

North Dakota Canola Variety Trial Results for 2016 and Selection Guide

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Introduction

Canola is a major oil crop in the northern Great Plains, particularly in North Dakota. In 2016, North Dakota accounted for approximately 82 percent of the canola acreage planted in the U.S. This publication summarizes canola variety performance at the various North Dakota State University Research Extension Centers. The relative performance of the 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, consider other agronomic characteristics, such as maturity, lodging score and oil percentages, if available.

Research specialists and technicians helped with the field work and data compilation. The assistance given by many secretaries in typing respective portions of the document is very much appreciated. A special thank you goes to Lisa Johnson, Extension Plant Sciences secretary, for assisting in the compilation of this publication.

2016 Growing Season Update

Canola fieldwork began by the end of April. Planting was earlier than normal, and by May 15, 60 percent of the acres had been planted compared with the average of 37 percent on the same date. On May 15, the topsoil moisture was rated at 74 percent adequate and 2 percent surplus.

Early canola stands varied across the region, depending on soil moisture availability and rainfall after planting. Some early planted acres were replanted due to frost damage to the crop during the first half of May. By July 10, 95 percent of the canola crop was flowering, compared with the average of 63 percent on the same day. By the last week in July, the North Dakota office of the National Agricultural Statistics Service reported the canola crop condition as 69 percent "good" and 9 percent "excellent."

Already 82 percent of the canola acres were harvested on Sept. 11. By Sept. 25, 94 percent of the canola was harvested, which was near average. In general, the 2016 season started early and the average yield forecast is 1,770 pounds per acre, a record high for North Dakota.

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Table 1. Canola Production, North Dakota 2008-2016.

Year	Acres Planted	Acres Harvested	Yield Per Acre	Production
	------(1,000 Acres)-----		(lb)	(1,000 lb)
2008	910	895	1,460	1,306,700
2009	730	725	1,840	1,334,000
2010	1,280	1,270	1,720	2,184,400
2011	890	850	1,500	1,275,000
2012	1,460	1,455	1,380	2,007,900
2013	920	915	1,820	1,665,300
2014	1,190	1,180	1,800	2,142,000
2015	1,410	1,400	1,780	2,492,000
2016 ¹	1,400	1,390	1,770	2,570,000
Average	1,132	1,120	1,674	1,886,367

¹ Forecast USDA.

Source: North Dakota Agricultural Statistics Service – USDA.

Table 2. April-September 2016 Average Temperature, Precipitation Accumulations and Their Rankings for Select North Dakota Locations.

Location	Average Temperature (Ranking)	Total Precipitation (Ranking)
Bowman	59.9 F (39th Warmest Period Since 1915)	13.4 inches (34th Wettest Period Since 1915)
Bismarck	61.9 F (28th Warmest Period Since 1875)	18.7 inches (11th Wettest Period Since 1875)
Cavalier	58.1 F (43rd Warmest Period Since 1934)	27.6 inches (The Wettest Period Since 1927)
Fargo	63.1 F (8th Warmest Period Since 1881)	16.1 inches (66th Wettest Period Since 1881)
Minot Exp. Station	59.8 F (24th Warmest Period Since 1905)	15.4 inches (37th Wettest Period Since 1905)
Williston Exp. Station	61.7 F (11th Warmest Period Since 1894)	12.0 inches (44th Wettest Period Since 1894)
North Dakota Average ¹	60.0 F (25th Warmest Period Since 1895)	17.4 in. (12th Wettest Period Since 1894)

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

¹Statewide values are calculated based on all available locations in North Dakota rather than the mathematical average of the list above.

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 or 90 percent probability (0.05 or 0.10 level), 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. The abbreviation 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 percentage of the trial mean (indicated on the bottom) 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, appropriate footnotes are given, 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.bayercropscience.us/products/seeds/invigor-canola/
BrettYoung	BrettYoung	www.brettyoung.ca/index.cfm
Canterra Seeds	Canterra	www.canterra.com/products/canola
Cargill	Cargill	www.victorycanola.com/
Cibus	Cibus	www.cibus.com
Dekalb	Dekalb	www.agseedselect.com
DuPont Pioneer	Pioneer	www.pioneer.com/home/site/us/products/canola/
Dyna-Gro Seed	Dyna-Gro	www.dynagroseed.com/
Integra Fortified Seed	Integra	http://integraseed.businesscatalyst.com/
Mycogen Seeds	Mycogen	www.mycogen.com/products
Proseed Inc.	Proseed	www.proseed.net/
Star Specialty	Star	www.starspecialtyseed.com/
WinField Croplan	Croplan	www.croplan.com

Table 4. 2016 Summary of Liberty Link, Clearfield and Sulfonylurea Canola Hybrids in North Dakota.

