

2012

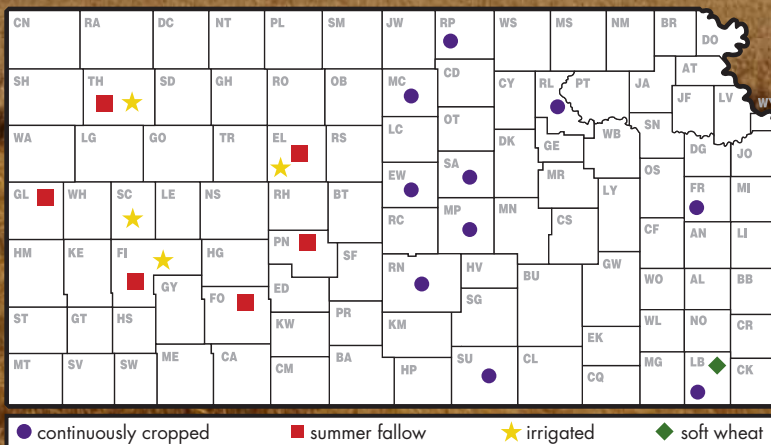
Kansas Performance Tests with Winter Wheat Varieties

Report of Progress 1072



K-STATE
Research and Extension

**Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service**



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*Excerpts from the National Winter Canola Variety Trial, Report of Progress 1062, Kansas State University Agricultural Experiment Station and Cooperative Extension Service (to be published in winter 2012-2013).

2012 WHEAT CROP REVIEW

Weather and Crop Development

Following the drought-stricken conditions of 2011, the 2011-2012 Kansas wheat crop flourished early on for the most part due to a mild winter and normal precipitation levels. The spring months brought unseasonably warm temperatures and scattered rain showers throughout the state. As the crop neared maturity, the weather settled into hot, dry conditions that were record-breaking in some locations: May 2012 ranks as the third warmest on record for Kansas. Many wheat producers determined that their wheat had died and shriveled from the heat and lack of moisture before it had the chance to ripen, leading to wide fluctuations in test weight and quality even within the same field.

Because of the mild winter and above-normal temperatures in the spring, the development of the 2011-2012 wheat crop progressed at an extremely accelerated pace for most of the season. The 2012 wheat harvest—two to three weeks early for most of the state—also ranks as the earliest on record for Kansas.

The quality of the 2011-2012 wheat crop reflected the range of conditions during the growing season; 40% of the crop was rated as good or excellent, 36% rated as fair, and 24% was rated as poor to very poor. (*Crop Progress and Conditions* report, Kansas Agricultural Statistics)

Diseases

Stripe rust was a serious problem in Kansas during the 2012 growing season. Severe stripe rust developed on varieties that were resistant to stripe rust in previous years, including some of the most widely grown varieties in the state. Stripe rust was a problem in nearly all areas of the state, and many growers responded to the emerging threat of disease with foliar fungicide applications. Hot, dry weather slowed the development of stripe rust in some areas, but in many cases this was not enough to avoid the disease. In some counties, more than 50% of the wheat acres were treated with a fungicide application. While these applications likely prevented much of the potential yield loss to stripe rust, they also significantly added to the production costs for many farmers.

Barley yellow dwarf (BYD) was also a significant problem central and eastern Kansas in 2012. The outbreak of BYD this year makes for three consecutive years that this viral disease has been a problem for wheat producers in the state.

Wheat streak mosaic (WSM) was reported in most areas of the state this year. Historically, wheat streak mosaic is most common in western Kansas and localized problems were reported in northwest Kansas again this year. WSM was reported in central KS also with severe outbreaks in Clay, Cloud, Dickinson, McPherson, Saline, and

Washington Counties. (Erick De Wolf and Bill Bockus, Kansas State University Plant Pathologists)

Insects

Very few problems were reported from planting until winter dormancy throughout the state. A few fall army cutworm infestations occurred in south central Kansas, but timely rains helped plants compensate for the larval feeding, so treatments were not required. Chinch bugs caused much concern in the spring because there were many areas in south central and north central Kansas that had adult infestations sufficient to cause considerable thinning, especially coupled with the dry weather. Areas of wheat streak mosaic and barley yellow dwarf infections were noted in different parts of the state, but levels were probably about average. No Hessian fly outbreaks were noted, but this pest continues at about 1% infestation levels in most fields sampled throughout the state. (Jeff Whitworth, Kansas State University Extension Entomologist)

Harvest Statistics

The Kansas Agricultural Statistics June 12 estimate of the 2012 crop was 387.0 million bushels from 9.0 million acres, up significantly from the 2011 wheat crop and the largest area harvested since 2006. If realized, this will be the highest production since 2003. Yield per harvested acre is expected to average 43 bushels, up 8 bushels from last year's final yield. (June 12, 2012, *Crops Report*, Kansas Agricultural Statistics)

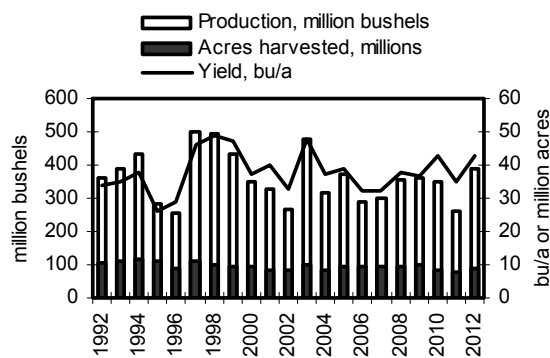


Figure 1. Historical Kansas wheat production

TAM 111 held on as the leading variety of wheat seeded in Kansas. It accounted for 12.6% of the state's wheat and was the most popular variety in the western third of the state. Everest jumped up 14 spots to second with 8% of acreage. Armour moved into third place with 7.5%. Fuller

dropped to fourth place, accounting for 5.5% of wheat acres. TAM 112 came in fifth at 5.2%. (February 1, 2012, *Wheat Variety*, Kansas Agricultural Statistics)

Acres Distribution

TAM 111 19 (20) Postrock 11 (12) Fuller 9 (10) Hatcher 6 (4) TAM 112 6 (6)	Armour 13 (3) Everest 11 Postrock 8 (12) Fuller 8 (11) Art 7 (12)	Everest 12 Santa Fe 8 (15) Fuller 4 (7) Karl/Karl 4 (6) Armour 4
TAM 111 29 (32) TAM 112 10 (10) Hatcher 9 (7) T158 5 Postrock 4	Armour 18 (8) Everest 15 Art 10 (13) Postrock 6 (10) Fuller 6 (11)	Everest 22 Santa Fe 8 (14) Art 6 (10) 2137 6 (7) Fuller 5 (12)
TAM 111 24 (24) TAM 112 12 (10) Jagalene 7 (10) Postrock 5 (5) Danby 5 (5)	Everest 13 Armour 10 Duster 8 Fuller 8 (15) Art 7 (12)	Everest 37 Fuller 8 (24) Armour 7 (6) Santa Fe 6 (8) Endurance 3 (6)

**Figure 2. Leading wheat varieties in Kansas
Percentage of seeded acreage for 2012 and (2011) crops**

2012 PERFORMANCE TESTS

The Kansas Agricultural Experiment Station annually compares both new and currently grown varieties in the state's major crop-producing areas. These performance tests generate unbiased performance information designed to help Kansas growers select wheat varieties suited for their area and conditions.

Site descriptions and management practices for each site are summarized in Table 3. One-year or one-location results can be misleading because of the possibility of unusual weather or pest conditions.

Environmental Factors

Heat damage and severity of strip rust were determining factors in many of the tests in the 2011-2012 growing season. **Be sure to keep extenuating environmental conditions in mind when examining test results.**

Varieties

Public varieties are selected for inclusion in the tests on the basis of several criteria. Most represent new or established varieties from Nebraska, Oklahoma, and Colorado with potential for successful use in Kansas. Some are included as long-term checks. Others are entered at the request of the originating institution. Twenty-four public wheat varieties were entered for testing.

Originators or marketers enter privately developed varieties on a voluntary basis. Entrants choose both the entries and test sites. The 2012 private entrants are listed

in Table 1. Eleven entrants provided a total of 32 varieties for testing.

Table 13 describes the characteristics of seed submitted for testing. Seed quality—including factors such as size, purity, and germination—can be important in determining the performance of a variety. Wheat seed used for entries in the Kansas Crop Performance Tests is prepared professionally and usually meets or exceeds Kansas Crop Improvement Certification standards. Performance of a given variety similar to that obtained in these tests is best assured under similar environmental and cultural conditions and with the use of certified or professionally prepared seed.

Results and Variety Characterization

Results from Kansas tests are presented in Tables 4 through 12. Yields are reported as bushels per acre (60 lb/bu) and are adjusted to a moisture content of 13% where moistures were reported at harvest. Yields also are converted to percentages of the test average to speed recognition of highest-yielding entries. Multi-year averages are presented for those varieties entered more than 1 year.

Additional information such as test weight, heading date, and plant height is helpful for fine-tuning variety comparisons. Planting varieties with a range of maturities helps minimize weather risks.

At the bottom of each table is the (0.05) LSD (least significant difference) for each column of replicated data. One can think of the LSD as a “margin of error” that shows how big the difference between two varieties must be for one to be 95% confident that the difference is real. The use of the LSD is intended to reduce the chance of overemphasizing small differences. Small variations in soil structure, fertility, water-holding characteristics, and other test-site characteristics can cause considerable yield variation among plots of one variety.

Electronic Access

To access crop performance testing information electronically, visit the website at: <http://www.agronomy.ksu.edu/kscpt>

Research and Duplication Policy

When companies submit entries, permission is given to Kansas State University to test varieties and/or hybrids designated on the entry forms in the manner indicated in the test announcements. Seed submitted for testing should be a true sample of the seed being offered for sale.

All results from Kansas Crop Performance Tests belong to the University and the public and shall be controlled by the University to produce the greatest benefit to the public. Performance data may be used in the following ways: 1) Tables may be reproduced in their entirety,

provided the source is referenced and data are not manipulated or reinterpreted; 2) Advertising statements by an individual company about the performance of its entries may be made as long as they are accurate statements about the data as published, with no reference to other companies' names or cultivars. In both cases, the following must be included with the reprint or ad citing the appropriate publication number and title: "See the official Kansas State University Agricultural Experiment Station and Cooperative Extension Service Report of Progress 1072 '2012 Kansas Performance Tests with Winter Wheat Varieties,' or the Kansas Crop Performance Test website, <http://www.agronomy.ksu.edu/kscpt> for details. Endorsement or recommendation by Kansas State University is not implied."

