

2013 National Winter Canola Variety Trial

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Objectives

The objectives of the National Winter Canola Variety Trial (NWCVT) are to evaluate the performance of released and experimental varieties, determine where these varieties are best adapted, and increase visibility of winter canola across the nation. Breeders, marketers, and producers use data collected from the trials. In the past decade, the number of environments and entries tested have increased. The NWCVT is planted at locations in the Great Plains, Midwest, northern U.S., and Southeast.

Procedures

Seed for the NWCVT was distributed to 40 cooperators in 22 states for the 2012-2013 growing season. Of the 50 entries, 24 are commercially available and 26 are experimental. These entries were provided by 11 global seed suppliers. All entries in the trial were treated with either Helix XTra or Prosper FX seed treatments to control insects and diseases through the late fall and early winter months.

All trials were planted in small research plots (150 ft²) with three replications. Cultural practices, site descriptions, growing conditions, and performance data are provided for each harvested location. Yield results for some locations include 2-year summaries. Results are listed alphabetically by seed supplier.

2012-2013 Growing Conditions

Temperature and precipitation data are shown at the top of the page for each location. Thick black lines on the temperature graphs represent long-term average high and low temperatures (°F) for the location. The upper thin line represents actual daily high temperatures, and the lower thin line represents actual daily low temperatures. On the precipitation graph, the line labeled “normal” represents long-term average precipitation, and the line labeled “12-13” represents actual precipitation. If weather data were not provided, they were taken from a nearby town.

In general, the 2012-2013 growing season saw above-normal temperatures and normal to below-normal precipitation. Several rounds of late spring freezes reduced plant height and delayed the crop at some locations. A cooler than normal May provided ideal conditions for grain fill and resulted in high test weights.

Test Sites and Results

Of the seven NWCVT sites planted in Kansas, four were harvested. Three trials are included in this report: Andale, Belleville, and Hutchinson. Garden City was harvested but suffered winterkill, multiple late spring freezes, and severe hail. Kiowa did not establish because of dry soils last fall. Manhattan was not harvested because of

variability in plant stands. Yield potential was reduced at Marquette because of an early fall freeze and a slow warm up in the spring.

The “percentage of test average” yield calculation is included in this year’s results. This relative yield calculation allows for some comparison of performance across environments. Entries yielding more than 100 percent of the test average across multiple locations merit some consideration.

Overall, yields were above average where moisture was not limited at planting. All sites averaged over 2,000 lb/acre. Belleville’s two-year average is 3,500 lb/acre. Hutchinson recovered extremely well from the late spring freezes. Canola weighs 50 lb/bushel, so a 2,000 lb/acre yield is 40 bushels/acre.

Variety Selection

Winter hardiness is an important trait to consider when selecting a winter canola variety. This trait has been improved over the past several years, but variability still exists where differential winterkill occurs. Winter canola varieties should show consistent survival across multiple years and locations. Other traits to consider include herbicide resistance, tolerance to carryover from sulfonyleurea herbicides, maturity, disease tolerance, and yield potential. Use more than one year of data to make an informed variety selection decision.

Some sites include High Erucic Acid Rapeseed (HEAR). By definition, HEAR is not canola because it produces greater than 2% erucic acid in the processed oil. The harvested seed cannot be mixed with canola

seed, and the oil can be used for industrial purposes only. If HEAR is commercially grown, it will be under contract and a delivery point must be identified before planting. View Table 1 for seed sources, brand names, and traits of the winter canola varieties and hybrids grown in the NWCVT.

Acknowledgments

This work was funded in part by the Supplemental and Alternative Crops Competitive Grants Program, which is administered by the U. S. Department of Agriculture-National Institute of Food and Agriculture, and the Kansas Agricultural Experiment Station. Assistant scientist Scott Dooley and student workers Emma Gantz, Jessica Martin, and Baylee Showalter assisted with organizing, packaging, planting, harvesting, and data collection. Sincere appreciation is expressed to all participating researchers and seed suppliers who have a vested interest in expanding winter canola acres and increasing production in the USA.

