

2009 Canola Variety Trials

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NDSU

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Introduction update

Canola is a major crop in the northern Great Plains and in North Dakota. In 2009, North Dakota accounted for approximately 89 percent of the canola acreage harvested in the United States. This report summarizes canola variety performance at the various North Dakota State University Research Extension Centers. The relative performance of the varieties and hybrids is presented in table format. Give special attention to yield results of those trials nearest to your production area when evaluating varieties or hybrids in these trials. Also, attempt to view yield averages of several years rather than using only one year’s data as a determining factor. In addition, also consider other agronomic characteristics, such as maturity, lodging score and oil percentages, if available.

Information contained in this publication is based on research conducted by the following North Dakota Agricultural Experiment Station scientists and authors:

Blaine Schatz and Steve Schaubert	Carrington Research Extension Center
Bryan Hanson and Richard Wilhelmi	Langdon Research Extension Center
Mark Halvorson and Angela Sebelius	North Central Research Extension Center, Minot
Neil Riveland, Gordon Bradbury and Sara Brogger	Williston Research Extension Center
Mukhlesur Rahman	NDSU, Fargo

Research specialists and technicians helped with the field work and data compilation. Several secretaries assisted with this document by typing information. A special thank you goes to Lisa Johnson, Extension Plant Sciences secretary, for assisting in the compilation of this publication.

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Table 1. Canola Production, North Dakota 2000-2009.

Year	Acres Planted	Acres Harvested	Yield Per Acre	Production
	------(1,000 Acres)-----		(lb)	(1,000 lb)
2000	1,270	1,250	1,320	1,650,000
2001	1,300	1,285	1,400	1,799,000
2002	1,300	1,160	1,210	1,403,600
2003	970	960	1,410	1,353,600
2004	780	750	1,630	1,222,500
2005	1,040	1,015	1,440	1,461,600
2006	940	935	1,370	1,280,950
2007	1,080	1,070	1,240	1,375,500
2008	910	895	1,460	1,306,700
2009	730	715	1,900	1,358,500
Average	1,032	1,004	1,438	1,421,200

Source: North Dakota Agricultural Statistics Service – USDA.

2009 Growing Season Update

Canola fieldwork began at the beginning of May. Planting was done fairly slowly and by May 17, only 23 percent of the acres were planted compared with 72 percent of planted acres in 2008 on the same date. The whole state started the growing season with good supplies of soil water. Early canola stands varied across the region, depending on soil water availability and rainfall after planting. In mid-July, the North Dakota Agricultural Statistics Service reported the canola crop condition 62 percent “good” and 15 percent “excellent.” By July 12, 68 percent of the canola crop was flowering, which compared with 86 percent in 2008.

Cool growing conditions continued throughout the season with mostly adequate rainfall for crop growth. Only 1 percent of the canola acres were swathed on Aug. 9 and 84 percent of the crop was harvested by Sept. 27. The projected average North Dakota canola yield is 1,900 pounds per acre, which is the highest yield in the last 10 years and is 462 pounds higher than the 10-year average (2000-2009) of 1,438 pounds per acre.

Table 2. April-September 2009 Average Temperature and Precipitation Rankings for Select North Dakota Locations.

City	Temperature Ranking	Precipitation Ranking
Bowman	13 th Coolest (Since 1915)	24 th Driest (Since 1915)
Bismarck	50 th Coolest (Since 1874)	24 th Wettest (Since 1874)
Fargo	52 nd Coolest (Since 1881)	14 th Driest (Since 1881)
Minot Exp. Station	20 th Coolest (Since 1905)	22 nd Driest (Since 1905)
Cavalier	11 th Coolest (Since 1934)	36 th Wettest (Since 1927)
Williston Exp. Station	20 th Coolest (Since 1953)	20 th Driest (Since 1956)
North Dakota Average	36th Coolest (Since 1895)	21st Driest (Since 1895)

Source: Adnan Akyuz, NDSU, North Dakota state climatologist.

About this publication

Variety trial data from all NDSU Research Extension Centers for all crops can be found at www.ag.ndsu.edu/varietytrials/. The agronomic data presented in this publication are from replicated research plots using experimental designs that enable the use of statistical analysis. The LSD (Least Significant Difference) numbers beneath the columns in tables are derived from the statistical analyses and only apply to the numbers in the column in which they appear. If the difference between two varieties exceeds the LSD value, it means that with 95 percent probability the higher-yielding variety has a significant yield advantage. If the difference between two varieties is less than the LSD value, then the variety yields are considered similar. NS is used to indicate no significant difference for that trait among any of the varieties. The CV is a measure of variability in the trial. The CV stands for coefficient of variation and is expressed as a percentage. Large CVs mean a large amount of variation that could not be attributed to differences in the varieties. In the tables, the mean indicates the average of the observations in the column. Only compare values within the table and look for trends for the desired trait among different experimental sites and years. Oil and harvest yield were adjusted to 8.5 percent moisture.

Presentation of data for the varieties tested does not imply approval or endorsement by the authors or agencies conducting the tests. NDSU approves the reproduction of any table in this publication only if no portion is deleted, if appropriate footnotes are given, if the order of the data is not rearranged and NDSU is credited for the data.