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Table 1. Private entrants in the 2012 Kansas wheat performance tests

AgriPro-Syngenta
AgriPro Wheat, Inc.
11783 Ascher Rd.
Junction City, KS 66441
785-210-0218

AGSECO
P.O. Box 7
Girard, KS 66743
620-724-6223

Delange Seed, Inc.
P.O. Box 7
Girard, KS 66743
620-724-6223

Drussel
Drussel Seed and Supply
2197 W. Parallel Road
Garden City, KS 67846
620-275-2359

Kansas Wheat Alliance
2005 Research Park Circle
Manhattan, KS 66502
785-477-3400

Limagrain Cereal Seeds
2040 SE Frontage Road
Fort Collins, CO 80525
970-498-2200

MFA
MFA Incorporated
201 Ray Young Dr.
Columbia, MO 65201
573-876-5363

Pioneer Brand
Pioneer Hi-Bred Intl., Inc.
8100 South 15th
Lincoln, NE 68512
800-228-4050

Scott Seed Company
Box 1732
Hereford, TX 79045
806-364-3484

Watley
Watley Seed
PO Box 51
Spearman, TX 79081
806-659-3838

WestBred-Monsanto
540 Dickinson St.
Kiowa, KS 67543
620-825-4315

Table 2. Comparisons of leading winter wheat varieties - agronomy and quality

Variety ¹	% of Kansas seeded acreage ¹	Relative ²										Relative milling and baking quality ⁴	Resistance or tolerance to: ⁵														
		Test weight	Straw strength	Maturity	Coleoptile			Winter hardiness	Acid tolerance	Sprout tolerance	Protein content ³		Soil-borne mosaic	Spindle streak mosaic	Wheat streak mosaic	Barley yellow dwarf	Leaf rust	Stem rust	Stripe rust	Septoria		Pow-dery mildew	Head scab	Hessian fly	Russ. ⁶ wheat aphid		
					Height ³	length	Shattering													tritici blotch	Glume blotch					Tan spot	
TAM 111	12.6	3	2	4	6	2	2	7	MS	2	7	AC	8	8	7	7	8	3	8	5	--	6	6	7	6	9	
Everest	8	2	5	1	6	5	3	3	T	--	5	LD	1	1	7	4	3	6	8	4	5	7	3	4	6	9	
Armour	7.5	3	3	1	2	7	1	5	T	--	5	AC	1	1	7	6	5	3	7	6	7	5	2	7	6	9	
Fuller	5.5	5	4	2	5	5	2	3	I	3	3	AC	1	1	5	7	5	5	6	6	6	6	7	9	9		
TAM 112	5.2	2	4	2	5	2	2	5	T	--	3	AC	8	8	5	6	7	2	8	5	--	6	1	8	8	9	
PostRock	4.9	2	2	3	5	5	3	3	T	3	6	AC	2	5	6	7	6	4	7	8	7	5	8	7	3	9	
Art	4.3	3	3	3	6	5	5	5	T	3	5	AC	1	1	7	8	3	2	6	5	7	6	3	6	5	9	
Duster	2.6	3	9	5	5	7	1	7	T	7	5	AC	1	1	7	4	3	5	4	7	--	7	3	9	1	9	
Jagger	2.5	4	4	1	5	6	5	6	T	3	3	EX	2	4	5	7	9	5	7	3	6	4	7	7	8	9	
Hatcher	2.4	5	6	3	5	2	3	2	I	--	4	AC	7	8	8	8	7	3	4	5	--	5	5	6	6	9	
Jagalene	2.3	3	3	2	4	6	4	5	MT	2	4	EX	2	3	5	7	9	2	9	4	--	7	9	8	6	9	
Santa Fe	2.1	3	3	2	6	2	3	3	MT	--	5	AC	1	--	7	6	3	4	7	3	6	5	6	7	8	9	
Endurance	2.1	5	5	5	7	5	5	5	T	3	7	AC	2	8	7	5	5	5	5	5	--	7	5	6	4	9	
T158	1.6	1	1	3	5	--	1	3	S	--	--	--	2	--	5	5	7	7	2	7	--	4	2	5	4	9	
Overley	1.6	3	5	1	7	7	9	9	T	1	3	EX	1	4	5	5	8	2	5	5	8	5	7	9	8	9	
Danby+	1.3	3	4	3	6	5	2	2	MS	4	5	AC	7	--	5	8	8	2	8	6	--	8	7	7	9	9	
T81	1.0	4	5	2	4	7	3	3	I	2	7	AC	8	4	8	6	8	3	3	7	7	6	3	5	--	9	
Winterhawk	0.9	3	5	5	8	5	5	3	I	--	5	AC	1	1	7	5	7	8	6	7	6	6	6	7	3	9	
2137	0.8	4	3	3	5	7	5	3	T	2	7	AC	1	5	6	5	7	6	8	5	5	4	8	3	9		
Jackpot	0.7	2	5	1	6	--	1	5	T	--	5	AC	1	1	6	7	6	4	5	6	--	4	6	7	4	9	
Aspen+	0.6	2	1	1	1	5	1	2	MT	5	5	AC	1	1	7	6	6	4	3	5	--	5	2	6	3	9	
TAM 110	0.6	--	--	1	5	--	--	--	--	--	1	LD	9	9	5	8	9	4	8	6	6	7	1	8	--	9	
Shocker	0.4	3	2	1	5	5	5	6	MT	--	4	AC	1	2	8	7	4	1	7	4	--	6	5	8	--	9	
Karl/Karl 92	0.3	3	8	1	3	7	3	3	I	5	3	EX	1	3	9	8	8	6	5	5	3	3	4	6	--	9	
Protection	0.3	7	3	2	7	5	7	9	I	--	5	AC	4	3	7	8	9	4	7	6	--	7	7	8	8	9	
Hitch	0.3	5	2	5	3	5	5	3	S	--	5	LD	1	1	7	7	2	2	9	6	--	4	6	5	8	9	
TAM 101	0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9
Centerfield	0.3	3	2	5	3	7	1	7	I	1	5	AC	2	--	--	5	7	2	4	7	--	6	2	8	1	9	
T136	0.2	4	3	1	3	7	2	6	I	3	--	AC	1	--	5	8	8	3	3	7	--	7	7	7	--	9	
Ike	0.2	3	4	4	6	7	2	3	S	2	3	AC	1	5	9	6	9	3	6	7	6	8	6	6	2	9	
Cutter	0.2											AC	3	4	6	7	8	2	--	6	--	6	7	8	--	9	
Thunderbolt	0.2	2	--	3	7	6	6	--	MS	2	3	AC	8	8	6	7	7	8	5	6	--	7	7	7	9	9	
AP503 CL2	0.2											AC	2	5	6	7	8	2	9	4	--	7	7	7	--	9	
CJ	0.2											AC	5	6	4	7	6	2	7	4	--	5	5	7	1	9	
Blends	9.0																										
Other White	0.3																										
Other Red	16.2																										
Other Soft	0.3																										

+ Hard white variety Scale: 1=Best 9=Poor 1=Best 9=Poor 1=Early 9=Late 1=Short 9=Tall 1=Long 9=Short 1=Best 9=Poor 1=Best 9=Poor T=Toler S=Susc 1=Best 9=Poor 1=Best 9=Poor Scale: 1=Most resistant/tolerant 9=Least resistant/tolerant

¹ Varieties and percentage seeded acreage from the Feb. 3, 2012, wheat variety survey, Kansas Agricultural Statistics, Topeka, KS.

² Most ratings are estimates based on information and observations from many sources over several years. Agronomic information by Joe Martin - Hays, and Allan Fritz, Jim Shroyer, and Steve Watson - K-State Agronomy.

³ Summary of crop performance test results from recent years.

⁴ Ratings from Rebecca Miller - K-State Wheat Quality Laboratory.

EX = Exceptional; large kernels; high protein content; very good milling, mixing, and commercial bread-baking.

LD = Less Desirable; one or more serious quality defects.

-- = Inadequate information or conflicting data.

AC = Acceptable; milling and baking attributes acceptable, but not outstanding, for all properties; may have minor defects.

*Strong blending wheat; needed for blending with weaker wheats; may not be suitable alone for bread flour.

⁵ Ratings by Allan Fritz - Manhattan, Joe Martin - Hays, Erick DeWolf and Bill Bockus - K-State Plant Pathology, Phil Sloderbeck - K-State Entomology.

Final ratings and descriptions of disease and insect pests are available in "Wheat Variety Disease and Insect Ratings 2012," Publication MF991 from Kansas State University.

⁶ New Russian wheat aphid biotype is thought to be virulent on all currently available commercial varieties.

Table 3. Wheat performance test site descriptions and management in 2012

Region and location	Soil type previous crop	N	P₂O₅	K₂O		Plant-harvest seed rate	Conditions
<u>Northeast Dryland</u>							
Ashland Agronomy Farm Manhattan (MA)	Reading silt loam Soybean	70	--	--	Fall	10/19/2011-6/9/2012 75 lb/a	Decent conditions early in the season, but dry from May until harvest.
<u>Southeast Dryland</u>							
East Central KS Experiment Field Ottawa (OT)	Woodson silt loam Grain sorghum	94	35	15	Fall	10/6/2011-6/4/2012 60 lb/a	Generally favorable conditions. Most varieties had some BYD but survived to finish with good yields.
Southeast Agricultural Research Center Parsons (PA)	Parsons silt loam Corn	30	15	25	Fall	10/14/2011-5/30/2012 75 lb/a	Excellent stands for all varieties, very good fall tillering, no insects.
<u>Soft Wheat</u>							
Southeast Agricultural Research Center Parsons (PA)	Parsons silt loam Corn	30	15	25	Fall	10/14/2011-5/30/2012 75 lb/a	Excellent stands for all varieties, very good fall tillering, no insects.
<u>North Central Dryland</u>							
North Central KS Experiment Field Belleville (BE)	Crete silt loam Fallow	80	30	--	Fall	10/3/2011-6/13/2012 90 lb/a	Good planting conditions. Very mild winter. Very hot and dry late spring until harvest.
North Central KS Farmer's Field Beloit (BL)	Harney silt loam Wheat	108	83	--	Fall	9/29/2011-6/12/2012 80 lb/a	Good planting conditions. Very mild winter. Very hot and dry late spring until harvest.
<u>Central Dryland</u>							
Central KS Farmer's Field Gypsum (GY)	Silty clay loam Fallow	40	--	--	Fall	10/19/2011-6/7/2012 90 lb/a	Mild winter. Very dry late spring until harvest.
Central KS Farmer's Field Lorraine (LR)	McCook silt loam Fallow	60	--	--	Fall	10/13/2011-6/14/2012 60 lb/a	Dry conditions led to increased variability.
<u>South Central Dryland</u>							
South Central KS Farmer's Field McPherson (MC)	Crete silt loam Fallow	60	--	--	Fall	10/4/2011-6/9/2012 60 lb/a	Earlier-maturing varieties had the advantage because they avoided heat stress and dry conditions later on.
South Central KS Experiment Field Hutchinson (HU)	Ost silt loam Fallow	125	40	--	Fall	10/17/2011-6/8/2012 60 lb/a	Earlier-maturing varieties had a similar advantage at Hutchinson.
South Central KS Farmer's Field Conway Springs (CW)	Sandy loam Fallow	40	--	--	Fall	10/4/2011-6/5/2012 60 lb/a	Same as McPherson and Hutchinson.
<u>Northwest Dryland</u>							
Agricultural Research Center Hays (HA)	Harney silt loam Fallow	80	--	--	Fall	9/28/2011-6/7/2012 50 lb/a	Good establishment in the fall. Winter was mild with increased moisture.
Northwest Research-Extension Center Colby (CO)	Keith silt loam Fallow	60	--	--	Fall	9/22/2011-6/13/2012 60 lb/a	Very dry at planting with non-uniform stands until it rained 10 days later. Winter was mild and dry.
Northwest Research-Extension Center Tribune (TR)	Richfield silt loam Grain sorghum	85	25	--	Fall	9/20/2011-6/17/2012 55 lb/a	Decent conditions early in the season, but dry from mid-April until harvest. Some stripe rust observed.
<u>Southwest Dryland</u>							
Southwest KS Farmer's Field Larned (LA)	Harney clay loam Fallow	75	--	--	Fall	10/5/2011-6/3/2012 50 lb/a	Dry.
Southwest KS Farmer's Field Dodge City (DC)	Harney clay loam Fallow	60	--	--	Fall	10/13/2011-5/31/2012 45 lb/a	Very dry.
Southwest Research-Extension Center Garden City (GC)	Keith silt loam Fallow	60	--	--	Fall	9/29/2011- 65 lb/a	Very dry. Abandoned.
<u>Western Irrigated</u>							
Northwest Research-Extension Center Colby (CO)	Keith silt loam Fallow	110	--	--	Fall	9/21/2011-6/19/2012 90 lb/a	Good stands were established. Winter was mild and dry.
Agricultural Research Center Hays (HA)	Harney silt loam Fallow	80	--	--	Fall	10/6/2011-6/11/2012 80 lb/a	Good establishment in the fall. Winter was mild with increased moisture.
Southwest Research-Extension Center Garden City (GC)	Keith silt loam Corn	80	--	--	Fall	9/29/2011-6/18/2012 75 lb/a	Adequate moisture.
Western KS Farmer's Field Scott City (SC)	Scott silt loam Fallow	90	--	--	Fall	9/29/2011-6/20/2012 80 lb/a	Decent conditions early in the growing season, but dry from mid-April until harvest.

