

# 2010 Canola Variety Trials

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## **Introduction update**

**By Hans Kandel**

Canola is an expanding crop in the northern Great Plains, particularly in North Dakota. In 2010, 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 form. 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 Kelly Bjerke

Eric Eriksmoen

Bryan Hanson and Richard Wilhelmi

Mark Halvorson and Angela Sebelius

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Carrington Research Extension Center

Langdon Research Extension Center

Hettinger Research Extension Center

North Central Research Extension Center, Minot

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**Table 1. Canola Production, North Dakota 1998-2010.**

Year	Acres Planted -----(1,000 Acres)-----	Acres Harvested	Yield Per Acre (lb)	Production (1,000 lb)
1998	800	775	1,480	1,147,000
1999	855	835	1,300	1,085,500
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	725	1,840	1,334,000
2010	1,350	1,330	1,810	2,280,000
Average	1,025	999	1,455	1,438,500

Source: North Dakota Agricultural Statistics Service – USDA

## 2010 Growing Season Update

Canola fieldwork began at the end of April. Planting was slower than normal, and by May 9, only 25 percent of the acres were planted, compared with the average (2005-2009) of 38 percent planted acres on the same date. The whole state started the growing season with good soil moisture. Early canola stands varied across the region, depending on soil moisture availability and rainfall after planting. In mid-July, the North Dakota Agricultural Statistics Service reported the canola crop condition 68 percent “good” and 15 percent “excellent.” By July 12, 96 percent of the canola crop was flowering, which compared with 76 percent in 2009.

Good growing conditions continued throughout the season, with mostly adequate moisture for crop growth. Twenty-five percent of the canola acres were swathed on Aug. 8 and 83 percent of the crop was harvested by Sept. 26. The projected 2010 average North Dakota canola yield is 1,810 pounds per acre, which is the second highest yield in the last 13 years and 385 pounds higher than the 12-year average (1998-2009) of 1,425 pounds per acre.

**Table 2. April-September 2010 Average Temperature and Precipitation Rankings for Select North Dakota Locations.**

City	Temperature Ranking	Precipitation Ranking
Bowman	3rd Warmest (Since 1915)	9th Wettest (Since 1915)
Bismarck	48th Warmest (Since 1874)	12th Wettest (Since 1874)
Carrington	5th Warmest (Since 1929)	21st Wettest (Since 1929)
Cavalier	8th Warmest (Since 1934)	5th Wettest (Since 1927)
Fargo	10th Warmest (Since 1881)	15th Wettest (Since 1881)
Minot Exp. Station	27th Warmest (Since 1905)	11th Wettest (Since 1905)
Williston Exp. Station	30th Warmest (Since 1953)	9th Wettest (Since 1956)
North Dakota Average	36th Warmest (Since 1895)	5th Wettest (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](http://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. Tables 4 and 5 are summary tables with yields expressed as a mean of the various trials reported in subsequent tables.

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, and 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	<a href="http://www.bayercropscienceus.com/products_and_seeds/seeds/invigor.html">www.bayercropscienceus.com/products_and_seeds/seeds/invigor.html</a>
BrettYoung	BrettYoung	<a href="http://www.brettyoung.ca/Western%20Canada/Products/Canola/index.php">www.brettyoung.ca/Western Canada/Products/Canola/index.php</a>
Canterra Seeds	Canterra	<a href="http://www.canterra.com/home/products/canola/">www.canterra.com/home/products/canola/</a>
Cargill	Cargill	<a href="http://www.victorycanola.com/">www.victorycanola.com/</a>
Croplan Genetics	Croplan	<a href="http://www.croplangenetics.com/FINDSEED/CANOLA/default.aspx">www.croplangenetics.com/FINDSEED/CANOLA/default.aspx</a>
Dekalb	Dekalb	<a href="http://www.asgrowanddekalb.com/web/products/spring%20canola/index.jsp">www.asgrowanddekalb.com/web/products/spring canola/index.jsp</a>
DL Seeds Inc.	DL Seeds	<a href="http://www.dlseeds.ca">www.dlseeds.ca</a>
Integra Fortified Seed	Integra	<a href="http://www.integraseed.com/products/canola.aspx">www.integraseed.com/products/canola.aspx</a>
Monsanto	Monsanto	<a href="http://www.monsanto.com/products/Pages/genuity-roundup-ready-canola.aspx">www.monsanto.com/products/Pages/genuity-roundup-ready-canola.aspx</a>
Pioneer Hi-Bred International Inc.	Pioneer	<a href="http://www.pioneer.com/web/site/portal/">www.pioneer.com/web/site/portal/</a>
Proseed Inc.	Proseed	<a href="http://www.proseed.net/Canola/canola.htm">www.proseed.net/Canola/canola.htm</a>