Company/ Brand	Variety	Type ¹	Blackleg Rating ²	Clubroot Resistance ³	REC Carrington SU	REC Carrington CL	REC Hettinger	REC Langdon	REC Minot	REC Williston
(Yields Expressed as a Percentage of the Trial Mean)										
Bayer	InVigor L130	H,LL,TR	R	No	--	--	--	99	107	--
Bayer	InVigor L140P	H,LL,TR	R	No	--	--	--	110	116	--
Bayer	InVigor L157H	H,LL,HO	R	No	--	--	--	104	100	--
Bayer	InVigor L230	H,LL,TR	R	No	--	--	--	114	111	--
Bayer	InVigor L233P	H,LL,TR	R	No	--	--	--	118	119	--
Bayer	InVigor L241C	H,LL,TR	R	Yes	--	--	--	106	--	--
Bayer	InVigor L252	H,LL,TR	R	No	--	--	--	115	109	--
Canterra	CS2200CL	H,CL,TR	R	No	--	119	--	107	102	--
Cibus	C1511	H,SU,TR	R	No	103	--	102	95	85	99
Cibus	C1516	H,SU,TR	MR	No	96	--	97	80	96	96
Cibus	C5507	H,SU,TR	R	No	112	--	87	96	96	106
Cibus	C5513	H,SU,TR	R	No	99	--	91	94	85	104
Cibus	C5522	H,SU,TR	R	No	90	--	79	92	90	93
Dyna-Gro	DG200CL	H,CL	R	No	--	--	--	115	126	--
Dyna-Gro	XCEED X122CL	H,CL	R	No	--	--	--	78	68	--
Mycogen	Nexera 2020CL	H,CL,HO	R	Yes	--	98	114	71	93	--
Mycogen	Nexera 2022CL	H,CL,HO	R	No	--	84	130	82	97	--
Croplan ⁴	HyCLASS 955	H,RR,TR	R	Yes	--	--	--	108	--	--
Dekalb ⁴	DKL70-50CR	H,RR,TR	R	Yes	--	--	--	117	--	--
Trial mean in lb/a					1,534	1,654	599	2,438	2,697	1,938

¹H = Hybrid, LL = Liberty Link, SU = Sulfonylurea, CL = Clearfield System, RR = Roundup Ready.

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

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

³Hybrid has Clubroot resistance. Rating provided by company.

⁴Roundup Ready checks in the trial.

Table 5. 2016 Summary of Roundup Ready Canola Hybrids in North Dakota.

Company/ Brand	Variety	Type ¹	Blackleg Rating ²	Clubroot Resistance ³	REC Carrington	REC Hettinger	REC Langdon	REC Minot	REC Williston
(Yields Expressed as a Percentage of the Trial Mean)									
BrettYoung	6056 RR	H, TR	R	Yes	--	--	86	--	--
BrettYoung	6074 RR	H, TR	R	No	113	100	101	97	103
BrettYoung	6076 RR	H, TR	R	Yes	--	--	103	--	--
BrettYoung	6080 RR	H, TR	R	No	103	92	105	108	102
BrettYoung	6086 CR	H, TR	R	Yes	--	--	101	--	--
Canterra	CS2000	H, TR	R	Yes	100	96	95	99	105
Canterra	CS2100	H, TR	R	No	118	107	104	110	97
Cargill	V12-1	H, HO	R	No	106	107	101	97	96
Cargill	V12-3	H, HO	R	Yes	114	106	108	99	104
Cargill	V22-1	H, HO	R	No	109	89	96	78	93
Croplan	HyCLASS 930	H, TR	R	No	86	122	109	101	99
Croplan	HyCLASS 955	H, TR	R	Yes	85	105	102	97	100
Croplan	HyCLASS 970	H, TR	R	No	108	98	111	115	--
Croplan	HyCLASS 972	H, TR	R	No	96	107	91	97	105
Dekalb	DKL30-20RR	H, TR	R	No	95	111	111	91	--
Dekalb	DKL38-48RR	H, TR	MR	No	100	100	94	118	--
Dekalb	DKL70-07RR	H, TR	R	No	113	--	94	94	--
Dekalb	DKL70-10RR	H, TR	R	No	107	--	110	113	--
Dekalb	DKL70-50CR	H, TR	R	Yes	89	--	98	109	--
Dekalb	DKL71-14BL	H, TR	R	No	115	--	119	95	--
Dyna-Gro	DG531G	H, TR	R	No	--	--	101	90	--
Dyna-Gro	DG533G	H, TR	R	No	--	--	97	123	--
Integra	7150RR	H, TR	R	No	92	91	100	102	95
Integra	7257RR	H, TR	R	No	107	92	102	107	
Mycogen	Nexera 1012RR	H, HO	R	No	--	--	91	97	--
Mycogen	Nexera 1020 RR	H, HO	MR	Yes	86	104	89	82	--
Mycogen	Nexera 1022 RR	H, HO	R	No	95	84	85	82	--
Pioneer	45CS40	H, TR	R	Yes	118	--	109	--	--
Pioneer	45H33	H, TR	R	Yes	111	--	95	--	--
Pioneer	46M34	H, TR	MR	No	90	--	103	--	--
Proseed	300 Mag	H, TR	R	No	96	94	96	113	--
Proseed	45 Caliber	H, TR	R	No	72	--	--	--	--
Proseed	PS 5000	H, TR	R	Yes	86	93	96	87	--
Star	Star 402	H, TR	R	No	91	99	100	--	103
Trial mean in lb/a					1,899	849	2,658	3,191	2,377