Table 4. 2012 NORTHEAST Kansas dryland winter wheat performance tests

Brand / Name	MA ¹		2yr		3yr	tw (lb/bu)	head (+/- Everest)	height (in.)
	yield (bu/a)	% of test average	multiyear av. (bu/a)					
AgriPro								
Art	36	91	50	--		60	--	--
CJ	34	86	49	--		59	--	--
SY Southwind	38	96	--	--		55	--	--
SY Wolf	40	100	--	--		57	--	--
Kansas								
Clara CL	31	78	--	--		58	--	--
Everest	45	113	54	--		56	--	--
Fuller	35	88	48	--		60	--	--
KS020319	42	106	--	--		60	--	--
Limagrain								
T153	40	100	--	--		53	--	--
T158	43	109	--	--		50	--	--
Oklahoma								
Billings	43	107	55	--		55	--	--
Duster	40	100	54	--		51	--	--
Endurance	40	101	53	--		53	--	--
Garrison	41	102	--	--		53	--	--
OK07209	47	119	--	--		57	--	--
Ruby Lee	50	126	--	--		59	--	--
Trio-Research								
T154	41	102	54	--		53	--	--
T163	27	67	--	--		51	--	--
WestBred								
Armour	34	85	48	--		57	--	--
Hitch	40	100	52	--		60	--	--
Santa Fe	41	103	52	--		56	--	--
WB-Cedar	48	120	57	--		60	--	--
Averages								
Averages	40	40	--	--		56	--	--
CV (%)	15	15	--	--		0	--	--
LSD (0.05)*	8	21	--	--		0	--	--

¹ MA = Manhattan, KS, Ashland Bottoms Research Farm, Riley County.

* Least significant difference, similar to margin of error, indicates difference needed to overcome test error.

Table 5. 2012 SOUTHEAST Kansas dryland winter wheat performance tests

Brand / Name	OT ¹ PA ² Av.			OT PA Av.			-OT- 2yr 3yr		-PA- 2yr 3yr		OT PA Av.			OT PA Av.			OT PA Av.					
	yield (bu/a)			% of test average			multiyear av. (bu/a)				tw (lb/bu)			head (+/- Everest)			height (in.)					
AgriPro																						
Art	60	56	58	99	86	93	--	--	--	--	60	61	60	--	8	8	--	32	32			
CJ	51	76	63	84	115	100	54	--	55	55	61	62	61	--	5	5	--	34	34			
JackPot	61	71	66	101	108	104	62	--	58	57	60	62	61	--	6	6	--	36	36			
SY Southwind	67	67	67	110	102	106	--	--	--	--	60	61	61	--	5	5	--	33	33			
Kansas																						
(W) Clara CL	59	50	54	97	76	86	--	--	--	--	61	61	61	--	0	0	--	30	30			
Everest	63	75	69	103	114	109	64	--	63	61	60	61	61	--	9	9	--	33	33			
Fuller	61	55	58	101	84	93	61	--	50	46	60	62	61	--	9	9	--	34	34			
KS020319	56	67	61	93	102	97	--	--	--	--	61	61	61	--	4	4	--	37	37			
Limagrain																						
T153	63	73	68	103	112	107	--	--	--	--	59	61	60	--	2	2	--	33	33			
T154	63	64	63	104	97	101	65	--	46	--	60	62	61	--	1	1	--	33	33			
Oklahoma																						
Billings	59	66	63	98	101	99	60	--	58	55	61	62	61	--	3	3	--	34	34			
Duster	61	50	55	100	76	88	66	--	51	--	61	62	62	--	4	4	--	32	32			
Endurance	64	67	65	105	102	104	64	--	56	53	60	61	61	--	6	6	--	34	34			
Garrison	58	70	64	95	106	101	--	--	--	--	60	61	61	--	6	6	--	34	34			
OK07209	62	52	57	103	79	91	--	--	--	--	62	62	62	--	7	7	--	32	32			
Ruby Lee	58	62	60	96	94	95	--	--	--	--	60	62	61	--	8	8	--	36	36			
WestBred																						
Armour	71	70	71	118	107	112	67	--	60	58	59	61	60	--	4	4	--	32	32			
Hitch	56	67	62	93	103	98	59	--	53	50	61	61	61	--	10	10	--	33	33			
Santa Fe	58	62	60	95	94	95	60	--	53	49	59	61	60	--	6	6	--	34	34			
WB-Cedar	62	93	77	102	142	122	63	--	68	66	59	61	60	--	0	0	--	33	33			
Averages	61	66	63	61	66	63	--	--	--	--	60	61	61	--	5	5	--	33	33			
CV (%)	7	8	8	7	8	8	--	--	--	--	1	1	1	--	1	1	--	4	4			
LSD (0.05)*	6	8	7	10	12	11	--	--	--	--	1	0	1	--	1	1	--	2	2			

¹ OT = Ottawa, KS, East Central Experiment Field, Franklin County.

² PA = Parsons, KS, Southeast Agricultural Research Center, Labette County.

(W) = Hard white wheat.

* Least significant difference, similar to margin of error, indicates difference needed to overcome test error.

Table 6. 2012 SOUTHEAST Kansas SOFT winter wheat performance tests

Brand / Name	PA ¹	PA	-PA-		PA	PA	PA
	yield (bu/a)	% of test average	2yr	3yr	tw (lb/bu)	head (+/- Everest)	height (in.)
DeLange							
Arrow	85	93	--	--	61	2	35
Kansas							
Everest	82	89	--	--	61	0	34
Fuller	58	63	--	--	62	4	34
MFA							
(S) 2018	86	93	--	--	61	6	36
(S) 2525	91	99	74	--	61	10	39
Pioneer							
(S) 25R30	116	126	99	--	61	6	35
(S) 25R39	103	112	--	--	61	9	36
(S) 25R40	113	123	89	--	61	9	31
Averages	92	92	--	--	61	6	35
CV (%)	5	5	--	--	0	1	3
LSD (0.05)*	7	8	--	--	0	1	1

¹ PA = Parsons, KS, Southeast Agricultural Research Center, Labette County.

(S) = Soft red wheat.

* Least significant difference, similar to margin of error, indicates difference needed to overcome test error.

Table 7. 2012 NORTH CENTRAL Kansas dryland winter wheat performance tests

Brand / Name	BE ¹ BL ² Av.			BE BL Av.			-BE- 2yr 3yr		-BL- 2yr 3yr		BE BL Av.			BE BL		BE BL Av.		
	yield (bu/a)			% of test average			multiyear av. (bu/a)				tw (lb/bu)			(+/- Everest)		height (in.)		
AgriPro																		
Art	76	63	69	84	89	87	82	78	70	--	61	58	59	--	--	41	41	41
CJ	82	60	71	91	85	88	87	81	69	--	62	56	59	--	--	44	40	42
Postrock	78	68	73	87	96	91	86	82	69	--	61	52	57	--	--	40	41	41
SY Southwind	105	87	96	117	122	119	--	--	--	--	61	57	59	--	--	39	39	39
SY Wolf	98	70	84	110	99	104	95	--	--	--	61	62	62	--	--	39	39	39
Kansas																		
(W) Clara CL	93	61	77	103	86	95	--	--	--	--	62	57	59	--	--	40	40	40
Everest	93	89	91	104	125	114	99	93	92	--	62	52	57	--	--	38	40	39
Fuller	94	76	85	105	108	106	90	85	77	--	63	58	60	--	--	41	36	39
KS020319	93	80	86	104	112	108	--	--	--	--	62	59	60	--	--	42	39	40
Limagrain																		
T153	85	66	75	95	93	94	--	--	--	--	62	58	60	--	--	37	40	39
T154	88	67	78	98	95	96	87	--	--	--	62	60	61	--	--	38	40	39
T158	91	72	82	102	101	102	--	--	--	--	63	61	62	--	--	39	40	40
T163	81	66	73	90	93	92	--	--	--	--	60	52	56	--	--	39	42	41
Nebraska																		
McGill	75	58	66	84	81	82	72	--	--	--	57	60	58	--	--	41	39	40
NE05496	83	72	78	93	102	97	--	--	--	--	54	51	52	--	--	42	38	40
Robidoux	97	75	86	108	105	107	--	--	--	--	60	55	57	--	--	40	41	41
Oklahoma																		
Duster	91	77	84	102	108	105	87	--	--	--	64	62	63	--	--	41	40	41
Endurance	91	67	79	102	94	98	84	--	--	--	59	59	59	--	--	42	41	42
Garrison	82	71	77	92	100	96	--	--	--	--	63	58	60	--	--	40	43	41
OK07209	90	55	72	100	77	89	--	--	--	--	61	61	61	--	--	39	40	40
Ruby Lee	84	70	77	94	98	96	--	--	--	--	64	58	61	--	--	43	41	42
WestBred																		
Armour	82	64	73	91	89	90	96	93	75	--	61	58	59	--	--	36	41	39
Hitch	96	73	84	107	102	105	93	81	65	--	61	57	59	--	--	36	40	38
Santa Fe	96	74	85	107	105	106	87	81	70	--	62	57	60	--	--	41	40	41
WB-Cedar	105	75	90	118	106	112	106	98	90	--	62	61	62	--	--	37	40	39
Winterhawk	96	81	89	108	114	111	--	--	--	--	60	58	59	--	--	40	38	39
Averages	89	71	80	89	71	80	--	--	--	--	61	58	59	--	--	40	40	40
CV (%)	6	10	8	6	10	8	--	--	--	--	--	--	0	--	--	2	5	4
LSD (0.05)*	9	12	11	10	17	14	--	--	--	--	--	--	0	--	--	2	4	3

¹BE = Belleville, KS, North Central Experiment Field, Republic County.

²BL = Beloit, KS, Mitchell County.

(W) = Hard white wheat.

* Least significant difference, similar to margin of error, indicates difference needed to overcome test error.

Table 8. 2012 CENTRAL Kansas dryland winter wheat performance tests

Brand / Name	GY ¹ LR ² Av.			GY LR Av.			-GY- -LR-				GY LR Av.			GY LR Av.					
	yield (bu/a) (lb/a)			% of average			multiyear av. (bu/a)				tw (lb/bu)			head (+/- Everest)			height (in.)		
	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	
AgriPro																			
Art	31	43	37	72	95	84	39	43	42	--	43	54	48	--	--	--	--	--	--
CJ	45	36	41	105	80	93	49	50	38	--	55	55	55	--	--	--	--	--	--
Postrock	27	35	31	65	77	71	39	42	29	--	53	55	54	--	--	--	--	--	--
SY Southwind	43	46	45	102	103	102	--	--	--	--	54	58	56	--	--	--	--	--	--
SY Wolf	42	45	43	99	99	99	--	--	--	--	54	56	55	--	--	--	--	--	--
Colorado																			
CO050175-1	35	39	37	83	85	84	--	--	--	--	54	55	54	--	--	--	--	--	--
Kansas																			
(W) Clara CL	35	39	37	82	86	84	--	--	--	--	56	55	55	--	--	--	--	--	--
Everest	43	53	48	101	118	110	47	49	49	--	58	54	56	--	--	--	--	--	--
Fuller	41	44	43	97	98	98	45	47	37	--	54	55	54	--	--	--	--	--	--
KS020319	43	38	41	102	84	93	--	--	--	--	55	53	54	--	--	--	--	--	--
Limagrain																			
T153	48	42	45	114	94	104	--	--	--	--	53	55	54	--	--	--	--	--	--
T154	51	55	53	121	123	122	54	--	47	--	56	57	56	--	--	--	--	--	--
T158	45	47	46	107	104	105	--	--	--	--	55	51	53	--	--	--	--	--	--
T163	35	39	37	81	86	83	--	--	--	--	53	52	53	--	--	--	--	--	--
Oklahoma																			
Billings	51	50	51	120	111	116	51	52	45	--	55	56	56	--	--	--	--	--	--
Centerfield	51	42	46	119	93	106	50	--	39	--	56	56	56	--	--	--	--	--	--
Duster	42	44	43	99	98	98	50	--	49	--	63	56	59	--	--	--	--	--	--
Endurance	44	43	44	105	95	100	48	49	42	--	60	58	59	--	--	--	--	--	--
Garrison	30	47	38	70	104	87	--	--	--	--	53	55	54	--	--	--	--	--	--
OK07209	47	48	47	110	106	108	--	--	--	--	55	55	55	--	--	--	--	--	--
Ruby Lee	51	53	52	121	117	119	--	--	--	--	56	56	56	--	--	--	--	--	--
Scott Seed																			
TAM 304	49	47	48	116	105	110	--	--	--	--	59	55	57	--	--	--	--	--	--
WestBred																			
Armour	38	39	39	90	87	89	44	47	39	--	51	57	54	--	--	--	--	--	--
Santa Fe	40	45	42	93	99	96	45	46	38	--	60	56	58	--	--	--	--	--	--
WB-Cedar	53	61	57	124	136	130	56	55	50	--	56	56	56	--	--	--	--	--	--
Averages																			
Averages	42	45	44	42	45	44	--	--	--	--	55	55	55	--	--	--	--	--	--
CV (%)	13	11	12	13	11	12	--	--	--	--	0	1	0	--	--	--	--	--	--
LSD (0.05)*	4	6	5	9	9	9	--	--	--	--	0	0	0	--	--	--	--	--	--

¹ GY = Gypsum, KS, Saline County.

