2007-2008 Winter Canola Performance Tests

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Production Technology Report
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Rocky Thacker, Southwest Research Station, Altus

Don Hooper, South Central Research Station, Chickasha

Ray Sidwell, North Central Research Station, Lahoma

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Sources of Seed for the 2007-2008 Winter Canola Performance Tests

Name/Address	Contact	Entries
Dekalb/Monsanto 800 N. Lindbergh Blvd. St. Louis, MO 63167	800-768-6387	DKW13-69 (Roundup Ready) CWH 081 (Roundup Ready) CWH 111 (Roundup Ready) CWH 630 (Roundup Ready) CWH683 (Roundup Ready) CWH 686 (Roundup Ready) CWH 687 (Roundup Ready) CWH 688 (Roundup Ready)
Deutsche Saatveredlung Ag Weissenburger STR. 5 59557 Lippstadt	Schaupp@dsv-saaten.de	Sitro Flash Rally Hornet
Technology Crops International 4201 38th St. S. Suite 108 Fargo, ND 58104	866-870-5910	Hearty
Agriprogress Inc Canada	204-331-3611 agriprogressinc@mts.net	Visby (hybrid) Baldur (hybrid) Kronos (hybrid)
Kansas State University/ Oklahoma State University Mike Stamm 3702 Throckmorton Plant Sciences Center Manhattan, KS 66506	785-532-3871	Wichita Sumner KS3074 KS9135 KS3077

2007-2008 Canola Crop Overview

Production season

The 2007-2008 canola production season in Oklahoma was characterized by variable weather patterns from planting to harvest. In a large portion of the state, especially the southwest, dry soil conditions were present at planting. Establishment was difficult and emergence uneven, with some plants emerging 10-14 days apart. Later emergence did have an effect on winter survival, especially in the southwestern part of the state. Nearly all parts of the state received adequate rainfall after November and ideal temperatures during bloom. Blooming was delayed a week or two due to cooler air and soil temperatures in February and March. During the growing season we expanded our knowledge of growing winter canola and identifying varieties that have the greatest potential for Oklahoma. Canola remains a highly viable crop for most areas of Oklahoma. Results from trials this year are variable due to uneven stands and shattering losses prior to harvest. When viewing this data and making variety/hybrid selection for this fall refer to last years data as well as this years data.

Pest problems

Overall, pest problems were not as severe in the 2007-2008 growing season compared to the prior growing seasons. Normal winter temperatures helped reduce the aphid populations compared to the high populations observed in 2005-2006. If an insecticide seed treatment was applied, most producers only had to spray one time to control aphid populations. Several fields in northwestern Oklahoma did see a large population of diamond back moth larvae from December to February. In the past, populations of larvae have not caused economic damage but several fields were treated this year because of very high populations.

Interpreting Data

Details of establishment and management of each test are listed in footnotes below the tables. Least significant differences (LSD) are listed at the bottom of all but the Performance Summary tables. Differences between varieties are significant only if they are equal to or greater than the LSD value. If a given variety out yields another variety by as much or more than the LSD value, then we are 95% sure that the yield difference is real, with only a 5% probability that the difference is due to chance alone. For example, if variety X is 500 lb/acre higher in yield than variety Y, then this difference is statistically significant if the LSD is 500 or less. If the LSD is 501 or greater, then we are less confident that variety X really is higher yielding than variety Y under the conditions of the test.

The CV value or coefficient of variation, listed at the bottom of each table is used as a measure of the precision of the experiment. Lower CV values will generally relate to lower experimental error in the trial. Uncontrollable or immeasurable variations in soil fertility, soil drainage, and other environmental factors contribute to greater experimental error and higher CV values. Generally, a CV less than 15 for canola trials is considered good. This is an indication that less error was observed in the plots.

Results reported here should be representative of what might occur throughout the state but would be most applicable under environmental and management conditions similar to those of the tests. The relative yields of all forage legume varieties are affected by crop management and by environmental factors including soil type, winter conditions, soil moisture conditions, diseases, and insects.

