mundell and Dave VanSanford	IRR./MISTING METHOD:	none
TEST LOCATION:	Princeton, KY	INOCULATION METHOD:	Scabby corn and conidial spray
PLOT SIZE:	Hill plots	PRECIP DURING GRAIN FILL:	5.99
REPS:	2	AVG. TEMP. DURING GRAIN FILL:	68
SEEDING DATE:	10/12/2005	DATE/FEEKES WHEN RATED:	
HARVEST DATE:	6/13/2006	COMMENTS:	

MDSAL	NUWWSN		
INSTITUTE:	University of Maryland	FERTILIZER:	120N
COOPERATOR(S):	Costa, Cooper, Grybauskas	IRR./MISTING METHOD:	AM and PM
TEST LOCATION:	Salisbury, MD	INOCULATION METHOD:	Scabby corn
PLOT SIZE:	single 1.2 M row	PRECIP DURING GRAIN FILL:	
REPS:	2	AVG. TEMP. DURING GRAIN FILL:	
SEEDING DATE:	10/27 (NUWWSN), 10/12 (PNUWWSN)	DATE/FEEKES WHEN RATED:	
HARVEST DATE:	6/21/2006	COMMENTS:	

MIELA	NUWWSN + PNUWWSN		
INSTITUTE:	MICHIGAN STATE UNIVERSITY	FERTILIZER:	150# 6-24-24 @ PLANTING
COOPERATOR(S):	LEE SILER / JIM KELLS		196# 46-0-0 @ GREEN-UP
TEST LOCATION:	EAST LANSING, MICHIGAN	IRR./MISTING METHOD:	MIST IRRIGATION
PLOT SIZE:	1 ROW PLOTS : 4 FEET IN LENGTH	INOCULATION METHOD:	INCOULATED WHEAT GRAIN
REPS:	4 REPLICATIONS	PRECIP DURING GRAIN FILL:	~2.83 INCHES
SEEDING DATE:	25-Oct-06	AVG. TEMP. DURING GRAIN FILL:	78.8 F HIGH / 55.1 F LOW
HARVEST DATE:	N / A	DATE/FEEKES WHEN RATED:	30-Jun-06

MOCOL	NUWWSN + PNUWWSN		
INSTITUTE:	University of Missouri	FERTILIZER:	80 lbs/Acre Nitrogen applied 02/09/06
COOPERATOR(S):	Anne McKendry	IRR./MISTING METHOD:	Overhead mist irrigation
TEST LOCATION:	Columbia, MO	INOCULATION METHOD:	Spray at 75% anthesis with F. graminearum concentrated to 50,000 macroconidia/mL
PLOT SIZE:	30 in. x 28 in.	PRECIP DURING GRAIN FILL:	
REPS:	3 (NUWWSN), 1 (PNUWWSN)	AVG. TEMP. DURING GRAIN FILL:	
SEEDING DATE:	10/5/2005	DATE/WEEKES WHEN RATED:	05/22/06 - 06/09/06
HARVEST DATE:	6/28/2006	COMMENTS:	

NEMEA	NUWWSN		
INSTITUTE:	University of Nebraska - Lincoln	FERTILIZER:	none
COOPERATOR(S):	Dr. S. Baenziger, Dr. S. Wegulo, J. Counsell, J Breathnach	IRR./MISTING METHOD:	misting from overhead risers
TEST LOCATION:	Mead, NE.	INOCULATION METHOD:	spray 70 000 condia/ml, at Feeke's 10.5
PLOT SIZE:	Total of 10 ft2 (1 row, 10 foot long, 1 foot between rows)	PRECIP DURING GRAIN FILL:	0.05 inch/day
REPS:	2	AVG. TEMP. DURING GRAIN FILL:	75 F
SEEDING DATE:	9/25/2005	DATE/FEEKES WHEN RATED:	soft dough = Feeke's 11.2
HARVEST DATE:	7/6/2006	COMMENTS:	

NYITH	NUWWSN		
INSTITUTE:	Cornell University	FERTILIZER:	300 lbs 10-20-20 preplant; 40# N topdress
COOPERATOR(S):	M.E. Sorrells	IRR./MISTING METHOD:	Overhead- daily Mist
TEST LOCATION:	Ithaca, NY	INOCULATION METHOD:	Sprayer applied 3X
PLOT SIZE:	1M x 35cm	PRECIP DURING GRAIN FILL:	
REPS:	5	AVG. TEMP. DURING GRAIN FILL:	
SEEDING DATE:	9/28/2005	DATE/FEEKES WHEN RATED:	Heading+ 1 week
HARVEST DATE:	7/28/2006	COMMENTS:	

OHWOO	NUWWSN + PNUWWSN		
INSTITUTE:	Ohio State University	FERTILIZER:	
COOPERATOR(S):	Clay Sneller, Pierce Paul	IRR./MISTING METHOD:	
TEST LOCATION:	Wooster OH	INOCULATION METHOD:	
PLOT SIZE:	single 1M row	PRECIP DURING GRAIN FILL:	
REPS:	3	AVG. TEMP. DURING GRAIN FILL:	
SEEDING DATE:		DATE/FEEKES WHEN RATED:	
HARVEST DATE:		COMMENTS:	IND for PNUWWSN was determine by one visual estimate per plot (no head counts etc)

ONRID	NUWWSN + PNUWWSN		
INSTITUTE:	University of Guelph, ON, Canada	FERTILIZER:	
COOPERATOR(S):	Tamburic-Ilincic, Schaafsma	IRR./MISTING METHOD:	misted
TEST LOCATION:	Ridgetown	INOCULATION METHOD:	spray
PLOT SIZE:	single row (4m)	PRECIP DURING GRAIN FILL:	
REPS:	4	AVG. TEMP. DURING GRAIN FILL:	
SEEDING DATE:		DATE/FEEKES WHEN RATED:	
HARVEST DATE:		COMMENTS:	

VABLA	NUWWSN + PNUWWSN		
INSTITUTE:	Virginia Tech	FERTILIZER:	20-80-80/acre
COOPERATOR(S):	Carl A. Griffey, Jianli Chen, Jody Fanelli	IRR./MISTING METHOD:	Overhead mist 2x/day
TEST LOCATION:	Blacksburg, Virginia	INOCULATION METHOD:	Conidial suspension spray
PLOT SIZE:	4' x5', 2 row plot	PRECIP DURING GRAIN FILL:	
REPS:	3	AVG. TEMP. DURING GRAIN FILL:	
SEEDING DATE:	10/13/2005	DATE/FEEKES WHEN RATED:	6/12/2006
HARVEST DATE:	7/4/2006	COMMENTS:	Cool, dry weather during anthesis. Data analyzed using sas software.

ROMAN	NUWWSN		
INSTITUTE:		FERTILIZER:	110 kg N
COOPERATOR(S):	Mariana Ittu	IRR./MISTING METHOD:	
TEST LOCATION:	Fundulea, Calarasi, Romania (Europe)	INOCULATION METHOD:	Syringe (point) inoculation at anthesis with six Fusarium graminearum and culmorum isolates-20-25 heads/replication/isolate
PLOT SIZE:	0.5 sq m	PRECIP DURING GRAIN FILL:	86.61 mm (variable for the same period over 43 yrs=67 mm)
REPS:	3	AVG. TEMP. DURING GRAIN FILL:	Sum of grads =686.8 C
SEEDING DATE:		DATE/FEEKES WHEN RATED:	
HARVEST DATE:	5/7/2006	COMMENTS:	Flowering, Severity (% of damaged spikelets at 20 days postinoculation, DPI), AUDPC; Relative weight of heads, % of control, FDK, %, TKW

Table 3. Traits assessed in the 2005-06 PNUWWSN and NUWWSN tests

Code	Trait	Description	PNUWWSN Locations*	NUWWSN Locations*
SEV	Disease severity from field tests	% of infected spikelets in an infected head.	IL,INBRO,INWLA,KYLEX, MI,MO,ON,VA	IL,INBRO,INWLA,KYLEX,MD,MI, NE,NY,OH,ON,RO,VA
INC	Disease incidence	% of heads with at least one infected spikelets	IL,INBRO,INWLA,KYLEX, MI,MO,ON,VA	IL,INBRO,INWLA,KYLEX,MD,MI, NE,NY,OH,ON,VA
IND	Disease index	IND = (SEVxINC)/100	IL,INBRO,INWLA,KYLEX, MI,MO,OH,ON,VA	IL,INBRO,INWLA,KYLEX,MD,MI, NE,NY,OH,ON,VA
KR	Kernel rating	A visual assessment of the percent infected kernels	IL,MO	IL,KS,MD
PSS	Percent scabby seed	Percent of scabby seed by weight	KYLEX,KYPRI	KYLEX,KYPRI,MO,ROMAN
ISK	Composite of head and kernel traits	ISK Index = .3 (Severity) + .3 (Incidence)+.4 (% FDK or PSS)	IL,MO	IL,KYLEX,MD,MO
DON	DON (vomitoxin)	PPM of vomitoxin in grain	IL,KYLEX,KYPRI,VA	IL,KS,KYLEX,KYPRI,MD,NE,VA
GH	Greenhouse severity	Same as SEV except from greenhouse	IL,KYLEX	IL,KYLEX,MO
MILL Score	Milling score	A relative composite score based on traits that affect milling	INWLA	INWLA, VABLA
BAKE SCORE	Baking score	A relative composite score based on traits that affect baking	INWLA	INWLA, VABLA
TW SCORE	Test Weight score	A relative score based on TW	INWLA	INWLA, VABLA
SE SCORE	Softness equivalent score	A relative core based on softness equivalent	INWLA	INWLA, VABLA
TW	Test weight	Test weight in lbs/bu of clean grain	INWLA	INWLA, VABLA
SE	Softness equivalent	Percentage of flour that passes through a 94 mesh screen	INWLA	INWLA, VABLA
PRO	Flour protein	NIR estimate of flour protein percentage (based on 13% moisture)	INWLA	INWLA, VABLA
LA	Lactic acid solvent retention capacity	A measure of gluten strength based on percentage of LA solvent retained by a flour sample after centrifugation	INWLA	INWLA, VABLA
SUC	Sucrose solvent retention capacity	A measure of pentosan content, and thus water absorption, based on percentage of sucrose solvent retained by a flour sample after centrifugation	INWLA	INWLA, VABLA
FYLD	Flour yield	The weight of the flour that passes through a 40 mesh screen after milling, adjusted for moisture and SE, expressed as percentage of milled grain.	INWLA	INWLA, VABLA

* ON and RO indicate Ontario Canada, and Romania, respectively

Table 4. Percentage of total sum of squares attributable to genetic (G), environment (E), and genotype by environment interaction (GEI) effects for the 2006 PNUWWSN and the NUWWSN. The ratio of G to GEI is also presented

	PNUWWSN					NUWWSN				
	G (%)	E (%)	GEI (%)	GEI as % Total	G/GEI	G (%)	E (%)	GEI (%)	GEI as % Total	G/GEI
INC	10	80	10	10	1.00	8	71	21	21	0.38
SEV	16	33	51	51	0.31	9	38	53	53	0.17
IND	12	57	31	31	0.39	8	68	24	24	0.33
KR	28	56	16	16	1.75	19	68	13	13	1.46
PSS	57	9	34	34	1.68	39	14	47	47	0.83
ISK	12	74	14	14	0.86	17	70	13	13	1.31
DON	18	54	28	28	0.64	12	67	21	21	0.57
GH	67	3	30	30	2.23	55	8	37	37	1.49
HD	7	90	3	3	2.33	8	86	5	5	1.60
HGT	42	46	9	9	4.67	66	21	13	13	5.08

Table 5. Correlation of Heading Date (HD) and height (HGT) with incidence (INC), severity (SEV), and index (IND), by location and test. Values in bold and large font are significant at the 0.05 P level.

		HD				HGT		
TEST	LOCATION	INC	SEV	IND		INC	SEV	IND
NUWWSN	ILURB	0.00	**0.43**	0.19				
NUWWSN	INWLA	-0.22	**0.45**	-0.07				
NUWWSN	KSMAN			**-0.85**				
NUWWSN	KYLEX	**0.44**	0.08	0.31		**0.41**	-0.05	0.21
NUWWSN	MDSAL	**-0.64**	**-0.54**	**-0.52**		**-0.48**	**-0.44**	**-0.41**
NUWWSN	MIELA	**-0.74**	**-0.60**	**-0.67**				
NUWWSN	MOCOL	-0.19	**-0.61**	**-0.57**		-0.15	**-0.58**	**-0.55**
NUWWSN	NYITH	0.02	-0.11	-0.08				
NUWWSN	OHWOO	0.14	0.19	0.25				
NUWWSN	ONRID	**-0.47**	**-0.45**	**-0.46**				
NUWWSN	ROMAN		0.08					
NUWWSN	VABLA	**-0.66**	**-0.53**	**-0.55**		**-0.45**	**-0.36**	**-0.40**
PNUWWSN	ILURB	0.15	**0.47**	0.32				
PNUWWSN	INWLA	0.14	**0.41**	0.24				
PNUWWSN	KYLEX	0.37	-0.02	0.29		0.06	-0.14	0.00
PNUWWSN	MIELA	**-0.60**	**-0.36**	**-0.54**				
PNUWWSN	MOCOL	-0.05	**-0.34**	**-0.31**		-0.31	-0.32	**-0.39**
PNUWWSN	OHWOO			**0.28**				
PNUWWSN	ONRID	-0.17	-0.14	-0.14				
PNUWWSN	VABLA	-0.10	**-0.43**	**-0.35**		-0.18	-0.20	-0.18

Table 6. Correlation among traits for NUWWSN (above diagonal, df = 56) and PNUWWSN (below diagonal, df = 37). Correlation > 0.44 are bold and in large font and are significant at P > 0.01. "n" indicates a non-significant correlation.

	INC	SEV	IND	KR	PSS	ISK	DON	GH	HD	HGT
INC	1	**.77**	**.89**	**.66**	**.54**	**.83**	**.46**	**.51**	**-.46**	**-.49**
SEV	**.60**	1	**.86**	**.67**	**.64**	**.80**	.40	**.69**	-.16n	-.23n
IND	**.87**	**.83**	1	**.56**	**.52**	**.76**	.31	**.48**	-.52	-.51
KR	**.71**	**.77**	**.82**	1	**.66**	**.89**	**.71**	**.62**	.12n	-.08n
PSS	.36	.11n	.23n	.43	1	**.80**	**.62**	**.67**	.03n	.01n
ISK	**.77**	**.73**	**.81**	**.91**	**.58**	1	**.69**	**.66**	-.12n	-.23n
DON	**.58**	**.62**	**.70**	**.77**	.27n	**.72**	1	**.54**	.18n	.04n
GH	.26n	**.60**	**.52**	**.52**	-.05n	.38	**.56**	1	.07n	.01n
HD	.17n	.05n	.04n	.27n	**.61**	.41	.20n	-.14	1	**.72**
HGT	-.10n	.04n	-.08n	.13n	.44	.16n	.21n	.13n	**.57**	1

Table 7. Traits means for 2006 NUWWSN. "l", "h" indicate means that are not significantly different from the lowest (l) or highest (h) mean in a column. The incidence of each is summed in last columns.