² LR = Lorraine, KS, Ellsworth County.

(W) = Hard white wheat.

* Least significant difference, similar to margin of error, indicates difference needed to overcome test error.

Table 9. 2012 SOUTH CENTRAL Kansas dryland winter wheat performance tests

Brand / Name	¹ MC ² HU ³ CW Av.				MC HU CW Av.				-MC- -HU- -CW- 2yr3yr 2yr3yr2yr 3yr				MC HU CW Av.				MC HU CW Av.									
	yield (bu/a) (lb/a)				% of average				multiyear av. (bu/a)				tw (lb/bu)				head (+/- Everest)				height (in.)					
AgriPro																										
Art	37	31	57	41	75	82	104	87	36	--	36	39	47	48	57	57	57	57	--	9	--	9	--	36	--	36
CJ	38	33	49	40	77	87	91	85	39	--	35	38	38	42	56	57	58	57	--	1	--	1	--	39	--	39
Postrock	36	22	45	34	74	59	83	72	44	--	31	34	38	43	56	55	58	56	--	6	--	6	--	34	--	34
SY Southwind	53	39	56	49	108	104	103	105	--	--	--	--	--	--	58	54	58	57	--	6	--	6	--	34	--	34
Colorado																										
CO050175-1	46	41	52	46	94	109	96	99	--	--	--	--	--	--	57	56	59	57	--	3	--	3	--	36	--	36
Kansas																										
(W) Clara CL	46	32	54	44	94	85	99	93	--	--	--	--	--	--	59	58	59	59	--	8	--	8	--	36	--	36
Everest	54	33	58	49	111	88	107	102	51	--	40	44	47	52	60	57	59	59	--	0	--	0	--	35	--	35
Fuller	40	35	59	45	82	93	110	95	43	--	37	37	45	46	61	58	58	59	--	7	--	7	--	36	--	36
KS020319	45	33	52	43	91	89	96	92	--	--	--	--	--	--	58	58	59	58	--	7	--	7	--	37	--	37
Limagrain																										
T153	60	47	56	54	122	125	103	117	--	--	--	--	--	--	58	56	56	57	--	1	--	1	--	34	--	34
T154	58	45	55	52	117	118	101	112	51	--	42	--	44	--	58	56	57	57	--	1	--	1	--	35	--	35
T158	57	34	56	49	116	91	104	104	--	--	--	--	--	--	55	56	57	56	--	3	--	3	--	35	--	35
Oklahoma																										
Billings	56	44	61	54	113	117	112	114	51	--	42	44	48	50	59	57	59	59	--	2	--	2	--	37	--	37
Centerfield	50	47	48	48	101	126	88	105	47	--	45	--	39	--	60	58	58	59	--	3	--	3	--	37	--	37
Duster	48	39	49	45	97	104	91	97	49	--	41	--	45	--	60	57	58	59	--	4	--	4	--	36	--	36
Endurance	49	44	48	47	100	118	89	102	49	--	46	47	42	45	58	56	60	58	--	3	--	3	--	38	--	38
Garrison	43	27	54	41	87	71	99	85	--	--	--	--	--	--	57	56	56	57	--	3	--	3	--	34	--	34
OK07209	52	46	49	49	105	122	90	105	--	--	--	--	--	--	60	59	59	59	--	6	--	6	--	36	--	36
Ruby Lee	52	43	59	51	106	115	108	109	--	--	--	--	--	--	60	57	58	58	--	0	--	0	--	40	--	40
Scott Seed																										
TAM 304	59	44	56	53	120	116	104	113	--	--	--	--	--	--	58	56	56	57	--	3	--	3	--	33	--	33
WestBred																										
Armour	45	21	57	41	91	56	106	84	43	--	29	36	47	50	55	52	58	55	--	6	--	6	--	33	--	33
Santa Fe	45	30	51	42	91	80	94	88	45	--	34	36	40	43	56	56	57	56	--	9	--	9	--	35	--	35
WB-Cedar	62	64	66	64	126	169	122	139	55	--	55	53	48	51	59	57	57	58	--	-2	--	-2	--	34	--	34
Averages	49	38	54	47	49	38	54	47	--	--	--	--	--	--	58	57	58	58	--	4	--	4	--	36	--	36
CV (%)	11	9	7	9	11	9	7	9	--	--	--	--	--	--	1	1	1	1	--	1	--	1	--	2	--	2
LSD (0.05)*	8	5	5	6	16	13	9	13	--	--	--	--	--	--	1	1	1	1	--	2	--	2	--	1	--	1

¹ MC = McPherson, KS, McPherson County.

² HU = Hutchinson, KS, South Central Experiment Field, Reno County.

³ CW = Conway Springs, KS, Sumner County.

(W) = Hard white wheat.

* Least significant difference, similar to margin of error, indicates difference needed to overcome test error.

Table 10 continued. 2012 NORTHWEST Kansas dryland winter wheat performance tests

Brand / Name	¹ ² ³				-HA-				-CO-				-TR-													
	HA	CO	TR	Av.	HA	CO	TR	Av.	2yr	3yr	2yr	3yr	2yr	3yr	HA	CO	TR	Av.	HA	CO	TR	Av.	HA	CO	TR	Av.
	yield (bu/a)				% of test average				multiyear av. (bu/a)				tw (lb/bu)				head (+/- Everest)				height (in.)					
Averages	64	61	39	55	64	61	39	55	--	--	--	--	--	--	62	55	57	58	5	2	3	3	38	34	34	36
CV (%)	7	9	14	10	7	9	14	10	--	--	--	--	--	--	1	2	10	4	1	1	1	1	4	3	17	3
LSD (0.05)*	6	8	4	6	10	13	10	11	--	--	--	--	--	--	1	2	1	1	1	1	1	1	2	1	3	2

¹ HA = Hays, KS, K-State Agricultural Research Center, Ellis County.

² CO = Colby, KS, Northwest Research-Extension Center, Thomas County.

³ TR = Tribune, KS, Southwest Research-Extension Center, Greeley County.

(W) = Hard white wheat.

* Least significant difference, similar to margin of error, difference needed to overcome test error.

Table 11. 2012 SOUTHWEST Kansas dryland winter wheat performance tests

Brand / Name	¹ LA ² DC ³ GC Av.				-LA- -DC- -GC-				LA DC GC Av.				LA DC GC Av.				LA DC GC Av.											
	yield (bu/a)				% of test average				multiyear av. (bu/a)				tw (lb/bu)				head (+/- Everest)				height (in.)							
AgriPro																												
Greer	26	30	--	28	115	99	--	107	--	--	44	--	--	--	54	57	--	55	--	--	--	--	25	26	--	26		
Jagalene	20	32	--	26	90	103	--	97	39	--	44	--	--	--	58	59	--	58	--	--	--	--	23	27	--	25		
Postrock	19	32	--	26	86	104	--	95	37	--	43	--	--	--	57	60	--	58	--	--	--	--	23	26	--	25		
SY Exp 1029	22	32	--	27	98	102	--	100	--	--	--	--	--	--	53	56	--	55	--	--	--	--	24	27	--	25		
TAM 111	20	28	--	24	88	90	--	89	40	--	40	--	--	--	57	57	--	57	--	--	--	--	24	27	--	26		
AGSECO																												
TAM 113	24	33	--	28	107	106	--	106	--	--	--	--	--	--	55	58	--	56	--	--	--	--	24	28	--	26		
Colorado																												
(W) Thunder CL	15	27	--	21	69	86	--	78	39	--	40	--	--	--	55	57	--	56	--	--	--	--	22	24	--	23		
Bill Brown	25	28	--	26	113	90	--	101	47	--	46	--	--	--	55	54	--	55	--	--	--	--	25	27	--	26		
Brawl CL Plus	23	32	--	27	102	104	--	103	--	--	43	--	--	--	57	57	--	57	--	--	--	--	26	28	--	27		
Byrd	21	36	--	28	93	117	--	105	--	--	46	--	--	--	56	56	--	56	--	--	--	--	24	29	--	26		
CO050175-1	25	29	--	27	111	96	--	103	--	--	--	--	--	--	56	58	--	57	--	--	--	--	25	29	--	27		
Denali	20	28	--	24	92	90	--	91	--	--	43	--	--	--	56	59	--	58	--	--	--	--	22	27	--	24		
Hatcher	18	30	--	24	79	98	--	89	41	--	43	--	--	--	57	57	--	57	--	--	--	--	22	27	--	25		
Ripper	18	28	--	23	81	90	--	85	41	--	44	--	--	--	54	57	--	56	--	--	--	--	22	26	--	24		
Kansas																												
(W) Clara CL	24	28	--	26	108	91	--	100	--	--	--	--	--	--	58	58	--	58	--	--	--	--	23	26	--	25		
(W) Danby	21	31	--	26	96	101	--	98	42	--	44	--	--	--	59	60	--	59	--	--	--	--	22	26	--	24		
(W) Tiger	14	22	--	18	64	70	--	67	36	--	35	--	--	--	57	57	--	57	--	--	--	--	21	23	--	22		
Everest	27	32	--	29	120	105	--	112	43	--	40	--	--	--	56	57	--	57	--	--	--	--	25	28	--	27		
Fuller	24	28	--	26	107	91	--	99	--	--	--	--	--	--	56	57	--	56	--	--	--	--	26	30	--	28		
KS020319	22	30	--	26	97	98	--	98	--	--	--	--	--	--	56	57	--	57	--	--	--	--	24	28	--	26		
Limagrain																												
T153	30	36	--	33	133	116	--	125	--	--	--	--	--	--	57	58	--	58	--	--	--	--	25	28	--	26		
T154	23	37	--	30	105	121	--	113	--	--	--	--	--	--	56	59	--	57	--	--	--	--	25	30	--	27		
T158	25	31	--	28	111	101	--	106	--	--	--	--	--	--	56	59	--	58	--	--	--	--	24	28	--	26		
T81	23	32	--	28	105	104	--	105	43	--	43	--	--	--	57	60	--	58	--	--	--	--	26	29	--	28		
Oklahoma																												
Duster	21	34	--	27	93	110	--	101	--	--	48	--	--	--	57	58	--	57	--	--	--	--	24	27	--	25		
Endurance	24	28	--	26	110	90	--	100	41	--	41	--	--	--	55	54	--	55	--	--	--	--	25	29	--	27		
Garrison	23	32	--	27	102	104	--	103	--	--	--	--	--	--	57	57	--	57	--	--	--	--	24	27	--	25		
OK07209	24	30	--	27	107	98	--	103	--	--	--	--	--	--	57	57	--	57	--	--	--	--	24	28	--	26		
Ruby Lee	29	31	--	30	130	102	--	116	--	--	--	--	--	--	57	59	--	58	--	--	--	--	29	32	--	30		
Scott Seed																												
TAM 304	25	32	--	29	112	106	--	109	--	--	45	--	--	--	55	57	--	56	--	--	--	--	24	28	--	26		
Watley																												
TAM 112	21	31	--	26	95	101	--	98	44	--	46	--	--	--	57	56	--	56	--	--	--	--	26	30	--	28		
WestBred																												
Armour	19	31	--	25	83	101	--	92	--	--	--	--	--	--	55	56	--	55	--	--	--	--	23	26	--	25		
WB-Stout	18	33	--	25	80	108	--	94	42	--	44	--	--	--	54	54	--	54	--	--	--	--	24	27	--	26		
Winterhawk	26	33	--	29	117	107	--	112	48	--	47	--	--	--	59	58	--	59	--	--	--	--	26	29	--	28		
Averages	22	31	--	27	22	31	--	27	--	--	--	--	--	--	56	57	--	57	--	--	--	--	24	27	--	26		
CV (%)	13	14	--	13	13	14	--	13	--	--	--	--	--	--	1	2	--	1	--	--	--	--	4	7	--	5		
LSD (0.05)*	4	6	--	5	18	19	--	18	--	--	--	--	--	--	1	1	--	1	--	--	--	--	1	3	--	2		

¹ LA = Larned, KS, Pawnee County.