**Table 4. 2010 Summary of Roundup Ready Canola Varieties in North Dakota - Yields Expressed as a Percentage of the Trial Mean.**

Company/ Brand	Variety	Type <sup>1</sup>	Blackleg Rating <sup>2</sup>	REC	REC	REC	REC	Breeder Trials
				Carrington	Hettinger	Langdon	Minot	% of Mean
BrettYoung	6040 RR	H,TR	R	98	103	88	98	--
BrettYoung	6130 RR	Syn,TR	R	--	--	100	92	--
BrettYoung	H8111	H,TR	R	91	78	80	83	--
Canterra	1918	OP,TR	R	--	--	89	87	--
Canterra	1950	H,TR	MR	--	--	101	101	--
Canterra	1956	Syn,TR	R	--	--	103	94	--
Cargill	v2035	H,HO	R	87	--	92	83	--
Cargill	v1040	H,HO	R	86	--	94	91	--
Cargill	v2018	H,HO	MR	82	--	91	89	--
Cargill	v2030	H,HO	MR	93	--	89	84	--
Croplan	HyCLASS 921	H,TR	R	112	93	97	97	--
Croplan	HyCLASS 940	H,TR	R	107	81	100	103	--
Croplan	HyCLASS 947	H,TR	R	92	87	105	106	--
Croplan	HyCLASS 988	H,TR	R	105	115	98	116	--
Dekalb	DKL30-42	H,TR	R	96	96	112	106	103
Dekalb	DKL38-25	H,TR	MR	--	--	--	--	95
Dekalb	DKL51-45	H,TR	R	102	96	105	106	--
Dekalb	DKL52-41	H,TR	R	--	--	--	--	97
Dekalb	DKL72-40	H,TR	R	97	107	104	109	--
Dekalb	DKL72-55	H,TR	MR	90	84	102	95	111
Dekalb	IS7145	H,TR	MR	--	--	--	--	94
DL Seeds	09DL30418	H,TR	R	106	--	101	92	--
DL Seeds	09DL90114	H,TR	R	98	--	105	109	--
DL Seeds	09DL90122	H,TR	R	104	--	94	98	--
DL Seeds	09DL90210	H,TR	R	107	--	99	106	--
DL Seeds	30217-C7	H,TR	R	95	--	98	98	--
DL Seeds	30220-D8	H,TR	R	111	--	97	101	--
DL Seeds	30511-D8	H,TR	R	108	125	116	106	--
DL Seeds	30512-D8	H,TR	R	105	--	107	107	--
Integra	7121R	H,TR	R	108	--	98	99	--
Integra	7150R	H,TR	R	105	--	112	102	--
Monsanto	G72818	H,TR	R	111	100	110	120	--
Monsanto	G82746	H,TR	R	95	92	98	105	--
Monsanto	G84602	H,TR	R	108	112	102	112	--
Monsanto	G86382	H,TR	R	114	105	113	113	--
Monsanto	G88666	H,TR	R	93	105	107	95	--
Monsanto	G89304	H,TR	R	95	90	105	92	--
Monsanto	G98022	H,TR	R	109	108	101	98	--
Monsanto	G98034	H,TR	R	110	95	98	106	--
Monsanto	G98046	H,TR	R	112	105	108	99	--
Monsanto	G98059	H,TR	R	105	104	106	105	--
Monsanto	G98073	H,TR	R	104	109	103	103	--
Monsanto	G99894	H,TR	R	113	--	107	110	--
Pioneer	45H26	H,TR	R	--	--	--	--	97
Pioneer	45H28	H,TR	R	99	91	100	94	95
Pioneer	45H29	H,TR	R	99	--	108	--	--
Pioneer	45S51	H,TR	R	92	90	93	90	107
Proseed	30 Caliber	Syn,TR	R	81	98	83	--	--
Proseed	50 Caliber	H,TR	R	81	104	83	--	--
Trial mean in lb/a				2,775	2,105	3,195	3,165	2,268

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

<sup>2</sup>Blackleg: R = Resistant, MR = Moderately Resistant. Blackleg rating provided by company.