Methods

Test locations were near Altus, Ft. Cobb, Chickasha, Lahoma, Isabella, Stillwater (Conventional till), Stillwater (No-till), and Miami. All locations were conventionally tilled prior to seeding except the Stillwater no-till location. Locations were lost at Chickasha and Altus in the fall due to dry soil conditions at planting and the Isabella location was not harvested due to excessive variability from soil characteristics.

Plots were 4 ft wide by 20 feet long and seeded at a rate of 5 lb/ac. Soil characteristics and fertilizer applied is indicated for each location on later pages. Entire plots were harvested with a small plot combine.

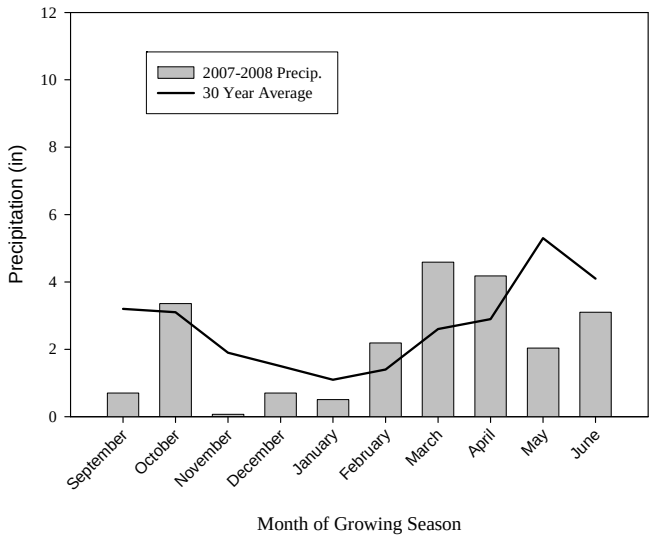
Additional information on the Web

A copy of this publication as well as additional variety information and more information on canola management can be found at

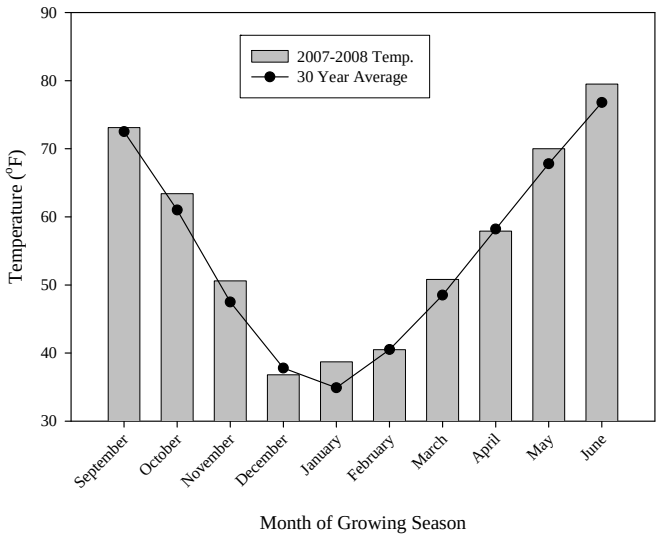
www.canola.okstate.edu/

Fort Cobb Canola Variety Trial

Fort Cobb Precipitation



Fort Cobb Temperature



Observations:

The Fort Cobb location had fair soil moisture at planting and precipitation fell a few days after planting. A good stand was obtained. Winter survival for all varieties was excellent. Adequate soil moisture was present from December until harvest. Pest pressure was minimal throughout the season. One application of pesticide was made to control diamondback moth larvae and cabbage loopers on March 26th. Grain yields at Fort Cobb averaged 2370 lb/ac when averaged across all varieties/hybrids. Test weight was low for all entries and was probably a function of temperature at grain/pod fill.

Table 1. Information on soil properties and management practices for Fort Cobb, OK in 2007-2008.