² DC = Dodge City, KS, Ford County.

³ GC = Garden City, KS, Finney County. Abandoned; uneven emergence caused by dry conditions.

(W) = Hard white wheat.

* Least significant difference, similar to margin of error, indicates difference needed to overcome test error.

Table 12. 2012 WESTERN IRRIGATED Kansas winter wheat performance tests

Brand / Name	CO ¹ HA ² GC ³ LN ⁴ Av.					CO HA GC LN Av.					-CO- 2yr 3yr		-HA- 2yr 3yr		-GC- 2yr 3yr		-LN- 2yr		CO HA GC LN Av.					
	yield (bu/a)					% of test average					multiyear av. (bu/a)										tw (lb/bu)			
AgriPro																								
Art	75	72	46	58	63	93	102	70	79	86	85	--	--	--	--	--	--	--	--	56	63	58	59	59
Jagalene	78	55	65	70	67	96	78	98	97	92	91	88	--	--	--	--	--	--	--	57	57	61	60	59
Postrock	82	80	67	69	74	101	112	101	95	102	86	84	--	--	--	--	--	--	--	58	61	60	60	60
SY Gold	86	71	69	76	76	106	101	103	105	104	93	--	--	--	--	--	--	--	--	56	61	58	60	59
SY Wolf	92	84	76	78	82	113	118	115	107	113	--	--	--	--	--	--	--	--	--	57	64	60	60	60
AGSECO																								
TAM 113	83	78	68	74	76	102	111	103	102	104	--	--	--	--	--	--	--	--	--	58	63	60	61	61
Colorado																								
(W) Thunder CL	85	78	72	79	78	105	110	109	108	108	83	86	78	--	65	--	71	--	58	61	58	61	59	
Bill Brown	66	58	63	69	64	82	83	95	96	89	77	78	69	--	66	--	69	--	54	63	60	59	59	
Brawl CL Plus	90	76	69	86	80	110	108	104	118	110	90	--	81	--	65	--	80	--	56	62	60	61	60	
Byrd	68	52	66	82	67	84	73	99	113	92	72	--	66	--	62	--	74	--	54	60	58	58	58	
CO050175-1	95	68	69	73	76	117	96	105	100	104	--	--	--	--	--	--	--	--	57	60	61	61	59	
Denali	72	61	58	65	64	89	86	87	89	88	81	--	74	--	59	--	69	--	57	62	60	60	60	
Hatcher	82	62	67	76	72	101	88	102	105	99	82	81	71	--	65	--	68	--	57	62	60	60	59	
Ripper	49	42	54	66	53	60	60	82	91	73	67	71	59	--	63	--	66	--	48	58	56	56	55	
Kansas																								
(W) Danby	73	71	71	86	76	90	101	107	119	104	83	83	79	--	69	--	77	--	52	61	62	63	59	
(W) Tiger	40	28	50	56	43	49	40	75	78	60	--	--	--	--	--	--	--	--	43	56	58	52	52	
Everest	72	66	72	66	69	89	93	108	91	95	79	88	77	--	65	--	67	--	55	63	60	61	60	
Fuller	87	73	55	78	73	107	103	83	108	100	85	82	74	--	63	--	71	--	58	62	59	60	60	
KS020319	82	77	62	61	70	102	109	93	84	97	--	--	--	--	--	--	--	--	59	63	59	62	61	
Limagrain																								
T153	95	78	66	77	79	117	110	100	106	108	--	--	--	--	--	--	--	--	56	63	59	60	59	
T154	93	76	73	78	80	114	108	109	107	110	--	--	--	--	--	--	--	--	56	63	59	60	59	
T158	103	84	76	88	88	127	118	115	122	121	--	--	--	--	--	--	--	--	55	63	61	63	60	
T81	83	69	68	77	74	102	98	103	106	102	84	87	85	--	66	--	73	--	57	63	59	61	60	
Oklahoma																								
Billings	93	88	79	70	83	115	124	120	97	114	91	--	96	--	67	--	68	--	57	63	60	62	60	
Duster	90	79	75	83	82	111	112	113	114	113	89	--	92	--	72	--	73	--	57	63	60	60	60	
Endurance	78	83	66	61	72	96	118	99	84	99	84	--	82	--	59	--	64	--	54	62	59	57	58	
Garrison	77	59	66	71	69	95	84	100	98	94	--	--	--	--	--	--	--	--	54	62	59	60	59	
OK07209	92	76	64	81	78	114	108	97	111	107	--	--	--	--	--	--	--	--	58	64	61	60	61	
Ruby Lee	67	77	62	38	61	83	109	94	52	84	--	--	--	--	--	--	--	--	50	63	61	62	59	
Scott Seed																								
TAM 304	95	86	78	86	86	117	122	118	118	119	97	97	94	--	73	--	82	--	56	62	59	59	59	
Watley																								
TAM 112	57	59	59	83	65	70	84	89	115	89	72	76	70	--	64	--	72	--	54	60	60	62	59	

Table 12 continued. 2012 WESTERN IRRIGATED Kansas winter wheat performance tests

Brand / Name	¹ ² ³ ⁴					Av.	-CO- -HA- -GC- -LN-					CO	HA	GC	LN	Av.						
	CO	HA	GC	LN	Av.		2yr	3yr	2yr	3yr	2yr						3yr	2yr				
WestBred	yield (bu/a)					% of test average					multiyear av. (bu/a)					tw (lb/bu)						
(W) Aspen	110	84	76	91	90	136	119	114	126	124	103	09	90	--	73	--	81	52	63	61	52	57
Armour	62	55	69	69	64	77	78	103	95	89	75	80	72	--	66	--	65	49	61	58	52	55
WB-Cedar	111	82	65	89	87	137	116	98	123	118	104	08	85	--	58	--	78	59	62	59	61	60
Averages	81	71	66	73	73	81	71	66	73	73	--	--	--	--	--	--	--	55	62	60	60	59
CV (%)	7	11	10	9	9	7	11	10	9	9	--	--	--	--	--	--	--	1	1	1	1	1
LSD (0.05)*	8	11	9	9	9	10	16	14	13	13	--	--	--	--	--	--	--	1	1	1	1	1

¹ CO = Colby, KS, Northwest Research-Extension Center, Thomas County.

² HA = Hays, KS, Research-Extension Center, Ellis County.

³ GC = Garden City, KS, Southwest Research-Extension Center, Finney County.

⁴ LN = Healy, KS, Farmers Field, Lane County.

(W) = Hard white wheat.

* Least significant difference, similar to margin of error, difference needed to overcome test error.

Table 13. 2012 Planted seed characteristics and Hessian fly ratings

Brand / Name	1000	Test weight	Seeds per lb	Hess. fly ¹	Brand / Name	1000	Test weight	Seeds per lb	Hess. fly ¹
	Seed weight					Seed weight			
	(grams)	(lb/bu)	(1000)	(rating)		(grams)	(lb/bu)	(1000)	(rating)
AgriPro					Duster	37.3	61.5	12.2	1
Art	39.3	59.0	11.6	5	Endurance	41.8	55.6	10.9	4
CJ	38.0	58.4	11.9	1	Garrison	36.5	59.2	12.4	9
Greer	40.3	58.3	11.3	3	OK07209	38.5	63.6	11.8	--
JackPot	39.8	58.5	11.4	3	Ruby Lee	43.0	59.2	10.6	1
Jagalene	35.3	57.4	12.9	6	Pioneer				
Postrock	39.8	60.4	11.4	3	(S) 25R30	41.8	55.4	10.9	1
SY Exp 1029	33.3	55.4	13.6	--	(S) 25R39	39.3	57.3	11.6	2
SY Gold	37.8	57.4	12.0	1	(S) 25R40	41.8	56.6	10.9	1
SY Southwind	35.3	56.9	12.9	--	Scott Seed				
SY Wolf	40.0	60.7	11.3	3	TAM 304	36.0	56.0	12.6	1
TAM 111	37.0	58.6	12.3	6	Watley				
AGSECO					TAM 112	37.3	61.2	12.2	8
TAM 113	34.8	61.3	13.1	9	WestBred				
Colorado					(W) Aspen	38.5	56.9	11.8	3
(W) Thunder CL	36.0	56.9	12.6	5	Armour	40.0	63.1	11.3	6
Bill Brown	42.0	64.4	10.8	8	Hitch	38.3	58.3	11.9	8
Brawl CL Plus	40.8	62.7	11.1	9	Santa Fe	37.5	63.2	12.1	8
Byrd	39.0	61.2	11.6	5	WB-Cedar	39.3	59.7	11.6	9
CO050175-1	37.5	60.5	12.2	--	WB-Stout	39.5	58.8	11.5	2
Denali	37.5	60.1	12.1	1	Winterhawk	41.5	60.0	10.9	3
Hatcher	42.0	62.9	10.8	6	Maximum	43.0	64.7	13.6	
Ripper	41.8	63.0	10.9	9	Minimum	33.3	55.4	10.6	
DeLange					Average	38.6	59.6	11.8	
Arrow	38.5	61.2	11.8	2					
Kansas									
(W) Clara CL	38.3	62.3	11.9	4					
(W) Danby	42.0	63.3	10.8	9					
(W) Tiger	39.0	61.6	11.6	2					
Everest	39.8	62.9	11.4	6					
Fuller	38.8	60.6	11.7	9					
KS020319	39.5	61.8	11.5	9					
Limagrain									
T153	41.0	57.1	11.1	--					
T154	38.3	58.4	11.9	3					
T158	40.3	60.0	11.3	4					
T163	34.3	59.0	13.2	8					
T81	39.3	59.5	11.6	8					
MFA									
(S) 2018	42.0	64.7	10.8	1					
(S) 2525	40.8	58.4	11.1	1					
Nebraska									
McGill	35.5	59.1	12.8	5					
NE05496	33.5	55.6	13.5	--					
Robidoux	37.3	59.3	12.2	8					
Oklahoma									
Billings	36.3	56.1	12.5	1					
Centerfield	34.0	56.4	13.3	1					

¹ Hessian fly ratings by Ming Chen, USDA, with inputs from Jeff Whitworth, K-State Entomology; 1-Highly resistant; 5-Intermediate; 7-Moderately susceptible; 9-Highly susceptible. Ratings are based on greenhouse results with Kansas (Great Plains) biotype of Hessian fly.

(W) = Hard white wheat (S) = Soft red wheat

2012 National Winter Canola Variety Trial

Senior Authors

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Other Contributors

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Cooperating Producers

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Objectives

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. The NWCVT is planted at locations in the Great Plains, Midwest, northern United States, and Southeast.

Procedures

Seed for the NWCVT was distributed to 47 cooperators in 22 states for the 2011-2012 growing season. Of the 45 entries, 29 are commercially available in the United States and 16 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.

Management guidelines were provided to cooperators, but previous growing experience influenced final management decisions. Agronomic information, site descriptions, and growing conditions are given along with performance data for each harvested location. All trials were planted in small research plots (approximately 100 ft²) with three or four replications. Yield results for some locations include 2-year summaries. Results are listed alphabetically by seed supplier. The

“percentage of test average” calculation is a relative yield calculation allowing for some comparison of performance across environments. Entries yielding more than 100 percent of the test average across multiple locations merit some consideration.