¹H = Hybrid, TR = Traditional Oil Type, HO = High Oleic Oil Type.

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

³Hybrid has Clubroot resistance. Rating provided by company.

Table 6. 2016 Canola - Roundup Ready - Carrington - Authors, M. Ostlie, B. Schatz and J. Nielsen.

Company/ Brand		Variety	Type ¹	Days to Flower		Plant Height	Plant Lodging ²	1000 Seed Weight	Test Weight	Oil Content	Seed Yield	
				Flower (DAP) ³	Duration (days)						Maturity (DAP) ³	(inch)
BrettYoung	6074 RR	TR	42	18	90	47.1	2.5	3.8	51.5	42.5	2,138	--
BrettYoung	6080 RR	TR	41	17	88	46.3	2.5	3.8	50.4	43.9	1,949	--
Canterra	CS2000	TR	43	16	87	47.4	2.5	4.0	50.7	43.5	1,894	--
Canterra	CS2100	TR	41	18	86	45.2	3.3	4.2	51.5	45.1	2,235	--
Cargill	V12-1	HO	46	13	90	49.5	2.8	4.2	50.4	43.0	2,017	2,671
Cargill	V12-3	HO	45	14	89	46.1	2.5	4.4	50.6	42.7	2,159	--
Cargill	V22-1	HO	47	15	90	47.4	2.5	3.7	50.7	44.1	2,061	--
Croplan	HyCLASS 930	TR	40	16	82	43.7	4.3	3.7	50.1	47.3	1,639	2,544
Croplan	HyCLASS 955	TR	39	16	82	40.7	5.3	4.0	50.4	47.1	1,614	2,641
Croplan	HyCLASS 970	TR	41	17	86	48.2	2.5	4.6	51.0	46.0	2,058	--
Croplan	HyCLASS 972	TR	42	18	87	45.1	2.8	3.9	50.6	42.1	1,819	--
Dekalb	DKL30-20RR	TR	40	15	85	45.5	3.5	4.0	51.2	47.0	1,803	--
Dekalb	DKL38-48RR	TR	41	17	87	46.2	3.8	4.1	51.2	45.0	1,901	2,403
Dekalb	DKL70-07RR	TR	41	18	88	45.1	3.3	4.1	51.0	46.5	2,153	2,678
Dekalb	DKL70-10RR	TR	41	16	85	45.3	3.5	4.1	50.4	44.6	2,036	--
Dekalb	DKL70-50CR	TR	40	17	88	42.7	5.5	4.3	50.6	42.2	1,697	--
Dekalb	DKL71-14BL	TR	39	17	83	44.9	3.8	3.7	51.3	47.4	2,182	--
Integra	7150RR	TR	39	17	84	46.3	4.5	3.7	50.1	46.9	1,753	--
Integra	7257RR	TR	40	17	85	44.1	3.5	4.0	51.0	45.7	2,027	--
Mycogen	1020RR	HO	46	15	89	44.6	2.5	3.9	50.5	42.0	1,631	2,371
Mycogen	1022RR	HO	39	23	91	46.7	2.0	3.9	51.6	42.3	1,795	--
Pioneer	45CS40	TR	43	16	85	48.0	2.8	3.8	50.2	45.5	2,232	--
Pioneer	45H33	TR	42	17	86	48.3	2.8	3.6	49.5	45.1	2,109	--
Pioneer	46M34	TR	42	17	88	44.1	3.5	3.9	51.8	43.6	1,718	--
Proseed	300 Mag	TR	41	18	86	44.1	3.8	4.4	50.7	45.8	1,815	2,585
Proseed	45 Caliber	TR	38	17	80	40.0	6.8	3.8	49.3	45.6	1,361	--
Proseed	PS 5000	TR	41	17	86	43.6	3.3	4.0	50.4	42.7	1,636	--
Star	Star 402	TR	40	16	83	44.3	4.0	3.9	49.6	47.8	1,735	2,590
Mean			41	17	86	45.4	3.4	4.0	50.6	44.8	1,899	2,560
CV %			2.5	8.5	1.9	7.3	24.6	6.4	1.2	2.8	17.4	--
LSD 0.05			1.2	1.7	1.9	3.9	0.9	0.3	0.7	1.7	381	--
LSD 0.10			1.5	2.0	2.3	4.7	1.1	0.4	0.8	1.4	455	--

This trial was impacted by a hail storm on July 9 (~ end bloom) that caused plant damage that was assessed uniformly across trial.

