

# OILSEED CROPS



## CANOLA

Canola (*Brassica napus* or *B. rapa*) is a crop developed from oilseed rape by Canadian plant breeders; the first canola variety was licensed in 1974. Canola is used for edible oil extraction and protein feed meal. Canola oil is considered one of the highest quality edible oils available. Considerable acreage of spring canola is grown in Canada. Interest in spring canola has increased recently in Minnesota, where the acreage grown has

increased from about 8,000 acres in 1990 to more than 200,000 acres in 1998.

The oil in canola seed contains less than 2 percent erucic acid. This compares with the 20 to 40 percent level of erucic acid found in oilseed rape. The meal remaining after oil extraction contains less than 0.1 percent of glucosinolate (sulfur-containing compounds) compared with about 1 percent in rapeseed meal. High

levels of erucic acid in food oils are hazardous to health, and high levels of glucosinolates are

detrimental in livestock feeds. Consequently, canola is also referred to as “double low” or “00” rapeseed.

The canola varieties described here are all spring-sown *Brassica napus* types. Winter canola varieties were previously evaluated by University of Minnesota researchers at locations throughout the state. In trials over 15 year/locations, fewer than 30 percent of the trials successfully overwintered.

Production information is provided in

the canola chapter of the Alternative Field Crops Manual, which is available for \$45 from county extension educators or the Center for Alternative Plant & Animal Products, 352 Alderman Hall, University of Minnesota, St. Paul, MN 55108. Either source can provide more information about this publication.

The more complete Canola Growers Manual on canola production is available from the Canola Council of Canada, 400-167 Lombard Ave, Winnipeg, Manitoba, Canada R3B 0T6 (phone 204-982-2100, internet [www.canola-council.org](http://www.canola-council.org)). It contains detailed information on canola production practices and costs \$68.00 (U.S.). The Canola Council also provides free annual updates to keep the information in the manual current. Please keep in mind if using this manual that not all pesticides used in Canada are legal in the United States. Always confirm the clearance of a pesticide with your local dealer or county extension educator.

The Minnesota Canola Council, ( see page 32) is another source for information on canola.

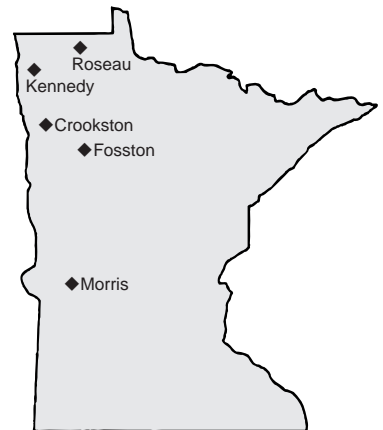
### Canola Variety Name Changes

Old Name or Experiment Number	New Variety Name
EXP95-09	1709
Hy 2	Blueribbon
5152.072	CL2061
9702	Cracker Jack
HCN 35	Phoenix
94-22685NDA	Q-2
SW 02766	Senator
SW 02601	SW Arrow
ZSNA005	Z005
Hyola EXP1RR	Hyola 357RR

The Crookston testing site was on the Monte Casavan farm. At Fosston the testing site was on the Ron Landsverk farm. The Kennedy testing site was on the Rob and Tim Rynning farm, and at Roseau the testing site was on the Richard Magnusson farm.

Support for the Kennedy site was provide by Cenex-Harvest States of Kennedy

General assistance for field work was provided by county extension educators Vicent W. Crary, Nathan L. Johnson, Herman J. Kendel, Gene Krause, Curtis W. Nyegaard and Joseph Shafer.