Table 3. Company Name, Short Name Used in the Tables and URL with Company Information.

Company/Brand	Short	URL
Bayer CropScience	Bayer	www.bayercropscienceus.com/products_and_seeds/seeds/invigor.html
BrettYoung	BrettYoung	www.brettyoung.ca/Western_Canada/Products/Canola/index.php
Canterra	Canterra	www.canterra.com/home/products/canola/
Cargill	Cargill	www.victorycanola.com/
Croplan Genetics	Croplan	www.croplangenetics.com/FINDSEED/CANOLA/default.aspx
Dekalb	Dekalb	www.asgrowanddekab.com/web/products/spring_canola/index.jsp
DL Seeds Inc.	DL Seeds	www.dlseeds.ca
Integra Fortified Seed	Integra	www.integraseed.com/
Monsanto	Monsanto	www.monsanto.com/monsanto/ag_products/input_traits/canola.asp
Pioneer Hi-Bred International Inc.	Pioneer	www.pioneer.com/web/site/portal/
Proseed Inc.	Proseed	www.proseed.net/Canola/canola.htm

Table 4. 2009 Summary of Roundup Ready Canola Varieties in N.D. - Yields Expressed as a Percentage of the Trial Mean.

Company/ Brand	Variety	Type ¹	Blackleg Rating ²	REC	REC	REC	State Trial	REC
				Carrington	Langdon	Minot	Breeding	Williston
				% of Mean	% of Mean	% of Mean	% of Mean	% of Mean
BrettYoung	6020 RR	H,TR	MR	105	102	103		85
BrettYoung	6040 RR	H,TR	R	105	101	102		94
Canterra	1768S	Syn,TR	MR	112	95	104		94
Canterra	1818 RR	OP,TR	R	85	90	103		82
Canterra	1950H	H,TR	MR	102	95	96		79
Canterra	1956S	Syn,TR	R	94	103	95		90
Cargill	v1035	H,HO	R	122	90	97		
Cargill	v1037	H,HO	R	108	92	107		
Cargill	v2010	H,HO	R	84	95	105		
Cargill	v2018	H,HO	MR	91	101	98		
Cargill	v2030	H,HO	MR	100	96	104		
Croplan	HyCLASS 712	Syn,TR	R	88	112	99		
Croplan	HyCLASS 906	H,TR	R	98	94	104		
Croplan	HyCLASS 921	H,TR	R	92	86	93		85
Croplan	HyCLASS 924	H,TR	R	92	91	95		
Croplan	HyCLASS 940	H,TR	R	103	98	98		103
Dekalb	DKL30-42	H,TR	R	101	106	101	97	101
Dekalb	DKL38-25	H,TR	MR				90	
Dekalb	DKL52-41	H,TR	R	103	105	101	96	103
Dekalb	DKL72-55	H,TR	MR	115	111	95	113	114
Dekalb	Hyola 357 Magnum	H,TR	MR					88
Dekalb	IS7145	H,TR	MR				101	
DL Seeds	30119-D8	H,TR	R	93	101	100		
DL Seeds	30205-D8	H,TR	R	94	95	94		
DL Seeds	30214-C7	H,TR	R	108	92	98		
DL Seeds	30220-D8	H,TR	R	91	106	102		
DL Seeds	30221-D8	H,TR	R	85	118	99		
DL Seeds	30516-D8	H,TR	R	94	107	92		
DL Seeds	H7047	H,TR	R	89	108	96		
DL Seeds	H8109	H,TR	R	95	100	101		
Integra	7121R	H,TR	R	111	110	101		
Integra	IX08-7321R	H,TR	R	102	92	92		
Integra	IX09-7426R	H,TR	R	103	81	103		
Integra	IX09-7427R	H,TR	R	109	84	104		
Monsanto	G64034	H,TR	R	111	109	99		94
Monsanto	G72522	H,TR	R	103	98	104		113
Monsanto	G72643	H,TR	R	107	107	91		109
Monsanto	G88006	H,TR	R	102	114	99		102
Monsanto	G88007	H,TR	R	110	108	99		116
Monsanto	G88058	H,TR	R	102	117	101		103
Monsanto	G88061	H,TR	R	94	108	84		104
Monsanto	G88066	H,TR	R	121	93	105		120
Monsanto	G88075	H,TR	R	109	105	95		100
Monsanto	G88115	H,TR	R	104	105	112		116
Monsanto	G88117	H,TR	R	101	113	104		94
Monsanto	G88124	H,TR	R	100	106	103		106
Monsanto	G88930	H,TR	R	112	110	93		105
Pioneer	45H26	H,TR	R				103	
Pioneer	45H28	H,TR	R	97	89	109	92	
Pioneer	45S51	H,TR	R	97	88	105	105	
Proseed	25 Caliber	Syn,TR	R	80	77	113		
Proseed	30 Caliber	Syn,TR	R	90	102	101		
Proseed	50 Caliber	H,TR	R	85	91	104		
Proseed	EXP9000	H,TR	MR	102				
Trial mean in lb/a				1,995	3,033	3,921	2,664	1,396

¹OP = Open Pollinated, H = Hybrid, Syn = Synthetic, TR = Traditional Oil Type, HO = High Oleic Oil Type.² Blackleg: R = Resistant, MR = Moderately Resistant. Blackleg rating provided by company.