Trial was planted on May 10 and harvested on Aug. 22. Previous crop was lentil.

¹TR = Traditional Oil Type, HO = High Oleic Oil Type.

²Lodging: 0 = none, 9 = lying flat on the ground.

³DAP = Days after planting.

Table 7. 2016 Canola - Clearfield - Carrington - Authors, M. Ostlie, B. Schatz and J. Nielsen.

Brand	Variety	Type ¹	Days to	Flower	Days to	Plant	Plant	1000 Seed	Test	Oil	Seed Yield
			Flower	Duration	Mature	Height	Lodge ²	Weight	Weight	Content	2016
			(DAP) ³	(days)	(DAP) ³	(inch)	(0-9)	(gram)	(lbs/bu)	(%)	---(lbs/a)---
Canterra	CS2200CL	TR	43	17	87	41	2	3.85	51.2	43.4	1,966
Mycogen	2020CL	HO	47	17	89	40	2	4.50	52.4	42.8	1,613
Mycogen	2022CL	HO	43	14	84	41	2	4.36	51.5	41.6	1,383
Mean			44	16	86	40	2	4.24	51.7	42.6	1,654
CV %			4	12	2	3	18	3.60	0.8	2.1	14
LSD 0.05			NS	NS	3	NS	NS	0.24	0.6	1.5	366
LSD 0.10			3	NS	2	2	NS	0.20	0.5	1.2	296

This trial was impacted by a hail storm on July 9 (~ end bloom) that caused plant damage that was assessed uniform across trial.

¹TR = Traditional Oil Type, HO = High Oleic Oil Type.

²Lodging: 0 = none, 9 = lying flat on the ground.

³DAP = Days after planting.

Table 8. 2016 Canola - Sulfonylurea - Carrington - Authors, M. Ostlie, B. Schatz and J. Nielsen.

Brand	Variety	Type ¹	Days to	Flower	Days to	Plant	Plant	1000 Seed	Test	Oil	Seed Yield
			Flower	Duration	Mature	Height	Lodge ²	Weight	Weight	Content	2016
			(DAP) ³	(days)	(DAP) ³	(inch)	(0-9)	(gram)	(lbs/bu)	(%)	---(lbs/a)---
Cibus	C1511	TR	42	18	85	40	2	4.05	49.8	38.9	1,580
Cibus	C1516	TR	45	15	87	43	2	4.16	51.9	39.8	1,479
Cibus	C5507	TR	43	15	86	42	2	3.64	50.3	42.6	1,711
Cibus	C5513	TR	45	16	87	42	2	3.96	51.1	43.1	1,517
Cibus	C5522	TR	43	15	87	41	2	3.28	50.2	42.4	1,383
Mean			44	16	86	42	2	3.82	50.7	41.4	1,534
CV %			3.2	7.1	2.8	4.8	--	5.8	0.8	1.3	6.6
LSD 0.05			2.1	1.7	NS	NS	--	0.3	0.6	0.8	156
LSD 0.10			1.7	1.4	NS	NS	--	0.3	0.5	0.7	128

This trial was impacted by a hail storm on July 9 (~ end bloom) that caused plant damage that was assessed uniformly across trial.

Trial was planted on May 10 and harvested on Aug. 22. Previous crop was lentil.

¹TR = Traditional Oil Type.

²Lodging: 0 = none, 9 = lying flat on the ground.

³DAP = Days after planting.

Table 9. 2016 Canola - Roundup Ready - Hettinger - Authors, J. Rickertsen and R. Olson.