**Locations of canola trials**

***Canola seed sources for 2000 planting, keyed to "Variety Information" column in seed yield tables, pages 60-61 and 66.***

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**Developers**

- D1 Agrevo, 203-407 Downey Rd., Saskatoon, Saskatchewan, Canada S7N 3R2
- D2 Agriprogress, P.O. Box 2499, Morden, Manitoba, Canada R6M 1C2
- D3 Brett Young, Box 99, St. Nobert P.S., Winnipeg, Manitoba, Canada
- D4 Cargill Hybrid Seeds, P.O. Box 5645, Minneapolis, MN 55440
- D5 Croplan Genetics, P.O. Box 1291, Minot ND 58702
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- D6 Danisco Seed, Mariba Seeds, Copenhagen, Denmark
- D7 DLF, Trifolium, Germany
- D8 DSV-Deutsche Saatveredelung, Germany
- D9 InterMountain Canola, 2300 N. Yellowstone Hwy, Suite 122,, Idaho Falls, ID 83401
- D10 Limagrain, P.O. Box 250, Listowel,, Ontario, Canada N4W 3H2
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- D11 Mycogen, 1340 Corporate Center Curve, Eagan, Mn. 55121
- D12 No Information Available
- D13 NPZ, Germany
- D14 Pioneer Hi-Bred International, 720 S. 48th St., Grand Forks, ND 58201
- D15 Svalof Weibull Seed, P.O. Box 217, Lindsay, Ontario, Canada K9V 5Z4
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- D16 University of Alberta/Agricore, 505-2nd St. SW., Box 2700, Calgary, Alberta, Canada T2P ZP5
- D17 University of Guelph, Guelph, Ontario, Canada
- D18 Zenneca, Winnipeg, MB, Canada

**Marketers**

- M1 AgrEvo, 203-407 Downey Rd., Saskatoon, Saskatchewan, Canada S7N 3R2 , 306-477-9427
- M2 Agriprogress, P.O. Box 2499, Morden, Manitoba, Canada R6M 1C2, 204-822-4956
- M3 Agri-Tel Grain LTD, Box 808, Beausejour, Manitoba, Canada R0E 0C0, 204-268-1415
- M4 Bonis & Co., P.O. Box 217, Lindsay, Ontario, Canada K9V 5Z4, 704-324-3293
- M5 Brett Young Seed LTD, Box 99, St. Nobert P.S., Winnipeg, Manitoba, Canada R3Y IG4, 204-261-7932
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- M6 Canterra Seeds Ltd., 43 Scurfield Blvd., Winnipeg, Manitoba, Canada R3Y 1G4, 204-988-9750
- M7 Cargill Hybrid Seeds, P.O. Box 5645, Minneapolis, MN 55440, 612-742-6731
- M8 Croplan Genetics, P.O. Box 1291, Minot, ND 58702, 701-852-3556
- M9 Integra Seed, P.O. Box 40, Bozeman, MT 59771-0040, 406-582-8375
- M10 InterMountain Canola, 2300 N. Yellowstone Hwy, Suite 122, Idaho Falls, ID 83401, 208-522-4113
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- M11 Interstate Seed Co., 1215 Prairie Parkway, West Fargo, ND 58078, 800-437-4120
- M12 Kaystar Seed, P.O. Box 947, Huron, SD 57350, 605-352-8791
- M13 Limagrain, P.O. Box 250, Listowel, Ontario, Canada N4W 3H2, 306-249-4220
- M14 Mycogen, 1340 Corporate Center Curve, Eagan, MN 55121, 651-405-5800
- M15 Newfield Seeds/Promark, Box 100 Nipawin, Saskatchewan, Canada S0E1E0, 306-862-4678
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- M16 No Information Available
- M17 Performance Seeds, Box 35028, Regina, Saskatchewan, Canada S4X 4C6, 306-791-0550
- M18 Pioneer Hi-Bred International, 720 S. 48th St., Grand Forks, ND 58201, 701-775-2546
- M19 Proseed, 705 E. Brewster, Harvey, ND 58341, 701-324-4177
- M20 Seeds 2000, PO Box 101, Breckenridge, MN 56520, 218-643-1208
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**Seed yield of canola (Brassica napus) varieties, lb/acre at 8 % moisture, at Roseau, Kennedy, Fosston, and Morris, 1999.**

**Variety information** includes Source Codes: (D = developer; M = marketer) keyed to listing, page 59, and these supplemental codes: H = Hybrid, Imi = Imidazalanone Tolerant, SP = Specialty Oil, Op = Open Pollinated, LL = Liberty Link, Syn = Synthetic, RR = Roundup Ready Check.