Table 5. 2009 Summary of Liberty Link and Clearfield Canola Varieties in N.D. - Yields Expressed as a Percentage of the Trial Mean.

Company/Brand	Variety	Type ¹	Blackleg Rating ²	REC	REC	REC
				Carrington % of Mean	Langdon % of Mean	Minot % of Mean
Bayer	674	H,LL,TR	R	112	102	109
Bayer	InVigor 5440	H,LL,TR	R	116	103	108
Bayer	InVigor 5550	H,LL,TR	R	91	83	102
Bayer	InVigor 5630	H,LL,TR	R	100	96	99
Bayer	InVigor 8440	H,LL,TR	R	96	111	101
Bayer	InVigor Health 1141	H,LL,HO	MR	73	98	
Bayer	InVigor Health 1144	H,LL,HO	MR	101	104	
BrettYoung	5525 CL	H,CL,TR	R	113	106	94
Canterra	30120-B6	H,CL,TR	MR	88	98	
Croplan ³	HyCLASS 940	H,RR,TR	R		101	
Dekalb ³	DKL72-55	H,RR,TR	R		103	
DL Seeds	30423-C7	Syn,CL,TR	R	112	106	92
DL Seeds	30522-C7	H,CL,TR	R	98	90	96
Trial mean in lb/a				1,516	3,104	3,983

¹H = Hybrid, Syn = Synthetic, LL = Liberty Link, CL = Clearfield System, RR = Roundup Ready, TR = Traditional Oil Type, HO = High Oleic Oil Type.

²Blackleg: R = Resistant, MR = Moderately Resistant. Blackleg rating provided by company.

³Roundup Ready check in the trial.

Table 6. 2009 Canola - Roundup Ready - Carrington - Authors, B. Schatz and S. Schaubert.

Company/ Brand	Variety	Type ¹	First	Flower		1000 Seed	Test	Oil	Seed Yield	
			Flower	Duration	Maturity	Weight	Weight	Content	2009	3-yr Avg.
			(DAP) ²	(days)	(DAP) ²	(gram)	(lb/bu)	(%)	----- (lb/a) -----	
BrettYoung	6020 RR	H,TR	48	25	94	3.1	50.5	46.8	2,089	--
BrettYoung	6040 RR	H,TR	50	23	95	3.3	49.2	45.3	2,086	--
Canterra	1818 RR	OP,TR	48	22	93	3.0	50.3	44.9	1,701	1,675
Canterra	1768S	Syn,TR	51	23	95	3.1	50.0	46.0	2,236	--
Canterra	1950H	H,TR	51	22	96	3.1	50.8	44.6	2,025	--
Canterra	1956S	Syn,TR	48	25	94	2.8	49.6	46.7	1,866	--
Cargill	v1035	H,HO	50	21	94	3.1	50.7	45.4	2,435	2,390
Cargill	v1037	H,HO	51	18	94	3.2	50.6	45.7	2,153	--
Cargill	v2010	H,HO	50	22	91	3.3	50.3	45.2	1,670	1,954
Cargill	v2018	H,HO	51	20	94	3.1	50.1	45.9	1,808	1,924
Cargill	v2030	H,HO	52	19	93	3.2	50.5	46.2	1,990	--
Croplan	HyCLASS 712	Syn,TR	53	21	96	3.0	50.6	45.7	1,756	1,992
Croplan	HyCLASS 906	H,TR	50	23	94	3.2	50.1	45.0	1,960	1,994
Croplan	HyCLASS 921	H,TR	48	23	95	3.5	50.6	47.4	1,840	--
Croplan	HyCLASS 924	H,TR	46	29	88	3.0	50.7	45.4	1,829	2,052
Croplan	HyCLASS 940	H,TR	48	22	90	3.5	50.5	45.2	2,063	--
Dekalb	DKL30-42	H,TR	46	22	89	3.5	50.8	46.9	2,021	--
Dekalb	DKL52-41	H,TR	48	24	90	3.3	49.8	45.7	2,054	2,165
Dekalb	DKL72-55	H,TR	46	23	92	3.7	50.5	47.2	2,301	--
DL Seeds	30119-D8	H,TR	49	22	91	3.2	50.6	45.1	1,854	--
DL Seeds	30205-D8	H,TR	50	21	91	3.1	50.9	45.4	1,873	--
DL Seeds	30214-C7	H,TR	49	24	92	3.2	50.8	45.2	2,151	--
DL Seeds	30220-D8	H,TR	52	24	97	3.0	50.2	44.7	1,823	--
DL Seeds	30221-D8	H,TR	51	24	97	3.0	50.2	45.3	1,700	--
DL Seeds	30516-D8	H,TR	53	26	97	2.9	50.2	45.5	1,877	--
DL Seeds	H7047	H,TR	50	26	94	3.3	51.3	44.8	1,776	--
DL Seeds	H8109	H,TR	50	26	95	3.2	51.4	44.3	1,889	--
Integra	7121R	H,TR	46	24	94	3.3	50.5	43.5	2,205	--
Integra	IX08-7321R	H,TR	48	23	93	3.1	50.4	45.3	2,039	--
Integra	IX09-7426R	H,TR	50	22	93	3.1	50.8	45.3	2,056	--
Integra	IX09-7427R	H,TR	48	24	94	3.4	50.1	46.5	2,184	--
Monsanto	G64034	H,TR	51	24	96	3.1	50.1	45.4	2,217	--
Monsanto	G72522	H,TR	49	22	92	3.0	50.2	45.5	2,051	--
Monsanto	G72643	H,TR	51	22	92	3.0	51.1	45.8	2,141	--
Monsanto	G88006	H,TR	49	23	94	3.4	50.6	46.9	2,040	--
Monsanto	G88007	H,TR	46	22	89	3.4	50.5	46.9	2,193	--
Monsanto	G88058	H,TR	49	22	93	3.5	50.7	45.2	2,041	--
Monsanto	G88061	H,TR	48	26	93	3.5	49.9	44.5	1,883	--
Monsanto	G88066	H,TR	50	22	92	3.1	50.5	46.4	2,407	--
Monsanto	G88075	H,TR	48	22	94	3.5	50.2	45.9	2,169	--
Monsanto	G88115	H,TR	48	21	92	3.4	50.4	47.0	2,075	--
Monsanto	G88117	H,TR	48	25	93	3.1	50.7	46.3	2,023	--
Monsanto	G88124	H,TR	48	21	93	3.3	50.5	47.2	1,987	--
Monsanto	G88930	H,TR	48	22	92	3.6	50.2	46.7	2,232	--
Pioneer	45H28	H,TR	49	23	95	3.0	50.4	46.6	1,930	--
Pioneer	45S51	H,TR	47	25	93	3.2	50.6	45.0	1,938	--
Proseed	25 Caliber	Syn,TR	47	23	91	3.1	51.0	44.1	1,593	--
Proseed	30 Caliber	Syn,TR	53	22	96	3.0	50.9	45.5	1,805	2,054
Proseed	50 Caliber	H,TR	47	24	89	3.1	50.8	43.9	1,700	1,842
Proseed	EXP9000	H,TR	51	22	93	2.9	51.2	45.6	2,035	--
Mean			49	23	93	3.2	50.5	45.7	1,995	2,004
CV %			2.3	7.0	2.5	3.8	0.8	1.7	14.9	--
LSD 0.05			1.6	2.2	3.2	0.17	0.5	1.1	413	--