NAME	INC		SEV		IND		KR		PSS		ISK		DON		GH		# l	# h
ERNIE	53.7		30.4	l	20.2		19.1	l	7.4	l	25.4	l	5.5		24.3		4	0
TRUMAN	33.6	l	24.2	l	12.4	l	21.5	l	5.2	l	24.1	l	4.5		3.3	l	7	0
FREEDOM	55.0		32.7	l	16.4	l	35.7		17.8	l	38.4		7.0		13.3	l	4	0
PIONEER 2545	67.4	h	51.5	h	31.9	h	52.5	h	44.0	h	57.9	h	10.4	h	38.2		0	7
IL00-8061	44.1	l	29.8	l	15.6	l	14.4	l	8.0	l	21.4	l	3.6		14.7		6	0
IL00-8109	53.8		37.6		19.7		22.8	l	16.1	l	29.9	l	3.1	l	24.1		4	0
IL00-8530	55.3		37.2		22.3		15.8	l	8.0	l	27.8	l	4.6		22.0		3	0
IL01-11445	46.5		34.6	l	16.6	l	19.8	l	4.1	l	25.9	l	4.6		13.4	l	6	0
IL01-11934	52.7		32.4	l	18.5		20.3	l	13.3	l	25.4	l	3.7		17.5		4	0
MSU Line E0001	47.5		35.7	l	12.3	l	36.3	h	12.6	l	36.1		7.0		49.1	h	3	2
MSU Line E2017	53.3		38.9	h	17.3	l	35.3		11.0	l	33.1		6.8		30.3		2	1
MSU Line E2041	66.7	h	42.1	h	25.7	h	40.5	h	26.3		46.4	h	9.8	h	39.1		0	6
MSU Line E2042	36.8	l	33.6	l	9.5	l	24.5	l	14.6	l	22.3	l	4.0		17.9		6	0
MV 6-82	65.4	h	52.0	h	31.7	h	36.6	h	17.5	l	40.8		4.1		51.3	h	1	5
NE02465	60.4	h	48.7	h	26.5	h	34.6		27.1		43.6		7.1		48.0		0	3
NE02584	57.6		36.4	l	19.7		47.1	h	29.6	h	44.6		6.5		47.6		1	2
NE03490	53.6		35.8	l	15.6	l	34.0		23.3		35.0		11.0	h	30.0		2	1
NH01046	47.9		39.1	h	16.6	l	23.5	l	31.3	h	34.3		7.4		38.4		2	2
NI02425	57.5		44.8	h	23.8	h	44.6	h	33.3	h	44.0		6.4		40.8		0	4
OH02-12678	49.8		29.9	l	16.2	l	22.7	l	10.1	l	25.1	l	3.8		20.3		5	0
OH02-12686	45.8	l	34.7	l	13.5	l	24.8	l	8.5	l	25.4	l	4.8		10.7	l	7	0
OH02-13567	48.9		29.3	l	14.2	l	27.3	l	4.5	l	27.7	l	5.8		14.6		5	0
OH02-7217	45.2	l	22.6	l	10.2	l	27.2	l	7.0	l	24.3	l	7.0		19.6		6	0
OH904	36.9	l	23.5	l	11.3	l	14.1	l	12.9	l	20.8	l	2.5	l	5.0	l	8	0
P.0128A1-36	45.2	l	27.9	l	16.2	l	13.2	l	6.6	l	20.1	l	2.8	l	14.7		7	0
P.0172A1-12	54.0		36.8	l	21.3		15.8	l	12.6	l	31.1	l	2.5	l	12.5	l	6	0
P.0175A1-44	54.5		24.4	l	14.1	l	28.0	l	13.7	l	32.6		5.1		3.6	l	5	0
P.01931A1-5	46.4		28.4	l	13.9	l	11.8	l	4.9	l	19.3	l	2.5	l	11.9	l	7	0
P.01946A1-16	52.3		34.2	l	22.5		25.1	l	12.7	l	30.9	l	4.4		7.5	l	5	0
RCAT 202D/ 1	61.7	h	40.4	h	21.3		45.8	h	15.0	l	42.5		7.0		22.5		1	3
RCAT 32/157	49.9		35.3	l	14.7	l	23.6	l	25.0		31.6	l	7.5		55.0	h	4	1
RCAT Akos 2234	46.8		36.7	l	15.9	l	29.9		20.0	l	28.2	l	4.8		21.5		4	0
RCAT TF 203/2	45.2	l	33.6	l	14.9	l	28.3	l	8.2	l	27.4	l	5.4		15.8		6	0
RCAT19/4c	47.0		37.4		14.8	l	30.0		24.8		31.0	l	5.0		45.5		2	0
VA04W-563	50.8		31.8	l	16.5	l	13.4	l	4.4	l	20.3	l	2.2	l	10.8	l	7	0
VA04W-592	52.8		31.5	l	18.2		26.1	l	9.1	l	29.8	l	4.7		13.3	l	5	0
VA05W-417	46.2		31.4	l	15.3	l	26.6	l	7.2	l	22.6	l	3.6		12.2	l	6	0
VA05W-421	49.2		33.0	l	15.6	l	26.6	l	10.3	l	25.8	l	4.9		19.5		5	0
VA05W-452	63.1	h	42.0	h	23.8	h	33.4		12.7	l	36.4		5.6		46.5		1	3
M01-4377	57.0		42.1	h	22.9		31.2		5.4	l	33.8		4.7		12.2	l	2	1
COKER 9553	64.5	h	45.7	h	29.7	h	44.8	h	14.8	l	41.4		8.3		50.5	h	1	5
KY97c-0554-4-6	64.2	h	38.3	h	22.0		23.7	l	16.6	l	33.8		4.2		12.5	l	3	2
KY97c-0540-1-2	67.6	h	39.4	h	23.6	h	38.1	h	20.3		42.2		6.6		34.6		0	4
KY97c-0388-5-2	67.5	h	46.7	h	30.4	h	34.1		33.2	h	46.9	h	7.1		58.6	h	0	6
KY97c-0304-26-10	63.0	h	45.9	h	23.5	h	48.4	h	23.9		47.5	h	6.7		56.1	h	0	6
KY97c-0277-1-8	64.9	h	42.2	h	25.8	h	36.3	h	24.4		46.1	h	6.9		22.0		0	5
KS03HW12-6-5	56.5		28.8	l	16.3	l	33.1		20.3		36.3		9.8	h	28.6		2	1
KS970085-9-15	70.3	h	45.9	h	30.7	h	41.0	h	23.5		43.4		6.6		24.1		0	4
MO050101	54.9		34.3	l	21.2		23.4	l	9.4	l	32.2		5.3		9.8	l	4	0
MO050143	45.2	l	26.1	l	11.4	l	19.0	l	9.1	l	23.7	l	5.1		7.2	l	7	0
MO050132	45.5	l	29.8	l	15.4	l	20.7	l	5.0	l	24.4	l	6.5		5.0	l	7	0
MO050194	48.7		31.0	l	17.0	l	27.1	l	13.2	l	30.4	l	5.6		11.9	l	6	0
MO050207	47.3		31.5	l	17.2	l	26.3	l	5.9	l	29.9	l	6.7		7.3	l	6	0
NY93285-9161	39.7	l	35.5	l	12.5	l	29.7		22.3		27.5	l	5.0		31.2		4	0
NY92237-1-sp-9173	43.0	l	27.1	l	12.7	l	26.2	l	6.3	l	26.2	l	5.6		22.1		6	0
NY94022-9093	59.4	h	52.6	h	28.3	h	52.5	h	26.3		48.4	h	13.2	h	44.4		0	6
NY93285-9147	40.3	l	37.2		12.6	l	37.6	h	16.6	l	30.7	l	5.1		27.1		4	1
NY93285-9179	39.3	l	39.3	h	14.1	l	39.2	h	12.6	l	29.4	l	5.1		30.7		4	2
AVERAGE	52.4		35.9		18.7		29.4		15.3		32.5		5.7		24.9			
n	12		13		13		3		4		4		7		3			
LSD	12.5		14.4		8.5		16.6		15.9		12.7		3.5		10.1			
CV	29.0		58.1		58.1		34.5		73.6		27.8		50.2		62.1			

Table 8. Traits means for 2006 PNUWWSN. “l”, “h” indicate means that are not significantly different from the lowest (l) or highest (h) mean in a column. The incidence of each is summed in the last columns.

Name	INC		SEV		IND		KR		PSS		ISK		DON		GH		# l	# h
ERNIE	50.3	l	23.0	l	14.6	l	12.5	l	3.4	l	20.3	l	5.2	l	26.5	l	8	0
TRUMAN	42.5	l	21.1	l	7.1	l	6.5	l	4.8	l	19.9	l	2.2	l	13.7	l	8	0
FREEDOM	54.3	lh	34.5	lh	14.8	l	24.0	lh	7.2	l	29.2	h	4.5	l	14.4	l	7	4
PIONEER 2545	62.8	h	46.8	h	27.7	h	46.5	h	15.4	l	38.8	h	8.9	h	58.4	h	1	7
IL00-8641	51.6	l	23.8	l	13.7	l	8.0	l	8.6	l	18.6	l	4.3	l	24.6	l	8	0
IL01-16170	51.3	l	36.7	h	13.7	l	8.5	l	7.2	l	21.3	l	1.9	l	7.7	l	7	1
IL02-18146	45.2	l	26.1	l	13.5	l	7.5	l	4.6	l	15.5	l	1.7	l	18.0	l	8	0
IL02-19463	52.5	l	30.1	l	17.3		18.5	l	4.1	l	28.5	lh	4.7	l	32.0	l	7	1
IL02-7735	40.9	l	24.5	l	9.4	l	5.0	l	1.9	l	13.6	l	2.3	l	39.8	l	8	0
MSU Line E1009	62.9	h	38.6	h	21.7	h	36.0	h	7.7	l	33.2	h	6.4	h	18.1	l	2	6
OH01-6167	52.4	l	36.9	h	16.6		20.0	l	11.5	l	30.4	h	5.6	l	52.3	h	4	3
OH01-7653	57.5	h	43.1	h	18.9		35.5	h	8.0	l	30.2	h	6.5	h	58.1	h	1	6
OH02-15978	56.3	h	35.1	lh	19.8	h	28.0	lh	13.7	l	30.5	h	5.8	l	47.7	h	4	6
OH02-5512	56.5	h	23.0	l	13.1	l	16.5	l	8.3	l	22.2	l	3.4	l	12.0	l	7	1
OH776	58.6	h	46.9	h	24.0	h	36.5	h	7.1	l	33.1	h	10.7	h	64.8	h	1	7
P.011034A1-3	48.2	l	30.3	l	13.4	l	24.0	lh	4.9	l	21.1	l	3.2	l	36.4	l	8	1
P.011035A1-71	55.3	h	27.9	l	15.7		22.5	lh	9.9	l	22.2	l	4.1	l	26.1	l	6	2
P.011050A1-13	53.3	lh	23.8	l	13.1	l	11.0	l	5.0	l	17.5	l	3.9	l	12.9	l	8	1
P.011099A1-2	51.7	l	31.6	l	15.9		17.5	l	2.6	l	22.7	l	3.0	l	26.5	l	7	0
P.011151B1-93	54.3	lh	26.5	l	16.8		18.0	l	2.4	l	21.8	l	7.2	h	45.7	h	5	3
RCAT 32/35B	66.9	h	39.6	h	25.4	h	26.5	lh	8.9	l	30.6	h	6.4	h	35.2	l	3	6
RCAT Akos 2290	50.5	l	23.5	l	10.1	l	24.0	lh	23.8	h	27.7	lh	4.4	l	9.1	l	7	3
RCAT F13	63.2	h	29.4	l	20.1	h	40.0	h	38.5	h	43.2	h	7.3	h	23.0	l	2	6
RCAT TF174/1c	42.5	l	20.4	l	9.1	l	10.5	l	21.3		22.6	l	4.8	l	8.1	l	7	0
VA05W-464	65.9	h	29.9	l	21.9	h	22.5	lh	7.1	l	30.8	h	4.1	l	14.8	l	4	3
VA05W-510	61.5	h	33.4	lh	19.9	h	24.5	lh	9.8	l	28.6	lh	3.2	l	48.6	h	5	6
VA05W-517	52.1	l	23.4	l	14.5	l	20.0	l	2.8	l	22.8	l	3.0	l	47.3	h	7	1
VA05W-673	52.3	l	25.3	l	12.5	l	7.0	l	4.5	l	17.5	l	2.8	l	2.9	l	8	0
VA05W-681	56.0	h	26.6	l	15.0	l	13.5	l	4.5	l	22.2	l	3.0	l	5.3	l	7	1
M00-3904-9	62.7	h	39.6	h	23.3	h	33.5	h	4.8	l	32.9	h	7.2	h	34.2	l	2	6
M02-2152	56.1	h	39.0	h	21.6	h	40.5	h	12.1	l	35.5	h	7.6	h	60.2	h	1	7
M02*2518	63.7	h	32.9	lh	19.9	h	26.0	lh	7.1	l	31.7	h	6.8	h	17.8	l	4	6
M03-3002	58.2	h	34.4	lh	16.8		27.5	lh	14.5	l	35.2	h	6.0	l	15.6	l	5	4
KY98c-1161-03	58.0	h	37.1	h	19.0		24.0	lh	2.8	l	26.7	l	7.4	h	80.2	h	3	5
KY98c-1305-02	66.3	h	43.7	h	26.8	h	40.0	h	10.0	l	38.3	h	6.9	h	35.3	l	2	6
KY98c-1169-06	57.0	h	22.4	l	13.2	l	21.0	l	3.4	l	24.0	l	7.4	h	32.6	l	6	2
KY98c-1164-04	44.3	l	24.3	l	11.1	l	22.5	lh	3.2	l	23.6	l	5.6	l	13.5	l	8	1
KY98c-1470-02	61.1	h	42.4	h	21.4	h	36.5	h	15.5	l	38.3	h	6.4	h	60.4	h	1	7
AVERAGE	55.2		31.5		16.9		22.7		8.8		26.9		5.2		31.0			
N	8		8		9		2		2		3		4		2			
LSD	13.6		14.8		7.9		24.0		15.5		15.5		4.3		37.1			
R2	0.8		0.5		0.7		0.8		0.7		0.9		0.7		0.7			
CV	24.4		47.0		49.4		52.2		88.2		35.2		59.6		58.9			

Table 9. Best (top of table) and worst (bottom of table) entries from the 2006 NUWWSN.

NAME	INC		SEV		IND		KR		PSS		ISK		DON		GH		# l	# h
OH904	36.9	l	23.5	l	11.3	l	14.1	l	12.9	l	20.8	l	2.5	l	5.0	l	8	0
MO050143	45.2	l	26.1	l	11.4	l	19.0	l	9.1	l	23.7	l	5.1		7.2	l	7	0
TRUMAN	33.6	l	24.2	l	12.4	l	21.5	l	5.2	l	24.1	l	4.5		3.3	l	7	0
OH02-12686	45.8	l	34.7	l	13.5	l	24.8	l	8.5	l	25.4	l	4.8		10.7	l	7	0
P.01931A1-5	46.4		28.4	l	13.9	l	11.8	l	4.9	l	19.3	l	2.5	l	11.9	l	7	0
MO050132	45.5	l	29.8	l	15.4	l	20.7	l	5.0	l	24.4	l	6.5		5.0	l	7	0
P.0128A1-36	45.2	l	27.9	l	16.2	l	13.2	l	6.6	l	20.1	l	2.8	l	14.7		7	0
VA04W-563	50.8		31.8	l	16.5	l	13.4	l	4.4	l	20.3	l	2.2	l	10.8	l	7	0
MSU Line E2042	36.8	l	33.6	l	9.5	l	24.5	l	14.6	l	22.3	l	4.0		17.9		6	0
OH02-7217	45.2	l	22.6	l	10.2	l	27.2	l	7.0	l	24.3	l	7.0		19.6		6	0
NY92237-1-sp-9173	43.0	l	27.1	l	12.7	l	26.2	l	6.3	l	26.2	l	5.6		22.1		6	0
RCAT TF 203/2	45.2	l	33.6	l	14.9	l	28.3	l	8.2	l	27.4	l	5.4		15.8		6	0
VA05W-417	46.2		31.4	l	15.3	l	26.6	l	7.2	l	22.6	l	3.6		12.2	l	6	0
IL00-8061	44.1	l	29.8	l	15.6	l	14.4	l	8.0	l	21.4	l	3.6		14.7		6	0
IL01-11445	46.5		34.6	l	16.6	l	19.8	l	4.1	l	25.9	l	4.6		13.4	l	6	0
MO050194	48.7		31.0	l	17.0	l	27.1	l	13.2	l	30.4	l	5.6		11.9	l	6	0
MO050207	47.3		31.5	l	17.2	l	26.3	l	5.9	l	29.9	l	6.7		7.3	l	6	0
P.0172A1-12	54.0		36.8	l	21.3		15.8	l	12.6	l	31.1	l	2.5	l	12.5	l	6	0
KY97c-0304-26-10	63.0	h	45.9	h	23.5	h	48.4	h	23.9		47.5	h	6.7		56.1	h	0	6
MSU Line E2041	66.7	h	42.1	h	25.7	h	40.5	h	26.3		46.4	h	9.8	h	39.1		0	6
NY94022-9093	59.4	h	52.6	h	28.3	h	52.5	h	26.3		48.4	h	13.2	h	44.4		0	6
KY97c-0388-5-2	67.5	h	46.7	h	30.4	h	34.1		33.2	h	46.9	h	7.1		58.6	h	0	6
PIONEER 2545	67.4	h	51.5	h	31.9	h	52.5	h	44.0	h	57.9	h	10.4	h	38.2		0	7
AVERAGE	52.4		35.9		18.7		29.4		15.3		32.5		5.7		24.9			
n	12		13		13		3		4.0		4		7		3			
LSD	12.5		14.4		8.5		16.6		15.9		12.7		3.5		10.1			
R2	0.8		0.5		0.8		0.9		0.5		0.9		0.8		0.6			
CV	29.0		58.1		58.1		34.5		73.6		27.8		50.2		62.1			

Table 10. Best (top of table) and worst (bottom of table) entries from the 2006 PNUWWSN.

Name	INC		SEV		IND		KR		PSS		ISK		DON		GHSEV		# l	# h
TRUMAN	42.5	l	21.1	l	7.1	l	6.5	l	4.8	l	19.9	l	2.2	l	13.7	l	8	0
IL02-7735	40.9	l	24.5	l	9.4	l	5.0	l	1.9	l	13.6	l	2.3	l	39.8	l	8	0
KY98c-1164-04	44.3	l	24.3	l	11.1	l	22.5	lh	3.2	l	23.6	l	5.6	l	13.5	l	8	1
VA05W-673	52.3	l	25.3	l	12.5	l	7.0	l	4.5	l	17.5	l	2.8	l	2.9	l	8	0
P.011050A1-13	53.3	lh	23.8	l	13.1	l	11.0	l	5.0	l	17.5	l	3.9	l	12.9	l	8	1
P.011034A1-3	48.2	l	30.3	l	13.4	l	24.0	lh	4.9	l	21.1	l	3.2	l	36.4	l	8	1
IL02-18146	45.2	l	26.1	l	13.5	l	7.5	l	4.6	l	15.5	l	1.7	l	18.0	l	8	0
IL00-8641	51.6	l	23.8	l	13.7	l	8.0	l	8.6	l	18.6	l	4.3	l	24.6	l	8	0
ERNIE	50.3	l	23.0	l	14.6	l	12.5	l	3.4	l	20.3	l	5.2	l	26.5	l	8	0
RCAT TF174/1c	42.5	l	20.4	l	9.1	l	10.5	l	21.3		22.6	l	4.8	l	8.1	l	7	0
RCAT Akos2290	50.5	l	23.5	l	10.1	l	24.0	lh	23.8	h	27.7	lh	4.4	l	9.1	l	7	3
OH02-5512	56.5	h	23.0	l	13.1	l	16.5	l	8.3	l	22.2	l	3.4	l	12.0	l	7	1
IL01-16170	51.3	l	36.7	h	13.7	l	8.5	l	7.2	l	21.3	l	1.9	l	7.7	l	7	1
VA05W-517	52.1	l	23.4	l	14.5	l	20.0	l	2.8	l	22.8	l	3.0	l	47.3	h	7	1
FREEDOM	54.3	lh	34.5	lh	14.8	l	24.0	lh	7.2	l	29.2	h	4.5	l	14.4	l	7	4
VA05W-681	56.0	h	26.6	l	15.0	l	13.5	l	4.5	l	22.2	l	3.0	l	5.3	l	7	1
P.011099A1-2	51.7	l	31.6	l	15.9		17.5	l	2.6	l	22.7	l	3.0	l	26.5	l	7	0
IL02-19463	52.5	l	30.1	l	17.3		18.5	l	4.1	l	28.5	lh	4.7	l	32.0	l	7	1
KY98c-1169-06	57.0	h	22.4	l	13.2	l	21.0	l	3.4	l	24.0	l	7.4	h	32.6	l	6	2
P.011035A1-71	55.3	h	27.9	l	15.7		22.5	lh	9.9	l	22.2	l	4.1	l	26.1	l	6	2
OH01-7653	57.5	h	43.1	h	18.9		35.5	h	8.0	l	30.2	h	6.5	h	58.1	h	1	6
OH02-15978	56.3	h	35.1	lh	19.8	h	28.0	lh	13.7	l	30.5	h	5.8	l	47.7	h	4	6
VA05W-510	61.5	h	33.4	lh	19.9	h	24.5	lh	9.8	l	28.6	lh	3.2	l	48.6	h	5	6
M02*2518	63.7	h	32.9	lh	19.9	h	26.0	lh	7.1	l	31.7	h	6.8	h	17.8	l	4	6
RCAT F13	63.2	h	29.4	l	20.1	h	40.0	h	38.5	h	43.2	h	7.3	h	23.0	l	2	6
MSULine E1009	62.9	h	38.6	h	21.7	h	36.0	h	7.7	l	33.2	h	6.4	h	18.1	l	2	6
M00-3904-9	62.7	h	39.6	h	23.3	h	33.5	h	4.8	l	32.9	h	7.2	h	34.2	l	2	6
RCAT 32/35B	66.9	h	39.6	h	25.4	h	26.5	lh	8.9	l	30.6	h	6.4	h	35.2	l	3	6
KY98c-1305-02	66.3	h	43.7	h	26.8	h	40.0	h	10.0	l	38.3	h	6.9	h	35.3	l	2	6
KY98c-1470-02	61.1	h	42.4	h	21.4	h	36.5	h	15.5	l	38.3	h	6.4	h	60.4	h	1	7
M02-2152	56.1	h	39.0	h	21.6	h	40.5	h	12.1	l	35.5	h	7.6	h	60.2	h	1	7
OH776	58.6	h	46.9	h	24.0	h	36.5	h	7.1	l	33.1	h	10.7	h	64.8	h	1	7
PIONEER 2545	62.8	h	46.8	h	27.7	h	46.5	h	15.4	l	38.8	h	8.9	h	58.4	h	1	7
AVERAGE	54.8		31.3		16.7		22.7		8.9		26.6		5.0		29.4			
n	8		8		9		2		2		3		4		2			
LSD	13.6		14.8		7.9		24.0		15.5		15.5		4.3		37.1			
R2	0.8		0.5		0.7		0.8		0.7		0.9		0.7		0.7			
CV	24.4		47.0		49.4		52.2		88.2		35.2		59.6		58.9			

Table 11. Incidence (INC, %) data from 2006 NUWWSN.