**Blackleg Resistance rating** provided by seed companies: R = Resistant, MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, N/A = Ratings Not Available. **Long-term average** of Hyola 401 (1993-99) is 1,980 lb/acre. **Varieties in bold** are Conventional and Roundup Ready\* checks. \*\* **Hudson** sat in the swath 4 weeks (5-10 days longer than the other treatments) which likely contributed to the high level of shattering. The Hudson yields were adjusted for shatter loss prior to statistical analysis.

Variety	Variety Information	Blackleg Resistance	Roseau	Kennedy	Fosston	R-K-F Average	Morris	Roseau, 1998-99
1709	D11,M14, Op	R	1,578	-	-	-	-	2,026
45A03	D14,M18, Op	MR	1,579	1,815	917	1,437	-	-
<b>45A51*</b>	D14,M18, Op,RR	MR	1,610	1,980	1,425	1,672	1,146	-
45A71	D14,M18, Op,Imi.	MR	1,685	2,058	-	-	-	1,700
46A65	D14,M18, Op	MR	1,765	2,060	1,728	1,851	-	1,959
46A76	D14,M18, Op,Imi.	MR	1,597	2,249	-	-	-	-
91-15026 NA	D16,M11, Op, Sp	R	1,618	2,144	-	-	-	2,144
93-KK51004	D9,M10, Op	MS	1,725	-	-	-	-	-
93NE.1439	D9,M10, Op	MS	1,237	-	-	-	-	-
96-2367LL	D8,M5, Op,LL	MR	1,506	2,043	-	-	-	-
96-2393LL	D8,M5, Op,LL	MR	1,802	2,180	-	-	-	-
Advantage	D7,M9, Op	MR	1,300	-	-	-	-	1,833
Battleford	D15,M9, Op	MR	1,710	-	-	-	-	231
Blue Ribbon	D7,M19, H	MR	1,501	-	1,480	-	-	2,022
Canterra1134	D10,M6, Op	MS	1,361	-	-	-	-	-
Canterra1492	D2,M6, H	MR	1,911	-	-	-	-	-
Canterra1174	D10,M6, Op	MS	1,868	-	-	-	-	-
Cavalier	D12,M7, Op	MR	1,354	1,950	1,318	1,541	-	1,533
CL2070	D5,M8, H	MR	1,706	2,204	1,263	1,724	1,307	2,111
CL2078	D5,M8, Syn	MR	1,774	2,217	1,390	1,794	1,157	2,189
CrackerJack	D15,M9, Syn	MR	1,811	2,352	-	-	-	2,286
<b>Crusher</b>	D15,M11, Op	MS	1,465	1,996	1,336	1,599	1,216	1,979
DMS-100	D11,M14, Op	MR	1,340	-	-	-	-	1,728
DP7-97	D7,M19, Op	MR	1,883	2,254	1,463	1,867	1,300	-
DS1-9220	D6,M2, Op	MS	1,621	-	-	-	-	-
Eagle	D15,M9, Op	MR	1,440	-	-	-	-	1,785
<b>Ebony</b>	D10,M13, Op	MR	1,481	2,272	1,527	1,760	1,112	2,083
Golden Boy	D15,M20, Syn.	MR	1,624	2,085	1,454	1,721	-	1,954
Goldpro 701	D15,M15, H	MR	1,859	2,045	-	-	-	2,011
HCN 41	D1,M1, Op,LL	MS	1,617	1,905	1,392	1,638	1,475	-
Hudson	D5,M8, Op	MR	1,660	1,925	1,514**	1,700	1,032	1,703
Hyola 330	D18,M11, H	MS	1,837	2,062	1,483	1,794	-	1,974
<b>Hyola 401</b>	D18,M11, H	S	1,894	2,036	1,645	1,858	1,529	2,098
Hyola 420	D18,M11, H	MR	1,738	2,187	1,498	1,808	-	1,906
IMC-140	D9,M10, Op	MS	1,471	-	-	-	-	1,585
InVigor2363	D1,M1, H,LL	MS	1,761	2,158	1,728	1,882	1,563	-
InVigor2373	D1,M1, H,LL	MS	1,684	2,490	1,478	1,884	1,360	-
KC-701	D12,M12, H	MR	1,746	2,157	-	-	-	2,260
LG3222	D10,M13, Op	MS	1,612	1,852	-	-	-	1,856
<b>LG3295*</b>	D10,M13, Op,RR	MR	1,529	1,886	1,414	1,610	1,023	-
LG3333	D10,M13, Op	MR	-	2,105	1,369	-	1,333	-
LG3369	D10,M13, Op	MR	-	-	1,150	-	1,234	-
LG3930	D10,M13, Op	MR	1,149	1,821	-	-	-	1,631
M94S007	D11,M14, Op	MS	1,549	-	-	-	-	-
M94S010	D11,M14, Op	MS	1,665	-	-	-	-	-
OAC Summit	D17,M3, Op	MS	-	-	1,751	-	-	-
Oscar	D5,M8, Op	MR	1,439	2,112	861	1,471	1,184	1,912