Table 1. Seed sources for entries in the 2012-2013 National Winter Canola Variety Trial

Developer / Marketer					Developer / Marketer				
Type ¹	Trait ^{2,3}	Release Date	Maturity ⁴	Type ¹	Trait ^{2,3}	Release Date	Maturity ⁴		
Kansas State University Canola Breeding Program Michael J. Stamm (mjstamm@ksu.edu)					DuPont Pioneer William McClure (william.mcclure@pioneer.com)				
KS4428	OP	---	---	M	46W94	Hyb	RR	2011	M
KS4475	OP	---	---	M	46W99	Hyb	RR	2011	M
KSUR21	OP	SU	---	F	PT211	Hyb	---	---	M
KSR07363	OP	RR	---	M	X10W443C	Hyb	---	---	M
Riley	OP	---	2010	M	X10W665C	Hyb	SD	---	F
Sumner	OP	SU	2003	E	X12W377C	Hyb	SD	---	F
Wichita	OP	---	1999	M					
DL Seeds Inc. (Developer) Kevin McCallum (kevin.mccallum@dlseeds.ca)					Syngenta Patrick.Carruthers@SYNGENTA.COM				
Rubisco Seeds LLC (Marketer) Claire Caldbeck (info@rubiscoseeds.com)					NK PETROL Hyb --- --- M				
Baldur	Hyb	---	2004	M	NK Technic	Hyb	---	---	M
Dimension	Hyb	---	2008	E	Gladius	Hyb	---	---	M
Dynastie	Hyb	---	2007	F	SY Regata	Hyb	---	---	E
Edimax	Hyb	CL	2012	M					
Flash	Hyb	---	2007	F	CROPLAN by WinField Mark Torno (Mtorno@landolakes.com)				
Hornet	Hyb	---	2008	M	HyClass 115W	OP	RR/SURT	2008	E
Inspiration	Hyb	---	---	M	HyClass 125W	OP	RR/SURT	2010	M
NPZ 1005	Hyb	---	---	M					
Rumba	Hyb	---	---	M	Virginia State University Agricultural Experiment Station Dr. Harbans Bhardwaj (hbhardwj@vsu.edu)				
Safran	Hyb	---	2008	M	Virginia	OP	---	2003	M
Sitro	Hyb	---	2007	M	VSX-3	OP	---	---	M
Visby	Hyb	---	2008	M					
High Plains Crop Development Dr. Charlie Rife (charlie@highplainscd.com)					Technology Crops International Jeff Riddle (jriddle@techcrops.com)				
Claremore	OP	IMI	2011	F	Rossini	H	HEAR	2009	E
HPX-7228	OP	---	---	E	TCI16	H	HEAR	---	E
HPX-7341	OP	---	---	M	TCI17	H	HEAR	---	M
					TCI/F13	H	---	---	M
MOMONT, France Dr. Thierry Momont (tmomont@momont.com)									
Chrome	Hyb	---	2010	M					
MH07J14	Hyb	---	---	M					
MH09E3	Hyb	---	---	E					
MH09H19	Hyb	---	---	M					
Monsanto / DEKALB James Bosch (james.c.bosch@monsanto.com)									
DKW41-10	OP	RR	2008	E					
DKW44-10	OP	RR	2009	M					
DKW46-15	OP	RR/SURT	2008	M					
DKW47-15	OP	RR/SURT	2008	F					

¹OP = open pollinated, Hyb = hybrid

²SU & SURT = sulfonylurea carryover tolerant; CL = Clearfield (imidazolinone resistant); IMI = imidazolinone carryover tolerant; RR = Roundup Ready; SD = semi dwarf

³HEAR = High Erucic Acid Rapeseed. Contains greater than 2% erucic acid in the processed oil. Can be used only for industrial purposes. HEAR is not canola.

⁴E = Early; M = Medium; F = Full

Andale, Kansas

Brent Gruenbacher and Mike Patry

Planted: 9/18/2012 at 5 lb/a in 9-in. rows
 Swathed: 6/13/2013
 Harvested: 6/22/2012
 Irrigation: None
 Soil Test: NA
 Soil Type: Blanket silt loam
 Elevation: 1393 ft Latitude: 37° 47'N
 Comments: Spotty stands caused by fallow sorghum residue. The canola compensated well and produced exceptional yields.