Company/ Brand	Variety	Type ¹	Days to	Flower	Days to	Plant	Oil	Seed Yield	
			Flower (DAP) ²	Duration (days)	Mature (DAP) ²	Height (inch)	Content (%)	2016 -----	2-Yr. Avg. (lb/a)-----
BrettYoung	6074 RR	TR	46	19	83	27	45.4	853	1,531
BrettYoung	6080 RR	TR	46	17	81	30	46.7	782	--
Canterra	CS2000	TR	46	19	83	30	44.9	817	--
Canterra	CS2100	TR	46	16	80	31	46.9	910	--
Cargill	V12-1	HO	47	17	82	30	44.9	905	1,586
Cargill	V12-3	HO	46	17	81	31	45.7	903	--
Cargill	V22-1	HO	46	19	83	28	45.5	758	1,495
Croplan	HyCLASS 930	TR	44	15	78	29	50.2	1,040	--
Croplan	HyCLASS 955	TR	44	16	78	30	49.2	892	--
Croplan	HyCLASS 970	TR	46	17	80	31	48.2	828	--
Croplan	HyCLASS 972	TR	46	17	81	29	44.9	912	--
Dekalb	DKL30-20RR	TR	44	16	78	29	48.9	939	--
Dekalb	DKL38-48RR	TR	45	16	80	28	47.7	852	--
Integra	7150RR	TR	45	15	78	28	47.7	776	--
Integra	7257RR	TR	45	15	78	28	46.5	784	--
Mycogen	1020RR	HO	48	18	83	30	44.9	881	--
Mycogen	1022RR	HO	50	15	83	30	44.0	710	1,351
Proseed	300 Mag	TR	45	18	81	28	47.0	800	1,386
Proseed	PS 5000	TR	46	19	83	30	44.6	793	1,439
Star Seed	Star 402	TR	44	16	78	29	50.8	839	1,407
Mean			46	17	81	29	46.7	849	1,456
CV %			0.9	4.3	0.8	4.0	2.2	10.9	--
LSD 0.05			0.6	1.0	0.9	1.7	1.4	126	--
LSD 0.10			0.5	0.8	0.7	1.4	1.2	106	--

Trial was planted on May 4 and harvested on Aug 5.

¹TR = Traditional Oil Type, HO = High Oleic Oil Type.

²DAP = Days after planting.

Table 10. 2016 Canola - Clearfield and Sulfonylurea - Hettinger - Authors, J. Rickertsen and R. Olson.

Brand	Variety	Type ¹	Days to	Flower	Days to	Plant	Oil	Seed Yield	
			Flower (DAP) ²	Duration (days)	Mature (DAP) ²	Height (inch)	Content (%)	2016 -----	2-Yr. Avg. (lbs/a)-----
Mycogen	2020 CL	CL, HO	49	17	84	30	46.5	685	1,484
Mycogen	2022 CL	CL, HO	48	17	83	30	46.8	778	--
Cibus	C1511	SU, TR	47	22	88	32	41.4	610	1,276
Cibus	C1516	SU, TR	47	22	87	30	40.6	581	1,155
Cibus	C5507	SU, TR	47	23	88	30	44.5	522	--
Cibus	C5513	SU, TR	47	23	88	29	42.7	545	--
Cibus	C5522	SU, TR	47	22	87	29	44.0	471	--
Mean			47	21	86	30	43.8	599	1,305
CV %			0.9	2.9	0.5	3.4	1.9	12.0	--
LSD 0.05			0.8	0.9	0.7	1.5	1.3	107	--
LSD 0.10			0.5	0.6	0.5	1.2	1.0	88	--

Trial was planted on May 3 and harvested on Aug. 9.

¹CL = Clearfield System, SU = Sulfonylurea, HO = High Oleic Oil Type, TR = Traditional Oil Type.

²DAP = Days after planting.

Table 11. 2016 Canola - Roundup Ready - Langdon - Authors, B. Hanson, T. Hakanson and L. Henry.