Variety	Variety Information	Blackleg Resistance	Roseau	Kennedy	Fosston	R-K-F Average	Morris	Roseau, 1998-99
PF8414/96	D8,M2, H	MS	1,792	–	–	–	–	2,132
Phoenix	D1,M1, Op,LL	MS	1,315	1,948	1,104	1,456	1,138	–
PHS98-596	D1,M1, H,LL	N/A	2,023	2,338	1,708	2,023	1,306	–
PHS98-601	D1,M1, H,LL	N/A	1,831	2,577	1,603	2,004	1,378	–
PHS98-639	D1,M1, H,LL	N/A	1,950	2,410	1,784	2,048	1,423	–
PHS98-685	D1,M1, H,LL	N/A	1,816	2,246	1,632	1,898	1,207	–
PHS98-730	D1,M1, H,LL	N/A	1,656	2,167	1,484	1,769	1,101	–
PR 5227-1	D10,M13, Op	R	1,649	2,041	–	–	–	–
PR 5269	D10,M13, Op	R	1,606	1,937	–	–	1,379	–
PR 5271	D10,M13, Op	R	1,756	2,144	–	–	–	–
Promark220	D15,M15, Syn.	MR	1,699	–	1,620	–	–	2,099
Q-2	D16,M16, Op	R	1,664	2,096	1,307	1,689	–	1,872
<b>Quest*</b>	D16,M11, Op,RR	MR	1,564	1,792	1,187	1,514	1,025	–
Roseau	D12,M7, Op	MR	1,445	1,747	913	1,368	–	1,913
Senator	D15,M4, Op	MR	1,856	2,304	–	–	–	2,313
SV095-08	D11,M14, Op	MR	1,778	–	–	–	–	2,155
SW B2691	D15,M4, Op	MR	1,759	2,061	–	–	–	–
SW B2696 LL	D15,M4, Op,LL	MS	1,809	1,924	–	–	–	–
SW B5001	D15,M4, H	MR	2,095	2,138	–	–	–	–
Topscore	D7,M19, Op	MR	1,557	1,926	1,287	1,590	1,378	1,801
Z009	D18,M11, Op	MR	1,833	2,021	1,138	1,664	–	–
Mean			1,656	2,090	1,410	1,721	2,090	–
LSD (0.05)			242.8	237.4	191.8	150.1	237.4	–
C.V.			10.5	8.1	9.7	10.9	8.1	–

### Growth characteristics and oil content of canola varieties grown near Roseau, planted June 18, 1999.

Varieties in bold are Conventional and Roundup Ready\* checks

\*\* Note: Maturity DAP over 102 are projected estimates because the plots were cut prematurely on September 28 to allow drying time to combine before winter.