Date Planted	27-Sep		
Soil Moisture at Planting	Good	**Fertilizer Applied (lbs/ac)**	
Soil Chemical Characteristics		Fall Nitrogen	46
Soil pH	6.4	Spring Nitrogen	100
Soil Test P Index	26	*Total Nitrogen*	146
Soil Test K Index	260	P_2O_5	34
Nitrate-N (lbs N/ac)	10	K_2O	0
Sulfur (lbs/ac)	-	Sulfur	10
Fall Stand Counts Taken	14-Nov		
Winter Survival Ratings Taken	20-Mar		
Harvested	3-Jun		

Fort Cobb Canola Variety Trial

Table 2. Selected variety characteristics and grain yields at Fort Cobb, OK in 2007-2008.

Cultivar	Fall Stand Rating†	Winter Survival‡	Lodging§	Shatter¶	Height	Test Weight	Seed Yield
		- - - - - - - - - - % - - - - - - - - - -			- - in - -	(lb/ac)	- - lbs/A - -
CWH 683‡‡	100	100	0	5	54	44	3280
CWH 081‡‡	100	100	0	10	53	43	3080
CWH 688‡‡	100	100	0	5	49	43	2820
CWH 687‡‡	100	100	0	0	47	45	2769
Rally	100	100	0	10	54	40	2768
CWH 686‡‡	100	100	0	5	50	45	2751
CWH 111‡‡	100	100	0	0	51	44	2695
KS 9135	100	100	0	0	53	44	2685
Wichita	100	100	0	10	47	45	2658
Sitro	100	100	0	5	52	43	2604
Visby	100	100	0	5	44	43	2581
KS 3077	100	100	0	5	54	43	2544
KS 3302	100	100	0	10	44	45	2494
Hearty††	100	100	0	0	45	43	2389
Kronos	100	100	0	0	53	43	2378
Baldur	100	100	0	0	42	43	2376
KS 3074	100	100	0	10	48	43	2354
Sumner	100	100	0	10	46	44	2300
CWH 630‡‡	100	100	0	5	50	43	2278
Flash	100	100	0	0	50	44	2238
Hornet	100	100	0	5	51	41	2133
DWK 13-69‡‡	100	100	0	10	48	42	1952
LSD (P=0.05)	NS	NS	NS	NS	2	NS	418
CV					4		10

* All entries were treated with commercially available seed insecticide treatment.

† Fall stand rating was based on a 0 to 10 scale with 10 being a full stand.

‡ Winter survival ratings were taken in the spring after winter dormancy was broken (rated as percent of the plot that survived).

§ Lodging ratings were determined at harvest by visually estimating the percentage of the plants that were lodged.

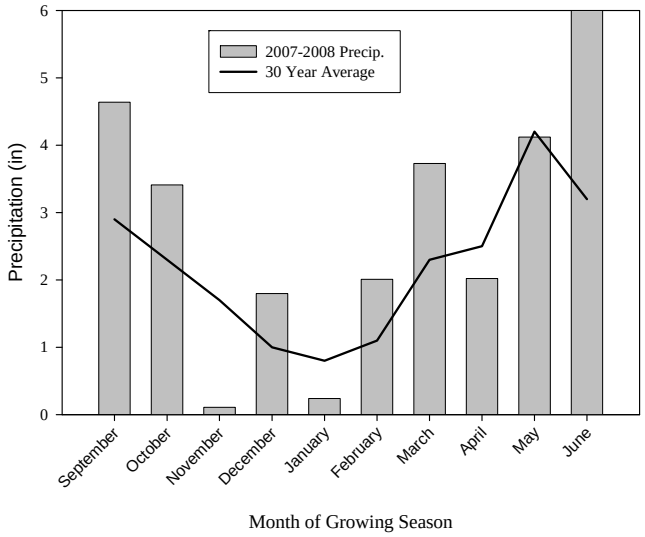
¶ Shattering was estimated as the percentage of pods per plant that had shattered by harvest.

†† High erucic acid rapeseed, can only be used for industrial purposes.