Name	ALL	ILURB	INBRO	INWLA	KYLEX	MDSAL	MIELA	MOCOL	NEMEA	NYITH	OHWOO	ONRID	VABLA
ERNIE	53.7	43.3	18.3	7.5	32.2	75.0	52.5	83.3	100.0	17.0	43.3	91.7	80.0
TRUMAN	33.6 l	76.7	0.0	3.0	33.5	25.0	15.0	62.9	99.0	12.6	0.0	48.3	26.7
FREEDOM	55.0	68.3	14.9	6.5	60.0	65.0	30.0	95.0	94.0	30.9	21.7	73.3	100.0
PIONEER 2545	67.4 h	95.0	19.8	30.0	50.0	95.0	62.5	61.4	98.0	48.5	48.3	100.0	100.0
IL00-8061	44.1 l	46.7	4.6	5.5	19.0	60.0	30.0	80.0	100.0	12.2	20.0	75.0	76.7
IL00-8109	53.8	43.3	8.4	11.5	50.8	55.0	55.0	67.6	100.0	16.0	58.3	96.7	83.3
IL00-8530	55.3	35.0	15.7	6.5	41.1	90.0	52.5	67.4	99.0	20.1	70.0	65.9	100.0
IL01-11445	46.5	70.0	10.0	6.5	18.9	65.0	35.0	80.0	100.0	17.8	11.7	73.4	70.0
IL01-11934	52.7	86.7	6.1	12.5	19.1	55.0	40.0	88.3	99.0	22.5	28.3	88.4	86.7
MSU Line E0001	47.5	73.3	8.7	6.5	71.8	42.5	22.5	64.8	71.0	14.3	80.0	68.3	46.7
MSU Line E2017	53.3	78.3	10.2	3.0	71.2	40.0	30.0	65.2	99.0	11.0	93.3	81.7	56.7
MSU Line E2041	66.7 h	76.7	19.0	35.0	45.9	90.0	57.5	93.3	93.0	47.3	63.3	79.2	100.0
MSU Line E2042	36.8 l	36.7	8.3	2.0	50.2	7.5	25.0	88.3	77.0	6.8	75.0	38.3	26.7
MV 6-82	65.4 h	81.7	15.7	15.0	35.7	87.5	45.0	86.7	99.0	41.8	83.3	93.3	100.0
NE02465	60.4 h	80.0	27.8	25.0	53.5	75.0	57.5	85.0	94.0	21.5	46.7	68.3	90.0
NE02584	57.6	95.0	6.4	45.0	18.2	85.0	45.0	86.7	73.0	33.8	46.7	56.7	100.0
NE03490	53.6	80.0	10.3	27.5	33.4	55.0	42.5	93.3	77.0	17.2	40.0	69.9	96.7
NH01046	47.9	63.3	4.3	17.5	46.1	70.0	37.5	67.1	89.0	27.2	18.3	48.4	86.7
NI02425	57.5	76.7	12.2	35.0	26.7	85.0	35.0	63.4	87.0	29.1	46.7	93.3	100.0
OH02-12678	49.8	85.0	8.8	10.0	18.1	30.0	27.5	83.3	98.0	25.3	28.3	90.0	93.3
OH02-12686	45.8 l	60.0	12.5	3.0	44.7	15.0	22.5	63.7	97.0	36.1	78.3	56.7	60.0
OH02-13567	48.9	66.7	3.8	12.5	56.2	32.5	35.0	98.3	100.0	21.5	3.3	73.4	83.3
OH02-7217	45.2 l	53.3	0.0	13.0	27.4	35.0	32.5	95.0	87.0	27.8	0.0	81.7	90.0
OH904	36.9 l	20.0	0.0	1.5	26.3	55.0	32.5	88.3	91.0	5.1	5.0	75.0	43.3
P.0128A1-36	45.2 l	25.0	0.0	3.5	47.1	37.5	52.5	91.7	94.0	11.1	35.0	65.0	80.0
P.0172A1-12	54.0	56.7	7.2	10.0	35.8	80.0	62.5	90.0	93.0	11.7	51.7	70.0	80.0
P.0175A1-44	54.5	95.0	6.4	2.5	36.0	60.0	27.5	90.0	93.0	21.8	50.0	75.0	96.7
P.01931A1-5	46.4	60.0	3.5	3.5	26.0	30.0	32.5	88.3	91.0	15.5	31.7	85.0	90.0
P.01946A1-16	52.3	76.7	0.0	3.5	21.5	80.0	52.5	62.4	100.0	17.3	33.3	87.5	93.3
RCAT 202D/ 1	61.7 h	91.7	8.5	35.0	35.2	70.0	55.0	85.0	96.0	27.0	60.0	76.7	100.0
RCAT 32/157	49.9	70.0	4.0	10.0	44.1	65.0	45.0	93.3	87.0	15.3	30.0	55.0	80.0
RCAT Akos 2234	46.8	70.0	15.0	2.0	46.6	22.5	30.0	68.0	100.0	15.6	76.7	61.7	53.3
RCAT TF 203/2	45.2 l	63.3	4.5	2.5	56.1	30.0	42.5	88.3	100.0	10.5	41.7	66.7	36.7
RCAT19/4c	47.0	78.3	7.3	2.0	43.3	30.0	27.5	68.0	88.0	18.0	90.0	61.7	50.0
VA04W-563	50.8	50.0	10.4	2.5	28.0	40.0	30.0	85.0	100.0	22.4	63.3	84.2	93.3
VA04W-592	52.8	73.3	0.0	6.5	22.1	70.0	45.0	57.9	98.0	22.9	48.3	96.7	93.3
VA05W-417	46.2	56.7	2.4	10.0	10.0	35.0	55.0	83.3	99.0	31.1	50.0	68.3	53.3
VA05W-421	49.2	83.3	5.6	10.0	15.0	50.0	55.0	63.3	93.0	33.6	53.3	61.7	66.7
VA05W-452	63.1 h	95.0	20.1	17.5	19.6	85.0	42.5	88.3	97.0	38.3	76.7	80.8	96.7
M01-4377	57.0	83.3	6.8	17.5	23.5	75.0	45.0	85.0	100.0	28.1	21.7	98.3	100.0
COKER 9553	64.5 h	95.0	21.5	17.5	17.0	95.0	50.0	66.7	100.0	30.8	80.0	100.0	100.0
KY97c-0554-4-6	64.2 h	76.7	25.2	22.5	39.3	85.0	62.5	81.7	91.0	36.1	53.3	96.7	100.0
KY97c-0540-1-2	67.6 h	96.7	45.6	22.5	54.3	80.0	50.0	91.7	84.0	34.9	78.3	93.3	80.0
KY97c-0388-5-2	67.5 h	78.3	31.3	32.5	46.3	90.0	55.0	88.3	99.0	25.5	83.3	80.0	100.0
KY97c-0304-26-10	63.0 h	88.3	8.0	45.0	24.7	85.0	42.5	83.3	97.0	31.6	81.7	81.7	86.7
KY97c-0277-1-8	64.9 h	98.3	20.5	35.0	36.9	90.0	45.0	85.0	91.0	33.9	60.0	83.4	100.0
KS03HW12-6-5	56.5	65.0	5.4	20.0	11.3	80.0	45.0	95.0	91.0	29.0	58.3	88.3	90.0
KS970085-9-15	70.3 h	93.3	15.7	45.0	35.1	85.0	60.0	85.0	100.0	43.1	88.3	93.3	100.0
MO050101	54.9	95.0	8.3	5.0	34.1	70.0	40.0	95.0	99.0	25.9	15.0	85.0	86.7
MO050143	45.2 l	56.7	13.3	6.0	2.0	50.0	32.5	66.2	95.0	21.9	43.3	75.8	80.0
MO050132	45.5 l	68.3	6.0	8.0	5.9	75.0	30.0	60.3	87.0	20.6	16.7	88.3	80.0
MO050194	48.7	70.0	4.8	6.5	19.4	75.0	45.0	63.4	99.0	28.3	13.3	73.3	86.7
MO050207	47.3	63.3	0.8	5.0	12.5	70.0	25.0	85.0	100.0	21.2	8.3	83.3	93.3
NY93285-9161	39.7 l	56.7	0.0	3.0	34.1	40.0	35.0	66.7	59.0	4.9	100.0	46.7	30.0
NY92237-1-sp-9173	43.0 l	83.3	6.4	3.0	11.5	45.0	15.0	86.7	99.0	17.7	23.3	61.7	63.3
NY94022-9093	59.4 h	90.0		8.0	37.1	75.0	35.0	63.0	88.0	27.6	100.0	91.7	80.0
NY93285-9147	40.3 l	73.3		6.5	35.0	17.5	25.0	86.7	66.0	11.3	98.3	30.0	36.7
NY93285-9179	39.3 l	50.0		4.5	28.9	30.0	27.5	66.0	83.0	8.2	100.0	43.3	33.3
AVERAGE	52.4	71.0	10.2	13.4	33.5	60.1	40.3	79.5	92.7	23.4	50.4	75.5	79.1
LSD	12.5	28.3	44.6	8.2	22.5	28.8	13.0	15.6	17.0		31.6	29.1	28.0

Table 12. Severity (SEV, %) data from 2006 NUWWSN.

Name	ALL	ILURB	INBRO	INWLA	KYLEX	MDSAL	MIELA	MOCOL	NEMEA	NYITH	OHWOO	ONRID	ROMAN	VABLA
ERNIE	30.4 l	43.7	37.5	18.1	13.1	30.0	40.0	23.6	91.0	0.0	8.8	23.5	35.2	30.3
TRUMAN	24.2 l	52.9	0.0	37.2	10.8	7.5	17.5	7.2	92.0	0.1	0.0	8.1	15.5	11.7
FREEDOM	32.7 l	68.5	60.0	11.7	27.7	32.5	27.5	10.6	49.0	0.3	4.5	12.3	32.4	34.7
PIONEER 2545	51.5 h	73.6	95.0	54.2	18.6	70.0	50.0	30.6	54.0	4.0	14.1	48.9	58.1	44.0
IL00-8061	29.8 l	44.1	15.0	17.5	11.7	17.5	27.5	16.7	89.0	0.4	3.9	19.5	45.4	24.7
IL00-8109	37.6	52.1	50.0	34.2	14.2	22.5	47.5	12.4	95.0	0.6	7.1	30.5	48.9	19.3
IL00-8530	37.2	33.4	35.0	21.7	12.1	42.5	45.0	14.4	96.0	0.2	12.4	38.5	42.6	35.3
IL01-11445	34.6 l	50.0	75.0	29.2	7.2	35.0	27.5	16.2	78.0	0.9	5.5	13.9	36.5	21.3
IL01-11934	32.4 l	43.5	35.0	32.4	7.5	22.5	42.5	12.6	81.0	0.2	10.3	20.8	30.7	28.3
MSU Line E0001	35.7 l	75.6	80.0	64.6	28.5	15.0	35.0	13.2	26.0	0.8	12.1	10	33.3	15.7
MSU Line E2017	38.9 h	67.9	65.0	69.2	13.5	15.0	40.0	6.5	78.0	1.6	22.7	19.4	40.5	13.0
MSU Line E2041	42.1 h	66.5	50.0	38.3	16.8	60.0	42.5	21.6	63.0	1.8	17.4	31.4	45.9	38.3
MSU Line E2042	33.6 l	61.6	85.0	35.8	15.4	5.0	22.5	9.6	58.0	0.3	20.7	3.5	57.7	7.7
MV 6-82	52.0 h	54.7	65.0	58.3	23.3	60.0	47.5	21.5	97.0	10.5	26.5	49.6	65	43.3
NE02465	48.7 h	69.1	92.5	57.5	21.4	40.0	62.5	18.6	77.0	1.9	25.2	11.8	66.3	35.7
NE02584	36.4 l	61.2	35.0	28.3	19.9	45.0	37.5	10.4	44.0	2.9	8.3	10.4	61.4	54.7
NE03490	35.8 l	60.7	25.0	80.6	27.1	12.5	42.5	12.6	53.0	1.8	10.9	5.2	53.4	26.0
NH01046	39.1 h	81.0	45.0	70.4	17.3	35.0	35.0	11.2	63.0	2.1	5.2	9.2	56.3	24.0
NI02425	44.8 h	73.5	85.0	35.8	14.9	47.5	37.5	17.6	70.0	4.7	26.3	26.2	51.1	38.3
OH02-12678	29.9 l	59.3	20.0	26.5	10.8	7.5	27.5	10.5	82.0	1.9	6.9	19.7	34.9	27.7
OH02-12686	34.7 l	60.6	77.5	56.8	14.0	10.0	20.0	8.4	80.0	1.6	14.8	11.2	29.7	12.3
OH02-13567	29.3 l	59.6	55.0	16.7	10.4	12.5	32.5	10.0	67.0	0.1	1.7	17.5	19.9	24.0
OH02-7217	22.6 l	53.2	0.0	29.2	12.5	12.5	27.5	7.9	36.0	0.7	0.0	16	25.5	19.0
OH904	23.5 l	40.2	0.0	9.2	16.9	15.0	32.5	12.3	61.0	0.5	1.7	22.9	24.1	15.0
P.0128A1-36	27.9 l	39.6	0.0	15.9	17.6	17.5	45.0	15.2	100.0	0.1	6.2	13	18.6	19.7
P.0172A1-12	36.8 l	46.4	70.0	12.1	18.1	30.0	60.0	49.3	60.0	0.2	10.0	12.3	29.6	25.7
P.0175A1-44	24.4 l	30.0	12.5	14.2	16.5	22.5	22.5	22.2	58.0	0.0	5.9	11.3	22.9	24.0
P.01931A1-5	28.4 l	43.9	45.0	15.8	9.5	15.0	30.0	21.2	56.0	0.3	5.2	21.3	27.6	23.7
P.01946A1-16	34.2 l	30.2	0.0	16.7	9.7	55.0	50.0	23.3	87.0	0.1	6.7	47.5	42.1	21.7
RCAT 202D/ 1	40.4 h	70.9	100.0	37.9	17.8	42.5	45.0	13.6	46.0	0.6	8.0	10.5	33.8	45.0
RCAT 32/157	35.3 l	53.3	35.0	78.8	16.9	25.0	42.5	12.2	61.0	0.8	7.4	9.5	37.9	24.0
RCAT Akos 2234	36.7 l	64.0	75.0	63.9	8.1	7.5	27.5	7.7	95.0	1.6	15.2	11.2	31.9	14.0
RCAT TF 203/2	33.6 l	46.5	47.5	54.5	19.2	10.0	40.0	7.8	86.0	0.4	6.3	11.6	36.7	16.7
RCAT19/4c	37.4	75.2	47.5	87.9	14.6	12.5	30.0	12.4	60.0	2.0	21.9	14.5	41	12.7
VA04W-563	31.8 l	38.1	40.5	15.0	20.2	15.0	30.0	14.4	84.0	0.0	6.8	46	29.5	19.3
VA04W-592	31.5 l	45.2	0.0	26.7	13.1	35.0	42.5	13.0	83.0	1.1	12.0	24.2	37	22.7
VA05W-417	31.4 l	41.8	35.0	32.5	13.2	15.0	37.5	10.1	95.0	0.9	11.7	9.5	36.1	15.7
VA05W-421	33.0 l	30.0	70.0	17.4	16.0	20.0	37.5	13.4	95.0	1.6	10.4	8.6	41	14.0
VA05W-452	42.0 h	62.3	87.5	19.4	9.1	40.0	32.5	16.6	64.0	4.9	24.1	39.8	55.1	36.0
M01-4377	42.1 h	64.9	85.0	37.5	16.4	40.0	37.5	16.2	95.0	1.0	7.7	30.9	32.3	29.0
COKER 9553	45.7 h	56.1	45.0	60.8	10.8	50.0	47.5	18.7	94.0	2.0	23.2	32.9	48.5	50.7
KY97c-0554-4-6	38.3 h	57.3	70.0	31.9	7.9	32.5	47.5	20.8	65.0	1.3	12.4	27.7	44	25.3
KY97c-0540-1-2	39.4 h	68.2	52.5	29.2	15.1	42.5	37.5	15.0	54.0	6.6	25.8	33.3	56.3	21.7
KY97c-0388-5-2	46.7 h	65.7	27.5	59.2	27.9	65.0	52.5	15.6	95.0	2.3	31.3	22.8	44.9	43.3
KY97c-0304-26-10	45.9 h	74.1	88.5	90.2	31.2	42.5	37.5	18.0	40.0	5.4	19.8	21.2	44.6	30.0
KY97c-0277-1-8	42.2 h	60.7	95.0	25.8	11.2	60.0	37.5	23.1	77.0	0.7	12.6	19.1	36.7	34.7
KS03HW12-6-5	28.8 l	54.5	5.0	29.2	19.1	45.0	30.0	12.2	44.0	1.4	14.9	15.2	23.5	26.3
KS970085-9-15	45.9 h	71.2	71.1	49.2	13.7	45.0	42.5	19.3	85.0	3.0	18.0	38.6	36.8	49.0
MO050101	34.3 l	53.4	62.5	12.5	11.5	32.5	32.5	9.6	98.0	0.5	3.3	24.4	21	30.7
MO050143	26.1 l	37.5	32.5	13.3	19.1	32.5	30.0	12.0	35.0	0.1	7.5	31.7	18.5	15.0
MO050132	29.8 l	34.4	60.0	18.3	12.2	30.0	25.0	9.1	90.0	0.2	4.0	18.3	16.1	15.7
MO050194	31.0 l	43.8	26.7	24.2	12.2	35.0	32.5	10.9	80.0	0.3	6.1	14.2	36.7	26.3
MO050207	31.5 l	62.0	50.0	10.8	8.6	32.5	30.0	15.2	75.0	0.4	6.1	19.5	23.7	22.0
NY93285-9161	35.5 l	69.3	0.0	90.8	14.9	10.0	42.5	8.3	42.0	1.5	53.8	7.5	48.9	18.0
NY92237-1-sp-9173	27.1 l	62.1	2.5	34.0	14.0	12.5	25.0	13.4	68.0	0.7	10.7	10.4	32.8	11.7
NY94022-9093	52.6 h	81.5		92.6	37.9	50.0	40.0	13.2	73.0	5.1	62.0	41.9	48.9	18.3
NY93285-9147	37.2	76.0		86.4	10.6	10.0	37.5	8.9	27.0	0.9	53.4	7.3	45.7	16.0
NY93285-9179	39.3 h	73.1		94.2	12.8	12.5	40.0	10.4	61.0	1.8	48.8	8.3	33.4	8.7
AVERAGE	35.9	56.7	47.7	40.2	15.7	29.6	37.0	14.8	70.8	1.5	14.6	20.6	38.4	25.4
LSD	11.5	22.2	10.9	17.8	8.9	14.4	12.0	9.1	34.0		10.1	19.9		13.8

Table 13. Index (IND, %) data from 2006 NUWWSN.