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To			Height, Inches	Lodging, 1 = Erect 9 = Flat	Sclerotinia, % of Plants Infected
			95% Canopy Closure	Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme			
1709	1,578	39.2	31	40	100	52	2.8	5
45A03	1,579	37.7	30	39	98	49	2.8	7
<b>45A51*</b>	1,610	39.0	32	40	99	51	2.5	6
45A71	1,685	36.6	28	39	99	53	4.3	6
46A65	1,765	38.8	31	39	99	52	4.0	5
46A76	1,597	39.0	31	41	101	56	3.0	6
91-15026NA	1,618	39.9	31	43	105**	58	1.3	4
93-KK51004	1,725	38.0	29	39	95	49	5.3	7
93NE.1439	1,237	36.7	33	39	97	49	4.0	4
96-2367LL	1,506	39.2	33	40	102	60	3.0	7
96-2393LL	1,802	38.3	30	39	100	53	4.0	10
Advantage	1,300	38.2	31	40	102	59	3.0	6
Battleford	1,710	37.6	31	39	100	54	3.5	8
BlueRibbon	1,501	40.6	29	42	106	61	2.3	6
Canterra 1134	1,361	38.7	32	40	99	53	3.8	6
Canterra 1174	1,868	38.4	29	40	99	53	3.5	8
Canterra 1492	1,911	39.7	29	38	98	51	3.0	7
Cavalier	1,354	38.6	31	39	95	47	4.3	5
CL2070	1,706	38.2	29	40	104**	58	2.8	6
CL2078	1,774	38.0	29	40	101	54	2.8	8
CrackerJack	1,811	38.5	29	39	100	54	2.3	7

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To			Height, Inches	Lodging, 1 = Erect 9 = Flat	Sclerotinia, % of Plants Infected
			95% Canopy Closure	Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme			
<b>Crusher</b>	1,465	38.2	32	42	102	57	2.3	5
DMS-100	1,340	38.7	33	41	103	53	4.3	6
DP7-97	1,883	37.5	30	39	100	53	2.0	7
DS1-9220	1,621	40.9	31	40	102	53	3.5	7
Eagle	1,440	36.4	33	39	99	47	3.0	6
<b>Ebony</b>	1,481	40.4	32	42	102	59	2.0	3
GoldenBoy	1,624	38.5	32	41	101	55	2.8	4
Goldpro701	1,859	38.5	29	37	101	54	2.8	7
HCN 41	1,617	38.3	31	40	99	49	3.0	4
Hudson	1,660	36.0	28	36	92	50	4.5	7
Hyola 330	1,837	37.2	30	36	94	39	5.0	5
<b>Hyola 401</b>	1,894	37.3	28	38	97	45	3.3	6
Hyola 420	1,738	37.0	29	38	98	47	3.8	7
IMC-140	1,471	40.5	31	41	101	53	4.3	5
InVigor 2363	1,761	37.8	30	40	98	56	2.5	6
InVigor 2373	1,684	38.7	28	40	97	53	3.5	6
KC-701	1,746	39.0	29	40	102	55	2.8	6
LG 3222	1,612	40.4	32	39	99	51	3.3	7
<b>LG 3295*</b>	1,529	36.6	30	40	97	51	4.5	10
LG 3930	1,149	41.7	32	41	103	57	3.8	5
M94S007	1,549	41.5	30	41	101	52	2.8	5
M94S010	1,665	40.8	32	39	99	44	3.3	8
Oscar	1,439	33.2	29	41	99	53	2.5	6
PF8414/96	1,792	38.0	29	40	99	53	2.8	6
Phoenix	1,315	41.2	34	41	100	52	3.3	6
PHS98-596	2,023	41.4	28	40	100	53	3.8	6
PHS98-601	1,831	38.5	31	41	102	53	3.3	4
PHS98-639	1,950	38.1	29	41	99	56	3.3	6
PHS98-685	1,816	35.4	30	41	99	54	3.0	8
PHS98-730	1,656	37.9	30	37	91	46	5.0	6
PR 5227-1	1,649	38.6	30	40	101	55	3.0	5
PR 5269	1,606	38.4	30	38	100	49	3.3	6
PR 5271	1,756	39.5	30	37	98	50	4.3	6
Promark220	1,699	37.7	30	40	102	55	2.5	6
Q 2	1,664	36.6	30	40	98	55	2.8	7
<b>Quest*</b>	1,564	37.2	31	38	97	49	5.0	9
Roseau	1,445	37.4	32	38	97	50	2.3	4
Senator	1,856	39.7	31	40	101	56	2.8	4
Summit	1,764	37.6	31	42	98	56	3.8	8
SV095-08	1,778	37.8	30	41	102	56	2.8	6
SW B2691	1,759	37.5	29	39	100	55	2.3	9
SW B2696LL	1,809	37.8	30	40	97	50	3.3	6
SW B5001	2,095	38.2	30	39	100	54	2.0	4
Topscore	1,557	36.4	32	40	100	57	2.8	7
Z009	1,833	38.9	31	40	99	54	4.0	4
Mean	1,656	38.4	30	40	99	53	3.2	6.0
LSD (0.05)	242.8	1.10	2.3	0.9	2.9	3.7	1.04	3.36
C.V.	10.5	2.1	5.6	1.7	2.1	5.0	23.0	40.1