Caution should be used when evaluating data from locations with coefficient of variation (CV) values greater than 20. Lower values suggest less error was observed at the location. Inestimable differences in soil type, weather, and environmental conditions play a part in increasing experimental error and CV values.

Test Locations

Of the seven NWCVT sites planted in Kansas, six were harvested. Four trials are included in this report: Belleville, Garden City, Kiowa, and Manhattan. Andale and Marquette received hail damage on the windrow before harvest, so the data are unreliable. Hutchinson was lost to poor fall establishment because of dry soils. Overall yields were excellent and above average in Kansas. Yields are reported in lb/acre. Canola weighs 50 lb/bushel, so a 2,000 lb/acre yield is 40 bushels/acre.

2011-2012 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 “11-12” represents actual precipitation.

In general, the 2011-2012 growing season saw above normal temperatures and normal to below normal precipitation. The above normal temperatures resulted in virtually no winter stand loss. Yield potential was very high throughout the growing season because the crops produced much aboveground biomass. Severe storms caused yield losses at Andale and Marquette (not reported) after the crop had been swathed just before harvest. At Kiowa, severe lodging was observed when a thunderstorm occurred at a vulnerable period of grain fill.

Even so, winter canola is consistently achieving high seed yields where moisture is not limiting and severe weather is avoided. Garden City has averaged 2,300 lb/acre for three consecutive years, with some varieties exceeding 3,000 lb/acre. Belleville produced some of the highest dryland winter canola yields ever reported in Kansas. The field average was 3,978 lb/acre, and the highest average yield was 4,845 lb/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 sulfonylurea herbicides, maturity, disease tolerance, lodging tolerance, and yield potential. Use more than one year of variety trial data to make an informed variety selection decision.

Some locations 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 grain cannot be mixed with canola grain, and the oil can be used only for industrial purposes. If HEAR is commercially grown, it will be under contract and a delivery point will be secured before planting.

Table 1 identifies the seed sources, developers and marketers, and traits of the winter canola

varieties and hybrids grown in the NWCVT.

Acknowledgments

This work was partially funded 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 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 United States.

Table 1. Seed sources for entries in the 2011-2012 National Winter Canola Variety Trial

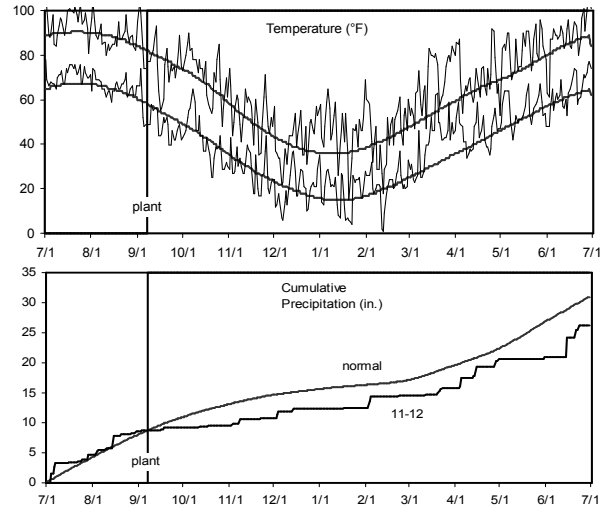
Developer / Marketer	Type ¹	Trait ²	Release date	Maturity ³	Developer / Marketer	Type ¹	Trait ²	Release date	Maturity ³
Kansas State University Canola Breeding Program					University of Idaho (Developer)				
Michael J. Stamm (mjstamm@ksu.edu)					Dr. Jack Brown (jbrown@uidaho.edu)				
KS4083	OP	---	---	F	Amanda	OP	---	---	F
KS4428	OP	---	---	M	Durola ⁴	OP	HEAR ⁵	---	M
KS4564	OP	---	---	M	05.UI.5.6.33	OP	---	---	M
Kiowa	OP	---	2008	F	06.UIWC.1	OP	---	---	M
Riley	OP	---	2010	M	<hr/>				
Sumner	OP	SU	2003	E	Croplan Genetics				
Wichita	OP	---	1999	M	Mark Torno (Mtorno@landolakes.com)				
<hr/>					HyClass 115W	OP	RR/SURT	2008	E
DL Seeds Inc. (Developer)					HyClass 125W	OP	RR/SURT	2010	M
Kevin McCallum (kevin.mccallum@dlseeds.ca)					HyClass 154W	Hyb	RR	2008	F
Rubisco Seeds LLC (Marketer)					<hr/>				
Claire Caldbeck (info@rubiscoseeds.com)					Monsanto / DEKALB				
Baldur	Hyb	---	2004	M	Ryan Bartlett (Ryan.K.Bartlett@monsanto.com)				
Dynastie	Hyb	---	2007	F	DKW41-10	OP	RR	2008	E
Flash	Hyb	---	2007	F	DKW44-10	OP	RR	2009	M
Hornet	Hyb	---	2008	M	DKW46-15	OP	RR/SURT	2008	M
NPZ 0903	Hyb	---	---	E	DKW47-15	OP	RR/SURT	2008	F
NPZ 1005	Hyb	---	---	M	<hr/>				
Rumba	Hyb	---	---	E	Virginia State University Agricultural Experiment Station				
Safran	Hyb	---	2008	M	Dr. Harbans Bhardwaj (hbhardwj@vsu.edu)				
Sitro	Hyb	---	2007	E	Virginia	OP	---	2003	M
Ulura	Hyb	---	---	M	VSX-3	OP	---	---	M
Visby	Hyb	---	2008	E	<hr/>				
WRH 350	Hyb	Clearfield	---	M	Technology Crops International				
<hr/>					Jeff Riddle (jriddle@techcrops.com)				
High Plains Crop Development					Rossini	H	HEAR	2009	E
Dr. Charlie Rife (charlie@highplainscd.com)					TCI805	H	HEAR	---	E
Claremore	OP	IMI	2011	F	TCI806	H	HEAR	---	M
HPX-7228	OP	---	---	M	<hr/>				
HPX-7341	OP	---	---	M	MOMONT, France				
<hr/>					Dr. Thierry Momont (tmomont@momont.com)				
Chrome	Hyb	---	2010	M	Chrome	Hyb	---	2010	M
Hybrirock	Hyb	---	2011	M	Hybrirock	Hyb	---	2011	M
MH06E10	Hyb	---	---	M	MH06E10	Hyb	---	---	M
MH07J14	Hyb	---	---	M	MH07J14	Hyb	---	---	M
MH09H19	Hyb	---	---	M	MH09H19	Hyb	---	---	M
<hr/>					<hr/>				
Pioneer Hi-Bred					<hr/>				
William McClure (william.mcclure@pioneer.com)					Footnotes:				
46W94	Hyb	RR	2011	M	¹ OP = open pollinated, Hyb = hybrid				
46W99	Hyb	RR	2011	M	² SU & SURT = sulfonylurea carryover tolerant; Clearfield = imidazolinone resistant; IMI = imidazolinone carryover tolerant; RR = Roundup Ready				
<hr/>					³ Maturity: E=Early; M=Medium; F=Full				
<hr/>					⁴ Durola has low glucosinolate (canola-quality) meal.				
<hr/>					⁵ HEAR = 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.				

Belleville, Kansas

Randall Nelson
Kansas State University

Planted: 9/7/2011 at 5 lb/a in 9-in. rows
Swathed: 6/5/2012
Harvested: 6/12/2012
Herbicides: Treflan, Assure II
Insecticides: None
Irrigation: None
Previous Crop: Wheat
Soil Test: P=34 ppm, K=438 ppm, pH=6.2
Fertilizer: 30-30 lb N-P-K fertilizer in fall
60-0-0 lb N-P-K fertilizer in spring

Soil Type: Crete silt loam
Elevation: 1530 ft Latitude: 39° 48'N



Comments: This is the first canola plot planted at Belleville since 1997. Exceptional yields were recorded at this dryland location. The crop looked impressive throughout the entire growing season. Temperatures were above normal, but moisture was below normal. A soil test revealed 29 lb/acre available N before planting.

Table 2. Results for the 2012 National Winter Canola Variety Trial at Belleville, KS

Name	Yield (lb/a)			Yield (% of test avg.)			Winter survival (%)		Fall stand	50% bloom	Moisture	Test weight
	2012	2011	2-yr.	2012	2012	2011	2-yr.	(0-10)	(DOY ¹)	(%)	(lb/bu)	
Virginia State University												
Virginia	3948	---	---	99	100	---	---	9.3	92.7	9.3	48.9	
VSX-3	4228	---	---	106	100	---	---	10.0	93.3	8.9	47.9	
Technology Crops International												
Rossini	4306	---	---	108	100	---	---	9.7	89.0	6.9	49.6	
TCI805	3881	---	---	98	100	---	---	9.7	91.0	7.3	49.1	
TCI806	3978	---	---	100	100	---	---	9.3	91.0	8.3	50.4	
Pioneer Hi-Bred												
46W94	4249	---	---	107	100	---	---	9.3	92.3	8.8	49.6	
46W99	3851	---	---	97	100	---	---	9.3	93.0	9.0	49.6	
High Plains Crop Development												
Claremore	3040	---	---	76	100	---	---	9.3	94.7	7.7	50.0	
HPX-7228	3768	---	---	95	100	---	---	9.0	90.7	6.8	49.7	
HPX-7341	3910	---	---	98	100	---	---	10.0	92.3	8.2	49.7	
Croplan Genetics												
HyClass115W	3552	---	---	89	100	---	---	9.3	91.3	7.5	49.0	
HyClass125W	3725	---	---	94	100	---	---	9.3	92.0	7.8	49.5	
HyClass154W	3604	---	---	91	100	---	---	9.0	93.7	8.7	50.1	
Kansas State University												
KS4083	3558	---	---	89	100	---	---	9.7	92.7	9.0	49.6	
KS4428	4029	---	---	101	100	---	---	9.3	91.7	7.8	49.7	
KS4564	3571	---	---	90	100	---	---	8.3	91.7	6.8	49.4	
Kiowa	3258	---	---	82	100	---	---	9.0	93.3	8.2	49.0	
Riley	4310	---	---	108	100	---	---	9.3	92.0	8.2	49.8	
Sumner	4063	---	---	102	100	---	---	8.7	91.3	8.9	49.4	
Wichita	3470	---	---	87	100	---	---	10.0	92.3	8.4	49.9	
DL Seeds / Rubisco Seeds												
Baldur	3689	---	---	93	100	---	---	10.0	93.0	8.1	50.1	
NPZ0903	3998	---	---	100	100	---	---	9.3	91.0	7.4	50.2	
NPZ1005	4846	---	---	122	100	---	---	9.7	92.0	7.9	50.2	
Rumba	4382	---	---	110	100	---	---	9.7	90.3	7.4	50.3	
Sitro	3892	---	---	98	100	---	---	9.3	92.0	7.3	49.8	
Ulura	4384	---	---	110	100	---	---	9.7	93.0	9.3	50.1	
WRH350	3888	---	---	98	100	---	---	9.7	92.7	8.3	50.0	

Table 2 continued. Results for the 2012 National Winter Canola Variety Trial at Belleville, KS