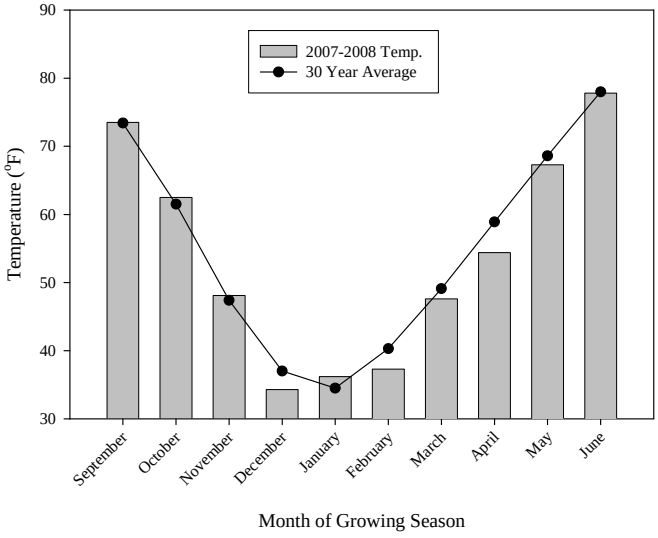
‡‡ Roundup ready canola.

Lahoma Canola Variety Trial

Lahoma Precipitation



Lahoma Temperature



Observations:

The trial at Lahoma was seeded into a dry seedbed. Some seed was placed into moisture and quickly germinated but the others were placed in dry soil and needed rain to germinate. The rainfall received in September is deceiving as 84% of the rainfall that month came in one event early in the month. Grain yields at Lahoma averaged 1349 lb/ac when averaged across all varieties/hybrids. Yields were hurt from poor stand establishment from a dry seedbed at planting and the high winds prior to harvest. No insecticides were needed throughout the growing season.

Table 3. Information on soil properties and management practices for Lahoma, OK in 2007-2008.

Date Planted	21-Sep		
Soil Moisture at Planting	Dry	**Fertilizer Applied (lbs/ac)**	
Soil Chemical Characteristics		Fall Nitrogen	40
Soil pH	7.8	Spring Nitrogen	100
Soil Test P Index	22	*Total Nitrogen*	140
Soil Test K Index	408	P_2O_5	40
Nitrate-N (lbs N/ac)	-	K_2O	0
Sulfur (lbs/ac)	-	Sulfur	10
Fall Stand Counts Taken	14-Nov		
Winter Survival Ratings Taken	7-Apr		
Harvested	10-Jun		

Lahoma Canola Variety Trial

Table 4. Selected variety characteristics and grain yields at Lahoma, OK in 2007-2008.

Cultivar	Fall Stand Rating†	Winter Survival‡	Lodging§	Shatter¶	Height	Test Weight	Seed Yield
		- - - - - - - - - - % - - - - - - - - - -			- - in - -	(lb/ac)	- - lbs/A - -
Rally	77	100	0	40	48		2033
Flash	90	100	0	50	52		2017
Hornet	73	100	0	60	49		1694
Wichita	80	100	0	60	43		1653
Sitro	73	100	0	60	46		1617
CWH 081‡‡	67	100	0	40	44		1597
Visby	57	100	0	50	47	Average Test Weight was 44 lb/ bu. Not large enough samples to collect accurate test weights for each variety/ hybrid.	1489
CWH 687‡‡	80	100	0	60	47		1369
CWH 111‡‡	80	100	0	60	53		1338
Sumner	75	100	0	50	42		1307
KS 3074	80	100	0	10	45		1266
KS 9135	70	100	0	60	52		1243
KS 3302	73	100	0	20	46		1214
KS 3077	77	100	0	50	52		1206
Baldur	77	100	0	60	49		1200
CWH 630‡‡	67	100	0	60	46		1177
CWH 686‡‡	77	100	0	60	44		1132
CWH 688‡‡	80	100	0	40	40		1030
DWK 13-69‡‡	77	100	0	10	49		1022
CWH 683‡‡	80	100	0	60	41		999
Kronos	90	100	0	60	47		925
LSD (P=0.05)	NS	NS	NS	NS	2		403
CV					4		18

* All entries were treated with commercially available seed insecticide treatment.

† Fall stand rating was based on a 0 to 10 scale with 10 being a full stand.

‡ Winter survival ratings were taken in the spring after winter dormancy was broken (rated as percent of the plot that survived).