Name	ALL		ILURB	INBRO	INWLA	KSMAN	KYLEX	MDSAL	MIELA	MOCOL	NEMEA	NYITH	OHWOO	ONRID	VABLA
ERNIE	20.2		19.3	6.9	1.4	20.6	4.2	24.0	22.3	19.6	92.0	0.0	4.1	22.1	26.3
TRUMAN	12.4	l	42.4	0.0	1.1	4.8	3.6	2.5	2.8	5.5	91.0	0.0	0.0	4.5	3.0
FREEDOM	16.4	l	43.8	8.9	0.8	11.6	16.6	22.5	8.5	8.6	46.0	0.1	1.7	9.7	34.7
PIONEER 2545	31.9	h	70.0	18.8	16.3	18.6	9.3	66.5	31.5	29.3	52.0	1.9	7.1	48.9	44.0
IL00-8061	15.6	l	20.4	0.7	1.0	18.5	2.2	9.0	8.3	13.6	90.0	0.1	1.2	17.4	20.3
IL00-8109	19.7		24.8	4.2	3.9	23.6	7.2	12.5	26.0	9.1	95.0	0.1	4.1	30.1	16.0
IL00-8530	22.3		12.3	5.5	1.4	22.4	5.0	38.5	24.0	12.8	96.0	0.0	9.4	26.9	35.3
IL01-11445	16.6	l	36.9	7.5	1.9	19.0	1.4	22.5	9.8	12.2	78.0	0.2	1.0	10.5	15.0
IL01-11934	18.5		37.8	2.1	4.1	25.9	1.4	13.0	17.8	10.0	81.0	0.1	2.3	19.7	25.3
MSU Line E0001	12.3	l	53.8	6.9	4.2	1.8	20.5	7.0	7.5	11.8	20.0	0.1	10.1	8.4	7.7
MSU Line E2017	17.3	l	52.2	6.6	2.1	8.1	9.6	6.5	12.0	4.4	77.0	0.2	22.1	16.6	7.7
MSU Line E2041	25.7	h	51.0	9.5	13.4	15.4	7.7	54.0	24.5	20.1	61.0	0.8	11.3	27.6	38.3
MSU Line E2042	9.5	l	21.1	7.0	0.7	2.3	7.7	0.5	6.0	8.5	49.0	0.0	16.6	1.6	2.3
MV 6-82	31.7	h	47.4	10.2	8.8	28.8	8.3	52.5	21.8	19.1	96.0	4.4	22.6	48.9	43.3
NE02465	26.5	h	55.9	25.7	14.4	26.9	11.4	30.5	36.8	13.8	74.0	0.4	13.4	9.2	32.7
NE02584	19.7		58.1	2.2	12.8	11.4	3.6	39.0	17.5	8.1	35.0	1.0	4.1	8.6	54.7
NE03490	15.6	l	48.4	2.6	22.2	8.9	9.1	7.0	18.3	10.9	42.0	0.3	5.2	2.8	25.7
NH01046	16.6	l	51.4	2.0	12.3	7.8	8.0	24.0	13.3	9.8	59.0	0.6	1.8	5.2	20.3
NI02425	23.8	h	55.7	10.4	12.5	17.4	4.0	40.0	13.3	16.9	61.0	1.4	13.0	25.0	38.3
OH02-12678	16.2	l	50.6	1.8	2.7	7.4	2.0	2.5	7.8	8.0	80.0	0.5	3.6	18.3	25.7
OH02-12686	13.5	l	36.3	9.7	1.7	3.5	6.3	2.0	5.3	5.4	78.0	0.6	12.7	7.5	7.0
OH02-13567	14.2	l	40.1	2.1	2.1	7.0	5.9	4.0	11.5	7.5	67.0	0.0	0.2	15.6	21.3
OH02-7217	10.2	l	35.5	0.0	3.8	5.6	3.4	4.5	9.0	5.9	34.0	0.2	0.0	14.3	17.0
OH904	11.3	l	7.6	0.0	0.1	18.3	4.5	9.5	12.3	9.9	58.0	0.0	0.3	20.1	6.0
P.0128A1-36	16.2	l	9.6	0.0	0.6	25.5	8.3	6.5	24.5	12.6	95.0	0.0	2.5	8.7	17.0
P.0172A1-12	21.3		26.7	5.1	1.2	30.0	6.5	24.0	38.3	48.7	57.0	0.0	8.4	9.2	22.0
P.0175A1-44	14.1	l	28.6	0.8	0.4	15.4	5.9	13.5	6.8	21.2	56.0	0.0	3.0	8.5	23.0
P.01931A1-5	13.9	l	25.2	1.6	0.6	20.9	2.5	5.0	10.3	19.2	53.0	0.0	1.7	19.0	22.0
P.01946A1-16	22.5		23.3	0.0	0.6	26.3	2.1	43.5	26.3	21.8	88.0	0.0	2.3	37.5	21.0
RCAT 202D/ 1	21.3		65.1	8.5	13.3	13.1	6.3	30.5	25.3	12.5	44.0	0.2	5.1	8.5	45.0
RCAT 32/157	14.7	l	37.0	1.4	7.9	5.0	7.5	17.5	20.3	11.1	55.0	0.1	3.3	5.2	20.0
RCAT Akos 2234	15.9	l	46.1	11.3	1.3	4.1	3.8	2.0	8.3	7.1	95.0	0.3	10.9	8.8	8.0
RCAT TF 203/2	14.9	l	30.0	2.2	1.4	15.9	10.8	3.0	17.0	6.7	87.0	0.0	2.9	9.5	7.0
RCAT19/4c	14.8	l	58.5	3.5	1.8	4.3	6.3	4.0	8.5	11.5	57.0	0.4	20.0	10.4	6.7
VA04W-563	16.5	l	19.4	4.2	0.4	14.0	5.7	6.0	9.0	12.9	85.0	0.0	4.3	35.3	18.3
VA04W-592	18.2		33.0	0.0	1.7	11.3	2.9	25.5	20.3	10.1	81.0	0.3	5.8	23.6	21.0
VA05W-417	15.3	l	21.7	0.8	3.3	19.6	1.3	5.5	21.8	8.6	94.0	0.3	6.6	6.9	8.3
VA05W-421	15.6	l	25.2	3.9	1.7	17.4	2.4	10.0	22.5	11.2	88.0	0.5	5.9	5.4	9.0
VA05W-452	23.8	h	59.1	17.6	3.4	14.9	1.8	34.5	14.3	14.9	64.0	1.9	19.2	28.7	34.7
M01-4377	22.9		53.7	5.8	6.6	10.1	3.9	30.0	17.5	14.0	95.0	0.3	1.7	30.6	29.0
COKER 9553	29.7	h	53.5	9.7	10.7	25.6	1.8	47.5	23.8	15.3	95.0	0.6	19.0	32.9	50.7
KY97c-0554-4-6	22.0		45.4	17.6	7.2	14.4	3.1	27.5	31.5	19.3	61.0	0.5	6.3	27.2	25.3
KY97c-0540-1-2	23.6	h	66.1	23.9	6.6	12.1	8.2	34.0	19.0	13.5	50.0	2.3	20.2	32.7	18.3
KY97c-0388-5-2	30.4	h	52.7	8.6	19.2	12.8	12.9	58.5	30.0	13.3	94.0	0.6	28.4	21.3	43.3
KY97c-0304-26-10	23.5	h	65.8	7.1	40.6	12.5	7.7	36.5	16.3	16.6	39.0	1.7	16.3	18.4	27.0
KY97c-0277-1-8	25.8	h	59.6	19.5	9.0	17.5	4.1	54.0	17.0	22.1	73.0	0.3	7.8	17.4	34.7
KS03HW12-6-5	16.3	l	37.7	0.3	5.8	16.1	2.2	36.0	14.3	10.3	41.0	0.4	9.0	14.0	25.0
KS970085-9-15	30.7	h	66.5	11.2	22.1	23.0	4.8	38.5	26.5	18.3	85.0	1.3	16.1	37.5	49.0
MO050101	21.2		51.6	5.2	0.6	21.1	3.9	23.0	13.3	7.2	98.0	0.1	0.8	22.2	28.0
MO050143	11.4	l	19.8	4.3	0.8	16.4	0.4	16.5	10.0	8.1	34.0	0.0	3.6	20.0	13.7
MO050132	15.4	l	23.8	3.6	1.5	21.9	0.7	22.5	7.8	6.9	80.0	0.0	1.1	16.8	13.3
MO050194	17.0	l	31.5	1.3	1.6	20.1	2.4	26.5	14.5	8.5	79.0	0.1	0.8	11.1	23.7
MO050207	17.2	l	39.3	0.4	0.5	23.0	1.1	23.0	7.5	13.5	76.0	0.1	0.6	17.6	21.3
NY93285-9161	12.5	l	40.0	0.0	2.7	1.4	5.1	4.0	14.8	6.8	25.0	0.1	53.8	4.3	4.3
NY92237-1-sp-9173	12.7	l	52.0	0.2	1.0	3.6	1.6	6.0	4.0	10.3	68.0	0.1	3.5	6.4	8.0
NY94022-9093	28.3	h	73.4		7.4	9.0	14.1	38.0	14.8	11.5	66.0	1.4	62.0	39.1	15.7
NY93285-9147	12.6	l	54.4		5.6	2.1	3.7	2.0	9.5	6.9	18.0	0.1	52.7	2.2	6.3
NY93285-9179	14.1	l	37.2		4.2	2.5	3.7	5.5	11.0	9.2	49.0	0.1	48.8	4.4	6.3
AVERAGE	18.7		41.5	6.0	5.8	14.5	5.6	21.6	16.3	12.8	67.9	0.5	10.7	17.6	22.3
LSD	8.5		23.6	7.9	3.6	5.6	6.9	14.2	9.8	9.5	39.0		10.1	18.1	15.5

Table 14. Kernel Rating (KR, %) and Percent Scabby Seed (PSS, %) data from 2006 NUWWSN.

	KR				PSS				
Name	ALL	ILURB	KSMAN	MDSAL	ALL	KYLEX	KYPRI	MOCOL	ROMAN
ERNIE	19.1 l	17.0	2.3	38.0	7.4 l	7.4	1.5	5	15.8
TRUMAN	21.5 l	27.0	0.5	37.0	5.2 l	10.7	1.9	3	5.4
FREEDOM	35.7	40.0	5.0	62.0	17.8 l	20.2	20.3	12	18.7
PIONEER 2545	52.5 h	77.0	11.0	69.5	44.0 h	62.5	23.9	40	49.4
IL00-8061	14.4 l	12.0	0.8	30.5	8.0 l	8.5	6.3	3	14.1
IL00-8109	22.8 l	27.0	0.5	41.0	16.1 l	41.6	0.3	3	19.4
IL00-8530	15.8 l	17.0	0.3	30.0	8.0 l	9.3	0.8	10	12
IL01-11445	19.8 l	13.0	1.0	45.5	4.1 l	2.6	0.2	3	10.5
IL01-11934	20.3 l	20.0	0.5	40.5	13.3 l	4.1	34.5	5	9.5
MSU Line E0001	36.3 h	53.0	1.8	54.0	12.6 l	10	19.9	3	17.6
MSU Line E2017	35.3	60.0	3.3	42.5	11.0 l	6.8	15	2	20.1
MSU Line E2041	40.5 h	70.0	1.0	50.5	26.3	54.5	6.4	8	36.1
MSU Line E2042	24.5 l	27.0	1.0	45.5	14.6 l	6.8	29.7	5	17
MV 6-82	36.6 h	53.0	4.3	52.5	17.5 l	12.4	1	10	46.5
NE02465	34.6	53.0	0.8	50.0	27.1	63.7	5.8	3	35.9
NE02584	47.1 h	60.0	7.3	74.0	29.6 h	30.8	10.3	30	47.2
NE03490	34.0	40.0	4.0	58.0	23.3	36.3	12.2	5	39.6
NH01046	23.5 l	27.0	7.0	36.5	31.3 h	28.1	32.2	8	57
NI02425	44.6 h	70.0	12.3	51.5	33.3 h	57.5	7.5	10	58.3
OH02-12678	22.7 l	27.0	3.0	38.0	10.1 l	6.9	15.8	8	9.6
OH02-12686	24.8 l	40.0	2.8	31.5	8.5 l	19	2.3	2	10.7
OH02-13567	27.3 l	37.0	1.5	43.5	4.5 l	8.3	2.5	3	4.3
OH02-7217	27.2 l	20.0	1.5	60.0	7.0 l	4.7	9.2	5	9.2
OH904	14.1 l	12.0	0.8	29.5	12.9 l	15.9	17.7	10	8
P.0128A1-36	13.2 l	10.0	1.5	28.0	6.6 l	1	6.5	10	8.8
P.0172A1-12	15.8 l	27.0	1.0	19.5	12.6 l	11.9	19	5	14.7
P.0175A1-44	28.0 l	27.0	3.5	53.5	13.7 l	14.3	10.9	15	14.5
P.01931A1-5	11.8 l	13.0	0.8	21.5	4.9 l	6.3	1.8	5	6.5
P.01946A1-16	25.1 l	30.0	1.8	43.5	12.7 l	12.2	14.6	5	18.9
RCAT 202D/ 1	45.8 h	60.0	11.3	66.0	15.0 l	26.7	2.5	10	20.8
RCAT 32/157	23.6 l	20.0	0.8	50.0	25.0	28.3	16.7	3	51.9
RCAT Akos 2234	29.9	47.0	2.8	40.0	20.0 l	21.9	37.8	5	15.5
RCAT TF 203/2	28.3 l	23.0	2.8	59.0	8.2 l	13	4.8	5	9.9
RCAT19/4c	30.0	40.0	10.5	39.5	24.8	26.7	51	5	16.6
VA04W-563	13.4 l	17.0	1.3	22.0	4.4 l	6	1.5	5	5.3
VA04W-592	26.1 l	33.0	2.8	42.5	9.1 l	2	3	12	19.5
VA05W-417	26.6 l	33.0	6.3	40.5	7.2 l	7.5	0.9	8	12.5
VA05W-421	26.6 l	33.0	0.8	46.0	10.3 l	9.1	0.7	3	28.4
VA05W-452	33.4	47.0	2.8	50.5	12.7 l	9.4	1.9	10	29.6
M01-4377	31.2	37.0	1.5	55.0	5.4 l	4.7	4.4	5	7.5
COKER 9553	44.8 h	70.0	3.3	61.0	14.8 l	13.5	1.5	12	32.1
KY97c-0554-4-6	23.7 l	30.0	1.0	40.0	16.6 l	22.3	19.5	5	19.9
KY97c-0540-1-2	38.1 h	50.0	4.8	59.5	20.3	9	2.5	20	49.9
KY97c-0388-5-2	34.1	50.0	7.8	44.5	33.2 h	37.3	4.3	40	51.3
KY97c-0304-26-10	48.4 h	73.0	5.3	67.0	23.9	23.7	5.3	25	41.6
KY97c-0277-1-8	36.3 h	53.0	5.0	51.0	24.4	27.8	3.5	40	26.2
KS03HW12-6-5	33.1	30.0	3.3	66.0	20.3	36.1	1.7	15	28.4
KS970085-9-15	41.0 h	47.0	4.0	72.0	23.5	37.5	5.1	10	41.5
MO050101	23.4 l	33.0	1.3	36.0	9.4 l	3.2	7.6	20	7
MO050143	19.0 l	13.0	1.5	42.5	9.1 l	19.8	3.8	5	7.8
MO050132	20.7 l	20.0	0.5	41.5	5.0 l	6.9	4.7	3	5.4
MO050194	27.1 l	27.0	4.8	49.5	13.2 l	14.4	14.9	15	8.7
MO050207	26.3 l	30.0	0.8	48.0	5.9 l	5.5	1.9	10	6.1
NY93285-9161	29.7	37.0	1.0	51.0	22.3	10.7	40.2	3	35.4
NY92237-1-sp-9173	26.2 l	27.0	1.0	50.5	6.3 l	0.6	10.9	3	10.9
NY94022-9093	52.5 h	70.0	6.5	81.0	26.3	32.9	16.7	10	45.7
NY93285-9147	37.6 h	50.0	1.3	61.5	16.6 l	18.5	22.4	3	22.5
NY93285-9179	39.2 h	60.0	1.0	56.5	12.6 l	4.7	18.1	8	19.5
AVERAGE	29.4	37.3	3.1	47.7	15.3	18.2	11.0	9.6	22.6
LSD	16.6	38.0	4.4	21.3	15.9	21.3	10.6		

Table 15. ISK (%) data from 2006 NUWWSN.