**Table 5. 2010 Summary of Liberty Link and Clearfield Canola Varieties in North Dakota - Yields Expressed as a Percentage of the Trial Mean.**

Company/ Brand		Variety	Type <sup>1</sup>	Blackleg Rating <sup>2</sup>	REC Carrington % of Mean	REC Hettinger % of Mean	REC Langdon % of Mean	REC Minot % of Mean
Bayer	InVigor 5440		H,LL,TR	R	96	--	107	122
Bayer	InVigor 8440		H,LL,TR	R	105	--	109	96
Bayer	InVigor L150		H,LL,TR	R	115	--	105	95
Bayer	InVigor L130		H,LL,TR	R	114	--	104	132
Bayer	InVigor Health 1145		H,LL,HO	R	96	--	99	103
Croplan <sup>3</sup>	HyCLASS 940		H,RR,TR	R	--	--	98	--
Croplan	XCEED 8571		OP,CL,TR	R	91	110	105	94
Croplan	XCEED 8470		OP,CL,TR	R	70	118	83	76
Dekalb <sup>3</sup>	DKL72-55		H,RR,TR	R	--	--	98	--
DL Seeds	09DL30512		H,CL,TR	R	101	--	94	82
Pioneer	45H73		H,CL,TR	R	113	--	98	--
Trial mean in lb/a					2,157	2,105	3,157	2,953

<sup>1</sup>H = Hybrid, LL = Liberty Link, CL = Clearfield System, RR = RoundupReady,

TR = Traditional Oil Type, HO = High Oleic Oil Type.

<sup>2</sup>Blackleg: R = Resistant. Blackleg rating provided by company.

<sup>3</sup>Roundup Ready check in the trial.

**Table 6. 2010 Canola - Roundup Ready - Carrington - Authors, B. Schatz and K.Bjerke.**

Company/Brand	Variety	Type <sup>1</sup>	First	Flower	1000 Seed	Test	Oil	Seed Yield		
			Flower (DAP) <sup>2</sup>	Duration (days)	Maturity (DAP) <sup>2</sup>	Weight (gram)	Weight (lb/bu)	Content (%)	2010	3-yr Avg.
BrettYoung	6040 RR	H,TR	48	22	87	3.0	51.9	45.4	2,727	--
BrettYoung	H8111	H,TR	48	22	87	2.9	52.8	43.9	2,530	--
Cargill	v2035	H,HO	47	21	87	3.2	52.1	49.0	2,409	--
Cargill	v1040	H,HO	47	22	88	3.0	52.1	44.6	2,375	--
Cargill	v2018	H,HO	48	21	88	3.0	52.2	45.9	2,283	2,100
Cargill	v2030	H,HO	49	22	89	3.0	52.5	45.7	2,587	--
Croplan	HyCLASS 921	H,TR	45	22	87	3.1	52.1	49.0	3,120	--
Croplan	HyCLASS 940	H,TR	46	21	86	3.1	52.1	45.8	2,967	2,657
Croplan	HyCLASS 947	H,TR	46	22	87	2.9	51.7	48.1	2,545	--
Croplan	HyCLASS 988	H,TR	48	25	91	2.9	51.6	45.0	2,911	--
Dekalb	DKL30-42	H,TR	47	21	86	3.2	52.2	48.0	2,659	2,309
Dekalb	DKL51-45	H,TR	45	19	86	3.0	51.8	47.4	2,831	--
Dekalb	DKL72-40	H,TR	47	22	88	3.0	52.0	47.1	2,682	--
Dekalb	DKL72-55	H,TR	43	20	84	2.6	51.0	47.7	2,485	2,433
DL Seeds	09DL30418	H,TR	48	20	87	2.8	51.8	43.9	2,943	--
DL Seeds	09DL90114	H,TR	48	24	90	3.3	52.5	45.4	2,705	--
DL Seeds	09DL90122	H,TR	48	24	90	3.2	52.3	45.1	2,874	--
DL Seeds	09DL90210	H,TR	48	22	89	3.2	51.8	43.4	2,970	--
DL Seeds	30217-C7	H,TR	46	20	86	3.0	51.3	46.0	2,632	--
DL Seeds	30220-D8	H,TR	49	23	91	3.0	51.9	43.3	3,069	--
DL Seeds	30511-D8	H,TR	46	23	90	3.0	52.1	46.5	2,989	--
DL Seeds	30512-D8	H,TR	47	24	89	2.8	52.2	45.6	2,924	--
Integra	7121R	H,TR	46	22	87	3.0	52.1	45.6	2,997	--
Integra	7150R	H,TR	45	20	86	3.0	51.6	47.8	2,908	--
Monsanto	G72818	H,TR	48	21	90	3.1	52.4	47.4	3,088	--
Monsanto	G82746	H,TR	45	20	88	3.0	51.9	47.4	2,621	--
Monsanto	G84602	H,TR	47	21	88	3.0	51.9	44.8	2,997	--
Monsanto	G86382	H,TR	47	20	88	3.0	52.2	47.4	3,175	--
Monsanto	G88666	H,TR	45	20	87	2.9	51.6	49.3	2,569	--
Monsanto	G89304	H,TR	45	19	85	3.0	51.5	48.2	2,621	--
Monsanto	G98022	H,TR	46	20	87	3.0	51.8	47.3	3,012	--
Monsanto	G98034	H,TR	48	22	88	3.3	52.7	44.9	3,050	--
Monsanto	G98046	H,TR	47	21	87	3.0	52.4	46.1	3,109	--
Monsanto	G98059	H,TR	46	20	86	2.9	51.8	49.4	2,906	--
Monsanto	G98073	H,TR	47	21	87	3.4	51.9	48.1	2,880	--
Monsanto	G99894	H,TR	47	22	88	3.0	51.8	47.4	3,131	--
Pioneer	45H28	H,TR	46	21	88	2.6	52.4	46.8	2,733	2,294
Pioneer	45H29	H,TR	48	21	88	2.8	52.2	46.0	2,737	--
Pioneer	45S51	H,TR	48	22	89	2.9	52.5	45.5	2,543	--
Proseed	30 Caliber	Syn,TR	51	22	91	2.9	52.6	45.0	2,238	2,174
Proseed	50 Caliber	H,TR	46	23	87	2.9	52.4	45.6	2,244	2,003
Mean			47	22	88	3.0	52.0	46.4	2,775	2,281
CV %			1.4	4.6	1.3	4.4	0.6	2.7	11.3	--
LSD 0.05			0.9	1.4	1.6	0.18	0.4	1.7	428	--