Name	Yield (lb/a)			Yield (% of test avg.)			Winter survival (%)		Fall stand	50% bloom	Moisture	Test weight
	2012	2011	2-yr.	2012	2012	2011	2-yr.	(0-10)	(DOY ¹)	(%)	(lb/bu)	
Dynastie	4328	---	---	109	100	---	---	9.3	92.3	9.3	49.5	
Flash	3765	---	---	95	100	---	---	10.0	93.3	9.7	49.2	
Hornet	3804	---	---	96	100	---	---	10.0	92.3	7.6	49.5	
Safran	4392	---	---	110	100	---	---	9.3	92.3	8.2	49.4	
Visby	4174	---	---	105	100	---	---	9.3	90.0	6.8	49.9	
MOMONT, France												
Chrome	4663	---	---	117	100	---	---	9.7	93.3	8.9	50.5	
MH07J14	4767	---	---	120	100	---	---	9.7	93.0	8.1	49.8	
Hybrirock	3792	---	---	95	100	---	---	9.0	92.0	7.6	50.0	
MH06E10	4459	---	---	112	100	---	---	8.7	93.0	9.3	49.8	
MH09H19	4719	---	---	119	100	---	---	9.0	92.3	8.8	49.6	
University of Idaho												
Amanda	4035	---	---	101	100	---	---	8.7	95.3	10.1	50.7	
Durola	3789	---	---	95	100	---	---	9.3	93.0	8.4	50.2	
05.UI.5.6.33	4013	---	---	101	100	---	---	9.7	92.0	8.2	49.3	
06.UIWC.1	3753	---	---	94	100	---	---	9.3	91.0	7.4	49.8	
Monsanto / DEKALB												
DKW41-10	3332	---	---	84	100	---	---	9.0	90.3	6.8	48.7	
DKW44-10	4296	---	---	108	100	---	---	9.0	92.7	7.7	49.9	
DKW46-15	3650	---	---	92	100	---	---	9.7	92.7	8.1	47.9	
DKW47-15	3923	---	---	99	100	---	---	9.3	92.3	7.8	49.1	
Mean	3978	---	---	---	---	---	---	9.4	92.2	8.2	49.6	
CV	11	---	---	---	---	---	---	5.4	1.0	14.0	1.9	
LSD (0.05)	735	---	---	---	---	---	---	0.8	1.5	1.9	NS	

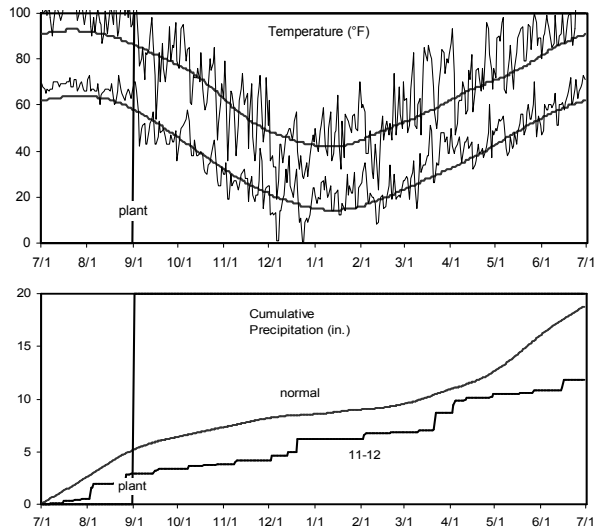
Bold: Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other. ¹DOY=Day of year after January 1.

Garden City, Kansas

Johnathon Holman
Kansas State University

Planted: 9/7/2011 at 5 lb/a in 8-in. rows
Harvested: 6/19/2012
Herbicides: Prowl 3 pt/a
Insecticides: None
Irrigation: 16.05 in.
Previous Crop: Corn
Soil Test: P=38 ppm, K=sufficient, pH=8.0
Fertilizer: 0-0-0 N-P-K fertilizer in the fall
110-0-0 N-P-K fertilizer in the spring

Soil Type: Ulysess-Richfield silt loam
Elevation: 2835 ft Latitude: 37° 99'N



Comments: Temperatures were well above normal and precipitation was below normal during the growing season. Plants grew vigorously in the fall and there was no winterkill. Shattering was observed before harvest; however, the losses did not impact yields significantly. The plot average has been 2,300 lb/acre for three consecutive years.

Table 3. Results for the 2012 National Winter Canola Variety Trial at Garden City, KS

Name	Yield (lb/a)			Yield (% of test avg.)		Winter survival (%)		Fall stand		Plant height		Test weight
	2012	2011	2-yr.	2012	2012	2011	2-yr.	(0-10)	Vigor ¹ (1-5)	(in.)	Shatter (%)	(lb/bu)
Virginia State University												
Virginia	2277	2236	2257	98	100	100	100	8.0	4.0	54	6.7	51.9
VSX-3	2117	2365	2241	91	100	100	100	10.0	5.0	54	10.0	52.2
Technology Crops International												
Rossini	2954	1693	2323	127	100	100	100	10.0	5.0	51	0.7	52.1
TCI805	1755	---	---	76	100	---	---	9.7	5.0	58	10.0	52.7
TCI806	2207	---	---	95	100	---	---	9.0	5.0	57	0.0	52.9
Pioneer Hi-Bred												
46W94	2104	---	---	91	100	---	---	9.3	5.0	56	10.0	51.5
46W99	2248	---	---	97	100	---	---	8.0	4.0	56	16.7	51.8
High Plains Crop Development												
Claremore	1613	1973	1793	70	100	89	95	8.0	4.3	56	5.7	52.5
HPX-7228	2345	2812	2579	101	100	100	100	8.3	4.3	54	6.7	52.9
HPX-7341	1836	2853	2344	79	100	100	100	8.3	4.7	58	10.0	52.5
Croplan Genetics												
HyClass115W	1541	2045	1793	66	100	100	100	8.7	4.3	57	10.0	51.8
HyClass125W	1453	2269	1861	63	100	96	98	8.3	4.0	56	16.7	51.9
HyClass154W	2538	1853	2196	109	100	100	100	8.0	4.0	57	10.0	52.7
Kansas State University												
KS4083	1915	2546	2231	83	100	100	100	7.3	3.3	59	13.3	52.0
KS4428	2203	2919	2561	95	100	97	99	7.7	3.7	58	6.7	52.5
KS4564	2030	---	---	88	100	---	---	7.0	2.7	53	10.0	52.5
Kiowa	2012	2128	2070	87	100	96	98	8.7	4.0	58	13.3	52.4
Riley	2319	2661	2490	100	100	100	100	8.0	4.0	58	10.0	52.1
Sumner	1664	2361	2013	72	100	96	98	9.0	4.7	55	10.0	52.2
Wichita	2349	2797	2573	101	100	100	100	7.7	3.7	54	10.0	52.3
DL Seeds / Rubisco Seeds												
Baldur	2269	2702	2485	98	100	100	100	8.7	4.7	57	10.0	52.8
NPZ0903	2491	---	---	107	100	---	---	8.7	4.7	56	10.0	51.9
NPZ1005	2431	---	---	105	100	---	---	8.7	4.3	56	10.0	52.2
Rumba	2958	---	---	128	100	---	---	8.0	4.3	54	10.0	52.1
Sitro	3091	2737	2914	133	100	100	100	8.3	4.7	56	0.0	52.2
Ulura	2039	---	---	88	100	---	---	8.7	5.0	59	10.0	51.8

Table 3 continued. Results for the 2012 National Winter Canola Variety Trial at Garden City, KS

Name	Yield (lb/a)			Yield (% of test avg.)				Fall stand		Plant height		Test weight
	2012	2011	2-yr.	2012	2012	2011	2-yr.	(0-10)	Vigor ¹ (1-5)	(in.)	Shatter (%)	(lb/bu)
WRH350	3043	---	---	131	100	---	---	8.3	4.3	56	0.0	52.4
Dynastie	3224	2606	2915	139	100	100	100	8.0	4.7	57	0.0	51.7
Flash	3175	2198	2687	137	100	100	100	9.3	4.7	60	0.0	51.9
Hornet	3115	2411	2763	134	100	100	100	8.3	4.0	59	0.0	52.4
Safran	3376	2978	3177	146	100	100	100	7.7	3.7	56	0.0	51.5
Visby	2658	2680	2669	115	100	100	100	7.7	4.0	54	10.0	51.7
MOMONT, France												
Chrome	2767	3016	2892	119	100	100	100	9.3	5.0	57	10.0	52.7
MH07J14	3507	---	---	151	100	---	---	9.0	4.7	57	0.0	52.2
Hybrirock	2967	2351	2659	128	100	96	98	10.0	5.0	57	6.7	52.1
MH06E10	2977	2252	2614	128	100	78	89	7.3	4.7	58	10.0	52.5
MH09H19	2942	---	---	127	100	---	---	9.3	5.0	57	6.7	52.1
University of Idaho												
Amanda	1689	2571	2130	73	100	96	98	8.0	4.0	56	10.0	53.4
Durola	1582	2276	1929	68	100	96	98	8.0	4.3	58	10.0	50.5
05.UI.5.6.33	2514	---	---	108	100	---	---	8.7	4.7	53	10.0	52.1
06.UIWC.1	2484	---	---	107	100	---	---	8.0	3.7	54	6.7	52.7
Monsanto / DEKALB												
DKW41-10	1282	1861	1572	55	100	100	100	8.0	3.3	42	30.0	51.6
DKW44-10	1339	2191	1765	58	100	100	100	9.3	4.0	54	16.7	51.5
DKW46-15	1165	2386	1776	50	100	96	98	7.7	3.3	53	13.3	51.4
DKW47-15	1779	1696	1737	77	100	100	100	8.3	4.0	56	10.0	51.9
Mean	2320	2300	2310	---	100	97	99	8.5	4.3	56	8.6	52.1
CV	11	12	---	---	---	5	---	11.1	14.4	3	44.9	0.6
LSD (0.05)	408	445	---	---	---	8	---	1.5	1.0	3	6.4	0.5

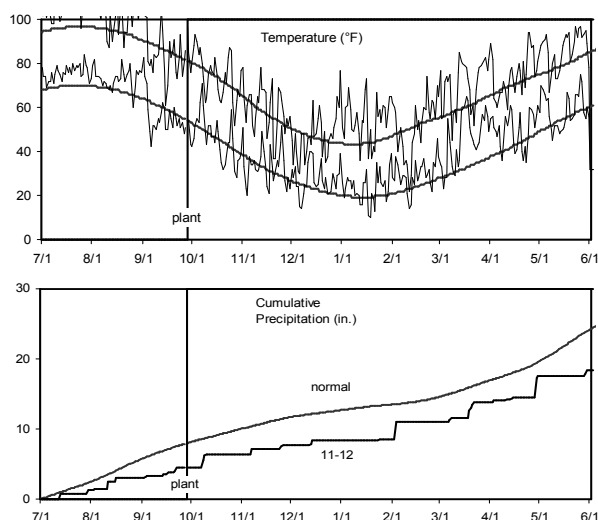
Bold: Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other. ¹Vigor is rated as 1=least vigorous to 5=most vigorous.

Kiowa, Kansas

Bob Schrock

Planted: 9/28/2011 at 5 lb/a in 9-in. rows
 Swathed: 5/15/2012
 Harvested: 5/21/2012
 Herbicides: Assure II
 Insecticides: Spring application for variegated cutworm
 Irrigation: None
 Previous Crop: Wheat
 Soil Test: P=sufficient, pH=6.2
 Fertilizer: 65-0-0 lb N-P-K fertilizer in fall
 25-0-0-10 lb N-P-K-S fertilizer in spring

Soil Type: Pond Creek silt loam
 Elevation: 1300 ft Latitude: 36° 58'N



Comments: The crop had high yield potential throughout the growing season. Above normal temperatures rapidly advanced plant development. Severe lodging was present after a thunderstorm hit at a vulnerable period of grain fill. Stem canker lesions were present at flowering and some stem girdling was observed.