Name	ALL		ILURB	KYLEX	MDSAL	MOCOL
ERNIE	25.4	l	32.8	16.5	46.7	5.7
TRUMAN	24.1	l	49.5	17.6	24.6	4.6
FREEDOM	38.4		57.0	34.4	54.1	8.0
PIONEER 2545	57.9	h	81.3	45.6	77.3	27.6
IL00-8061	21.4	l	31.9	12.6	35.5	5.6
IL00-8109	29.9	l	39.3	36.1	39.7	4.4
IL00-8530	27.8	l	27.2	19.7	51.8	12.4
IL01-11445	25.9	l	41.3	8.9	48.2	5.3
IL01-11934	25.4	l	47.0	9.6	39.5	5.4
MSU Line E0001	36.1		66.0	34.1	38.9	5.4
MSU Line E2017	33.1		67.9	28.1	33.5	2.7
MSU Line E2041	46.4	h	71.0	40.6	65.2	8.8
MSU Line E2042	22.3	l	40.1	22.4	22.0	4.6
MV 6-82	40.8		62.3	22.7	65.3	13.0
NE02465	43.6		66.0	47.9	54.5	5.9
NE02584	44.6		70.9	23.7	68.6	15.1
NE03490	35.0		58.2	32.7	43.5	5.7
NH01046	34.3		54.0	30.2	46.1	6.9
NI02425	44.0		73.1	35.5	60.4	7.2
OH02-12678	25.1	l	54.0	11.4	26.5	8.4
OH02-12686	25.4	l	52.2	25.2	20.1	3.9
OH02-13567	27.7	l	52.6	23.3	30.9	3.9
OH02-7217	24.3	l	40.0	13.9	38.3	5.2
OH904	20.8	l	22.7	19.3	32.8	8.4
P.0128A1-36	20.1	l	23.4	19.8	27.7	9.3
P.0172A1-12	31.1	l	41.6	20.9	40.8	20.9
P.0175A1-44	32.6		48.2	21.5	46.2	14.4
P.01931A1-5	19.3	l	36.5	13.2	22.1	5.4
P.01946A1-16	30.9	l	44.0	14.3	57.9	7.6
RCAT 202D/ 1	42.5		72.8	26.6	60.2	10.3
RCAT 32/157	31.6	l	45.0	29.6	47.0	4.9
RCAT Akos 2234	28.2	l	58.9	25.2	25.0	3.6
RCAT TF 203/2	27.4	l	42.3	27.8	35.6	4.1
RCAT19/4c	31.0	l	62.1	28.1	28.6	5.2
VA04W-563	20.3	l	33.1	16.8	25.3	5.9
VA04W-592	29.8	l	48.9	11.4	48.5	10.5
VA05W-417	22.6	l	42.9	10.0	31.2	6.4
VA05W-421	25.8	l	47.4	12.9	39.4	3.6
VA05W-452	36.4		65.9	12.4	57.7	9.5
M01-4377	33.8		59.1	13.8	56.5	5.9
COKER 9553	41.4		73.3	13.8	67.9	10.8
KY97c-0554-4-6	33.8		52.2	23.1	51.3	8.8
KY97c-0540-1-2	42.2		69.5	24.4	60.6	14.5
KY97c-0388-5-2	46.9	h	63.2	37.2	64.3	22.8
KY97c-0304-26-10	47.5	h	78.1	26.2	65.1	20.6
KY97c-0277-1-8	46.1	h	69.1	25.5	65.4	24.3
KS03HW12-6-5	36.3		47.8	23.5	63.9	9.9
KS970085-9-15	43.4		68.0	29.6	67.8	8.3
MO050101	32.2		57.9	15.0	45.2	10.7
MO050143	23.7	l	33.6	14.3	41.8	5.0
MO050132	24.4	l	38.8	8.2	48.1	2.4
MO050194	30.4	l	44.8	15.2	52.8	8.9
MO050207	29.9	l	49.6	8.5	50.0	11.4
NY93285-9161	27.5	l	52.5	19.0	35.4	3.2
NY92237-1-sp-9173	26.2	l	54.3	7.9	37.5	5.2
NY94022-9093	48.4	h	79.5	35.7	69.9	8.7
NY93285-9147	30.7	l	64.8	21.1	32.9	4.1
NY93285-9179	29.4	l	60.9	14.4	35.4	7.0
AVERAGE	32.5		53.2	22.1	46.0	8.6
LSD	12.7		17.3			

Table 16. Deoxynivenal (DON, ppm) data from 2006 NUWWSN.

NAME	ALL	ILURB	KSMAN	KYLEX	KYPRI	MDSAL	NEMEA	VABLA
ERNIE	5.5	10.8	2.5	8.7	0.3	19	0.5	2
TRUMAN	4.5	9.8	1.4	6	5.4	13	0.5	0.2
FREEDOM	7.0	11.5	4.2	16	3.1	17	1.3	1.2
PIONEER 2545	10.4 h	13.5	11.3	15.5	8.8	25	0.6	3.2
IL00-8061	3.6	4	1.4	7	2.8	14	0.5	0.5
IL00-8109	3.1 l	6.3	1.6	5.1	0.3	13	0.4	0.4
IL00-8530	4.6	7	1.2	12.3	1.4	13	0.6	1.9
IL01-11445	4.6	6.3	2.6	5.4	1.8	20	0.4	0.5
IL01-11934	3.7	8.8	1.8	5.8	2.2	11	0.5	0.9
MSU Line E0001	7.0	16.3	2.6	8.8	11.8	14	0.4	0.3
MSU Line E2017	6.8	12.8	4.2	5.8	17	10	2.1	0.5
MSU Line E2041	9.8 h	10.5	7.1	23.3	8.5	19	0.4	4.5
MSU Line E2042	4.0	4.8	2.3	6	9.9	9	0.4	0.5
MV 6-82	4.1	7.3	3.5	9	1.1	12	0.4	0.8
NE02465	7.1	15.8	1.2	15.5	2.7	18	0.7	1.1
NE02584	6.5	14	5.2	13.8	5.2	9	0.4	2.9
NE03490	11.0 h	11	5.3	20.3	8.3	29.		2.1
NH01046	7.4	13	5.2	7.8	14	15	0.4	1.1
NI02425	6.4	12.5	4.3	11.3	3.2	15	0.6	2.7
OH02-12678	3.8	7.8	2.3	3.5	2.5	15	0.4	0.4
OH02-12686	4.8	5.3	1.6	2.4	10.5	18	0.6	0.1
OH02-13567	5.8	10.3	2.6	7.8	5	19	0.4	0.4
OH02-7217	7.0	5.5	3.7	5.2	16.5	22	0.5	0.5
OH904	2.5 l	2	0.7	3.3	1.1	15	0.4	0.2
P.0128A1-36	2.8 l	6.3	0.9	3.8	0.9	12	0.6	0.4
P.0172A1-12	2.5 l	7	0.9	4.4	0.8	8	0.4	1
P.0175A1-44	5.1	8.8	2.5	11.3	2.2	15	0.5	0.7
P.01931A1-5	2.5 l	7	1.6	6	1.6	5	0.4	0.6
P.01946A1-16	4.4	9.8	1.9	6.1	0.5	16	0.5	0.9
RCAT 202D/ 1	7.0	11.5	9.5	16.3	3.5	10	0.4	2.8
RCAT 32/157	7.5	7	2.5	19	3.3	22	0.5	3.4
RCAT Akos 2234	4.8	11	1.8	5.8	6	13	0.4	0.5
RCAT TF 203/2	5.4	4.5	3.2	12.5	8.5	13.		0.7
RCAT19/4c	5.0	12	2.4	3.1	5.7	16	0.4	0.2
VA04W-563	2.2 l	4.8	0.9	8	0.7	5	0.5	0.5
VA04W-592	4.7	8.3	2.2	9.5	1.9	15	0.4	0.9
VA05W-417	3.6	6	2	7.5	1.2	12	0.6	0.6
VA05W-421	4.9	8.3	1.8	6.5	2.2	19	0.5	0.7
VA05W-452	5.6	13.3	3	9.5	1.4	16	0.6	0.4
M01-4377	4.7	9.8	2.1	6	1.9	17	0.4	0.5
COKER 9553	8.3	19.8	2	12.8	2.2	23	0.6	2.6
KY97c-0554-4-6	4.2	6	2.3	10.8	0.9	13	0.4	1
KY97c-0540-1-2	6.6	15	4.2	11	2.5	16	0.8	1.7
KY97c-0388-5-2	7.1	12	6	14	2.7	17	0.5	2.4
KY97c-0304-26-10	6.7	11.5	4.7	18.3	2.9	13	0.6	0.9
KY97c-0277-1-8	6.9	10.5	8.2	15.3	1.8	15	0.5	2.4
KS03HW12-6-5	9.8 h	18	4.8	19.8	3.3	25	0.5	2.5
KS970085-9-15	6.6	15.5	4.6	11.5	1.1	17	0.4	1.3
MO050101	5.3	14.5	2	7.3	2	14	0.5	1.5
MO050143	5.1	6.5	2.7	7	5.4	18	0.4	0.6
MO050132	6.5	7.5	2.4	14.5	8.1	16	0.6	1.4
MO050194	5.6	7.3	2.3	8.3	5.5	20	0.5	0.4
MO050207	6.7	13.3	2.3	12.8	4.2	18	0.5	0.8
NY93285-9161	5.0	10.3	1.7	4	6.6	16	1	0.2
NY92237-1-sp-9173	5.6	7	2.8	6.8	5.2	21	0.5	1
NY94022-9093	13.2 h	18	8.2	17.3	10.3	41	0.6	2.1
NY93285-9147	5.1	14.5	1.8	4.3	7.2	12	0.5	0.1
NY93285-9179	5.1	11.8	1.5	3.8	4.4	18	0.4	0.5
AVERAGE	5.7	10.0	3.2	9.7	4.5	16.1	0.5	1.2
LSD	3.5	8.0	2.1	7.3	4.5	8.7	0.4	

Table 17. Greenhouse Severity (GH, %) data from 2006 NUWWSN.

Name	ALL		ILURB	KYLEX	MOCOL
ERNIE	24.3		31.8	0.0	41.0
TRUMAN	3.3	l	3.0	1.5	5.4
FREEDOM	13.3	l	6.0	4.1	29.8
PIONEER 2545	38.2		50.1	0.0	64.4
IL00-8061	14.7		6.9	12.8	24.5
IL00-8109	24.1		11.3	33.3	27.8
IL00-8530	22.0		3.7	34.7	27.7
IL01-11445	13.4	l	6.8	0.0	33.5
IL01-11934	17.5		5.3	6.2	41.0
MSU Line E0001	49.1	h	26.1	75.4	45.7
MSU Line E2017	30.3		44.3	20.5	26.1
MSU Line E2041	39.1		22.9	38.4	56.0
MSU Line E2042	17.9		11.9	0.0	41.9
MV 6-82	51.3	h	44.4	66.7	43.0
NE02465	48.0		71.9	0.0	72.0
NE02584	47.6		35.0	72.4	35.5
NE03490	30.0		14.1	26.5	49.3
NH01046	38.4		36.3	22.7	56.1
NI02425	40.8		53.7	32.6	36.1
OH02-12678	20.3		21.2	17.0	22.6
OH02-12686	10.7	l	20.8	5.1	6.3
OH02-13567	14.6		22.3	5.9	15.7
OH02-7217	19.6		18.2	15.4	25.2
OH904	5.0	l	4.4	1.7	8.9
P.0128A1-36	14.7		4.0	17.2	22.8
P.0172A1-12	12.5	l	9.6	17.1	10.8
P.0175A1-44	3.6	l	3.5	1.5	6.0
P.01931A1-5	11.9	l	10.8	12.7	12.3
P.01946A1-16	7.5	l	4.3	8.3	9.9
RCAT 202D/ 1	22.5		21.6	12.9	32.9
RCAT 32/157	55.0	h	79.3	17.9	67.6
RCAT Akos 2234	21.5		22.9	9.2	32.5
RCAT TF 203/2	15.8		6.6	12.3	28.6
RCAT19/4c	45.5		62.3	27.6	46.5
VA04W-563	10.8	l	10.9	13.1	8.3
VA04W-592	13.3	l	19.0	11.5	9.6
VA05W-417	12.2	l	5.6	2.9	28.1
VA05W-421	19.5		22.9	1.3	34.3
VA05W-452	46.5		46.2	46.0	47.3
M01-4377	12.2	l	9.9	14.0	12.9
COKER 9553	50.5	h	26.8	68.8	56.1
KY97c-0554-4-6	12.5	l	7.6	9.4	20.6
KY97c-0540-1-2	34.6		23.7	18.1	62.1
KY97c-0388-5-2	58.6	h	83.0	32.2	60.6
KY97c-0304-26-10	56.1	h	85.3	19.4	63.6
KY97c-0277-1-8	22.0		9.8	18.2	38.0
KS03HW12-6-5	28.6		32.0	8.3	45.5
KS970085-9-15	24.1		23.6	4.1	44.6
MO050101	9.8	l	3.9	17.8	7.7
MO050143	7.2	l	10.8	2.7	8.0
MO050132	5.0	l	9.6	1.7	3.8
MO050194	11.9	l	10.8	8.9	16.1
MO050207	7.3	l	3.8	13.5	4.7
NY93285-9161	31.2		52.6	4.4	36.6
NY92237-1-sp-9173	22.1		8.7	32.9	24.8
NY94022-9093	44.4		57.6	19.3	56.4
NY93285-9147	27.1		52.8	9.4	19.1
NY93285-9179	30.7		54.7	0.0	37.5
AVERAGE	24.9		25.3	17.4	31.9
LSD	10.1		32.0	0.13	

Table 18. Heading Date (Julian days) data from 2006 NUWWSN.

NAME	ALL		ILURB	INWLA	KSMAN	KYLEX	MDSAL	MIELA	MOCOL	NYITH	OHWOO	ONRID	ROMAN	VABLA
ERNIE	132		131	127	123	120	120	152	124	149	133	144	142	123
TRUMAN	140		139	140	133	132	130	158	136	147	140	148	146	129
FREEDOM	137		141	132	129	124	127	156	129	147	140	146	145	126
PIONEER 2545	135		133	132	128	125	123	154	126	149	140	145	145	126
IL00-8061	135		132	132	124	123	125	155	128	149	137	145	145	125
IL00-8109	133		130	127	123	121	121	152	125	149	132	144	142	124
IL00-8530	132	l	129	128	124	120	120	151	123	148	133	144	142	125
IL01-11445	134		133	133	126	122	125	152	126	148	137	144	142	124
IL01-11934	135		132	133	124	122	123	152	127	149	138	145	145	133
MSU Line E0001	142		146	142	133	134	135	156	138	147	144	149	147	132
MSU Line E2017	142	h	145	142	134	135	135	159	136	149	146	149	145	132
MSU Line E2041	134		133	129	127	123	122	152	125	149	135	146	145	125
MSU Line E2042	144	h	143	145	135	135	139	158	140	152	148	149	147	137
MV 6-82	133		133	126	125	119	118	153	124	147	137	146	145	124
NE02465	134		132	132	124	121	122	153	124	147	137	146	145	123
NE02584	135		134	133	125	124	125	154	129	151	133	146	145	123
NE03490	138		137	135	129	130	128	153	136	146	140	148	145	124
NH01046	138		140	136	131	132	127	155	133	146	140	147	145	125
NI02425	135		136	133	127	123	123	154	127	149	139	146	145	124
OH02-12678	137		137	135	129	127	125	154	129	149	140	146	145	126
OH02-12686	142		144	140	134	134	135	157	138	149	147	148	145	132
OH02-13567	138		138	135	129	129	129	154	129	151	139	146	145	125
OH02-7217	139		138	136	131	131	131	154	133	149	141	147	145	128
OH904	135		137	134	124	123	124	154	127	148	140	141	145	125
P.0128A1-36	132		131	128	124	118	123	151	123	150	132	143	142	124
P.0172A1-12	130	l	128	125	119	116	117	150	121	150	131	143	142	122
P.0175A1-44	134		135	127	125	121	123	157	126	148	133	146	145	125
P.01931A1-5	133		137	127	125	120	118	153	124	149	133	144	145	123
P.01946A1-16	132		132	127	124	121	121	152	123	148	133	143	142	123
RCAT 202D/ 1	135		134	133	125	121	123	153	128	149	137	146	145	125
RCAT 32/157	137		136	133	128	127	125	153	128	152	140	148	145	125
RCAT Akos 2234	141		145	140	132	131	128	155	138	147	147	148	145	130
RCAT TF 203/2	140		142	136	130	130	130	156	136	151	145	147	146	131
RCAT19/4c	141		146	140	134	134	131	155	136	149	146	149	145	131
VA04W-563	133		131	127	124	121	121	153	126	147	132	145	145	124
VA04W-592	134		136	128	128	122	124	152	128	149	133	144	145	125
VA05W-417	134		134	128	125	122	125	152	124	149	137	146	145	125
VA05W-421	134		133	128	124	122	124	152	125	152	137	146	142	124
VA05W-452	135		133	128	125	124	125	152	127	150	137	146	145	125
M01-4377	135		134	129	126	125	126	152	128	150	137	145	145	125
COKER 9553	132		131	125	123	118	123	152	124	150	133	143	145	122
KY97c-0554-4-6	134		137	127	126	121	121	152	125	149	135	146	145	125
KY97c-0540-1-2	135		135	129	125	124	125	153	127	149	141	146	145	125
KY97c-0388-5-2	135		134	129	128	122	122	154	128	149	138	148	145	126
KY97c-0304-26-10	137		137	133	128	127	125	154	129	148	141	146	145	125
KY97c-0277-1-8	135		136	129	128	123	124	154	126	148	137	146	145	125
KS03HW12-6-5	135		132	131	127	121	121	153	127	150	137	146	145	124
KS970085-9-15	132	l	130	125	123	118	121	152	126	150	132	144	142	123
MO050101	135		134	127	126	123	123	153	128	149	137	146	145	125
MO050143	135		133	128	127	122	126	154	129	149	133	146	145	125
MO050132	134		132	127	125	120	123	156	128	150	137	146	145	124
MO050194	135		135	128	126	122	124	155	127	149	137	146	145	125
MO050207	135		136	128	127	124	124	155	128	150	137	146	145	124
NY93285-9161	143	h	146	142	136	135	136	157	137	149	147	149	145	133
NY92237-1-sp-9173	139		138	134	131	128	131	155	130	152	142	148	145	130
NY94022-9093	141		143	141	133	131	129	159	135	149	148	149	145	132
NY93285-9147	143	h	144	141	139	134	137	158	138	149	147	149	145	135
NY93285-9179	143	h	147	142	137	137	133	157	139	148	147	149	145	133
AVERAGE	136		136	132	128	125	125	154	129	149	138	146	145	126
LSD			5.0				5.3		2.5			2.7		1.2

Table 19. Height (inches) data from 2006 NUWWSN.