Trial was planted on May 6 and harvested on Aug. 11. Previous crop was spring wheat.

<sup>1</sup>H = Hybrid, Syn = Synthetic, TR = Traditional Oil Type, HO = High Oleic Oil Type.

<sup>2</sup>DAP = Days after planting.

**Table 7. 2010 Canola - Liberty Link and Clearfield - Carrington - Authors, B. Schatz and K. Bjerke.**

Seed Yield										
Company/ Brand	Variety	Type <sup>1</sup>	First Flower (DAP) <sup>2</sup>	Flower Duration (days)	Maturity (DAP) <sup>2</sup>	Plant Height (inch)	Plant Lodge (0-9)	Test Weight (lb/bu)	Oil Content (%)	3-yr 2010 ----(lb/a)---- Avg.
Bayer	InVigor 5540	H,LL,TR	48	21	86	39.2	0.0	52.8	42.5	2,060 2,023
Bayer	InVigor 8440	H,LL,TR	47	20	85	38.6	0.3	52.4	43.6	2,258 --
Bayer	InVigor Health 1145	H,LL,TR	48	21	87	39.0	0.3	52.4	44.4	2,072 --
Bayer	InVigor L130	H,LL,TR	47	21	86	37.4	0.0	52.4	42.4	2,457 --
Bayer	InVigor L150	H,LL,TR	50	19	87	38.1	0.8	52.7	43.6	2,474 --
Croplan	XCEED 8470	OP,CL,TR	42	24	88	37.3	1.8	51.7	42.0	1,514 --
Croplan	XCEED 8571	OP,CL,TR	44	25	89	38.4	0.5	52.5	41.3	1,967 --
DL Seeds	09DL30512	H,CL,TR	49	20	87	39.1	0.3	52.8	42.7	2,176 --
Pioneer	45H73	H,CL,TR	47	20	87	36.5	0.8	51.9	43.8	2,439 --
Mean			47	21	87	38.2	0.5	52.4	42.9	2,157 2,023
CV %				1.4	4.4	0.6	7.0	125	2.2	9.7 --
LSD 0.05				0.9	1.4	0.7	NS	0.9	0.3	300 --

Trial was planted on May 6 and harvested on Aug. 11. Previous crop was spring wheat.

<sup>1</sup>H = Hybrid, OP = Open-pollinated, LL = Liberty Link, CL = Clearfield System, TR = Traditional Oil Type.

<sup>2</sup>DAP = Days after planting.

**Table 8. 2010 Canola - Roundup Ready - Prosper, Langdon, Carrington, Minot and Garrison - Author, M. Rahman**

Company/ Brand	Variety	Type <sup>1</sup>	Oil Content (%)	Oil/Acre (lb)	Seed Yield (lb/a)
Dekalb	DKL30-42	H,TR	44.4	1,041	2,339
Dekalb	DKL38-25	H,TR	42.2	914	2,154
Dekalb	DKL52-41	H,TR	43.3	958	2,198
Dekalb	DKL72-55	H,TR	43.8	1,097	2,514
Dekalb	IS7145	H,TR	43.1	928	2,140
Pioneer	45H26	H,TR	44.0	970	2,202
Pioneer	45H28	H,TR	43.6	948	2,161
Pioneer	45S51	H,TR	42.5	1,040	2,436
Mean			43.4	987	2,268
CV %			2.9	14.7	13.7
LSD 0.05			1.07	125	270

<sup>1</sup>H = Hybrid, TR = Traditional Oil Type.