Company/		Type ¹	Days to Flower		Plant			Oil		Seed Yield	
Brand	Variety		Flower (DAP) ⁴	Duration (days)	Maturity (DAP) ⁴	Height (inch)	Lodge ² (0-9)	Cover ³ (%)	Content (%)	2016 ----- (lb/a)-----	3-yr. Avg.
BrettYoung	6056 RR	TR	45	22	94	42	4	78	47.3	2,280	2,969
BrettYoung	6074 RR	TR	45	22	95	45	4	92	46.1	2,679	--
BrettYoung	6076 RR	TR	47	21	95	49	5	75	45.2	2,727	--
BrettYoung	6080 RR	TR	44	23	92	45	4	94	46.9	2,791	--
BrettYoung	6086CR	TR	46	21	95	44	6	77	48.2	2,687	--
Canterra	CS2000	TR	48	20	96	48	5	69	46.4	2,529	--
Canterra	CS2100	TR	44	23	92	44	5	77	49.3	2,752	--
Cargill	V12-1	HO	48	20	95	45	5	84	46.7	2,697	3,190
Cargill	V12-3	HO	46	21	94	46	5	95	47.1	2,865	--
Cargill	V22-1	HO	47	20	94	45	6	86	46.3	2,540	--
Croplan	HyCLASS 930	TR	42	20	90	39	6	84	52.0	2,910	3,312
Croplan	HyCLASS 955	TR	42	22	90	38	6	81	51.9	2,717	3,301
Croplan	HyCLASS 970	TR	44	22	92	44	5	77	49.2	2,938	--
Croplan	HyCLASS 972	TR	46	22	93	44	4	68	46.9	2,409	--
Dekalb	DKL30-20RR	TR	41	21	90	44	4	89	50.4	2,960	--
Dekalb	DKL38-48RR	TR	42	23	90	40	5	85	48.4	2,503	2,964
Dekalb	DKL70-07RR	TR	44	23	91	40	5	74	49.7	2,495	3,088
Dekalb	DKL70-10RR	TR	44	22	90	41	5	80	49.2	2,917	--
Dekalb	DKL70-50CR	TR	43	24	91	45	5	88	48.4	2,600	3,171
Dekalb	DKL71-14BL	TR	42	22	91	41	5	90	50.6	3,156	--
Dyna-Gro	DG531G	TR	45	23	92	42	4	79	48.8	2,677	--
Dyna-Gro	DG533G	TR	44	23	93	44	3	80	47.8	2,579	--
Integra	7150RR	TR	43	21	92	41	6	72	50.7	2,653	3,191
Integra	7257RR	TR	44	22	90	39	6	69	49.8	2,711	--
Mycogen	1012RR	HO	48	20	96	45	6	65	46.9	2,421	2,955
Mycogen	1020RR	HO	47	21	95	45	5	71	46.8	2,362	--
Mycogen	1022RR	HO	48	20	95	46	3	65	46.4	2,254	--
Pioneer	45CS40	TR	45	21	92	44	5	81	48.4	2,893	--
Pioneer	45H33	TR	45	23	92	46	5	82	46.1	2,518	--
Pioneer	46M34	TR	45	22	93	44	5	88	47.9	2,735	--
Proseed	300 Mag	TR	44	22	91	42	6	80	48.1	2,561	--
Proseed	PS 5000	TR	46	22	93	42	5	77	48.9	2,549	3,166
Star	Star 402	TR	43	22	91	41	5	69	52.9	2,649	3,333
Mean			45	22	92	43	5	79	48.3	2,658	3,149
CV %			2.2	6.5	1.2	6.3	15.9	12.9	2.6	10.1	--
LSD 0.05			1.4	2.0	1.6	3.8	1.1	13.8	1.8	367	--
LSD 0.10			1.2	1.7	1.3	3.2	0.9	11.6	1.5	307	--

Trial was planted on May 16 and harvested on Aug. 30.

¹TR = Tradional Oil Type, HO = High Oleic Oil Type.

²Lodging: 0 = none, 9 = lying flat on the ground.

³Cover - 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.

⁴DAP = Days after planting.

Table 12. 2016 Canola - Liberty Link, Clearfield and Sulfonylurea - Langdon - Authors, B. Hanson, T. Hakanson and L. Henry.

Company/		Type ¹	Days to		Plant	Oil	Seed Yield				
Brand	Variety		Flower	Duration			Maturity	Height	Lodge ²	Cover ³	Content
			(DAP) ⁴	(days)	(DAP) ³	(inch)	(0-9)	(%)	(%)	-----(lb/a)----	
Bayer	InVigor L130	LL, TR	44	23	90	49	3	94	46.1	2,410	3,037
Bayer	InVigor L140P	LL, TR	44	22	91	46	5	91	46.2	2,672	3,311
Bayer	InVigor L157H	LL, HO	42	24	91	43	6	93	47.4	2,534	3,136
Bayer	InVigor L230	LL, TR	43	21	91	44	5	95	45.7	2,779	--
Bayer	InVigor L233P	LL, TR	44	21	92	46	3	93	48.0	2,866	--
Bayer	InVigor L241C	LL, TR	44	23	93	47	4	94	44.4	2,591	--
Bayer	InVigor L252	LL, TR	47	20	95	46	5	76	48.2	2,792	3,435
Canterra	CS2200CL	CL, TR	46	22	94	47	5	78	46.5	2,603	--
Cibus	C1511	SU, TR	44	25	92	47	5	79	42.1	2,321	--
Cibus	C1516	SU, TR	47	23	92	46	5	75	44.8	1,950	--
Cibus	C5507	SU, TR	45	22	93	46	5	79	45.9	2,334	--
Cibus	C5513	SU, TR	46	22	94	46	4	83	46.5	2,291	--
Cibus	C5522	SU, TR	44	24	93	44	5	86	46.0	2,250	--
Dyna-Gro	DG200CL	CL, TR	47	23	96	51	5	89	44.6	2,798	--
Dyna-Gro	XCEED X122CL	CL, TR	38	21	88	44	1	49	43.0	1,912	--
Mycogen	2020CL	CL, HO	50	20	97	41	6	43	46.5	1,723	2,687
Mycogen	2022CL	CL,HO	45	24	95	42	5	60	46.0	2,003	--
RR Check	HyCLASS 955	RR, TR	42	20	89	45	5	86	52.9	2,640	3,315
RR Check	Dekalb 70-50CR	RR, TR	42	23	90	42	4	91	49.3	2,858	--
Mean			44	22	92	45	5	81	46.3	2,438	3,154
CV %			2.4	6.9	1.1	7.7	17.3	10.9	2.4	10.1	--
LSD 0.05			1.5	2.2	1.5	4.9	1.1	12.4	1.6	351	--
LSD 0.10			1.3	1.8	1.2	4.1	0.9	10.3	1.3	294	--