Trial was planted on May 8 and harvested on Aug. 26. Previous crop was spring wheat.

¹H = Hybrid, Syn = Synthetic, OP = Open Pollinated, TR = Traditional Oil Type, HO = High Oleic Oil Type.

²DAP = Days after planting.

Table 7. 2009 Canola - Liberty Link and Clearfield - Carrington - Authors, B. Schatz and S. Schaubert.

Company/ Brand	Variety	Type ¹	First Flower (DAP) ²	Flower Duration (days)	Flower Maturity (DAP) ²	Plant Height (inch)	Plant Lodge (0-9)	Test Weight (lb/bu)	Oil Content (%)	Seed Yield	
										2009	3-yr Avg. ------(lb/a)-----
Bayer	InVigor 5440	H,LL,TR	49	22	93	39.4	0.5	51.4	43.6	1,759	1,905
Bayer	InVigor 5550	H,LL,TR	47	22	91	42.7	1.0	51.8	44.2	1,376	1,865
Bayer	InVigor 5630	H,LL,TR	48	25	92	38.2	0.5	51.1	44.7	1,517	1,735
Bayer	InVigor 8440	H,LL,TR	49	23	92	36.8	1.3	51.6	41.5	1,452	--
Bayer	InVigor Health 1141	H,LL,HO	47	25	92	36.5	1.0	51.5	43.9	1,102	--
Bayer	InVigor Health 1144	H,LL,HO	48	24	94	37.8	1.0	52.3	42.2	1,537	--
Bayer	674	H,LL,TR	49	21	95	40.0	0.3	49.9	43.9	1,697	--
BrettYoung	5525 CL	H,CL,TR	48	23	92	40.1	0.3	52.3	44.1	1,713	--
Canterra	30120-B6	H,CL,TR	48	22	91	38.4	0.5	51.2	43.2	1,330	--
DL Seeds	30423-C7	Syn,CL,TR	48	23	89	37.7	0.3	52.3	44.4	1,702	--
DL Seeds	30522-C7	H,CL,TR	50	23	95	39.2	0.8	51.6	43.6	1,491	--
Mean			48	23	92	38.8	0.7	51.5	43.6	1,516	1,835
CV %			1.9	12	2.6	7.4	95	1.1	2.4	24	--
LSD 0.05			1.3	NS	NS	NS	NS	0.8	1.5	NS	--

Trial was planted on May 15 and harvested on Sep. 4. Previous crop was spring wheat.

¹H = Hybrid, Syn= Synthetic, LL = Liberty Link, CL = Clearfield System, TR = Traditional Oil Type.

²DAP = Days after planting.

Table 8. 2009 Canola - Liberty Link and Clearfield - Langdon - Authors, B. Hanson and R. Wilhelmi.