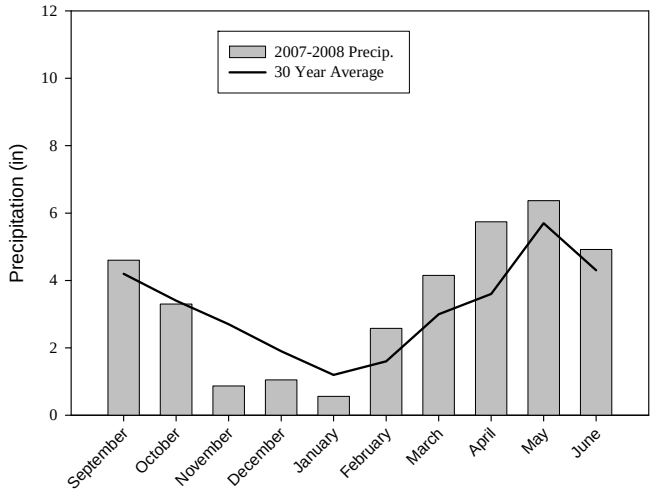
§ Lodging ratings were determined at harvest by visually estimating the percentage of the plants that were lodged.

¶ Shattering was estimated as the percentage of pods per plant that had shattered by harvest.

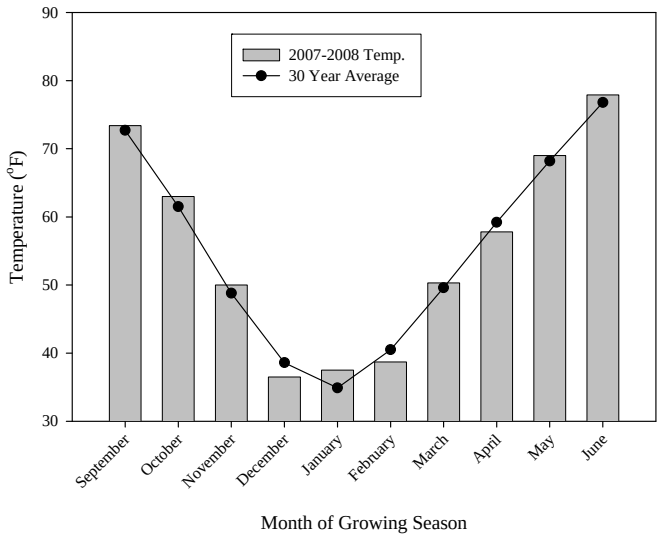
‡‡ Roundup ready canola.

Stillwater Canola (Conventional Till and No-till) Variety Trial

Stillwater Precipitation



Stillwater Temperature



Observations:

The trials at Stillwater were seeded into a dry seedbed. Some seed was placed into moisture and quickly germinated but the other seed was placed in dry soil and needed rain to germinate. Grain yields at Stillwater averaged 974 lb/ac when averaged across all varieties/hybrids for the conventional till trial and 659 lb/ac for the no-till trial. Yields were hurt from poor stand establishment from a dry seedbed at planting and the high winds prior to harvest. Both trials had a significant amount of shatter that reduced yields. Insecticide was applied in March to control aphids and diamondback moth larvae.

Table 5. Information on soil properties and management practices for Stillwater (CT), OK in 2007-2008.

Date Planted	28-Sep		
Soil Moisture at Planting	Dry	**Fertilizer Applied (lbs/ac)**	
Soil Chemical Characteristics		Fall Nitrogen	46
Soil pH	7.3	Spring Nitrogen	100
Soil Test P Index	68	*Total Nitrogen*	146
Soil Test K Index	-	P_2O_5	0
Nitrate-N (lbs N/ac)	7	K_2O	0
Sulfur (lbs/ac)	-	Sulfur	10
Fall Stand Counts Taken	19-Nov		
Winter Survival Ratings Taken	14-Mar		
Harvested	7-Jun		

Stillwater Canola Variety Trial

Conventional Till

Table 6. Selected variety characteristics and grain yields at Stillwater (conventional tillage), OK in 2007-2008.