**Table 9. 2010 Canola - Roundup Ready - Hettinger - Author, E. Eriksmoen.**

Company/Brand	Variety	Type <sup>1</sup>	First	Flower	Plant		Test	Oil	Seed	
			Flower (DAP) <sup>2</sup>	Duration (days)	Maturity (DAP) <sup>2</sup>	Height (inch)	Lodging (0-9) <sup>3</sup>	Weight (lb/bu)	Content (%)	Yield (lb/a)
BrettYoung	6040RR	H,TR	55	15	91	37	0	51.0	48.9	2,158
BrettYoung	H8111	H,TR	54	15	90	38	1	52.1	50.7	1,644
Croplan	HyCLASS 921	H,TR	54	13	89	33	0	50.9	49.2	1,957
Croplan	HyCLASS 940	H,TR	52	16	88	34	1	51.8	48.2	1,711
Croplan	HyCLASS 947	H,TR	51	17	88	34	1	50.8	49.6	1,837
Croplan	HyCLASS 988	H,TR	55	16	96	37	0	50.8	49.0	2,424
Croplan <sup>4</sup>	XCEED 8470	OP,CL,TR	53	20	92	41	5	52.3	49.0	2,487
Croplan <sup>4</sup>	XCEED 8571	OP,CL,TR	57	20	92	42	3	53.2	48.7	2,312
Dekalb	DKL30-42	H,TR	53	14	88	31	0	50.9	46.6	2,028
Dekalb	DKL51-45	H,TR	52	16	89	32	2	50.3	49.0	2,019
Dekalb	DKL72-40	H,TR	54	15	94	37	1	50.9	50.2	2,254
Dekalb	DKL72-55	H,TR	49	18	87	32	1	49.4	46.9	1,759
DL Seeds	30511-D8	H,TR	52	16	95	38	1	52.0	49.9	2,629
Monsanto	G72818	H,TR	54	14	95	38	0	50.7	49.2	2,104
Monsanto	G82746	H,TR	52	17	93	34	2	50.1	49.6	1,939
Monsanto	G84602	H,TR	52	16	94	35	0	50.5	48.5	2,353
Monsanto	G86382	H,TR	54	16	94	35	0	50.6	50.5	2,207
Monsanto	G88666	H,TR	52	15	89	36	1	50.0	48.3	2,206
Monsanto	G89304	H,TR	51	16	89	32	3	49.6	47.9	1,895
Monsanto	G98022	H,TR	52	16	92	32	1	50.8	48.5	2,273
Monsanto	G98034	H,TR	55	14	92	33	0	50.6	49.8	1,988
Monsanto	G98046	H,TR	55	15	90	37	1	51.4	48.5	2,210
Monsanto	G98059	H,TR	52	15	92	30	3	50.6	46.8	2,180
Monsanto	G98073	H,TR	53	15	92	34	1	51.4	49.7	2,300
Pioneer	45H28	H,TR	55	15	92	36	2	50.9	49.2	1,906
Pioneer	45S51	H,TR	53	16	90	32	2	51.7	48.2	1,902
Proseed	30 Caliber	Syn,TR	56	15	95	39	1	52.2	48.8	2,056
Proseed	50 Caliber	H,TR	52	17	89	33	1	51.1	50.5	2,195
Mean			53.2	15.8	91.3	35.1	1.2	51.0	48.9	2,105
CV %			1.1	4.8	1.6	6.7	57	0.6	3.4	6.4
LSD 0.05			1.0	1.0	2.0	4.0	1.0	0.5	NS	219

Trial was planted on April 30 and harvested on Aug. 8. Previous crop was spring wheat.

<sup>1</sup>H = Hybrid, OP = Open-pollinated, Syn = Synthetic, TR = Traditional Oil Type, CL = Clearfield System.

<sup>2</sup>DAP = Days after planting.

<sup>3</sup>Lodging: 0 = none, 9 = lying flat on ground.

<sup>4</sup>CL = Clearfield System.