Company/ Brand	Variety	Type ¹	First Flower (DAP) ²	End Flower (DAP) ²	Flower Duration (days)	Flower Maturity (DAP) ²	Plant Height (inch)	Plant Cover (%)	Oil Content (%)	Seed Yield	
										2009	3-yr Avg.
Bayer	InVigor 5440	H,LL,TR	50	71	21	101	39.7	89	43.8	3,190	3,190
Bayer	InVigor 5550	H,LL,TR	49	72	23	101	38.6	91	44.3	2,568	2,568
Bayer	InVigor 5630	H,LL,TR	49	72	23	101	38.1	93	44.6	2,973	2,973
Bayer	InVigor 8440	H,LL,TR	48	72	23	101	39.3	95	44.0	3,443	3,443
Bayer	InVigor Health 1141	H,LL,HO	49	74	26	103	40.6	94	45.5	3,048	--
Bayer	InVigor Health 1144	H,LL,HO	48	72	24	102	40.0	90	44.1	3,216	--
Bayer	674	H,LL,TR	49	73	24	103	40.2	93	45.1	3,168	--
BrettYoung	5525 CL	H,CL,TR	51	74	24	103	43.6	80	43.8	3,291	--
Canterra	30120-B6	H,CL,TR	52	76	24	105	44.1	89	43.3	3,054	3,054
DL Seeds	30423-C7	Syn,CL,TR	49	73	24	101	40.9	91	41.4	3,302	--
DL Seeds	30522-C7	H,CL,TR	49	70	21	100	40.7	86	43.2	2,786	--
Check	HyCLASS 940	H,RR,TR	47	68	21	99	39.8	95	43.3	3,127	--
Check	DKL72-55	H,RR,TR	47	68	21	100	39.0	93	46.9	3,190	--
Mean			49	72	23	102	40.4	91	44.1	3,104	2,871
CV %			1	1.7	4.9	1	4.1	4.2	2.6	10.8	--
LSD 0.05			0.7	1.8	1.6	1.5	2.4	5.5	1.6	NS	--

¹H = Hybrid, Syn = Synthetic, LL = Liberty Link, CL = Clearfield System, RR = Roundup Ready, TR = Traditional Oil Type, HO = High Oleic Oil Type.

²DAP = Days after planting

Table 9. 2009 Canola - Roundup Ready - Langdon - Authors, B. Hanson and R. Wilhelmi.