NAME	ALL	KYLEX	MDSAL	MOCOL	VABLA
ERNIE	34.3	37	33	32	35
TRUMAN	39.8	42	37	39	42
FREEDOM	38.6	42	39	36	39
PIONEER 2545	37.8	40	38	34	40
IL00-8061	38.0	43	36	33	41
IL00-8109	35.9	37	35	34	38
IL00-8530	36.7	40	35	35	38
IL01-11445	37.1	40	34	36	39
IL01-11934	35.9	39	33	34	38
MSU Line E0001	39.0	43	37	36	40
MSU Line E2017	41.2	45	40	40	41
MSU Line E2041	37.8	40	38	36	38
MSU Line E2042	40.8	46	42	36	39
MV 6-82	32.7	35	31	33	33
NE02465	35.7	39	33	33	38
NE02584	36.5	39	35	36	36
NE03490	35.9	39	36	36	34
NH01046	41.2	44	40	39	42
NI02425	35.0	37	34	34	36
OH02-12678	38.7	41	38	37	39
OH02-12686	39.5	44	39	37	39
OH02-13567	40.2	45	38	37	40
OH02-7217	41.0	45	40	37	42
OH904	42.8	44	47	37	44
P.0128A1-36	34.4	38	33	35	32
P.0172A1-12	33.4	36	32	31	35
P.0175A1-44	34.5	37	32	33	36
P.01931A1-5	37.6	38	37	35	41
P.01946A1-16	33.5	36	31	33	34
RCAT 202D/ 1	38.4	40	35	37	41
RCAT 32/157	45.4	45	43	40	53
RCAT Akos 2234	46.9	49	50	40	50
RCAT TF 203/2	46.2	49	51	38	48
RCAT19/4c	46.2	49	47	42	47
VA04W-563	37.2	39	37	35	39
VA04W-592	37.5	40	37	35	39
VA05W-417	34.9	39	33	32	35
VA05W-421	36.0	40	34	35	36
VA05W-452	33.9	36	34	33	33
M01-4377	38.5	41	38	36	40
COKER 9553	35.7	38	35	33	38
KY97c-0554-4-6	37.0	39	37	35	37
KY97c-0540-1-2	35.0	37	35	34	35
KY97c-0388-5-2	36.3	38	37	33	37
KY97c-0304-26-10	39.1	40	40	37	40
KY97c-0277-1-8	36.6	40	34	36	37
KS03HW12-6-5	35.3	36	33	34	38
KS970085-9-15	33.1	36	32	30	35
MO050101	36.9	38	37	35	38
MO050143	37.1	38	38	35	39
MO050132	37.1	38	38	35	38
MO050194	39.9	42	38	37	44
MO050207	36.0	38	35	33	38
NY93285-9161	41.9	45	44	39	41
NY92237-1-sp-9173	43.0	45	42	40	46
NY94022-9093	37.1	40	37	35	37
NY93285-9147	41.2	45	42	37	41
NY93285-9179	41.0	45	39	38	43
AVERAGE	38.0	40	37	35	39
LSD			2.7	5.8	4.4

Table 20. Other trait data from 2006 NUWWSN (HL = head length).

Name	AUDPC for SEV (RO)	Relative Head Wgt (RO, %)	Rachis (MO)	Spread (MO)	HGT (MO, in)	HL (MO)	TW (MO)	Yield (MO)	Pow. Mild. (VA, 0-9)	Str. Rust (AR, %)	TKW (Romania)	100 Seed Wgt (MD)
ERNIE	329	79.5	0.9	5.1	44	8	54.5	90.7	2	66.3	31.6	3.45
TRUMAN	159	87.3	0.3	0.9	77	10	52.8	100.5	2	12.7	31.1	2.71
FREEDOM	339	77.3	0.7	4.4	62	8	49.5	71.9	1	64.3	30.0	2.30
PIONEER 2545	620	55.9	1.0	8.4	67	8	31.8	69.9	1	46.2	23.7	1.93
IL00-8061	491	71.7	0.8	2.9	66	7	49.0	42.6	3	13.2	33.2	3.15
IL00-8109	454	70.5	0.9	3.8	54	8	55.2	88.8	3	25.2	30.6	3.18
IL00-8530	414	69.4	0.4	3.3	68	7	55.4	99.9	2	18.7	33.1	3.09
IL01-11445	356	85.3	0.8	5.3	64	9	57.9	129.1	0	38.7	33.7	2.79
IL01-11934	321	84.3	0.9	6.9	69	9	50.7	50.6	1	39.5	32.7	2.90
MSU Line E0001	360	81.8	1.0	6.6	64	10	47.3	76.8	1	26.5	40.5	1.97
MSU Line E2017	538	81.0	0.9	4.6	80	10	50.7	94.5	4	61.0	34.0	2.93
MSU Line E2041	513	153.6	0.9	7.1	66	7	51.8	63.6	1	46.7	28.1	2.59
MSU Line E2042	592	81.5	0.8	6.2	84	8	47.8	54.1	1	19.8	31.0	2.23
MV 6-82	704	52.6	0.9	4.6	50	6	53.8	60.4	0	10.0	23.5	2.80
NE02465	732	57.9	1.0	7.4	63	6	56.5	102.6	1	19.8	22.6	2.24
NE02584	621	49.3	0.8	3.8	63	6	56.1	82.0	2	15.3	22.9	1.76
NE03490	538	68.3	1.0	8.3	67	8	53.1	94.0	2	1.8	28.1	2.53
NH01046	615	56.2	1.0	7.5	69	5	55.8	94.8	1	3.5	23.5	3.11
NI02425	547	59.8	0.6	4.1	58	6	53.2	114.8	1	3.2	16.8	3.00
OH02-12678	263	83.5	0.7	2.6	68	6	53.2	89.9	0	50.0	33.7	3.30
OH02-12686	374	89.2	0.6	0.9	69	8	53.6	87.2	0	19.0	34.5	2.61
OH02-13567	249	85.4	0.6	2.5	77	8	52.6	99.2	2	56.3	34.7	2.14
OH02-7217	294	86.5	0.9	4.5	80	8	52.9	76.9	2	58.8	36.3	1.95
OH904	232	77.8	0.3	1.5	78	8	44.6	45.3	5	62.3	35.2	3.07
P.0128A1-36	146	90.2	0.6	3.2	59	7	53.8	78.4	1	41.7	35.6	3.77
P.0172A1-12	309	74.6	0.5	1.3	57	7	52.2	61.5	1	64.7	36.0	4.04
P.0175A1-44	220	97.2	0.1	0.9	65	8	49.9	103.5	1	72.7	34.2	2.79
P.01931A1-5	333	84.3	0.9	1.8	67	9	52.0	59.3	2	14.8	38.4	3.96
P.01946A1-16	438	76.0	0.3	1.4	62	8	55.5	96.2	1	44.7	29.8	2.98
RCAT 202D/ 1	380	81.6	1.0	4.7	80	8	53.1	82.1	1	74.3	28.6	2.36
RCAT 32/157	509	45.0	1.0	8.9	97	8	52.3	55.9	3	45.3	27.4	3.32
RCAT Akos 2234	364	70.8	0.9	5.7	90	10	43.7	46.3	1	29.8	35.3	3.09
RCAT TF 203/2	323	79.5	1.0	4.2	73	8	54.9	63.1	3	41.7	31.5	2.60
RCAT19/4c	461	71.4	1.0	8.3	89	10	50.8	50.8	1	30.2	35.8	2.91
VA04W-563	334	64.9	0.4	1.1	69	7	54.4	83.9	2	38.3	31.6	3.27
VA04W-592	448	66.4	0.3	1.6	78	7	53.5	104.5	1	8.5	28.3	2.58
VA05W-417	430	74.4	0.9	4.0	58	7	37.6	38.1	1	30.0	28.0	2.64
VA05W-421	374	70.4	0.7	4.9	58	6	56.2	89.1	1	35.0	24.8	2.84
VA05W-452	582	59.3	0.9	6.1	57	7	54.8	106.9	0	13.0	23.6	2.28
M01-4377	351	83.7	0.5	1.8	69	8	54.6	102.1	4	2.5	34.9	2.63
COKER 9553	526	61.9	1.0	7.5	58	6	55.1	63.5	1	4.2	27.4	2.49
KY97c-0554-4-6	477	69.5	0.6	3.2	68	8	50.8	100.5	0	1.8	27.2	2.87
KY97c-0540-1-2	647	62.2	1.0	7.4	64	7	52.3	100.2	0	52.2	24.0	2.62
KY97c-0388-5-2	521	49.6	1.0	6.1	61	6	49.9	64.8	0	58.5	21.1	3.09
KY97c-0304-26-10	429	60.7	1.0	10.5	83	9	51.7	64.3	0	45.3	26.6	2.08
KY97c-0277-1-8	387	67.0	0.6	4.6	68	7	52.8	100.1	1	17.3	34.2	3.07
KS03HW12-6-5	271	74.8	1.0	5.0	73	7	55.5	83.2	3	17.8	33.0	2.96
KS970085-9-15	382	62.1	1.0	5.7	62	7	54.9	108.4	1	5.7	24.3	2.20
MO050101	224	89.9	0.5	1.3	58	7	52.3	106.7	3	9.0	32.9	3.12
MO050143	196	94.9	0.3	1.3	87	10	53.7	102.4	2	14.0	33.2	2.75
MO050132	172	81.8	0.3	0.6	79	8	54.7	95.3	2	8.2	33.2	2.86
MO050194	404	81.8	1.0	2.3	81	8	52.2	60.5	1	3.5	36.6	3.38
MO050207	244	74.0	0.4	0.9	74	11	52.9	102.4	3	10.2	34.9	2.92
NY93285-9161	495	63.1	1.0	6.1	80	8	49.6	76.3	0	25.2	26.2	2.17
NY92237-1-sp-9173	333	79.9	0.5	4.2	75	9	51.8	103.7	1	63.5	38.6	3.46
NY94022-9093	499	55.3	1.0	10.5	75	8	50.2	81.6	2	42.2	23.1	1.13
NY93285-9147	331	71.4	0.9	3.3	83	10	49.7	73.5	0	12.3	30.1	1.92
NY93285-9179	343	72.2	1.0	7.1	78	10	48.2	75.7	0	12.8	29.7	2.04
AVERAGE	405.8	74.3	0.7	4.5	69.7	7.7	51.9	82.2	1.4	30.5	30.4	2.7

Table 21. Incidence (INC, %) data from 2006 PNUWWSN.

Name	ALL		ILURB	INBRO	INWLA	KYLEX	MIELA	MOCOL	ONRID	VABLA
ERNIE	50.3	l	56.7	0.0	3.0	50.2	62.5	55.0	75.0	100.0
TRUMAN	42.5	l	33.3	0.0	1.0	67.2	15.0	70.0	60.0	93.3
FREEDOM	54.3	lh	83.3	6.1	8.0	52.7	42.5	75.0	70.0	96.7
PIONEER 2545	62.8	h	86.7	15.7	27.5	42.5	60.0	75.0	95.0	100.0
IL00-8641	51.6	l	53.3	0.0	7.5	29.8	57.5	75.0	90.0	100.0
IL01-16170	51.3	l	50.0	2.4	5.0	44.5	50.0	90.0	78.3	90.0
IL02-18146	45.2	l	36.7	0.0	3.5	11.5	55.0	85.0	80.0	90.0
IL02-19463	52.5	l	81.7	0.0	12.5	37.2	65.0	85.0	75.0	63.3
IL02-7735	40.9	l	45.0		3.5	10.5	30.0	80.0	68.3	93.3
MSU Line E1009	62.9	h	83.3	40.8	20.0	37.5	65.0	85.0	78.3	93.3
OH01-6167	52.4	l	61.7	23.3	15.0	52.2	40.0	85.0	58.3	83.3
OH01-7653	57.5	h	78.3	3.2	40.0	23.7	65.0	80.0	70.0	100.0
OH02-15978	56.3	h	66.7	3.5	25.0	42.5	62.5	65.0	98.3	86.7
OH02-5512	56.5	h	61.7	20.4	15.0	31.1	52.5	85.0	86.7	100.0
OH776	58.6	h	88.3	4.0	17.5	19.4	60.0	85.0	95.0	100.0
P.011034A1-3	48.2	l	46.7	2.4	10.0	21.8	55.0	80.0	90.0	80.0
P.011035A1-71	55.3	h	56.7	34.2	17.5	25.0	57.5	60.0	91.7	100.0
P.011050A1-13	53.3	lh	35.0	20.0	7.5	34.5	52.5	90.0	93.3	93.3
P.011099A1-2	51.7	l	66.7	10.5	10.0	23.1	75.0	90.0	65.0	73.3
P.011151B1-93	54.3	lh	76.7	0.0	9.0	10.7	60.0	85.0	93.3	100.0
RCAT 32/35B	66.9	h	76.7	71.5	30.0	33.3	50.0	75.0	98.3	100.0
RCAT Akos 2290	50.5	l	50.0	0.0	9.0	72.6	37.5	80.0	61.7	93.3
RCAT F13	63.2	h	80.0	2.1		98.3	52.5	75.0	71.7	100.0
RCAT TF174/1c	42.5	l	80.0		6.5	3.7	45.0	95.0	61.7	50.0
VA05W-464	65.9	h	95.0	17.0	20.0	52.7	52.5	90.0	100.0	100.0
VA05W-510	61.5	h	71.7	21.8	25.0	26.7	55.0	100.0	98.3	93.3
VA05W-517	52.1	l	70.0	0.0	20.0	20.7	47.5	90.0	91.7	76.7
VA05W-673	52.3	l	25.0	10.0	3.5	60.2	55.0	75.0	90.0	100.0
VA05W-681	56.0	h	60.0	0.8	9.0	34.7	50.0	100.0	93.3	100.0
M00-3904-9	62.7	h	85.0	16.0	20.0	39.2	70.0	85.0	93.3	93.3
M02-2152	56.1	h	81.7	5.3	20.0	24.0	42.5	95.0	93.3	86.7
M02*2518	63.7	h	75.0	12.0	42.5	54.3	62.5	85.0	85.0	93.3
M03-3002	58.2	h	56.7	11.9	22.5	69.2	50.0	90.0	81.7	83.3
KY98c-1161-03	58.0	h	75.0	21.3	32.5	36.5	45.0	75.0	91.7	86.7
KY98c-1305-02	66.3	h	93.3	22.3	55.0	43.4	60.0	85.0	71.7	100.0
KY98c-1169-06	57.0	h	71.7	4.0	22.5	42.8	60.0	70.0	91.7	93.3
KY98c-1164-04	44.3	l	83.3	7.7	17.5	12.5	35.0	85.0	36.7	76.7
KY98c-1470-02	61.1	h	85.0	7.1	30.0	52.6	47.5	90.0	86.7	90.0
AVERAGE	55.2		67.5	11.6	17.4	38.0	52.6	82.1	81.8	90.9
n	8									
LSD	13.6		22.3		10.2	25.0	11.6		24.3	23.3
R2	0.8		0.8		0.9	0.7				1.5
CV	24.4		21.0		30.2	54.1	15.9		21.3	15.8

Table 22. Severity (SEV, %) data from 2006 PNUWWSN.

Name	ALL		ILURB	INBRO	INWLA	KYLEX	MIELA	MOCOL	ONRID	VABLA
ERNIE	23.0	l	30.1	0.0	16.7	21.1	47.5	5.3	14.0	49.5
TRUMAN	21.1	l	51.7	0.0	40.9	19.5	25.0	4.2	7.1	20.2
FREEDOM	34.5	lh	48.5	100.0	12.5	15.7	32.5	17.2	9.9	39.6
PIONEER 2545	46.8	h	59.0	50.0	63.5	17.9	47.5	33.0	61.3	42.7
IL00-8641	23.8	l	30.3	0.0	26.7	13.8	42.5	19.1	19.3	38.8
IL01-16170	36.7	h	29.3	95.0	19.2	28.0	50.0	28.5	11.7	31.8
IL02-18146	26.1	l	37.5	0.0	20.0	20.5	50.0	18.7	23.3	38.5
IL02-19463	30.1	l	63.0	0.0	44.8	21.7	45.0	23.3	8.9	33.9
IL02-7735	24.5	l	24.5		18.3	27.8	32.5	9.2	20.1	36.6
MSU Line E1009	38.6	h	67.1	25.1	97.5	22.4	42.5	8.8	17.2	28.4
OH01-6167	36.9	h	71.8	5.3	88.3	23.6	50.0	12.4	11.8	32.2
OH01-7653	43.1	h	62.4	100.0	76.5	12.2	35.0	12.4	10.2	35.9
OH02-15978	35.1	lh	64.1	25.0	41.7	15.7	52.5	18.7	32.4	30.7
OH02-5512	23.0	l	40.3	25.0	13.2	10.8	32.5	13.1	16.2	33.1
OH776	46.9	h	70.1	77.5	55.2	21.3	50.0	20.8	42.4	38.2
P.011034A1-3	30.3	l	29.4	52.5	11.7	25.3	47.5	13.7	29.4	32.7
P.011035A1-71	27.9	l	30.7	25.0	33.3	13.8	42.5	12.1	31.0	34.7
P.011050A1-13	23.8	l	35.1	15.0	12.5	16.4	37.5	15.1	27.5	31.1
P.011099A1-2	31.6	l	34.3	50.0	16.7	17.1	57.5	32.8	12.3	31.8
P.011151B1-93	26.5	l	49.4	0.0	23.6	12.4	47.5	14.6	26.9	37.6
RCAT 32/35B	39.6	h	74.5	22.5	70.8	21.4	47.5	9.4	22.4	48.2
RCAT Akos 2290	23.5	l	58.2	0.0	42.4	11.6	35.0	12.2	6.3	22.4
RCAT F13	29.4	l	57.9	15.0		39.7	30.0	11.3	12.4	35.9
RCAT TF174/1c	20.4	l	42.0		14.8	8.6	35.0	20.6	6.3	13.7
VA05W-464	29.9	l	53.6	12.5	13.9	16.1	42.5	22.8	34.3	43.7
VA05W-510	33.4	lh	59.1	52.5	25.0	17.3	32.5	20.6	32.4	27.8
VA05W-517	23.4	l	50.7	0.0	18.8	9.7	37.5	16.3	19.1	35.5
VA05W-673	25.3	l	25.4	42.5	9.0	26.8	35.0	7.8	27.2	28.5
VA05W-681	26.6	l	40.6	30.0	10.4	16.8	32.5	22.7	29.9	29.7
M00-3904-9	39.6	h	57.9	50.0	39.6	24.8	50.0	24.5	18.1	51.8
M02-2152	39.0	h	79.5	45.0	41.7	12.2	50.0	20.5	28.8	34.5
M02*2518	32.9	lh	52.6	25.0	46.2	27.6	37.5	21.3	15.6	37.1
M03-3002	34.4	lh	68.6	35.0	38.0	30.3	42.5	19.8	14.2	26.7
KY98c-1161-03	37.1	h	55.2	65.0	49.2	16.0	40.0	14.7	21.7	34.9
KY98c-1305-02	43.7	h	65.7	65.0	65.3	25.1	47.5	23.2	10.2	47.9
KY98c-1169-06	22.4	l	32.6	10.0	22.6	16.6	32.5	12.5	19.8	32.4
KY98c-1164-04	24.3	l	50.7	35.0	14.2	13.4	35.0	9.9	4.2	32.1
KY98c-1470-02	42.4	h	72.3	80.0	38.3	18.4	42.5	20.0	34.8	32.9
AVERAGE	31.5		50.7	34.2	34.9	19.2	41.4	16.9	20.8	34.6
n	8									
LSD	14.8		20.8		16.7	8.4	10.9		14.9	14.8
R2	0.5		0.7		0.6	0.7				0.5
CV	47.0		26.2		54.0		18.9		52.1	26.5

Table 23. Index (IND, %) data from 2006 PNUWWSN.