**Table 10. 2010 Canola - Roundup Ready - Langdon - Authors, B. Hanson and R. Wilhelm.**

Company/ Brand	Variety	Type <sup>1</sup>	First Flower	Flower Duration	Maturity	Plant Height	Oil Cover <sup>2</sup>	Oil Content (%)	Seed Yield	
			(DAP) <sup>3</sup>	(days)	(DAP) <sup>3</sup>	(inch)			2010	3-yr Avg.
BrettYoung	6040 RR	H,TR	46	21	90	49	57	45.5	2,824	--
BrettYoung	6130 RR	Syn,TR	45	21	89	43	65	46.2	3,185	--
BrettYoung	H8111	H,TR	45	22	89	43	48	45.5	2,548	--
Canterra	1918	OP,TR	46	21	89	43	38	47.0	2,832	--
Canterra	1950	H,TR	45	20	90	45	62	42.3	3,225	--
Canterra	1956	Syn,TR	45	21	90	45	69	46.1	3,298	--
Cargill	v1040	H,HO	45	21	91	43	70	44.3	3,018	--
Cargill	v2018	H,HO	47	21	89	45	69	45.4	2,894	2,895
Cargill	v2030	H,HO	47	21	89	47	66	45.0	2,829	3,069
Cargill	v2035	H,HO	47	18	90	42	64	47.4	2,950	--
Croplan	HyCLASS 921	H,TR	45	20	89	44	71	47.8	3,094	--
Croplan	HyCLASS 940	H,TR	43	19	88	42	80	45.5	3,199	3,168
Croplan	HyCLASS 947	H,TR	44	21	90	44	61	48.3	3,346	--
Croplan	HyCLASS 988	H,TR	45	22	90	48	63	47.2	3,115	--
Dekalb	DKL30-42	H,TR	42	20	89	39	75	46.4	3,565	3,372
Dekalb	DKL51-45	H,TR	43	19	88	40	65	47.2	3,359	--
Dekalb	DKL72-40	H,TR	44	20	89	42	54	47.2	3,329	--
Dekalb	DKL72-55	H,TR	41	21	89	40	81	47.3	3,257	3,377
DL Seeds	09DL30418	H,TR	44	19	89	42	62	45.4	3,241	--
DL Seeds	09DL90114	H,TR	44	21	89	46	72	46.6	3,365	--
DL Seeds	09DL90122	H,TR	45	21	91	48	83	44.9	3,005	--
DL Seeds	09DL90210	H,TR	44	22	89	45	79	45.3	3,159	--
DL Seeds	30217-C7	H,TR	44	20	88	46	64	46.9	3,115	--
DL Seeds	30220-D8	H,TR	47	23	90	49	60	43.5	3,102	--
DL Seeds	30511-D8	H,TR	44	21	90	44	89	47.9	3,694	--
DL Seeds	30512-D8	H,TR	45	23	90	46	74	46.4	3,420	--
Integra	7121R	H,TR	43	20	89	41	61	45.2	3,134	--
Integra	7150R	H,TR	43	19	90	41	60	48.6	3,590	--
Monsanto	G72818	H,TR	44	20	89	45	67	47.7	3,501	--
Monsanto	G82746	H,TR	43	20	89	41	70	47.7	3,142	--
Monsanto	G84602	H,TR	44	20	90	45	63	46.2	3,253	--
Monsanto	G86382	H,TR	44	20	90	43	68	48.0	3,610	--
Monsanto	G88666	H,TR	44	19	89	43	69	49.2	3,431	--
Monsanto	G89304	H,TR	43	19	88	40	69	49.2	3,356	--
Monsanto	G98022	H,TR	43	20	89	45	56	46.3	3,234	--
Monsanto	G98034	H,TR	45	21	90	45	66	46.0	3,142	--
Monsanto	G98046	H,TR	44	19	89	42	75	46.6	3,459	--
Monsanto	G98059	H,TR	44	20	89	41	67	49.6	3,375	--
Monsanto	G98073	H,TR	44	20	88	41	75	48.4	3,288	--
Monsanto	G99894	H,TR	44	20	89	42	57	48.5	3,412	--
Pioneer	45H28	H,TR	45	20	90	45	67	46.8	3,183	3,177
Pioneer	45S51	H,TR	46	20	89	42	63	46.0	2,975	--
Pioneer	45H29	H,TR	45	20	90	44	68	47.5	3,436	--
Proseed	30 Caliber	Syn,TR	48	48	48	47	41	45.4	2,646	2,950
Proseed	50 Caliber	H,TR	45	21	90	44	52	44.3	2,659	2,817
Mean			44	21	88	44	66	46.6	3,195	3,103
CV %			3.4	3.9	1.2	4.4	13.7	2.9	7.8	--
LSD 0.05			2	1	2	3	13	1.9	344	--

Trial was planted on May 17 and harvested on Aug. 27.

<sup>1</sup>H = Hybrid, Syn = Synthetic, OP = Open-pollinated, TR = Traditional Oil Type, HO = High Oleic Oil Type.<sup>2</sup>Cover - visual rating of percent area of plot covered by plant growth. This is a measure of stand and vigor. Plants were at 5-to 6-leaf stage.<sup>3</sup>DAP = Days after planting.