Trial was planted on May 17 and harvested on Aug. 30.

¹LL = Liberty Link, SU = Sulfonylurea, CL = Clearfield System, RR = Roundup Ready, TR = Traditional Oil Type, HO = High Oleic Oil Type.

²Lodging: 0 = none, 9 = lying flat on the ground.

³Cover - 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.

⁴DAP = Days after planting.

Table 13. 2016 Canola - Roundup Ready - Williston - Authors, J. Bergman, G. Pradhan and E. Link.

Company/		Type ¹	Days to		Plant	Oil	Seed Yield	
Brand	Variety		Flower	Maturity			Height	Content
			(DAP) ²	(DAP) ²	(inch)	(%)	-----(lb/a)----	
BrettYoung	6074 RR	TR	46	93	31	45.2	2,237	-
BrettYoung	6080 RR	TR	46	92	32	45.0	2,228	-
Canterra	CS2000	TR	48	93	37	43.2	2,277	-
Canterra	CS2100	TR	45	92	30	44.6	2,104	-
Cargill	V12-1	HO	47	91	33	44.0	2,078	-
Cargill	V12-3	HO	47	92	31	44.9	2,254	-
Cargill	V22-1	HO	46	90	32	45.2	2,012	-
Croplan	HyCLASS 930	TR	43	92	30	46.6	2,159	1,701
Croplan	HyCLASS 955	TR	45	94	33	43.5	2,173	1,787
Croplan	HyCLASS 972	TR	43	91	27	46.1	2,286	-
Integra	7150RR	TR	43	91	29	45.5	2,056	1,729
Star	Star 402	TR	44	92	29	46.6	2,237	1,805
Mean			45	92	31	45.0	2,175	1,756
CV %			1.9	1.1	8.0	1.5	6.0	--
LSD 0.05			1.2	1.4	3.6	1.0	182	--
LSD 0.10			1.0	1.2	3.0	0.8	152	--

Trial was planted on May 2 and harvested on Aug. 12. Previous crop was durum.

¹TR = Traditional Oil Type, HO = High Oleic Oil Type.

²DAP = Days after planting.

Table 14. 2016 Canola - Sulfonylurea - Williston - Authors, J. Bergman, G. Pradhan and E. Link.

Company/ Brand	Variety	Type ¹	Days to		Plant Height (inch)	Oil Content (%)	Seed Yield	
			Flower (DAP) ²	Maturity (DAP) ²			2016	2-yr. Avg.
Cibus	C1511	TR	47	93	34	43.8	1,748	1,453
Cibus	C1516	TR	49	94	39	45.1	1,711	1,460
Cibus	C5507	TR	47	93	34	46.8	1,887	-
Cibus	C5513	TR	48	94	34	46.0	1,842	-
Cibus	C5522	TR	48	94	31	46.6	1,657	-
Mean			48	94	34	45.6	1,769	1,457
CV %			2.3	0.8	9.4	1.2	7.7	-
LSD 0.05			1.6	NS	NS	0.8	NS	-
LSD 0.10			1.3	NS	4.0	0.7	NS	-

Trial was planted on May 3 and harvested on Aug. 16. Previous crop was durum.

¹TR = Traditional Oil Type.

²DAP = Days after planting.

Table 15. 2016 Canola - Liberty Link, Clearfield and Sulfonylurea - Minot - Authors, E. Eriksmoen, J. Tarasenko and J. Effertz.