**Growth characteristics and oil content of canola varieties grown near Fosston, planted May 29, 1999.**

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To			Height, Inches	Lodging, 1 = Erect 9 = Flat	Shatter, %
			95% Canopy Closure	Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme			
45A03	917	38.4	28	41	87	49	3.0	1.0
<b>45A51*</b>	1,425	36.8	28	41	89	52	3.3	1.0
46A65	1,728	38.9	28	40	89	48	3.3	0.5
BlueRibbon	1,480	36.9	26	47	93	58	2.0	2.0
Cavalier	1,318	34.7	26	41	88	49	4.8	1.0
CL2070	1,263	35.8	26	43	91	57	3.0	1.5
CL2078	1,390	38.8	26	42	89	52	2.8	1.0
<b>Crusher</b>	1,336	37.1	30	43	91	55	2.3	0.5
DP7-97	1,463	37.3	27	41	90	49	2.0	1.5
Ebony	1,527	37.0	27	44	91	56	2.5	0.5
Golden Boy	1,454	37.2	27	41	89	52	2.5	0.5
HCN 41	1,392	37.5	27	42	88	54	3.0	1.0
Hudson	1,514**	37.1	26	37	81	48	2.8	7.9**
Hyola 330	1,483	36.5	25	38	86	47	3.3	0.5
<b>Hyola 401</b>	1,645	37.0	25	40	91	51	3.0	0.5
Hyola 420	1,498	36.5	25	40	90	51	3.5	0.5
InVigor 2363	1,728	38.5	25	43	89	55	3.0	1.0
InVigor 2373	1,478	37.1	26	33	90	56	3.0	0.5
<b>LG 3295*</b>	1,414	36.0	26	41	89	53	5.5	0.5
LG 3333	1,369	37.2	27	38	88	52	3.3	2.0
LG 3369	1,150	38.8	27	40	90	54	3.8	1.0
OAC Summit	1,751	36.1	26	43	91	58	4.3	0.0
Oscar	861	31.8	27	42	89	51	2.5	0.0
Phoenix	1,104	40.2	27	41	89	51	5.0	1.0
PHS98-59	1,708	39.5	26	43	91	56	3.5	2.0
PHS98-60	1,603	36.8	26	43	92	54	3.8	1.0
PHS98-63	1,784	37.5	25	43	90	56	3.5	1.0
PHS98-68	1,632	35.2	26	40	88	51	3.0	0.0
PHS98-73	1,484	39.7	26	39	87	52	4.0	1.0
Promark 220	1,620	38.0	27	41	89	53	2.3	1.0
Q2	1,307	36.6	26	41	88	54	3.8	0.0
<b>Quest*</b>	1,187	37.6	27	38	87	50	3.8	1.0
Roseau	913	37.5	27	40	88	49	2.8	1.0
Topscore	1,287	36.7	29	42	90	55	2.8	2.0
Z009	1,138	37.2	27	43	90	52	5.3	1.5
Mean	1,410	37.2	26	41	89	52	3.3	1.1
LSD (0.05)	192	1.24	1.3	4.9	2.3	4.5	1.10	0.88
C.V.	10	2.4	3.4	8.5	1.9	6.1	23.8	57.2

**Growth characteristics and oil content of canola varieties grown near Kennedy, planted April 29, 1999.**

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To			Height, Inches	Lodging, 1 = Erect 9 = Flat	Sclerotinia, % of Plants Infected
			95% Canopy Closure	Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme			
45A03	1815	35.9	45	53	95	39	1.3	16
<b>45A51*</b>	1980	36.0	44	54	98	42	2.5	19
45A71	2058	34.5	43	53	95	41	3.3	17
46A65	2060	36.0	43	53	97	41	2.5	14
46A76	2249	35.5	43	55	101	48	1.0	8