**Table 11. 2010 Canola - Liberty Link and Clearfield - Langdon - Authors, B. Hanson and R. Wilhelm.**

Company/ Brand	Variety	Type <sup>1</sup>	Flower						Seed Yield	
			First Flower (DAP) <sup>2</sup>	Dur- ation (days)	Maturity (DAP) <sup>2</sup>	Plant (inch)	Plant (0-9)	Oil (%)	2010	3-yr Avg.
Bayer	InVigor 5440	H,LL,TR	48	22	94	50	2.0	43.6	3,381	3,128
Bayer	InVigor 8440	H,LL,TR	46	20	92	47	1.0	45.5	3,445	3,232
Bayer	InVigor Health 1145	H,LL,HO	46	22	92	47	2.0	46.4	3,119	--
Bayer	InVigor L130	H,LL,TR	47	21	93	49	2.3	44.6	3,294	--
Bayer	InVigor L150	H,LL,TR	47	22	93	50	2.0	44.5	3,308	--
Croplan	XCEED 8470	OP,CL,TR	42	26	93	47	1.5	44.2	2,612	--
Croplan	XCEED 8571	OP,CL,TR	42	26	93	51	1.5	41.4	3,314	--
Croplan <sup>3</sup>	HyCLASS 940	H,RR,TR	44	19	88	42	3.5	44.5	3,090	--
Dekalb <sup>3</sup>	DKL 72-55	H,RR,TR	41	22	87	42	3.0	44.8	3,090	--
DL Seeds	09DL30512	H,CL,TR	48	21	94	46	2.8	43.8	2,970	--
Pioneer	45H73	H,CL,TR	45	20	92	44	2.0	44.3	3,099	--
Mean			45	22	92	47	2.1	44.3	3,157	3,180
CV %				1.6	3.5	0.7	3.5	25.8	2.6	5.6
LSD 0.05				1	1	1	2	0.8	1.7	255

Trial was planted on May 17 and harvested on Aug. 28.

<sup>1</sup>H = Hybrid, OP = Open-pollinated, LL = Liberty Link, CL = Clearfield System, RR = Roundup Ready, TR = Traditional Oil Type.

<sup>2</sup>DAP = Days after planting.

<sup>3</sup>RR = Roundup Ready check in the trial.

**Table 12. 2010 Canola - Liberty Link and Clearfield - Minot - Authors, M. Halvorson and A. Sebelius.**

Company/ Brand	Variety	Type <sup>1</sup>	Flower						1000		Seed Yield	
			First Flower (DAP) <sup>2</sup>	Dur- ation (days)	Maturity (DAP) <sup>2</sup>	Plant (inch)	Test Weight (lb/bu)	Seed Weight (gram)	Oil (%)	2010	3-yr Avg.	
Bayer	InVigor 5440	H,LL,TR	46	21	90	49	51.3	3.4	41.5	3,616	3,857	
Bayer	InVigor 8440	H,LL,TR	45	21	89	43	50.0	3.4	40.5	2,836	3,468	
Bayer	InVigor Health 1145	H,LL,HO	46	20	89	47	50.5	3.6	43.1	3,038	--	
Bayer	InVigor L130	H,LL,TR	46	20	89	46	51.2	3.1	41.9	3,895	--	
Bayer	InVigor L150	H,LL,TR	48	21	90	49	51.2	3.6	40.9	2,804	--	
Croplan	XCEED 8470	OP,CL,TR	41	19	84	47	51.2	2.9	41.2	2,232	--	
Croplan	XCEED 8571	OP,CL,TR	43	21	85	53	51.7	2.9	39.5	2,788	--	
DL Seeds	09DL30512	H,CL,TR	47	18	88	47	51.7	3.0	42.3	2,411	--	
Mean			45	20	88	48	51.1	3.2	41.4	2,953	3,663	
CV %				1.3	1.5	0.6	7.8	0.7	5.6	2.0	18.3	
LSD 0.05				1	2	1	7	0.6	0.3	1.4	944	

Trial was planted on May 11 and harvested on Aug. 20.

<sup>1</sup>H = Hybrid, OP = Open-pollinated, LL = Liberty Link, CL = Clearfield System, HO = High Oleic, TR = Traditional Oil Type.

<sup>2</sup>DAP = Days after planting.