Cultivar	Fall Stand Rating†	Winter Survival‡	Lodging§	Shatter¶	Height	Test Weight	Seed Yield
		- - - - - - - - - - % - - - - - - - - - -			- - in - -	(lb/ac)	- - lbs/A - -
CWH 683‡‡	83	100	0	40	44		1270
Wichita	90	100	0	25	47		1237
CWH 081‡‡	90	100	0	30	47		1189
Kronos	92	100	0	35	50		1055
CWH 687‡‡	92	100	0	30	47		1046
CWH 686‡‡	90	100	0	40	40		1001
KS 3077	85	100	0	25	52	Average Test Weight was 47 lb/ bu. Not large enough samples to collect accurate test weights for each variety/ hybrid.	970
CWH 111‡‡	83	100	0	35	47		931
CWH 688‡‡	90	100	0	40	44		914
Visby	85	100	0	25	47		906
Sitro	90	100	0	25	49		881
KS 9135	87	100	0	30	49		844
Flash	90	100	0	30	45		815
Sumner	85	100	0	30	45		797
Hornet	83	100	0	20	50		792
KS 3302	83	100	0	35	47		790
Baldur	87	100	0	30	50		772
KS 3074	90	100	0	30	52		751
CWH 630‡‡	88	100	0	40	44		693
Rally	87	100	0	20	48		664
DWK 13-69‡‡	92	100	0	30	49		658
Hearty††	82	100	0	30	44		372
LSD (P=0.05)	NS	NS	NS	NS	5		408
CV					5		

* All entries were treated with commercially available seed insecticide treatment.

† Fall stand rating was based on a 0 to 10 scale with 10 being a full stand.

‡ Winter survival ratings were taken in the spring after winter dormancy was broken (rated as percent of the plot that survived).

§ Lodging ratings were determined at harvest by visually estimating the percentage of the plants that were lodged.

¶ Shattering was estimated as the percentage of pods per plant that had shattered by harvest.

†† High erucic acid rapeseed, can only be used for industrial purposes.

‡‡ Roundup ready canola.

Stillwater Canola Variety Trial

No-till

Table 7. Selected variety characteristics and grain yields at Stillwater (no-till), OK in 2007-2008.

Cultivar	Fall Stand Rating†	Winter Survival‡	Lodging§	Shatter¶	Height	Test Weight	Seed Yield
		- - - - - - - - - - % - - - - - - - - - -			- - in - -	(lb/ac)	- - lbs/A - -
Flash	96	100	0	5	45		844
KS 9135	95	100	0	20	45		814
Baldur	98	100	0	15	46		807
CWH 111‡‡	98	100	0	20	44		780
KS 3077	86	100	0	15	42		774
Sumner	98	100	0	20	41		773
CWH 687‡‡	98	100	0	30	41		772
Rally	96	100	0	15	43		750
Sitro	98	100	0	20	46		747
Kronos	94	100	0	35	49		733
Visby	94	100	0	10	50		688
KS 3074	96	100	0	20	43		687
CWH 688‡‡	97	100	0	30	40	Average Test Weight was 47 lb/ bu. Not large enough samples to collect accurate test weights for each varity/ hybrid.	666
CWH 683‡‡	98	100	0	20	44		658
CWH 081‡‡	96	100	0	10	40		596
Hornet	93	100	0	15	44		578
CWH 686‡‡	96	100	0	20	41		572
DWK 13-69‡‡	97	100	0	30	41		554
CWH 630‡‡	96	100	0	25	39		537
Wichita	98	100	0	25	42		479
KS 3302	95	100	0	30	45		470
Hearty††	98	100	0	20	48		263
LSD (P=0.05)	NS	NS	NS	NS	NS		264
CV							31

* All entries were treated with commercially available seed insecticide treatment.

† Fall stand rating was based on a 0 to 10 scale with 10 being a full stand.

‡ Winter survival ratings were taken in the spring after winter dormancy was broken (rated as percent of the plot that survived).

§ Lodging ratings were determined at harvest by visually estimating the percentage of the plants that were lodged.