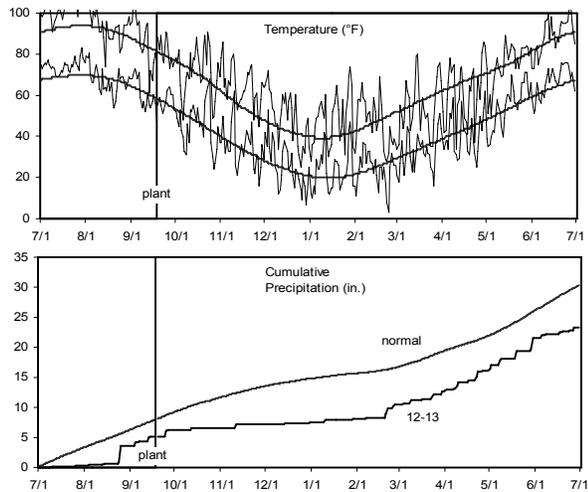


Table 2. Results for the 2013 National Winter Canola Variety Trial at Andale, KS

Name	Yield (lb/a)			Yield (% of test avg.)			Winter survival (%)	Fall stand (0-10)	Plant height (in.)	Moisture (%)	Test weight (lb/bu)	Oil (%)
	2013	2012	2-yr.	2013	2013	2012						
CROPLAN by WinField												
HyCLASS115W	2892	---	---	99	---	---	---	7	49	8.7	50.6	---
HyCLASS125W	2614	---	---	90	---	---	---	6	51	8.8	47.2	---
DL Seeds Inc. / Rubisco Seeds LLC												
Baldur	2950	---	---	101	---	---	---	6	49	9.7	50.3	---
Dimension	3078	---	---	105	---	---	---	5	47	8.6	48.8	---
Dynastie	2858	---	---	98	---	---	---	5	53	9.5	46.6	---
Flash	2730	---	---	94	---	---	---	6	55	9.1	48.3	---
Hornet	2416	---	---	83	---	---	---	6	51	8.8	49.9	---
Safran	2799	---	---	96	---	---	---	6	53	8.9	48.8	---
Sitro	3032	---	---	104	---	---	---	7	52	8.6	49.0	---
Visby	2834	---	---	97	---	---	---	5	46	9.0	50.9	---
DuPont Pioneer												
46W94	3148	---	---	108	---	---	---	7	51	8.5	48.8	---
46W99	2950	---	---	101	---	---	---	5	49	8.7	48.3	---
Kansas State University												
Riley	2823	---	---	97	---	---	---	6	52	8.3	47.5	---
Sumner	2590	---	---	89	---	---	---	6	51	8.2	48.5	---
Wichita	3067	---	---	105	---	---	---	6	51	8.9	50.2	---
MOMONT												
CHROME	3380	---	---	116	---	---	---	4	51	8.8	51.4	---
Monsanto / DEKALB												
DKW41-10	2590	---	---	89	---	---	---	8	46	8.3	51.9	---
DKW44-10	2823	---	---	97	---	---	---	7	49	8.4	48.8	---
DKW46-15	2776	---	---	95	---	---	---	6	47	8.0	48.1	---
DKW47-15	2544	---	---	87	---	---	---	5	51	10.1	48.5	---
Syngenta												
Gladius	3287	---	---	113	---	---	---	6	51	8.9	50.6	---
NK PETROL	3218	---	---	110	---	---	---	5	50	9.4	49.6	---
NK Technic	3438	---	---	118	---	---	---	7	47	8.4	49.4	---
SY Regata	3194	---	---	109	---	---	---	5	49	9.0	48.2	---
Mean	2918	---	---	---	---	---	---	6	50	8.8	49.2	---
CV	10	---	---	---	---	---	---	21	9	5.9	4.6	---
LSD (0.05)	473	---	---	---	---	---	---	2	NS	0.9	NS	---

Bold: Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

Belleville, Kansas

Randall Nelson
Kansas State University

Planted: 9/6/2012 at 5 lb/a in 9-in. rows
Swathed: 6/26/2013
Harvested: 7/2/2013
Irrigation: None
Soil Test: NA
Soil Type: Crete silt loam
Elevation: 1530 ft Latitude: 39° 48'N
Comments: Ideal weather at seed fill resulted in excellent yields. No negative effects from late freezes.

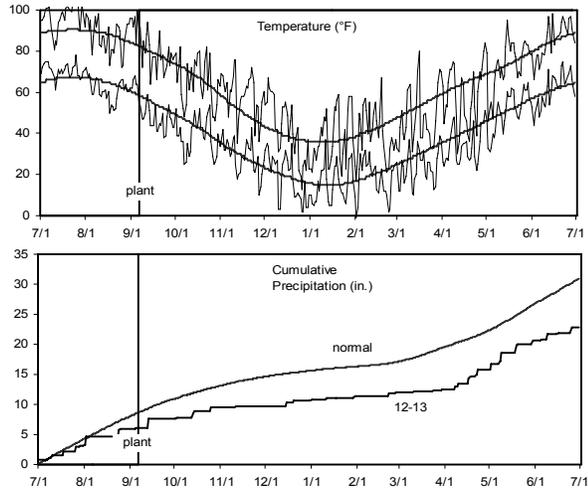


Table 3. Results for the 2013 National Winter Canola Variety Trial at Belleville, KS