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To			Height, Inches	Lodging, 1 = Erect 9 = Flat	Sclerotinia, % of Plants Infected
			95% Canopy Closure	Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme			
91-15026NA	2144	32.2	43	54	99	48	1.8	11
96-2367LL	2043	36.8	44	54	101	50	2.0	13
96-2393LL	2180	36.7	42	54	101	49	2.3	14
Cavalier	1950	35.7	44	54	94	38	2.3	19
CL2070	2204	35.7	42	54	101	47	2.0	11
CL2078	2217	35.1	42	54	101	46	1.8	13
Cracker Jack	2352	35.7	43	54	100	46	1.5	11
<b>Crusher</b>	1996	35.5	45	56	100	47	1.5	11
DP7-97	2254	37.2	43	53	101	47	1.0	13
<b>Ebony</b>	2272	37.2	42	54	101	45	2.0	9
GoldenBoy	2085	35.1	42	53	99	46	2.3	15
Goldpro 701	2045	36.0	42	53	98	48	1.5	12
HCN 41	1905	34.9	43	54	96	43	2.5	13
Hudson	1925	34.9	42	52	94	40	1.5	21
Hyola 330	2062	35.6	41	50	93	34	2.3	19
<b>Hyola 401</b>	2036	35.6	42	50	96	34	2.5	13
Hyola 420	2187	35.4	42	52	96	38	2.3	13
InVigor 2363	2158	35.6	42	54	97	44	3.0	12
InVigor 2373	2,490	36.2	42	54	98	47	2.8	11
KC-701	2,157	36.2	42	53	100	44	1.8	11
LG3222	1,852	36.6	43	53	99	40	2.3	15
<b>LG3295*</b>	1,886	34.5	42	53	95	41	3.8	24
LG3333	2,105	35.1	42	52	96	41	2.5	19
LG3930	1,821	36.9	46	54	102	41	3.0	10
Oscar	2,112	31.3	43	53	100	43	1.8	10
Phoenix	1,948	36.5	43	54	100	42	2.8	16
PHS98-596	2,338	38.5	41	54	99	47	2.8	10
PHS98-601	2,577	38.3	42	55	101	47	2.3	11
PHS98-639	2,410	34.7	41	54	97	49	2.0	11
PHS98-685	2,246	35.1	41	54	97	46	3.3	13
PHS98-730	2,167	34.4	41	52	95	43	2.8	12
PR5227-1	2,041	34.4	43	54	98	46	1.8	12
PR5269	1,937	36.0	43	53	96	42	1.8	18
PR5271	2,144	36.3	43	52	97	41	1.8	11
Q2	2,096	33.5	41	54	96	45	2.8	15
<b>Quest*</b>	1,792	35.7	43	52	99	43	3.3	14
Roseau	1,747	36.2	44	53	95	39	1.8	15
Senator	2,304	38.1	42	54	101	50	1.8	9
SW B2691	2,061	35.7	41	53	96	46	1.5	15
SW B2696LL	1,924	34.1	43	54	94	43	2.8	19
SW B5001	2,138	36.3	42	54	98	48	1.5	8
Topscore	1,926	35.0	44	54	99	47	2.8	11
Z009	2,021	35.4	42	53	95	43	3.3	19
Mean	2,090	35.6	42	53	98	44	2.2	14
LSD (0.05)	237.4	1.20	1.6	0.9	2.4	3.7	0.78	7.0
C.V.	8.1	2.4	2.7	1.2	1.8	6.1	25.1	37.0