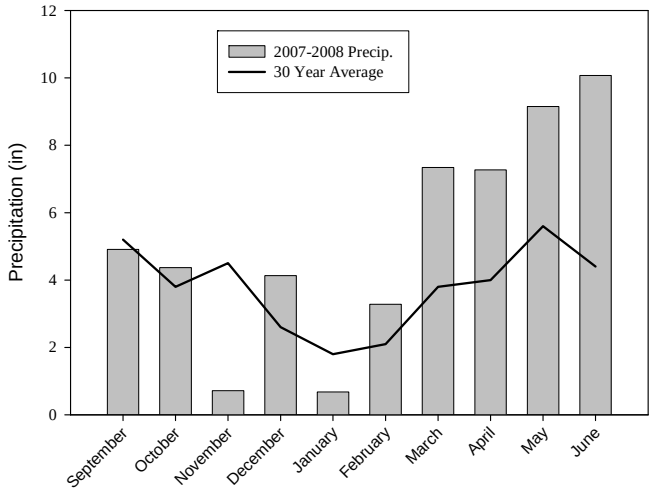
¶ Shattering was estimated as the percentage of pods per plant that had shattered by harvest.

†† High erucic acid rapeseed, can only be used for industrial purposes.

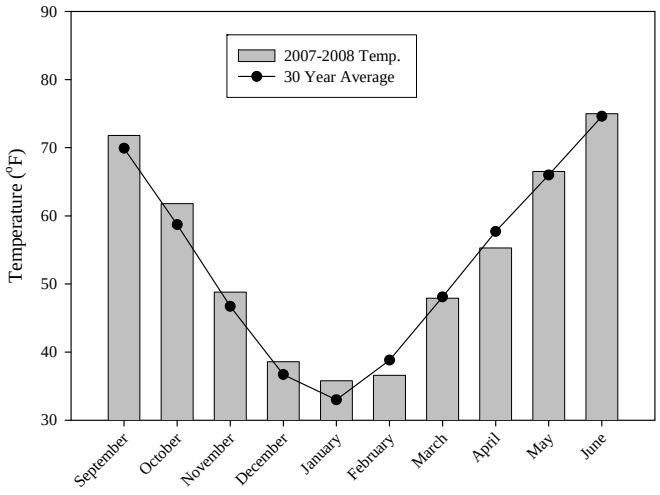
‡‡ Roundup ready canola.

Miami Canola Variety Trial

Miami Precipitation



Miami Temperature



Observations:

The Miami location had fair soil moisture at planting but precipitation fell a few days after planting and a acceptable stand was obtained. The rain came fast and as a result caused some variability in stand. Winter survival for all varieties was acceptable. This is the only location where winter survival between entries was significantly different. Adequate soil moisture was present from December until harvest. Pest pressure was minimal throughout the season. One application of pesticide was made to control aphids. Grain yields at Miami averaged 1302 lb/ac when averaged across all varieties/hybrids.

Table 8. Information on soil properties and management practices for Miami, OK in 2007-2008.

Date Planted	27-Sep		
Soil Moisture at Planting	Good	**Fertilizer Applied (lbs/ac)**	
Soil Chemical Characteristics		Fall Nitrogen	50
Soil pH	6.8	Spring Nitrogen	100
Soil Test P Index	41	*Total Nitrogen*	150
Soil Test K Index	105	P_2O_5	70
Nitrate-N (lbs N/ac)	43	K_2O	100
Sulfur (lbs/ac)		Sulfur	10
Fall Stand Counts Taken	19-Jan		
Winter Survival Ratings	26-Mar		
Harvested			

Miami Canola Variety Trial

Table 9. Selected variety characteristics and grain yields at Miami, OK in 2007-2008.