Name	Yield (lb/a)			Yield (% of test avg.)			Winter survival (%)		Fall stand	Vigor	Plant height	Moisture	Oil
	2013	2012	2-yr.	2013	2013	2012	2-yr.	(0-10)	(1-5)	(in.)	(%)	(%)	
Bayer CropScience													
RG29101	2985	---	---	101	---	---	---	8	4	47	6.9	---	
RG29102	2985	---	---	101	---	---	---	8	3	47	7.0	---	
CROPLAN by WinField													
HyClass 115W	2509	3552	3031	85	---	---	---	8	3	47	7.0	---	
HyClass 125W	2939	3725	3332	99	---	---	---	9	3	49	6.6	---	
DL Seeds Inc. / Rubisco Seeds LLC													
Baldur	3160	3689	3424	107	---	---	---	8	3	47	7.1	---	
Dimension	3090	---	---	104	---	---	---	7	3	49	7.3	---	
Dynastie	3043	4328	3686	103	---	---	---	6	3	51	7.1	---	
Edimax	2892	---	---	98	---	---	---	8	4	52	6.8	---	
Flash	2904	3765	3334	98	---	---	---	8	4	51	7.2	---	
Hornet	2811	3804	3308	95	---	---	---	7	4	47	7.0	---	
Inspiration	3020	---	---	102	---	---	---	8	5	50	6.9	---	
NPZ 1005	3403	4846	4125	115	---	---	---	9	5	49	7.1	---	
Rumba	3090	4382	3736	104	---	---	---	9	5	45	7.1	---	
Safran	3078	4392	3735	104	---	---	---	5	3	51	6.9	---	
Sitro	2985	3892	3439	101	---	---	---	5	4	46	7.0	---	
Visby	3136	4174	3655	106	---	---	---	8	3	47	7.2	---	
DuPont Pioneer													
46W94	3113	4249	3681	105	---	---	---	8	3	46	7.0	---	
46W99	2881	3851	3366	97	---	---	---	6	3	45	7.3	---	
PT211	3194	---	---	108	---	---	---	9	5	47	7.1	---	
X10W443C	3659	---	---	124	---	---	---	9	3	47	7.2	---	
X10W665C	3299	---	---	112	---	---	---	9	4	47	7.1	---	
X12W377C	3276	---	---	111	---	---	---	5	3	46	7.1	---	
High Plains Crop Development													
Claremore	2707	3040	2873	92	---	---	---	9	3	50	7.2	---	
HPX-7228	2916	3768	3342	99	---	---	---	7	4	45	6.8	---	
HPX-7341	2753	3910	3331	93	---	---	---	8	4	50	7.0	---	
Kansas State University													
KS4428	2497	4029	3263	84	---	---	---	2	2	49	7.3	---	
KS4476	2916	---	---	99	---	---	---	7	2	53	7.6	---	
KSR07363	2788	---	---	94	---	---	---	7	2	45	6.9	---	
KSUR21	2799	---	---	95	---	---	---	6	2	53	7.4	---	
Riley	2974	4310	3642	101	---	---	---	8	3	51	7.2	---	
Sumner	2451	4063	3257	83	---	---	---	7	2	47	7.3	---	
Wichita	2753	3470	3112	93	---	---	---	8	2	47	6.9	---	

Table 3 continued. Results for the 2013 National Winter Canola Variety Trial at Belleville, KS