Table 4. Results for the 2012 National Winter Canola Variety Trial at Kiowa, KS

Name	Yield (lb/a)			Yield (% of test avg.)			50% bloom		Lodging (%)	Moisture (%)	Test weight (lb/bu)
	2012	2011	2-yr.	2012	2011	2-yr.	(DOY ¹)	(%)			
Virginia State University											
Virginia	2120	---	---	100	100	---	---	85.3	73.3	7.0	51.6
VSX-3	2163	---	---	102	100	---	---	84.3	90.0	7.0	51.9
Technology Crops International											
Rossini	2309	---	---	109	100	---	---	83.0	100.0	6.5	50.2
TCI805	2381	---	---	112	100	---	---	83.7	60.0	6.6	52.1
TCI806	1830	---	---	86	100	---	---	84.0	61.7	6.7	52.2
Pioneer Hi-Bred											
46W94	2367	---	---	112	100	---	---	84.0	93.3	6.5	51.6
46W99	2614	---	---	123	100	---	---	83.7	100.0	6.8	51.0
High Plains Crop Development											
Claremore	1670	---	---	79	100	---	---	89.0	50.0	7.1	51.8
HPX-7228	1960	---	---	93	100	---	---	83.3	96.7	7.2	52.6
HPX-7341	1931	---	---	91	100	---	---	84.3	76.7	6.7	50.1
Croplan Genetics											
HyClass115W	1728	---	---	82	100	---	---	84.3	90.0	6.0	49.5
HyClass125W	1989	---	---	94	100	---	---	84.0	60.0	7.2	51.2
HyClass154W	2193	---	---	104	100	---	---	86.0	73.3	7.4	51.9
Kansas State University											
KS4083	1873	---	---	88	100	---	---	84.7	100.0	7.0	51.8
KS4428	1786	---	---	84	100	---	---	84.7	93.3	6.8	50.3
KS4564	1626	---	---	77	100	---	---	85.0	90.0	6.8	51.9
Kiowa	1728	---	---	82	100	---	---	84.7	83.3	6.8	51.3
Riley	1946	---	---	92	100	---	---	84.7	48.3	7.1	51.0
Sumner	2033	---	---	96	100	---	---	83.3	93.3	6.9	52.9
Wichita	2018	---	---	95	100	---	---	86.0	76.7	6.6	50.6
DL Seeds / Rubisco Seeds											
Baldur	1946	---	---	92	100	---	---	84.0	100.0	6.7	51.9
NPZ0903	2309	---	---	109	100	---	---	83.3	100.0	6.8	52.4
NPZ1005	2701	---	---	128	100	---	---	84.0	100.0	7.3	52.4
Rumba	2497	---	---	118	100	---	---	83.0	70.0	7.4	52.3
Sitro	2585	---	---	122	100	---	---	83.0	100.0	6.5	52.5
Ulura	2483	---	---	117	100	---	---	84.3	93.3	7.2	51.6
WRH350	2425	---	---	115	100	---	---	84.7	100.0	6.9	52.2

Table 4 continued. Results for the 2012 National Winter Canola Variety Trial at Kiowa, KS

Name	Yield (lb/a)			Yield (% of test avg.)			Winter survival (%)		50% bloom	Lodging	Moisture	Test weight
	2012	2011	2-yr.	2012	2012	2011	2-yr.	(DOY ¹)	(%)	(%)	(lb/bu)	
Dynastie	1830	---	---	86	100	---	---	85.7	70.0	7.3	50.8	
Flash	1859	---	---	88	100	---	---	84.7	93.3	6.3	51.1	
Hornet	2120	---	---	100	100	---	---	83.7	96.7	6.6	50.9	
Safran	2222	---	---	105	100	---	---	85.3	83.3	7.0	52.4	
Visby	2236	---	---	106	100	---	---	83.7	50.0	7.1	48.2	
MOMONT, France												
Chrome	2701	---	---	128	100	---	---	84.3	90.0	7.4	52.5	
MH07J14	2149	---	---	102	100	---	---	84.3	100.0	6.7	50.0	
Hybrirock	2991	---	---	141	100	---	---	83.3	100.0	7.1	52.4	
MH06E10	2178	---	---	103	100	---	---	83.0	68.3	6.4	51.5	
MH09H19	2817	---	---	133	100	---	---	84.0	100.0	6.8	52.6	
University of Idaho												
Amanda	2004	---	---	95	100	---	---	86.3	73.3	7.2	48.3	
Durola	1583	---	---	75	100	---	---	86.0	63.3	9.0	50.0	
05.UI.5.6.33	1728	---	---	82	100	---	---	85.0	73.3	7.4	51.8	
06.UIWC.1	2105	---	---	99	100	---	---	85.7	76.7	7.4	52.9	
Monsanto / DEKALB												
DKW41-10	1859	---	---	88	100	---	---	82.3	100.0	6.1	49.1	
DKW44-10	1946	---	---	92	100	---	---	85.7	100.0	7.0	51.5	
DKW46-15	1757	---	---	83	100	---	---	85.3	100.0	6.2	51.3	
DKW47-15	1975	---	---	93	100	---	---	85.7	96.7	7.0	51.3	
Mean	2117	---	---	---	---	---	---	84.5	84.6	6.9	51.4	
CV	20	---	---	---	---	---	---	1.0	22.5	9.2	3.3	
LSD (0.05)	677	---	---	---	---	---	---	1.4	30.9	1.0	2.8	

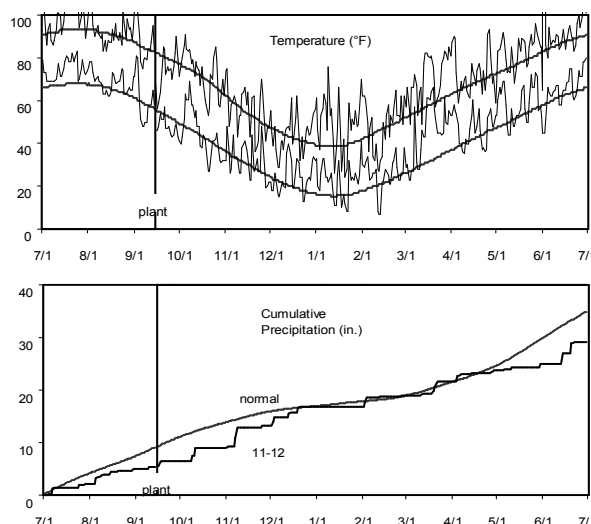
Bold: Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other. ¹DOY=Day of year after January 1.

Manhattan, Kansas

Michael Stamm and Scott Dooley
Kansas State University

Planted: 9/15/2011 at 5 lb/a in 9-in. rows
Harvested: 6/13/2012
Herbicides: Treflan, Assure II
Insecticides: None
Irrigation: None
Previous Crop: Soybean
Soil Test: P=43 ppm, K=212 ppm, pH=7.0
Fertilizer: 0-0-0 lb N-P-K fertilizer in fall
50-0-0-30 lb N-P-K-S fertilizer in spring

Soil Type: Belvue silt loam
Elevation: 1034 ft Latitude: 39° 08'N



Comments: No fall N application was made because of 150 lb/acre N available based soil tests. The third replication was dropped because of poor establishment. The trial was replanted on 10/3/12 with little improvement in stand. Above normal temperatures resulted in 100% winter survival.

Table 5. Results for the 2012 National Winter Canola Variety Trial at Manhattan, KS

Name	Yield (lb/a)			Yield (% of test avg.)				Fall stand		50% bloom	Maturity ¹	Plant height	Blackleg ²
	2012	2011	2-yr.	2012	2012	2011	2-yr.	(0-10)	(d)	(% of 5/23)	(in.)	(%)	
Virginia State University													
Virginia	1960	1905	1933	103	100	99	100	4.0	85.0	67.5	51	2.0	
VSX-3	2323	2381	2352	122	100	99	100	7.0	85.0	80.0	53	1.0	
Technology Crops International													
Rossini	2269	2219	2244	119	100	100	100	7.5	82.5	95.0	51	3.0	
TCI805	1761	1975	1868	92	100	98	99	9.0	84.0	90.0	57	5.0	
TCI806	2015	2614	2314	105	100	98	99	5.0	87.0	82.5	58	2.0	
Pioneer Hi-Bred													
46W94	2468	---	---	129	100	---	---	5.0	84.5	60.0	55	3.0	
46W99	1416	---	---	74	100	---	---	2.5	87.5	20.0	52	1.5	
High Plains Crop Development													
Claremore	1470	2312	1891	77	100	99	99	4.5	87.5	30.0	53	1.5	
HPX-7228	2450	2463	2457	128	100	100	100	6.0	85.5	67.5	51	2.0	
HPX-7341	1851	2405	2128	97	100	99	100	7.0	85.5	72.5	57	1.5	
Croplan Genetics													
HyClass115W	2069	1951	2010	108	100	100	100	5.5	85.0	50.0	49	1.5	
HyClass125W	1652	2277	1964	86	100	100	100	5.0	86.5	50.0	53	2.0	
HyClass154W	2360	2590	2475	124	100	98	99	8.0	86.5	62.5	57	2.0	
Kansas State University													
KS4083	2632	2625	2628	138	100	100	100	6.5	85.5	55.0	63	1.5	
KS4428	2577	2730	2654	135	100	100	100	5.5	87.0	55.0	58	1.0	
KS4564	1960	---	---	103	100	---	---	6.5	85.5	60.0	54	1.5	
Kiowa	2105	2219	2162	110	100	100	100	6.5	85.5	60.0	63	2.0	
Riley	2323	2602	2463	122	100	100	100	6.0	85.5	70.0	56	1.5	
Sumner	1416	2207	1811	74	100	100	100	6.5	83.5	80.0	55	3.5	
Wichita	1688	2927	2307	88	100	100	100	7.5	83.5	80.0	54	3.0	
DL Seeds / Rubisco Seeds													
Baldur	2505	2590	2547	131	100	99	100	6.0	86.0	60.0	56	1.5	
NPZ0903	2632	---	---	138	100	---	---	7.0	84.0	70.0	57	2.5	
NPZ1005	2595	---	---	136	100	---	---	8.0	85.0	67.5	56	3.0	
Rumba	2577	---	---	135	100	---	---	5.5	83.5	50.0	55	1.5	
Sitro	1906	2474	2190	100	100	99	100	5.5	84.0	77.5	58	2.0	
Ulura	2741	---	---	144	100	---	---	7.0	86.0	60.0	60	1.5	
WRH350	2559	---	---	134	100	---	---	6.5	85.0	72.5	55	2.0	

Table 5 continued. Results for the 2012 National Winter Canola Variety Trial at Manhattan, KS

Name	Yield (lb/a)			Yield (% of test avg.)				Winter survival (%)	Fall stand (0-10)	50% bloom (d)	Maturity ¹ (% of 5/23)	Plant height (in.)	Blackleg ² (%)
	2012	2011	2-yr.	2012	2012	2011	2-yr.						
Dynastie	1688	2672	2180	88	100	100	100	4.0	87.0	30.0	51	1.0	
Flash	1742	2602	2172	91	100	100	100	4.0	86.0	32.5	53	1.0	
Hornet	1742	2439	2091	91	100	100	100	6.0	87.5	27.5	53	2.5	
Safran	2650	2544	2597	139	100	100	100	7.0	85.5	75.0	52	1.5	
Visby	2196	2858	2527	115	100	99	100	3.5	84.5	55.0	50	1.5	
MOMONT, France													
Chrome	2559	2300	2430	134	100	99	100	4.0	84.5	27.5	54	1.0	
MH07J14	3231	---	---	169	100	---	---	7.5	85.5	50.0	59	0.5	
Hybrirock	3557	2323	2940	186	100	99	100	7.0	84.5	45.0	57	1.0	
MH06E10	2378	2416	2397	125	100	90	95	5.5	85.5	25.0	60	2.5	
MH09H19	3249	---	---	170	100	---	---	7.0	83.5	50.0	58	2.0	
University of Idaho													
Amanda	2450	2149	2300	128	100	100	100	7.0	87.5	72.5	53	2.0	
Durola	1888	1557	1722	99	100	98	99	7.0	85.5	52.5	56	2.5	
05.UI.5.6.33	1888	---	---	99	100	---	---	8.5	87.0	67.5	59	4.0	
06.UIWC.1	1742	---	---	91	100	---	---	6.0	85.0	67.5	50	3.0	
Monsanto / DEKALB													
DKW41-10	1343	1777	1560	70	100	100	100	5.5	83.5	85.0	45	4.0	
DKW44-10	2232	2021	2127	117	100	100	100	7.0	87.5	40.0	47	0.5	
DKW46-15	1888	1905	1896	99	100	100	100	6.5	86.0	55.0	48	1.5	
DKW47-15	1869	2126	1998	98	100	100	100	7.0	84.5	85.0	53	3.5	
Mean	2191	2316	---	---	---	99	---	6.1	85.4	59.7	55	2.0	
CV	19	15	---	---	---	2	---	21.4	1.3	22.4	5	50.9	
LSD (0.05)	856	576	---	---	---	3	---	2.7	2.2	26.9	5	2.1	

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. ¹Maturity is rated as the percent of plants with mature pod color on 5/23. ²Blackleg is rated on a scale from 0=no infection to 5=completely dead.

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