**Table 13. 2010 Canola - Roundup Ready - Minot - Authors, M. Halvorson and A. Sebelius.**

Company/ Brand	Variety	Type <sup>1</sup>	First (DAP) <sup>2</sup>	Flower (days)	1000 Seed (DAP) <sup>2</sup>	Test Weight (lb/bu)	Oil Content (%)	Seed Yield	
			Flower (DAP) <sup>2</sup>	Duration	Maturity (DAP) <sup>2</sup>	Weight (gram)	2010 -----(lb/a)-----	3-yr Avg.	
BrettYoung	6040 RR	H,TR	46	21	98	3.1	50.0	42.4	3,098 --
BrettYoung	6130 RR	Syn,TR	45	22	98	3.5	49.9	43.0	2,908 --
BrettYoung	H8111	H,TR	46	22	99	3.2	51.4	40.2	2,639 --
Canterra	1918	OP,TR	46	21	98	3.1	50.5	42.8	2,743 --
Canterra	1950	H,TR	46	21	97	3.5	50.5	41.0	3,188 --
Canterra	1956	Syn,TR	45	22	98	3.0	49.5	43.5	2,987 --
Cargill	v2035	H,HO	47	18	95	3.3	49.9	44.2	2,635 --
Cargill	v1040	H,HO	46	22	99	3.4	50.2	41.3	2,894 --
Cargill	v2018	H,HO	47	20	98	3.4	49.5	41.1	2,809 3,294
Cargill	v2030	H,HO	48	20	99	3.3	50.1	40.6	2,643 3,458
Croplan	HyCLASS 921	H,TR	44	20	96	3.6	50.6	44.0	3,081 --
Croplan	HyCLASS 940	H,TR	44	20	95	3.8	50.9	42.8	3,261 3,654
Croplan	HyCLASS 947	H,TR	44	21	96	3.3	50.6	45.3	3,360 --
Croplan	HyCLASS 988	H,TR	47	21	99	3.2	48.8	42.2	3,662 --
Dekalb	DKL30-42	H,TR	44	19	94	3.8	51.0	44.1	3,358 3,735
Dekalb	DKL72-55	H,TR	43	20	93	3.0	50.1	44.6	3,012 3,606
Dekalb	DKL51-45	H,TR	44	18	93	3.6	50.5	44.6	3,342 --
Dekalb	DKL72-40	H,TR	44	19	94	3.8	50.7	44.1	3,446 --
DL Seeds	09DL30418	H,TR	45	20	95	3.2	49.9	42.5	2,912 --
DL Seeds	09DL90114	H,TR	45	21	97	3.4	50.6	43.3	3,441 --
DL Seeds	09DL90122	H,TR	46	22	99	3.7	50.3	42.5	3,115 --
DL Seeds	09DL90210	H,TR	45	21	98	3.4	49.2	41.2	3,353 --
DL Seeds	30217-C7	H,TR	46	20	97	3.4	49.8	43.6	3,088 --
DL Seeds	30220-D8	H,TR	48	20	99	3.2	49.7	41.6	3,205 --
DL Seeds	30511-D8	H,TR	45	22	98	3.4	49.7	43.4	3,360 --
DL Seeds	30512-D8	H,TR	47	22	100	3.0	49.8	41.6	3,396 --
Integra	7121R	H,TR	45	20	96	3.4	51.1	41.7	3,135 3,521
Integra	7150R	H,TR	43	20	95	3.7	50.4	44.6	3,231 --
Monsanto	G72818	H,TR	46	19	95	4.1	50.9	44.9	3,787 --
Monsanto	G82746	H,TR	44	21	95	4.1	50.8	44.7	3,308 --
Monsanto	G84602	H,TR	44	19	94	4.0	50.3	42.8	3,533 --
Monsanto	G86382	H,TR	45	19	95	3.7	50.6	44.7	3,581 --
Monsanto	G88666	H,TR	43	19	93	3.5	50.4	45.5	3,012 --
Monsanto	G89304	H,TR	43	19	93	3.4	50.4	45.2	2,901 --
Monsanto	G98022	H,TR	44	19	95	3.5	50.3	43.5	3,115 --
Monsanto	G98034	H,TR	46	21	98	3.7	50.2	40.5	3,360 --
Monsanto	G98046	H,TR	45	19	95	3.7	51.2	43.9	3,143 --
Monsanto	G98059	H,TR	44	17	92	3.7	50.4	45.0	3,326 --
Monsanto	G98073	H,TR	44	20	95	4.0	50.4	44.6	3,259 --
Monsanto	G99894	H,TR	45	20	96	3.4	50.7	45.2	3,488 --
Pioneer	45H28	H,TR	45	19	95	3.2	50.7	44.2	2,970 3,616
Pioneer	45S51	H,TR	46	19	96	3.7	50.3	41.7	2,849 --
Mean			45	20	96	3.5	50.2	43.1	3,165 3,555
CV %			1.4	7.4	1.5	6.7	0.9	1.9	10 --
LSD 0.05			1	2	2	0.3	0.7	1.1	458 --

Trial was planted on May 11 and harvested on Aug. 19.

<sup>1</sup>H = Hybrid, Syn = Synthetic, OP = Open-pollinated, TR = Traditional Oil Type, HO = High Oleic Oil Type.<sup>2</sup>DAP = Days after planting.

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