Name	Yield (lb/a)			Yield (% of	Winter survival (%)			Fall	Vigor	Plant	Moisture	Oil
	2013	2012	2-yr.	test avg.)	2013	2012	2-yr.	stand	(1-5)	height	(%)	(%)
								(0-10)		(in.)		
MOMONT												
CHROME	3543	4663	4103	120	---	---	---	8	3	47	7.2	---
MH07J14	3113	4767	3940	105	---	---	---	8	4	49	7.2	---
MH09E3	3183	---	---	108	---	---	---	8	3	43	6.8	---
MH09H19	2939	4719	3829	99	---	---	---	7	4	47	7.6	---
Monsanto / DEKALB												
DKW41-10	2219	3332	2775	75	---	---	---	9	3	39	6.1	---
DKW44-10	2869	4296	3583	97	---	---	---	9	3	47	7.0	---
DKW46-15	2346	3650	2998	79	---	---	---	8	3	46	6.2	---
DKW47-15	2463	3923	3193	83	---	---	---	9	3	49	6.8	---
Syngenta												
Gladius	3148	---	---	106	---	---	---	8	3	47	7.1	---
NK Technic	3345	---	---	113	---	---	---	8	4	51	7.3	---
NK_PETROL	3264	---	---	110	---	---	---	8	4	51	7.2	---
SY Regata	3287	---	---	111	---	---	---	7	4	49	7.3	---
Technology Crops International												
Rossini	2765	4306	3535	93	---	---	---	8	4	42	6.7	---
TCI/F13	2834	---	---	96	---	---	---	9	5	49	7.1	---
TCI16	2974	---	---	101	---	---	---	9	5	47	7.2	---
TCI17	3090	---	---	104	---	---	---	8	4	51	7.1	---
Virginia State University												
Virginia	2869	3948	3409	97	---	---	---	9	3	46	7.2	---
VSX-3	2625	4228	3426	89	---	---	---	9	4	46	7.0	---
Mean	2958	3978	3468	---	---	---	---	8	3	48	7.1	---
CV	8	11	10	---	---	---	---	11	22	8	5.3	---
LSD (0.05)	384	735	560	---	---	---	---	1	1	6	0.6	---

Bold: Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

Hutchinson, Kansas

Gary Cramer
Kansas State University

Planted: 9/17/2012 at 5 lb/a in 9-in. rows
 Swathed: 6/14/2013
 Harvested: 6/20/2013
 Irrigation: None
 Previous Crop: Wheat
 Soil Test: NA
 Soil Type: Funmar-Taver loam
 Elevation: 1570 ft Latitude: 37° 57'N
 Comments: The canola responded favorably after the late spring freezes. Ideal weather at seed fill resulted in very good yields.

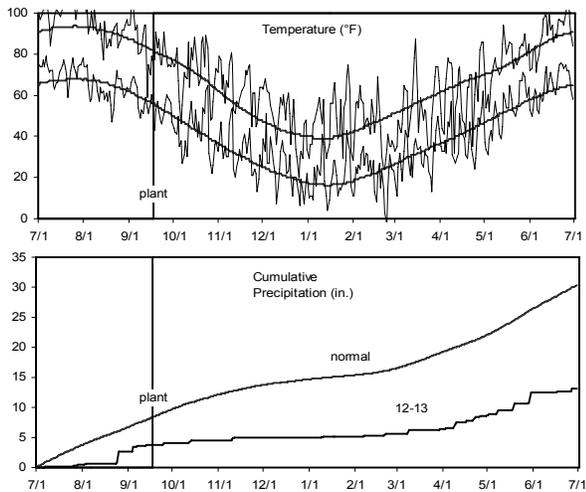


Table 4. Results for the 2013 National Winter Canola Variety Trial at Hutchinson, KS