Company/ Brand	Variety	Type ¹	First	End	Flower	Maturity	Plant	Plant	Oil	Seed Yield	
			Flower	Flower	Duration					Height	Lodge
			(DAP) ²	(DAP) ²	(days)	(DAP) ²	(inch)	(0-9)	(%)	----(lb/a)----	
BrettYoung	6020 RR	H,TR	47	73	26	102	34.5	1.3	46.4	3,100	--
BrettYoung	6040 RR	H,TR	50	75	25	102	37.5	0.8	42.9	3,070	--
Canterra	1768S	Syn,TR	49	73	23	101	36.6	1.3	43.4	2,883	--
Canterra	1818 RR	OP,TR	50	73	23	103	33.4	1.8	44.7	2,743	2,691
Canterra	1950H	H,TR	50	74	24	104	40.1	1.8	41.4	2,889	--
Canterra	1956S	Syn,TR	49	72	23	102	37.5	0.8	44.6	3,122	--
Cargill	v1035	H,HO	49	71	22	100	35	2.3	44.6	2,737	2,934
Cargill	v1037	H,HO	50	71	21	102	34.8	3.3	42.4	2,780	--
Cargill	v2010	H,HO	50	74	24	102	37.8	2	42.5	2,886	2,924
Cargill	v2018	H,HO	49	74	25	102	35.8	1.3	43.3	3,048	2,823
Cargill	v2030	H,HO	50	74	24	102	39.7	2.8	43.1	2,913	--
Croplan	HyCLASS 712	Syn,TR	51	78	26	105	36.4	0.8	43.9	3,402	3,129
Croplan	HyCLASS 906	H,TR	50	75	25	103	39.6	0.8	41.9	2,863	2,993
Croplan	HyCLASS 921	H,TR	49	71	22	100	34.5	1.8	46.8	2,596	--
Croplan	HyCLASS 924	H,TR	48	74	26	101	36.2	0.8	41.6	2,762	2,912
Croplan	HyCLASS 940	H,TR	48	71	23	98	34.8	1	44.2	2,984	3,058
Dekalb	DKL30-42	H,TR	46	69	23	98	34.8	0.5	44.8	3,219	--
Dekalb	DKL52-41	H,TR	48	73	26	100	35.9	1	43.8	3,188	3,069
Dekalb	DKL72-55	H,TR	47	70	23	100	36.3	1	45.8	3,373	--
DL Seeds	30119-D8	H,TR	49	72	23	101	37.9	2.3	42.1	3,058	--
DL Seeds	30205-D8	H,TR	50	73	23	102	37.4	1	43.4	2,894	--
DL Seeds	30214-C7	H,TR	49	73	25	101	36.3	1.3	43.5	2,778	--
DL Seeds	30220-D8	H,TR	51	78	27	106	40.2	0.5	42.8	3,228	--
DL Seeds	30221-D8	H,TR	50	77	27	106	40.5	0	45.9	3,589	--
DL Seeds	30516-D8	H,TR	52	81	29	107	42.3	0	44.7	3,248	--
DL Seeds	H7047	H,TR	49	74	25	101	39.7	0	43.8	3,270	--
DL Seeds	H8109	H,TR	50	76	26	103	39.9	1	41.6	3,046	--
Integra	7121R	H,TR	47	70	23	100	37.6	0.8	42	3,334	--
Integra	IX08-7321R	H,TR	49	71	22	101	36.9	2	43.1	2,783	--
Integra	IX09-7426R	H,TR	49	73	24	100	37.2	1	43.5	2,459	--
Integra	IX09-7427R	H,TR	49	72	23	101	38.1	2.3	43.2	2,544	--
Monsanto	G64034	H,TR	49	76	27	104	38.5	0	44.3	3,298	--
Monsanto	G72522	H,TR	50	72	22	100	34.7	0.5	45.2	2,963	--
Monsanto	G72643	H,TR	51	77	26	102	36.1	0.8	45	3,245	--
Monsanto	G88006	H,TR	49	72	23	102	34.3	0.5	46.4	3,467	--
Monsanto	G88007	H,TR	47	68	21	101	37.6	1.3	45.8	3,279	--
Monsanto	G88058	H,TR	49	71	22	101	35.1	0	42.9	3,537	--
Monsanto	G88061	H,TR	48	71	23	100	34.8	0.5	44.8	3,272	--
Monsanto	G88066	H,TR	50	72	22	100	35.9	1.3	45	2,810	--
Monsanto	G88075	H,TR	48	72	24	103	33.9	1.3	44.9	3,192	--
Monsanto	G88115	H,TR	46	71	25	101	36.5	1.8	45.7	3,190	--
Monsanto	G88117	H,TR	48	70	23	102	38.5	1.8	45.8	3,434	--
Monsanto	G88124	H,TR	48	69	21	102	38.5	2	46.4	3,228	--
Monsanto	G88930	H,TR	48	70	22	101	36.1	1.3	45.8	3,322	--
Pioneer	45H28	H,TR	48	70	22	101	36.9	1.8	45.1	2,714	--
Pioneer	45S51	H,TR	47	70	22	100	37.9	2.3	42.1	2,681	--
Proseed	25 Caliber	Syn,TR	49	74	26	101	34	1.3	43.7	2,340	--
Proseed	30 Caliber	Syn,TR	53	80	27	107	40.9	1.3	42.5	3,096	--
Proseed	50 Caliber	H,TR	49	73	24	102	38.1	1	43	2,763	--
Mean			49	73	24	102	37.0	1.2	44.0	3,033	2,948
CV %			1.9	2.9	7.4	1.4	7.1	72.5	3.5	9.3	--
LSD 0.05			1.3	2.9	2.5	2	3.6	1.2	2.1	391.6	--

¹OP = Open Pollinated, H = Hybrid, Syn = Synthetic, TR = Traditional Oil Type, HO = High Oleic Oil Type.²DAP = Days after planting

Table 10. 2009 Canola - Roundup Ready - Minot - Authors, M. Halvorson and A. Sebelius.