Cultivar	Fall Stand Rating†	Winter Survival‡	Lodging§	Shatter¶	Height	Test Weight	Seed Yield
		- - - - - - - - - - % - - - - - - - - - -			- - in - -	(lb/ac)	- - lbs/A - -
KS 3077	69	82	0	10	55	48	2136
KS 3302	69	79	0	10	55	48	1814
Wichita	na	na	0	10	48	47	1666
CWH 683‡‡	71	61	0	10	50	46	1640
KS 3074	67	80	0	10	55	47	1634
KS 9135	69	80	0	10	59	47	1614
Flash	72	67	0	10	49	48	1460
CWH 111‡‡	79	74	0	10	51	46	1426
CWH 687‡‡	57	63	0	10	54	44	1423
CWH 081‡‡	63	68	0	10	54	42	1329
CWH 688‡‡	71	59	0	10	49	45	1327
Sumner	na	na	0	10	51	46	1295
Rally	79	73	0	10	54	46	1293
CWH 686‡‡	70	66	0	10	53	44	1284
Visby	62	64	0	10	51	46	1185
CWH 630‡‡	64	64	0	10	54	41	1076
Kronos	75	68	0	10	52	48	1030
Hornet	64	67	0	10	51	46	1006
DWK 13-69‡‡	58	56	0	10	51	47	915
Sitro	69	58	0	10	52	na	864
Baldur	73	60	0	10	53	44	807
Hearty††	na	na	0	10	50	na	423
LSD (P=0.05)	NS	13	NS	NS	6	NS	473
CV		15			7		28

* All entries were treated with commercially available seed insecticide treatment.

† Fall stand rating was based on a 0 to 10 scale with 10 being a full stand.

‡ Winter survival ratings were taken in the spring after winter dormancy was broken (rated as percent of the plot that survived).

§ Lodging ratings were determined at harvest by visually estimating the percentage of the plants that were lodged.

¶ Shattering was estimated as the percentage of pods per plant that had shattered by harvest.

†† High erucic acid rapeseed, can only be used for industrial purposes.

‡‡ Roundup ready canola.

Table 10. Winter Canola grain yields for 2005-2006 variety trials.

Cultivar	Altus	Fort Cobb	Haskell	Lahoma
	- - - - - - - - - - - - - - lb/ac - - - - - - - - - - - - - -			
Wichita	1653	2859	2555	4080
Plainsman	907	1621	1287	3284
KS-7436	1267	2152	2179	3601
Virginia	1391	2505	2320	3492
Sumner	1461	2894	1897	3726
DKW 13-62 RR†	705	1872	NA	3105
DKW 13-86 RR	964	2047	1677	3380
DKW 13-86 RR + Helix™ XTra‡	957	2075	2138	3510
DKW 13-86 RR + Prosper™§	1006	2137	1946	3444
LSD (P=0.05)	253	281	456	258
CV	19	11	10	6

† Roundup ready canola.

‡ Seed was treated with Helix™ XTra.

§ Seed was treated with Prosper™.

Table 11. Winter Canola grain yields for 2006-2007 Variety Trials.

Cultivar	Altus	Chickasha	Fort Cobb	Lahoma	Miami	Stillwater
			lbs/A			
Baldur	4081	2534	3698	2765	3857	2909
DKW13-62RR‡	2912	1386	2667	1499	2077	2407
DKW13-86RR‡	3098	2080	3040	1858	2974	2508
EXP3269‡	3339	2179	3156	1972	3315	3202
KS3074	3652	2992	3343	2825	3741	2972
KS9135	3625	3043	3292	2571	3681	3204
Sumner	3542	3089	3298	2823	3361	2562
SW023173	3548	2291	3180	1717	3052	2532
SW023181	3771	2209	3305	2530	2385	2369
SW023344	3243	2820	2907	2216	3157	2769
TCI.06.F1†	3939	3387	3683	3119	3458	2946
TCI.06.F2†	3590	3793	3688	2688	3577	3357
TCI.06.M2†	2866	1536	2716	1650	1359	1524
TCI.06.M4†	3615	2008	3119	2550	3110	2166
Virginia	3586	3166	3524	2518	3536	3183
Wichita	3375	2801	3067	3225	3259	3264
LSD (P=0.05)	430	657	451	630	586	876
CV	10	20	11	21	15	22

* All entries were treated with commercially available seed insecticide treatment.

† High erucic acid rapeseed, can only be used for industrial purposes.

‡ Roundup ready canola.