Name	Yield (lb/a)			Yield (% of test avg.)			Winter survival (%)		Fall stand	Moisture	Test		
	2013	2012	2-yr.	2013	2013	2012	2-yr.	(0-10)	(%)	weight	Protein	Oil	
											(lb/bu)	(%)	(%)
Bayer CropScience													
RG29101	2063	---	---	97	---	---	---	8	11.8	---	---	---	---
RG29102	2162	---	---	102	---	---	---	8	10.2	---	---	---	---
CROPLAN by WinField													
HyClass 115W	1889	---	---	89	---	---	---	8	10.5	---	---	---	---
HyClass 125W	1723	---	---	81	---	---	---	7	10.7	---	---	---	---
DL Seeds Inc. / Rubisco Seeds LLC													
Baldur	2172	---	---	103	---	---	---	6	11.3	---	---	---	---
Dimension	2138	---	---	101	---	---	---	5	10.7	---	---	---	---
Dynastie	2067	---	---	98	---	---	---	5	11.7	---	---	---	---
Edimax	1882	---	---	89	---	---	---	7	11.0	---	---	---	---
Flash	1688	---	---	80	---	---	---	8	11.9	---	---	---	---
Hornet	2125	---	---	100	---	---	---	6	11.2	---	---	---	---
Inspiration	2085	---	---	98	---	---	---	7	10.9	---	---	---	---
NPZ 1005	2381	---	---	112	---	---	---	7	9.5	---	---	---	---
Rumba	1863	---	---	88	---	---	---	8	10.7	---	---	---	---
Safran	2179	---	---	103	---	---	---	4	11.4	---	---	---	---
Sitro	1749	---	---	83	---	---	---	6	10.5	---	---	---	---
Visby	2079	---	---	98	---	---	---	6	9.2	---	---	---	---
DuPont Pioneer													
46W94	2201	---	---	104	---	---	---	7	10.5	---	---	---	---
46W99	2114	---	---	100	---	---	---	4	10.2	---	---	---	---
PT211	2395	---	---	113	---	---	---	7	9.5	---	---	---	---
X10W443C	2765	---	---	131	---	---	---	8	11.1	---	---	---	---
X10W665C	3260	---	---	154	---	---	---	8	11.1	---	---	---	---
X12W377C	2556	---	---	121	---	---	---	5	10.6	---	---	---	---
High Plains Crop Development													
Claremore	1850	---	---	87	---	---	---	8	10.9	---	---	---	---
HPX-7228	1874	---	---	88	---	---	---	6	9.7	---	---	---	---
HPX-7341	1826	---	---	86	---	---	---	8	9.1	---	---	---	---
Kansas State University													
KS4428	1902	---	---	90	---	---	---	2	11.7	---	---	---	---
KS4476	2308	---	---	109	---	---	---	6	11.4	---	---	---	---
KSR07363	1885	---	---	89	---	---	---	7	9.6	---	---	---	---
KSUR21	1852	---	---	87	---	---	---	3	11.2	---	---	---	---
Riley	2035	---	---	96	---	---	---	8	10.0	---	---	---	---
Sumner	1677	---	---	79	---	---	---	7	10.5	---	---	---	---
Wichita	1784	---	---	84	---	---	---	7	10.8	---	---	---	---

Table 4 continued. Results for the 2013 National Winter Canola Variety Trial at Hutchinson, KS

Name	Yield (lb/a)			Yield (% of test avg.)			Winter survival (%)		Fall stand	Moisture	Test		Oil
	2013	2012	2-yr.	2013	2013	2012	2-yr.	(0-10)	(%)	(lb/bu)	Protein (%)	Oil (%)	
MOMONT													
CHROME	2807	---	---	133	---	---	---	7	11.0	---	---	---	
MH07J14	2543	---	---	120	---	---	---	8	11.5	---	---	---	
MH09E3	2653	---	---	125	---	---	---	7	11.3	---	---	---	
MH09H19	2151	---	---	102	---	---	---	8	10.2	---	---	---	
Monsanto / DEKALB													
DKW41-10	1462	---	---	69	---	---	---	8	9.8	---	---	---	
DKW44-10	1877	---	---	89	---	---	---	8	10.2	---	---	---	
DKW46-15	1653	---	---	78	---	---	---	8	9.9	---	---	---	
DKW47-15	1756	---	---	83	---	---	---	7	10.2	---	---	---	
Syngenta													
Gladius	2322	---	---	110	---	---	---	7	9.9	---	---	---	
NK PETROL	2523	---	---	119	---	---	---	6	10.5	---	---	---	
NK Technic	2729	---	---	129	---	---	---	7	10.7	---	---	---	
SY Regata	2378	---	---	112	---	---	---	5	9.6	---	---	---	
Technology Crops International													
Rossini	1755	---	---	83	---	---	---	7	9.6	---	---	---	
TCI/F13	1910	---	---	90	---	---	---	8	10.8	---	---	---	
TCI16	1963	---	---	93	---	---	---	7	10.7	---	---	---	
TCI17	2115	---	---	100	---	---	---	8	11.6	---	---	---	
Virginia State University													
Virginia	2593	---	---	122	---	---	---	8	10.9	---	---	---	
VSX-3	2183	---	---	103	---	---	---	8	10.8	---	---	---	
Mean	2118	---	---	---	---	---	---	7	10.6	---	---	---	
CV	14	---	---	---	---	---	---	12	8.0	---	---	---	
LSD (0.05)	482	---	---	---	---	---	---	1	1.4	---	---	---	

Bold: Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

To access crop performance testing information electronically, visit our website. The information contained in this publication, plus more, is available for viewing or downloading at:

www.agronomy.ksu.edu/kscpt

Excerpts from the
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Permission is hereby given to Kansas State University (KSU) to test varieties and/or hybrids designated on the attached entry forms in the manner indicated in the test announcements. I certify that seed submitted for testing is a true sample of the seed being offered for sale.

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