Company/		Type ¹	Early	10%	90%	Plant	Test	Oil	Seed Yield		
Brand	Variety		Vigor	Flower	Flower				Maturity	Height	Weight
			(1-5) ²	(DAP) ³	(DAP) ³	(DAP) ³	(inch)	(lb/bu)	(%)		
BrettYoung	6020 RR	H,TR	5	47	68	99	50	50.1	44.4	4,024	--
BrettYoung	6040 RR	H,TR	5	47	68	99	54	49.7	44.6	4,008	--
Canterra	1768S	Syn,TR	5	48	68	99	53	48.9	44.4	4,070	--
Canterra	1818 RR	OP,TR	4	46	67	100	47	49.3	44.7	4,044	3,572
Canterra	1950H	H,TR	5	48	68	100	51	50.5	44.9	3,769	--
Canterra	1956S	Syn,TR	5	46	67	99	48	49.1	44.7	3,722	--
Cargill	v1035	H,HO	5	49	68	100	46	49.2	43.8	3,806	3,862
Cargill	v1037	H,HO	5	50	68	100	50	49.7	44.9	4,179	3,871
Cargill	v2010	H,HO	5	48	69	100	52	49.1	43.1	4,113	3,637
Cargill	v2018	H,HO	5	50	68	99	50	49.2	44.0	3,825	3,537
Cargill	v2030	H,HO	5	51	69	99	54	48.9	43.5	4,074	3,866
Croplan	HyCLASS 712	Syn,TR	5	50	69	100	53	48.7	44.6	3,874	3,917
Croplan	HyCLASS 906	H,TR	4	49	69	100	51	49.2	45.0	4,070	3,978
Croplan	HyCLASS 921	H,TR	5	46	68	99	48	49.8	43.9	3,659	--
Croplan	HyCLASS 924	H,TR	5	45	68	98	50	49.9	43.4	3,741	3,611
Croplan	HyCLASS 940	H,TR	5	46	66	98	47	49.8	43.6	3,827	3,851
Dekalb	DKL 30-42	H,TR	5	45	67	97	44	50.1	43.7	3,943	3,923
Dekalb	DKL 52-41	H,TR	5	46	68	99	50	50.1	43.5	3,941	3,991
Dekalb	DKL 72-55	H,TR	5	46	68	100	47	48.8	44.1	3,740	3,903
DL Seeds	30119-D8	H,TR	5	47	68	98	48	49.4	44.5	3,917	--
DL Seeds	30205-D8	H,TR	5	47	67	98	50	49.2	43.6	3,667	--
DL Seeds	30214-C7	H,TR	5	46	67	98	52	50.5	44.0	3,859	3,811
DL Seeds	30220-D8	H,TR	5	48	70	100	48	47.9	43.5	3,994	--
DL Seeds	30221-D8	H,TR	5	48	70	100	48	48.8	43.7	3,877	--
DL Seeds	30516-D8	H,TR	4	50	70	100	52	50.1	44.1	3,600	--
DL Seeds	H7047	H,TR	5	49	70	99	52	49.9	43.3	3,767	--
DL Seeds	H8109	H,TR	5	48	69	99	53	50.0	44.5	3,951	--
Integra	7121R	H,TR	5	45	68	98	48	49.4	44.9	3,964	3,713
Integra	IX08-7321R	H,TR	5	47	67	97	51	50.5	44.0	3,609	3,548
Integra	IX09-7426R	H,TR	5	47	68	98	53	50.3	44.1	4,040	--
Integra	IX09-7427R	H,TR	5	46	67	99	54	48.7	43.7	4,065	--
Monsanto	G64034	H,TR	5	47	68	99	48	49.2	44.7	3,877	3,940
Monsanto	G72522	H,TR	5	46	67	99	47	48.6	44.6	4,069	--
Monsanto	G72643	H,TR	5	49	68	99	50	50.5	44.2	3,576	--
Monsanto	G88006	H,TR	5	46	67	99	47	49.3	43.9	3,881	--
Monsanto	G88007	H,TR	5	45	66	97	45	49.2	43.6	3,883	--
Monsanto	G88058	H,TR	4	46	67	99	45	50.4	43.7	3,952	--
Monsanto	G88061	H,TR	5	45	68	98	46	49.6	44.5	3,300	--
Monsanto	G88066	H,TR	5	47	67	98	48	49.6	44.5	4,112	--
Monsanto	G88075	H,TR	5	46	68	100	45	49.9	44.0	3,718	--
Monsanto	G88115	H,TR	5	45	66	94	43	48.6	44.3	4,395	--
Monsanto	G88117	H,TR	5	46	67	99	48	49.5	43.2	4,078	--
Monsanto	G88124	H,TR	5	46	67	99	48	49.0	43.4	4,057	--
Monsanto	G88930	H,TR	5	46	67	98	44	48.8	44.0	3,656	--
Pioneer	45H28	H,TR	5	46	68	99	51	49.8	43.3	4,258	3,939
Pioneer	45S51	H,TR	5	46	68	99	51	50.3	44.1	4,129	--
Proseed	25 Caliber	Syn,TR	4	46	68	98	50	49.5	44.9	4,426	--
Proseed	30 Caliber	Syn,TR	4	51	70	100	54	49.8	44.2	3,973	3,635
Proseed	50 Caliber	H,TR	4	47	69	98	49	49.3	44.7	4,067	3,625
Mean			5	47	68	99	49	49.5	44.1	3,921	3786
CV %			6.5	1.6	1.2	1.6	6.2	2.2	2.9	10.9	--
LSD 0.05			0.4	1	1	2	4	1.5	1.8	597	--

Trial was planted on May 12 with a seeding rate of 685,000 PLS and harvested on Aug. 27.

¹OP = Open Pollinated, H = Hybrid, Syn= Synthetic, TR = Traditional Oil Type, HO = High Oleic Oil Type.

²Early Vigor: Vigor of plants 4 weeks after planting where 1 = poor and 5 = excellent.

³DAP = Days after planting.

Table 11. 2009 Canola - Liberty Link and Clearfield - Minot - Authors, M. Halvorson and A. Sebelius.

Company/ Brand	Variety	Type ¹	10%	90%	Plant Maturity	1000 Seed Wt.	Test Weight	Oil Content	Seed Yield		
			Flower (DAP) ²	Flower (DAP) ²					Height (inch)	(gram)	(lb/bu)
Bayer	InVigor 5440	H,LL,TR	49	69	100	54	3.1	50.8	41.1	4,284	3,978
Bayer	InVigor 5550	H,LL,TR	46	67	98	53	3.3	51.8	42.3	4,048	3,703
Bayer	InVigor 5630	H,LL,TR	47	68	99	51	3.4	49.7	42.4	3,950	3,686
Bayer	InVigor 8440	H,LL,TR	46	67	99	50	3.4	49.5	41.2	4,038	3,783
Bayer	674	H,LL,TR	49	68	100	54	3.4	49.0	43.0	4,325	--
BrettYoung	5525 CL	H,CL,TR	50	69	100	53	3.2	50.5	42.7	3,746	--
DL Seeds	30522-C7	H,CL,TR	47	67	99	51	3.3	51.9	41.0	3,814	3,442
DL Seeds	30423-C7	Syn,CL,TR	51	69	100	56	3.0	49.7	41.9	3,662	--
Mean			48	68	99	53	3.3	50.4	41.9	3,983	3719
CV %			1.5	0.8	0.7	4.4	4.3	2.3	2.2	11.0	--
LSD 0.05			1	1	1	3	0.2	1.7	1.4	643	--

Trial was planted on May 12 with a seeding rate of 685,000 PLS and harvested on Aug. 27.