Name	ALL		ILURB	INBRO	INWLA	KYLEX	MIELA	MOCOL	OHWOO	ONRID	VABLA
ERNIE	14.6	l	17.3	0.0	0.5	10.6	29.8	2.9	8.7	12.2	49.5
TRUMAN	7.1	l	15.1	0.0	0.4	13.1	3.8	3.0	5.2	4.6	19.0
FREEDOM	14.8	l	39.2	6.1	1.0	8.2	14.8	12.9	5.8	6.7	38.3
PIONEER 2545	27.7	h	51.1	7.9	17.5	7.6	28.8	24.7	10.6	58.8	42.7
IL00-8641	13.7	l	15.4	0.0	2.0	4.1	24.5	14.4	6.0	17.9	38.8
IL01-16170	13.7	l	13.9	2.3	1.0	12.5	26.0	25.6	4.3	9.4	28.6
IL02-18146	13.5	l	13.6	0.0	0.7	2.4	27.3	15.9	4.8	22.2	34.7
IL02-19463	17.3		52.5	0.0	5.6	8.1	29.5	19.8	7.9	6.4	25.7
IL02-7735	9.4	l	11.3		0.6	2.9	9.8	7.4	6.1	15.8	34.4
MSU Line E1009	21.7	h	56.5	10.3	19.5	8.4	27.5	7.4	22.8	16.1	26.9
OH01-6167	16.6		43.6	1.2	13.3	12.3	20.3	10.5	12.4	7.8	28.0
OH01-7653	18.9		49.0	3.2	30.6	2.9	23.0	9.9	7.3	8.3	35.9
OH02-15978	19.8	h	41.6	0.9	10.4	6.7	34.0	12.1	12.8	32.1	27.5
OH02-5512	13.1	l	23.7	5.1	2.0	3.4	17.3	11.1	7.9	14.3	33.1
OH776	24.0	h	62.2	3.1	9.7	4.1	30.5	17.7	10.7	39.9	38.2
P.011034A1-3	13.4	l	14.0	1.2	1.2	5.5	26.3	11.0	5.4	28.2	27.5
P.011035A1-71	15.7		17.2	8.5	5.8	3.5	24.8	7.3	11.3	27.8	34.7
P.011050A1-13	13.1	l	11.7	3.0	0.9	5.7	20.3	13.6	7.3	26.9	28.9
P.011099A1-2	15.9		21.8	5.3	1.7	3.9	43.3	29.6	2.9	10.2	24.1
P.011151B1-93	16.8		37.6	0.0	2.1	1.3	29.5	12.4	5.0	26.0	37.6
RCAT 32/35B	25.4	h	57.0	16.1	21.3	7.1	23.8	7.1	26.1	22.0	48.2
RCAT Akos 2290	10.1	l	29.1	0.0	3.8	8.4	13.0	9.8	1.9	3.9	21.0
RCAT F13	20.1	h	47.3	0.3		39.1	17.0	8.5		9.7	35.9
RCAT TF174/1c	9.1	l	33.6		1.0	0.3	15.8	19.6	4.1	4.2	7.7
VA05W-464	21.9	h	50.2	2.1	2.8	8.5	22.8	20.5	12.1	34.3	43.7
VA05W-510	19.9	h	42.7	11.5	6.3	4.6	18.0	20.6	17.1	32.1	26.0
VA05W-517	14.5	l	38.0	0.0	3.8	2.0	17.3	14.7	7.9	18.1	29.0
VA05W-673	12.5	l	6.2	4.3	0.3	16.1	19.8	5.8	7.7	23.7	28.5
VA05W-681	15.0	l	23.8	0.3	0.9	5.8	16.3	22.7	6.6	29.3	29.7
M00-3904-9	23.3	h	48.6	8.0	7.9	9.7	35.8	20.8	12.0	17.1	49.7
M02-2152	21.6	h	65.0	2.4	8.3	2.9	22.5	19.5	16.0	27.8	29.9
M02*2518	19.9	h	41.0	3.0	19.6	15.0	23.5	18.1	10.0	13.7	35.3
M03-3002	16.8		38.6	4.2	8.5	21.0	21.8	17.8	3.8	12.3	23.7
KY98c-1161-03	19.0		42.1	13.9	16.0	5.8	19.0	11.1	10.8	20.4	31.7
KY98c-1305-02	26.8	h	61.4	14.5	35.9	10.9	29.0	19.8	14.9	7.2	47.9
KY98c-1169-06	13.2	l	23.2	0.4	5.1	7.1	19.8	8.8	5.3	18.5	30.5
KY98c-1164-04	11.1	l	42.0	2.7	2.5	1.7	12.5	8.4	2.2	2.3	26.0
KY98c-1470-02	21.4	h	61.4	5.7	11.5	9.7	21.0	18.0	5.1	29.2	30.8
AVERAGE	16.9		35.8	4.1	7.6	8.0	22.6	14.2	8.9	18.9	32.4
n	9										
LSD	7.9		19.1	7.3	4.7	7.4			5.5	15.0	32.2
R2	0.7		0.8		1.0	0.7			0.9		0.5
CV	49.4		34.6	79.0	30.2	74.3			37.0	58.0	35.5

Table 24. Kernel Rating (KR, %) and Percent Scabby Seed (PSS, %) data from 2006 NUWWSN.

	KR				PSS			
Name	ALL		ILURB	MOCOL	ALL		KYLEX	KYPRI
ERNIE	12.5	l	23.0	2.0	3.4	l	3.7	3.2
TRUMAN	6.5	l	8.0	5.0	4.8	l	2.9	6.8
FREEDOM	24.0	lh	43.0	5.0	7.2	l	6.9	7.5
PIONEER 2545	46.5	h	73.0	20.0	15.4	l	17.7	13.2
IL00-8641	8.0	l	13.0	3.0	8.6	l	12.9	4.3
IL01-16170	8.5	l	12.0	5.0	7.2	l	7.5	6.9
IL02-18146	7.5	l	12.0	3.0	4.6	l	7.6	1.6
IL02-19463	18.5	l	33.0	4.0	4.1	l	6.1	2.1
IL02-7735	5.0	l	8.0	2.0	1.9	l	3.4	0.3
MSU Line E1009	36.0	h	57.0	15.0	7.7	l	12.3	3.0
OH01-6167	20.0	l	37.0	3.0	11.5	l	21.1	1.9
OH01-7653	35.5	h	63.0	8.0	8.0	l	12.6	3.4
OH02-15978	28.0	lh	53.0	3.0	13.7	l	15.8	11.6
OH02-5512	16.5	l	25.0	8.0	8.3	l	15.2	1.5
OH776	36.5	h	63.0	10.0	7.1	l	8.9	5.3
P.011034A1-3	24.0	lh	40.0	8.0	4.9	l	7.1	2.8
P.011035A1-71	22.5	lh	40.0	5.0	9.9	l	17.3	2.4
P.011050A1-13	11.0	l	17.0	5.0	5.0	l	6.5	3.4
P.011099A1-2	17.5	l	30.0	5.0	2.6	l	4.0	1.1
P.011151B1-93	18.0	l	33.0	3.0	2.4	l	3.9	0.9
RCAT 32/35B	26.5	lh	43.0	10.0	8.9	l	13.7	4.1
RCAT Akos 2290	24.0	lh	43.0	5.0	23.8	h	5.5	42.2
RCAT F13	40.0	h	68.0	12.0	38.5	h	27.8	49.3
RCAT TF174/1c	10.5	l	18.0	3.0	21.3		31.0	11.7
VA05W-464	22.5	lh	40.0	5.0	7.1	l	5.2	8.9
VA05W-510	24.5	lh	37.0	12.0	9.8	l	18.4	1.3
VA05W-517	20.0	l	30.0	10.0	2.8	l	4.6	1.1
VA05W-673	7.0	l	9.0	5.0	4.5	l	8.1	1.0
VA05W-681	13.5	l	17.0	10.0	4.5	l	7.9	1.1
M00-3904-9	33.5	h	57.0	10.0	4.8	l	6.2	3.4
M02-2152	40.5	h	73.0	8.0	12.1	l	21.1	3.1
M02*2518	26.0	lh	37.0	15.0	7.1	l	12.3	2.0
M03-3002	27.5	lh	50.0	5.0	14.5	l	24.7	4.3
KY98c-1161-03	24.0	lh	40.0	8.0	2.8	l	4.0	1.6
KY98c-1305-02	40.0	h	60.0	20.0	10.0	l	18.5	1.5
KY98c-1169-06	21.0	l	37.0	5.0	3.4	l	5.4	1.5
KY98c-1164-04	22.5	lh	37.0	8.0	3.2	l	4.3	2.1
KY98c-1470-02	36.5	h	63.0	10.0	15.5	l	27.2	3.9
AVERAGE	22.7		37.9	7.4	8.8		11.6	6.0
n	2				2			
LSD	24.0		18.0		15.5		13.3	10.3
R2	0.8		0.8		0.7		0.6	0.7
CV	52.2		30.7		88.2		89.5	147

Table 25. ISK (%) data from 2006 PNUWWSN.

Name	ALL		ILURB	KYLEX	MOCOL
ERNIE	20.3	l	35.4	22.9	2.5
TRUMAN	19.9	l	28.9	27.2	3.5
FREEDOM	29.2	h	56.9	23.3	7.4
PIONEER 2545	38.8	h	73.0	25.2	18.1
IL00-8641	18.6	l	30.4	18.3	7.2
IL01-16170	21.3	l	28.5	24.7	10.8
IL02-18146	15.5	l	26.9	12.6	7.1
IL02-19463	28.5	lh	56.7	20.1	8.8
IL02-7735	13.6	l	24.2	12.9	3.8
MSU Line E1009	33.2	h	67.8	22.9	8.9
OH01-6167	30.4	h	54.7	31.2	5.2
OH01-7653	30.2	h	67.6	15.8	7.2
OH02-15978	30.5	h	60.6	23.8	7.0
OH02-5512	22.2	l	40.6	18.6	7.4
OH776	33.1	h	72.9	15.8	10.5
P.011034A1-3	21.1	l	38.8	17.0	7.6
P.011035A1-71	22.2	l	42.2	18.5	5.8
P.011050A1-13	17.5	l	27.7	17.9	6.8
P.011099A1-2	22.7	l	42.3	13.7	12.1
P.011151B1-93	21.8	l	51.2	8.5	5.8
RCAT 32/35B	30.6	h	62.7	21.9	7.1
RCAT Akos 2290	27.7	lh	49.8	27.4	5.9
RCAT F13	43.2	h	68.7	52.5	8.4
RCAT TF174/1c	22.6	l	43.9	16.1	7.7
VA05W-464	30.8	h	60.6	22.7	9.1
VA05W-510	28.6	lh	53.9	20.6	11.3
VA05W-517	22.8	l	48.2	10.9	9.2
VA05W-673	17.5	l	18.7	29.3	4.6
VA05W-681	22.2	l	36.9	18.6	11.1
M00-3904-9	32.9	h	65.5	21.7	11.6
M02-2152	35.5	h	77.7	19.3	9.6
M02*2518	31.7	h	52.9	29.5	12.6
M03-3002	35.2	h	57.6	39.7	8.2
KY98c-1161-03	26.7	l	55.1	17.3	7.8
KY98c-1305-02	38.3	h	71.8	27.9	15.2
KY98c-1169-06	24.0	l	46.0	19.9	6.0
KY98c-1164-04	23.6	l	54.9	9.5	6.4
KY98c-1470-02	38.3	h	72.5	32.2	10.3
AVERAGE	26.9		50.7	21.8	8.3
n	3				
LSD	15.5		17.8		
R2	0.9		0.9		
CV	35.2		17.4		

Table 26. Deoxynivenal (DON, ppm) data from 2006 PNUWWSN.

Name	ALL		ILURB	KYLEX	KYPRI	VABLA
ERNIE	5.2	l	8.0	10.5	0.7	1.6
TRUMAN	2.2	l	2.5	2.2	4.0	0.1
FREEDOM	4.5	l	6.3	9.3	1.4	1.0
PIONEER 2545	8.9	h	11.5	15.5	5.5	3.0
IL00-8641	4.3	l	2.0	10.8	3.7	0.8
IL01-16170	1.9	l	3.5	3.7	0.1	0.4
IL02-18146	1.7	l	2.5	2.7	0.6	0.9
IL02-19463	4.7	l	9.3	8.9	0.1	0.4
IL02-7735	2.3	l	3.5	5.3	0.0	0.4
MSU Line E1009	6.4	h	6.5	14.5	2.8	1.6
OH01-6167	5.6	l	14.5	5.5	2.0	0.4
OH01-7653	6.5	h	14.5	7.4	2.9	1.3
OH02-15978	5.8	l	14.0	6.3	2.0	0.9
OH02-5512	3.4	l	7.5	3.3	2.4	0.5
OH776	10.7	h	21.5	17.5	2.2	1.6
P.011034A1-3	3.2	l	7.3	4.2	0.8	0.5
P.011035A1-71	4.1	l	5.5	9.4	1.0	0.6
P.011050A1-13	3.9	l	5.5	9.3	0.3	0.5
P.011099A1-2	3.0	l	3.3	7.8	0.2	0.6
P.011151B1-93	7.2	h	12.0	13.5	1.7	1.6
RCAT 32/35B	6.4	h	9.8	12.0	2.3	1.4
RCAT Akos 2290	4.4	l	2.3	2.4	12.5	0.4
RCAT F13	7.3	h	6.5	13.3	8.2	1.0
RCAT TF174/1c	4.8	l	4.8	9.8	4.0	0.5
VA05W-464	4.1	l	8.0	6.7	1.2	0.5
VA05W-510	3.2	l	7.3	4.3	0.4	0.8
VA05W-517	3.0	l	7.0	3.7	0.7	0.4
VA05W-673	2.8	l	3.3	6.2	1.5	0.3
VA05W-681	3.0	l	4.0	6.0	1.0	0.9
M00-3904-9	7.2	h	15.3	9.3	2.4	1.7
M02-2152	7.6	h	18.3	9.0	1.8	1.3
M02*2518	6.8	h	10.5	14.5	1.4	0.9
M03-3002	6.0	l	12.0	10.0	0.9	1.1
KY98c-1161-03	7.4	h	15.0	12.0	0.8	1.6
KY98c-1305-02	6.9	h	10.0	12.8	3.1	1.6
KY98c-1169-06	7.4	h	11.3	15.3	1.5	1.3
KY98c-1164-04	5.6	l	8.0	11.0	1.7	1.6
KY98c-1470-02	6.4	h	12.3	10.8	1.7	0.6
AVERAGE	5.2		8.6	8.9	2.1	1.0
n	4					
LSD	4.3		7.1	0.13	2.4	
R2	0.7		0.8	0.8		
CV	59.6		42.1	65.5		

Table 27. Greenhouse Severity (GH, %) data from 2006 PNUWWSN.

Name	ALL		ILURB	KYLEX
ERNIE	26.5	l	29.2	23.7
TRUMAN	13.7	l	19.1	8.3
FREEDOM	14.4	l	24.1	4.8
PIONEER 2545	58.4	h	82.7	34
IL00-8641	24.6	l	17.5	31.7
IL01-16170	7.7	l	6.1	9.4
IL02-18146	18.0	l	27.4	8.6
IL02-19463	32.0	l	53.9	10.2
IL02-7735	39.8	l	56.2	23.3
MSU Line E1009	18.1	l	23.8	12.4
OH01-6167	52.3	h	68.1	36.6
OH01-7653	58.1	h	65.8	50.3
OH02-15978	47.7	h	52.6	42.9
OH02-5512	12.0	l	12.1	11.9
OH776	64.8	h	89.8	39.7
P.011034A1-3	36.4	l	36.6	36.3
P.011035A1-71	26.1	l	43.9	8.3
P.011050A1-13	12.9	l	3.4	22.5
P.011099A1-2	26.5	l	20.7	32.4
P.011151B1-93	45.7	h	72.4	19
RCAT 32/35B	35.2	l	46.2	24.2
RCAT Akos 2290	9.1	l	7.9	10.2
RCAT F13	23.0	l	18.5	27.5
RCAT TF174/1c	8.1	l	4.5	11.7
VA05W-464	14.8	l	10.3	19.3
VA05W-510	48.6	h	59.6	37.6
VA05W-517	47.3	h	38.5	56.1
VA05W-673	2.9	l	2.6	3.2
VA05W-681	5.3	l	6.9	3.8
M00-3904-9	34.2	l	61.0	7.4
M02-2152	60.2	h	83.3	37.1
M02*2518	17.8	l	6.5	29.1
M03-3002	15.6	l	14.3	16.9
KY98c-1161-03	80.2	h	60.4	100
KY98c-1305-02	35.3	l	42.7	28
KY98c-1169-06	32.6	l	11.9	53.3
KY98c-1164-04	13.5	l	4.0	23
KY98c-1470-02	60.4	h	43.7	77.1
AVERAGE	31.0		34.3	27.4
n	2			
LSD	37.1		36.7	0.13
R2	0.7		0.4	0.8
CV	58.9		94.0	65.5

Table 28. Heading Date (Julian days) data from 2006 PNUWWSN.

Name	All		ILURB	INWLA	KYLEX	MIELA	MOCOL	OHWOO	ONRID	VABLA
ERNIE	132	l	129	127	119	153	124	133	145	123
TRUMAN	142	h	141	140	133	158	139	143	149	130
FREEDOM	136		135	133	125	156	130	138	148	125
PIONEER 2545	135		133	133	126	153	125	140	146	126
IL00-8641	133		130	132	122	151	124	134	146	123
IL01-16170	132		130	128	119	154	124	138	143	123
IL02-18146	131	l	128	127	120	152	122	132	143	125
IL02-19463	130	l	127	126	118	151	122	131	143	121
IL02-7735	132		129	128	122	153	124	133	145	123
MSU Line E1009	139		139	137	129	153	129	147	149	131
OH01-6167	138		138	136	128	156	129	141	146	129
OH01-7653	135		132	133	128	153	125	141	145	125
OH02-15978	134		132	129	123	152	125	141	145	124
OH02-5512	136		132	132	127	153	129	140	146	125
OH776	135		135	133	124	153	125	141	145	126
P.011034A1-3	132		130	128	123	153	124	133	144	124
P.011035A1-71	133		129	129	123	154	124	132	145	124
P.011050A1-13	133		129	127	121	153	122	139	145	124
P.011099A1-2	130	l	127	126	119	151	122	131	143	123
P.011151B1-93	131	l	128	126	121	152	124	132	143	123
RCAT 32/35B	137		136	134	129	155	128	140	147	127
RCAT Akos 2290	140	h	140	144	131	154	135	142	147	126
RCAT F13	141	h	141		131	157	137	145	148	128
RCAT TF174/1c	140	h	138	140	128	157	137	144	148	130
VA05W-464	135		132	134	124	152	124	139	146	125
VA05W-510	132		131	128	120	152	125	133	147	124
VA05W-517	135		133	132	126	152	128	139	146	125
VA05W-673	133		131	129	123	152	124	135	146	124
VA05W-681	135		131	132	127	152	128	139	146	125
M00-3904-9	134		132	133	125	152	125	139	146	123
M02-2152	134		132	132	123	154	124	139	146	125
M02*2518	135		132	133	126	153	125	139	146	125
M03-3002	136		134	133	123	155	128	139	146	129
KY98c-1161-03	135		131	132	125	156	128	139	146	125
KY98c-1305-02	135		133	133	125	155	125	139	145	123
KY98c-1169-06	132	l	129	127	121	154	124	132	144	122
KY98c-1164-04	135		133	133	126	154	128	140	146	123
KY98c-1470-02	135		131	135	124	154	125	139	146	126
AVERAGE	135		132	132	124	153	127	138	146	125
n	8									
LSD	1.8		1.8			1.5				1.4
R2	1.0		0.9							0.8
CV	1.4		9.0			1.9				0.02

Table 29. Height (inches) data from 2006 PNUWWSN.