Company/ Brand	Variety	Days to Flower (DAP) ²	Flower Duration (days)	Days to Maturity (DAP) ²	Plant Height (inch)	Lodging ¹ (0-9)	Oil Content (%)	Seed Yield	
								2016	3-yr. Avg.
Bayer	InVigor L130	43	22	87	47	1	43.2	2,891	2,401
Bayer	InVigor L140P	41	21	85	45	1	44.5	3,133	2,772
Bayer	InVigor L157H	43	23	87	46	1	45.1	2,687	--
Bayer	InVigor L230	41	20	84	43	0	44.8	2,986	--
Bayer	InVigor L233P	43	21	86	45	0	45.9	3,198	--
Bayer	InVigor L252	44	21	86	47	0	47.9	2,939	2,475
Canterra	CS2200CL	43	25	86	46	0	46.5	2,747	--
Cibus	C1511	43	24	86	47	0	41.4	2,293	--
Cibus	C1516	44	23	86	45	0	44.0	2,582	--
Cibus	C5507	43	21	86	45	0	46.1	2,601	--
Cibus	C5513	43	24	85	46	0	44.6	2,301	--
Cibus	C5522	43	23	88	44	0	45.4	2,439	--
Dyna-Gro	DG200CL	44	23	86	48	1	45.4	3,390	--
Dyna-Gro	XCEED X122CL	36	27	84	39	0	36.6	1,841	--
Mycogen	2020CL	44	23	87	43	1	46.3	2,497	2,195
Mycogen	2022CL	43	21	87	44	0	45.1	2,624	--
Mean		43	23	86	45	0	44.5	2,697	2,461
CV %		2	4	1	6	116	2.5	8	--
LSD 0.05		1	2	2	4	NS	1.8	326	--
LSD 0.10		1	1	1	4	NS	1.5	271	--

Trial was planted on May 16 with a seeding rate of 9 lb/A and harvested on Aug. 26. Previous crop was soybean.

¹Lodging: 0 = none, 9 = lying flat on the ground.

²DAP = Days after planting.

Table 16. 2016 Canola - Roundup Ready - Minot - Authors, E. Eriksmoen, J. Tarasenko and J. Effertz.

Company/		Days to Flower (DAP) ³	Flower Duration (days)	Days to Maturity (DAP) ³	Plant Height (inch)	Lodging ² (0-9)	Oil Content (%)	Seed Yield		
Brand	Variety							Type ¹	2016	3-yr. Avg.
								----- (lb/a) -----		
BrettYoung	6074 RR	TR	42	23	89	48	2	47.5	3,106	--
BrettYoung	6080 RR	TR	41	22	87	44	1	45.6	3,435	--
Canterra	CS2000	TR	42	21	88	47	1	46.6	3,162	--
Canterra	CS2100	TR	42	21	88	46	1	46.5	3,515	--
Cargill	V12-1	HO	44	20	89	49	2	46.7	3,092	2,639
Cargill	V12-3	HO	43	21	90	50	1	46.7	3,156	--
Cargill	V22-1	HO	43	22	89	48	2	44.6	2,484	--
Croplan	HyCLASS 930	TR	41	21	86	44	0	49.8	3,234	2,726
Croplan	HyCLASS 955	TR	40	21	84	48	1	47.8	3,111	2,756
Croplan	HyCLASS 970	TR	42	19	89	49	0	47.6	3,684	--
Croplan	HyCLASS 972	TR	43	22	86	53	1	46.0	3,090	--
Dekalb	DKL30-20	TR	41	19	84	53	2	47.5	2,895	--
Dekalb	DKL38-48	TR	41	21	88	49	3	46.2	3,766	2,939
Dekalb	DKL70-07	TR	42	20	87	47	0	46.6	2,984	2,683
Dekalb	DKL70-10	TR	42	21	89	49	1	45.0	3,603	--
Dekalb	DKL70-50CR	TR	42	21	88	51	1	47.2	3,477	--
Dekalb	DKL71-14BL	TR	40	22	88	48	2	48.4	3,017	--
Dyna-Gro	DG531G	TR	41	21	83	50	1	46.3	2,868	--
Dyna-Gro	DG533G	TR	42	24	86	51	1	45.7	3,923	--
Integra	7150RR	TR	41	21	87	49	1	48.3	3,245	--
Integra	7257RR	TR	41	22	82	45	1	46.2	3,400	--
Mycogen	1012RR	HO	46	19	92	56	3	44.9	3,090	2,473
Mycogen	1020RR	HO	44	21	91	48	2	45.1	2,613	--
Mycogen	1022RR	HO	46	20	92	52	4	45.3	2,629	--
Proseed	300 Mag	TR	41	21	86	48	2	48.3	3,604	3,043
Proseed	PS 5000	TR	41	21	87	47	2	45.5	2,779	--
Mean			42	21	87	49	2	46.6	3,191	2,751
CV %			2	5	3	6	86	2.4	10	--
LSD 0.05			1	2	4	5	2	1.8	487	--
LSD 0.10			1	1	3	4	2	1.5	407	--

Trial was planted on May 9 with a seeding rate of 9 lb/A and harvested on Aug. 17. Previous crop was soybean.

¹HO = High Oleic Oil Type, TR = Traditional Oil Type.

²Lodging: 0 = none, 9 = lying flat on the ground.

³DAP = Days after planting.

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