¹H = Hybrid, Syn= Synthetic, LL = Liberty Link, CL = Clearfield System, TR = Traditional Oil Type.

²DAP = Days after planting.

Table 12. 2009 Canola - Roundup Ready - Prosper, Langdon, Carrington, Minot, Rugby and Williston - Author, M. Rahman.

Company/Brand	Variety	Type ¹	Protein Content	Oil Content	Oil/Acre	Seed Yield
			(%)	(%)	(lb)	(lb/a)
Dekalb	DKL30-42	H,TR	19.9	45.9	1,329	2,579
Dekalb	DKL38-25	H,TR	22.0	43.9	1,064	2,397
Dekalb	DKL52-41	H,TR	21.5	43.9	1,129	2,549
Dekalb	DKL72-55	H,TR	22.1	44.5	1,374	3,022
Dekalb	IS7145	H,TR	21.9	43.9	1,234	2,680
Pioneer	45H26	H,TR	22.2	44.3	1,247	2,736
Pioneer	45H28	H,TR	19.8	46.5	1,358	2,458
Pioneer	45S51	H,TR	21.8	44.3	1,300	2,806
Mean			21.6	44.5	1,244	2,664
CV %			4.9	2.9	9.2	9.3
LSD 0.05			1.1	1.2	112	231

¹H = Hybrid, TR = Traditional Oil Type.

Table 13. 2009 Canola - Roundup Ready - Williston- Authors, N. Riveland, G. Bradbury and S. Brogger.

Company/ Brand	Variety	Type ¹	First Flower (DAP) ²	End Flower (DAP) ²	Flower Duration (days)	Plant Height (inch)	Test Weight (lb/bu)	Oil Content (%)	Seed Yield	
									2009	3-yr Avg. ------(lb/a)-----
BrettYoung	6020 RR	H,TR	48	80	31	29.5	51.5	41.5	1,182	
BrettYoung	6040 RR	H,TR	49	81	32	32.9	50.8	40.3	1,316	
Canterra	1768S	Syn,TR	49	81	32	31.5	51.2	41.1	1,318	
Canterra	1818 RR	OP,TR	48	79	31	26.8	51.4	40.9	1,143	
Canterra	1950H	H,TR	50	82	32	34.1	50.3	41.0	1,100	
Canterra	1956S	Syn,TR	48	82	34	30.0	49.1	42.8	1,260	
Croplan	HyCLASS 921	H,TR	52	80	28	30.2	51.8	42.9	1,193	
Croplan	HyCLASS 940	H,TR	48	79	31	29.6	52.1	42.4	1,431	
Dekalb	DKL30-42	H,TR	48	79	31	29.9	51.9	41.4	1,407	
Dekalb	DKL52-41	H,TR	49	80	31	31.7	50.5	41.6	1,438	1,021
Dekalb	DKL72-55	H,TR	49	78	30	32.7	52.1	42.5	1,587	
Dekalb	Hyola 357 Magnum	H,TR	47	80	34	24.9	50.3	38.8	1,229	1,021
Monsanto	G64034	H,TR	50	80	30	31.5	50.5	42.1	1,316	
Monsanto	G72522	H,TR	48	77	28	27.5	51.7	42.8	1,580	
Monsanto	G72643	H,TR	50	80	30	31.0	52.0	41.8	1,528	
Monsanto	G88006	H,TR	49	80	31	31.2	50.9	42.5	1,426	
Monsanto	G88007	H,TR	48	77	30	27.8	52.5	42.4	1,619	
Monsanto	G88058	H,TR	49	80	31	28.8	51.9	40.1	1,438	
Monsanto	G88061	H,TR	49	79	30	28.3	51.0	40.3	1,450	
Monsanto	G88066	H,TR	49	79	30	31.7	52.2	41.6	1,675	
Monsanto	G88075	H,TR	49	79	30	33.3	50.7	41.9	1,399	
Monsanto	G88115	H,TR	48	77	30	30.2	52.2	42.7	1,617	
Monsanto	G88117	H,TR	49	81	32	29.6	50.9	43.4	1,316	
Monsanto	G88124	H,TR	48	78	30	29.2	52.2	42.8	1,473	
Monsanto	G88930	H,TR	49	79	30	30.9	52.0	42.3	1,461	
Mean			49	79	31	30.3	51.3	41.8	1,396	1,021
CV %			1.3	1.9	4.5	7.2	1.1	1.7	13.7	
LSD 0.05			0.9	2.1	1.9	3.1	1.2	1.5	272	

¹OP = Open Pollinated, H = Hybrid, Syn = Synthetic, TR = Traditional Oil Type.²DAP = Days after planting.

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