Name	All		KYLEX	MOCOL	VABLA
ERNIE	35.0		36.0	32.7	36.3
TRUMAN	39.6		43.5	34.3	41.0
FREEDOM	37.4		41.5	31.9	38.7
PIONEER 2545	37.4		40.5	33.1	38.7
IL00-8641	38.9		40.5	37.4	38.7
IL01-16170	35.3		37.0	32.7	36.3
IL02-18146	36.4		37.5	33.5	38.3
IL02-19463	35.7		37.0	33.1	37.0
IL02-7735	39.3		43.5	34.6	39.7
MSU Line E1009	37.3		40.0	34.6	37.3
OH01-6167	42.5	h	43.0	39.4	45.0
OH01-7653	40.1		42.5	37.0	40.7
OH02-15978	41.5	h	45.5	37.8	41.3
OH02-5512	38.7		41.5	35.4	39.3
OH776	37.4		40.0	34.3	38.0
P.011034A1-3	37.0		38.5	34.3	38.3
P.011035A1-71	36.9		39.5	33.5	37.7
P.011050A1-13	34.5	l	36.0	33.5	34.0
P.011099A1-2	32.9	l	36.5	30.3	32.0
P.011151B1-93	33.6	l	35.0	31.9	34.0
RCAT 32/35B	41.6	h	45.0	35.8	44.0
RCAT Akos 2290	40.7	h	45.5	35.8	40.7
RCAT F13	39.5		41.5	35.8	41.3
RCAT TF174/1c	42.9	h	49.0	35.4	44.3
VA05W-464	32.2	l	35.5	29.5	31.7
VA05W-510	34.3	l	37.0	28.7	37.3
VA05W-517	34.9		39.0	29.1	36.7
VA05W-673	34.0	l	37.0	28.7	36.3
VA05W-681	34.3	l	36.5	31.1	35.3
M00-3904-9	35.5		37.5	31.1	38.0
M02-2152	36.0		38.0	34.3	35.7
M02*2518	35.9		40.0	32.7	35.0
M03-3002	35.9		39.0	31.5	37.3
KY98c-1161-03	37.6		40.5	33.1	39.3
KY98c-1305-02	38.0		41.5	33.9	38.7
KY98c-1169-06	39.0		41.0	35.8	40.3
KY98c-1164-04	40.3		42.0	36.6	42.3
KY98c-1470-02	38.9		41.0	35.0	40.7
AVERAGE	37.3		40.0	33.7	38.3
n	3				
LSD	2.4				2.5
R2	0.9				0.9
CV	3.9				3.9

Table 30. Other trait data from 2006 PNUWWSN.

Name	Stripe Rust (AR, %)	TW (MO, lbs/bu)	Yield (MO, b/a)	Powdery Mildew (VA, 0-9)
ERNIE	68.0	50.6	48.5	2
TRUMAN	8.7	43.9	46.4	2
FREEDOM	66.3	33.3	37.8	1
PIONEER 2545	45.3	49.0	64.1	1
IL00-8641	6.5	56.9	88.9	3
IL01-16170	48.3	51.8	63.2	3
IL02-18146	54.5	54.7	59.5	1
IL02-19463	30.3	55.6	71.5	3
IL02-7735	29.2	55.3	96.0	3
MSU Line E1009	41.3	49.8	75.8	1
OH01-6167	4.3	52.2	84.2	0
OH01-7653	45.5	53.3	87.7	1
OH02-15978	46.7	55.1	93.9	1
OH02-5512	55.0	52.8	60.4	1
OH776	51.7	52.8	93.4	1
P.011034A1-3	20.7	52.8	68.9	2
P.011035A1-71	20.5	51.7	102.7	1
P.011050A1-13	19.3	54.1	101.1	3
P.011099A1-2	39.5	53.0	84.5	4
P.011151B1-93	37.5	53.5	56.8	2
RCAT 32/35B	68.5	51.2	60.2	3
RCAT Akos 2290	48.0	52.4	78.9	1
RCAT F13	39.5	42.9	46.7	3
RCAT TF174/1c	44.2	25.8	28.9	3
VA05W-464	12.7	55.6	91.2	0
VA05W-510	15.2	54.6	60.6	0
VA05W-517	19.8	49.2	49.4	0
VA05W-673	50.2	56.4	96.7	3
VA05W-681	35.7	55.4	66.5	3
M00-3904-9	3.0	53.5	68.1	0
M02-2152	29.8	53.7	118.8	1
M02*2518	47.5	55.0	95.5	1
M03-3002	48.0	50.3	74.2	1
KY98c-1161-03	46.7	55.2	66.2	1
KY98c-1305-02	74.3	49.6	64.1	1
KY98c-1169-06	3.3	55.5	91.2	1
KY98c-1164-04	46.3	51.9	73.3	2
KY98c-1470-02	64.0	53.3	86.9	1
AVERAGE	37.2	51.5	73.7	1.6
LSD	28.6			
R2				
CV				

Table 31. Quality data provided by the USDA SWQL averaged over two locations (VABLA and INWLA.

	MILL SCORE	BAKE SCORE	TW SCORE	SE SCORE	TW LB/BU	SE %	PRO %	LA %	SUC %	FYLD %
ERNIE	55.0	58.2	50.1	67.1	60.1	53.8	8.8	84.9	84.9	67.7
TRUMAN	60.4	67.5	59.9	66.5	61.3	53.6	8.8	88.6	81.0	68.7
FREEDOM	59.8	66.5	46.0	64.6	59.7	52.9	8.5	79.8	81.6	68.6
PIONEER 2545	50.3	56.2	50.5	72.2	60.2	55.6	8.9	86.7	87.1	66.7
IL00-8061	76.0	64.0	68.4	71.5	62.5	55.8	8.6	99.8	83.1	71.9
IL00-8109	75.7	61.1	62.4	70.0	61.7	55.2	8.8	107.1	83.5	71.9
IL00-8530	75.9	58.5	72.7	61.1	63.0	52.1	8.9	102.3	82.2	71.9
IL01-11445	65.7	66.6	67.8	72.5	62.4	56.1	7.8	102.8	83.8	69.9
IL01-11934	68.3	62.5	66.3	63.9	62.2	53.1	7.7	96.4	83.5	70.4
E0001	76.7	70.1	46.1	82.4	59.8	59.6	8.3	91.8	83.8	72.1
E2017	70.1	78.7	54.3	75.3	60.8	57.1	8.2	83.1	78.5	70.8
E2041	73.4	65.3	60.6	63.3	61.5	52.9	8.3	90.1	81.1	71.4
E2042	71.8	82.8	52.7	83.6	60.6	60.0	8.0	75.6	79.0	71.1
MV 6-82	60.9	49.2	75.0	60.4	63.3	51.9	9.4	89.2	85.0	68.9
NE02465	72.5	27.8	75.1	23.6	63.3	39.0	10.0	101.4	83.9	71.3
NE02584	66.3	10.3	79.2	17.3	63.8	36.8	10.1	112.0	89.6	70.0
NE03490	76.5	48.7	61.1	53.5	61.6	49.5	8.3	109.2	85.8	72.0
NH01046	67.0	34.1	67.7	36.2	62.4	43.4	9.1	98.4	86.1	70.1
NI02425	73.3	19.8	71.0	21.1	62.8	38.1	10.4	107.4	85.9	71.4
OH02-12678	63.1	54.1	58.1	64.9	61.3	53.5	8.5	91.2	85.9	69.4
OH02-12686	62.6	55.4	63.8	56.7	61.9	50.6	8.5	82.5	83.2	69.3
OH02-13567	67.1	58.0	60.0	55.3	61.4	50.1	8.2	87.8	82.4	70.2
OH02-7217	68.2	67.0	59.4	67.6	61.4	54.4	7.9	96.7	82.1	70.4
OH904	45.8	39.7	62.2	53.1	61.7	49.3	10.6	81.2	84.6	65.9
P.0128A1-36	57.8	54.6	54.3	62.4	60.8	52.6	8.8	82.7	84.4	68.3
P.0172A1-12	60.7	48.2	57.1	55.2	61.1	50.1	9.2	93.1	84.5	68.9
P.0175A1-44	64.7	58.5	39.9	61.7	59.0	52.4	7.9	74.8	84.4	69.7
P.01931A1-5	57.5	56.4	60.7	61.8	61.5	52.4	9.0	94.1	83.0	68.3
P.01946A1-16	55.7	45.4	54.9	71.0	60.8	55.6	8.4	100.3	91.1	67.9
RCAT 202D/ 1	60.1	54.4	70.6	69.3	62.7	55.0	8.7	82.1	86.4	68.8
RCAT 32/157	59.4	52.4	64.5	64.9	62.0	53.5	8.5	81.1	86.4	68.7
RCAT Akos 2234	60.2	29.4	61.7	14.5	61.6	35.8	9.7	72.5	81.6	68.8
RCAT TF 203/2	71.7	64.9	62.5	64.8	61.7	53.4	8.4	86.3	81.4	71.1
RCAT 19/4c	60.5	25.7	67.6	14.5	62.4	35.8	10.1	68.8	82.2	68.9
VA04W-563	60.7	47.7	72.1	77.9	62.9	58.0	8.3	91.3	92.1	68.9
VA04W-592	52.3	48.3	57.9	73.3	61.2	56.4	8.3	113.0	90.8	67.2
VA05W-417	57.7	37.9	64.1	57.2	62.0	50.8	9.0	76.5	89.7	68.3
VA05W-421	58.6	38.0	65.3	54.6	62.1	49.9	8.8	77.2	89.5	68.4
VA05W-452	61.4	48.3	70.7	47.4	62.8	47.4	8.5	86.9	84.1	69.0
M01-4377	60.0	50.2	67.2	66.3	62.3	53.9	8.1	93.8	88.6	68.7
COKER 9553	57.3	55.7	64.2	76.2	62.0	57.4	8.0	96.0	88.8	68.2
KY97c-0554-4-6	68.6	55.3	63.1	70.6	61.8	55.5	8.2	93.9	87.4	70.4
KY97c-0540-1-2	63.6	54.9	71.8	66.4	62.9	54.0	8.5	104.7	85.8	69.4
KY 97c-0388-5-2	62.7	54.5	57.7	70.9	61.2	55.6	8.6	94.9	86.9	69.3
KY97c-0304-26-10	58.5	60.4	64.8	73.3	62.0	56.4	8.7	97.4	84.7	68.4
KY97c-0277-1-8	74.3	45.6	63.0	67.2	61.8	54.3	9.1	102.2	88.8	71.6
KS03HW12-6-5	75.4	43.9	65.9	26.7	62.2	40.1	8.6	90.9	80.6	71.8
KS970085-9-15	51.9	46.6	56.0	71.9	61.0	56.0	8.2	99.3	91.3	67.1
MO050101	61.3	58.7	62.6	63.3	61.8	52.9	8.0	84.7	84.6	69.0
MO050143	60.2	61.8	61.4	63.9	61.6	53.1	7.7	88.1	83.8	68.8
MO050132	60.9	60.2	60.9	66.4	61.6	54.0	7.8	91.0	84.9	68.9
MO050194	57.2	44.9	63.6	65.5	61.9	53.7	8.7	101.3	89.4	68.2
MO050207	60.3	54.4	65.0	58.4	62.1	51.2	8.2	82.8	84.6	68.8
NY93285-9161	59.6	70.6	49.8	64.3	60.3	53.3	8.7	79.2	78.2	68.7
NY92237-1-sp-9173	45.3	50.2	58.7	55.8	61.3	50.3	8.6	84.9	85.1	65.8
NY94022-9093	74.2	72.3	53.7	68.9	60.7	54.9	8.5	80.1	78.9	71.6
NY93285-9147	57.9	66.7	50.5	63.5	60.3	53.0	9.3	71.5	78.5	68.3
NY93285-9179	58.4	64.3	50.3	64.0	60.3	53.1	9.3	77.1	79.6	68.4
AVERAGE	63.2	53.5	61.4	60.3	61.6	51.8	8.7	90.3	84.6	69.4

Table 32. Quality data from INWLA provided by the USDA SWQL.

ENTRY	MILL SCORE		BAKE SCORE		TW SCORE		SE SCORE		TW LB/BU	SE %	PRO %	LA SRC %	SUC SRC %	FYLD %
ERNIE	52.6	D	43.5	E	46.9	E	62.6	C	59.4	53.7	8.73	76.9	86.3	66.7
TRUMAN	62.0	C	46.7	E	58.3	D	61.7	C	60.8	53.4	9.16	82.6	83.8	68.6
FREEDOM	59.1	D	45.9	E	39.2	F	61.1	C	58.5	53.2	9.00	76.6	84.3	68.0
PIONEER 2545	50.6	D	32.9	F	49.3	E	63.4	C	59.7	54.0	9.46	84.4	89.5	66.3
IL00-8641	76.7	B	48.5	E	49.1	E	70.5	B	59.7	56.5	8.97	99.1	85.6	71.5
IL01-16170	60.0	C	43.3	E	56.8	D	67.5	C	60.6	55.5	8.47	89.2	88.1	68.2
IL02-18146	55.0	D	44.9	E	66.9	C	58.1	D	61.8	52.2	8.70	87.4	84.7	67.2
IL02-19463	62.4	C	43.6	E	63.4	C	75.4	B	61.4	58.2	8.29	94.7	90.3	68.6
IL02-7735	76.0	B	48.3	E	57.9	D	69.6	C	60.7	56.2	8.36	97.3	86.7	71.3
MSU LINE E1009	67.4	C	41.3	E	42.9	E	61.9	C	58.9	53.5	8.81	87.9	86.9	69.6
OH01-6167	57.2	D	64.6	C	50.6	D	80.7	A	59.8	60.1	7.96	78.2	83.3	67.6
OH01-7653	56.8	D	49.3	E	41.7	E	76.0	B	58.8	58.4	7.94	98.6	88.7	67.5
OH02-15978	51.7	D	50.8	D	53.9	D	78.1	B	60.2	59.2	7.95	101.0	88.6	66.5
OH01-5512	59.7	D	37.5	F	47.7	E	54.0	D	59.5	50.7	11.02	80.7	82.0	68.1
OH776	73.2	B	50.6	D	54.5	D	60.7	C	60.3	53.1	8.24	77.0	83.8	70.8
P.011034A1-3	61.0	C	39.5	F	46.8	E	52.2	D	59.4	50.1	8.20	85.0	86.5	68.4
P.011035A1-71	63.7	C	57.6	D	37.8	F	72.4	B	58.3	57.2	7.58	81.9	85.0	68.9
P.011050A1-13	53.1	D	29.4	F	50.2	D	58.1	D	59.8	52.2	8.01	86.3	92.7	66.8
P.011099A1-2	73.9	B	34.3	F	61.3	C	30.6	F	61.1	42.5	9.83	79.1	80.1	70.9
P.011151B1-93	51.4	D	27.7	F	57.5	D	58.8	D	60.7	52.4	8.67	88.0	92.2	66.4
PATTERSON	64.8	C	45.9	E	58.6	D	63.2	C	60.8	53.9	8.27	84.8	86.3	69.1
RCAT 32/35B	57.6	D	54.0	D	44.8	E	72.6	B	59.1	57.3	8.45	89.6	84.8	67.7
RCAT Akos 2290	60.1	C	61.9	C			79.1	B		59.5	7.28	84.0	85.4	68.2
RCAT F13	42.4	E	3.5	F			68.0	C		55.7	10.35	99.0	101.4	64.6
RCAT TF174/1c	60.8	C	48.5	E	57.2	D	63.7	C	60.6	54.1	8.92	86.1	84.0	68.3
VA05W-464	59.2	D	41.9	E	54.5	D	54.5	D	60.3	50.9	8.31	86.2	85.8	68.0
VA05W-510	59.7	D	47.1	E	59.8	D	68.1	C	60.9	55.7	8.17	85.9	87.2	68.1
VA05W-517	57.8	D	33.8	F	65.7	C	56.5	D	61.6	51.6	7.42	88.2	91.6	67.7
VA05W-673	47.4	E	33.8	F	61.5	C	73.9	B	61.1	57.7	7.64	91.9	95.5	65.7
VA05W-681	42.0	E	25.2	F	59.2	D	68.6	C	60.9	55.8	8.19	96.2	96.7	64.6
M00-3904-9	42.9	E	24.1	F	68.7	C	46.2	E	62.0	48.0	8.48	78.1	91.1	64.7
M02-2152	14.4	F	15.4	F	57.1	D	44.3	E	60.6	47.3	8.10	89.0	95.1	59.1
M02*2518	61.9	C	39.6	F	61.1	C	76.6	B	61.1	58.7	7.78	85.7	93.3	68.5
M05-3002	74.2	B	49.9	E	45.0	E	66.9	C	59.2	55.2	7.94	79.7	86.2	71.0
KY98c-1161-03	60.7	C	37.3	F	65.8	C	58.1	D	61.7	52.2	9.82	86.7	85.6	68.3
KY98c-1305-02	56.3	D	28.2	F	54.6	D	66.5	C	60.3	55.1	8.57	106.7	94.1	67.4
KY98c-1169-06	67.3	C	43.7	E	64.9	C	61.2	C	61.6	53.3	8.70	85.9	85.9	69.6
KY98c-1164-04	60.0	C	43.2	E	46.7	E	64.1	C	59.4	54.3	7.84	81.6	88.6	68.2
KY98c-1470-02	73.6	B	66.0	C	43.2	E	76.3	B	58.9	58.5	7.71	89.2	82.1	70.9
Average	58.6		41.6		54.1		64.1		60.3	54.3	8.5	87.3	87.9	67.9