**Growth characteristics and oil content of canola varieties grown near Morris, planted April 30, 1999.**

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To		Height, Inches	Lodging, 1 = Erect 9 = Flat	Sclerotinia, % of Plants Infected
			Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme			
<b>45A51*</b>	1,146	33.7	48	87	52	8.0	13
CL2070	1,307	33.7	50	88	53	5.5	2
CL2078	1,157	32.7	49	87	52	5.5	1
<b>Crusher</b>	1,216	32.5	52	88	55	2.0	1
DP7-97	1,300	34.0	48	89	53	7.0	6
<b>Ebony</b>	1,112	33.9	51	90	55	4.5	1
HCN 41	1,475	32.3	48	87	57	5.5	1
Hudson	1,032	33.5	45	84	50	7.0	10
<b>Hyola 401</b>	1,529	34.2	45	87	45	7.5	2
InVigor 2363	1,563	33.5	48	87	55	7.0	6
InVigor 2373	1,360	33.8	49	89	56	7.0	5
<b>LG 3295*</b>	1,023	32.0	48	87	54	8.0	23
LG 3333	1,333	33.6	45	86	53	7.5	5
LG 3369	1,234	34.3	47	89	54	7.5	5
Oscar	1,184	28.7	47	87	49	6.0	1
Phoenix	1,138	35.6	49	89	50	7.0	2
PHS98-596	1,306	36.5	49	88	61	8.0	6
PHS98-601	1,378	35.8	50	89	57	6.0	3
PHS98-639	1,423	33.5	48	87	58	6.5	5
PHS98-685	1,207	32.9	47	87	55	7.5	11
PHS98-730	1,101	33.2	46	86	56	7.5	4
PR 5269	1,379	33.7	46	87	52	7.5	4
<b>Quest*</b>	1,025	34.1	46	88	53	8.0	7
Topscore	1,378	31.7	48	87	54	7.0	5
Mean	1,258	33.5	48	87	54	6.7	5
LSD (0.05)	267	1.69	1.5	1.7	4.9	1.75	10.4
C.V.	15	3.6	2.3	1.4	6.4	18.6	142.7

**Seed yield of Roundup Ready canola (*Brassica napus*) varieties, lb/acre at 8% moisture at Roseau, Fosston and Kennedy 1999 and Kennedy 1998.**

**Variety information** includes Source Codes: (D# = developer; M# = marketer) keyed to listing, page 59, and these Supplemental codes: H = Hybrid, SP = Specialty Oil, Op = Open Pollinated, Syn = Synthetic.

**Blackleg Resistance** rating provided by seed companies: R = Resistant, MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, N/A = Ratings Not Available

**\*1998 Roundup Ready results** which were not published for the 17 varieties test. The seven varieties that show yields were tested in 1998 and 1999 at Kennedy.

Variety	Variety Information	Blackleg Resistance	Roseau	Kennedy	Roseau - Kennedy Average	Fosston	Kennedy, 1998*	Kennedy, 1998-99
449RR	D8,M5, H	MS	1,366	1,959	1,663	–	–	–
4992.125	D6,M16, H	MS	1,473	–	–	–	–	–
5152.098	D6,M16, H	MS	1,539	–	–	–	–	–
5153.104	D6,M16, H	MS	1,567	–	–	–	–	–
<b>45A51*</b>	D14,M18, H	MR	1,555	2,139	1,847	1,423	2,224	2,182
46A52	D14,M18, Op	MR	1,355	1,863	1,609	–	–	–
561RR	D8,M5, Op	R	1,378	1,770	1,574	–	–	–
A 98-9NR	D16,M11, Op, SP	R	1,711	1,927	1,819	–	–	–
A4992.125	D6,M16, Op	MS	1,367	–	–	–	–	–
A5152.098	D6,M16, Op	MS	1,549	–	–	–	–	–
A5153.104	D6,M16, Op	MS	1,631	–	–	–	–	–
Arrow	D15,M11, Op	R	1,383	1,721	1,552	917	1,916	1,819
CL2061	D6,M8, H	MR	1,732	–	–	–	–	–
GoldnRdyRR	D10,M20, Op	S	1,700	2,232	1,966	1,438	–	–
Hyola 357	D18,M11, H	MR	1,652	2,114	1,883	1,613	2,348	2,231
IMC-203	D9,M10, Op	MS	1,434	–	–	–	–	–
LG 3235	D10,D13, Op	MR	1,497	1,934	1,716	1,539	–	–
LG 3275	D10,D13, Op	MR	1,494	1,846	1,670	1,323	–	–
<b>LG 3295*</b>	D10,D13, Op	MS	1,462	1,959	1,711	1,436	2,107	2,033
LG 3345	D10,M13, Op	MR	1,524	–	–	1,366	–	–
Minot	D5,M8, Op	MR	1,574	2,065	1,820	1,541	–	–
PR 3665	D10,M13, Op	MR	1,622	1,912	1,767	1,361	2,220	2,066
PR 5292	D10,M13, Op	MR	1,425	1,879	1,652	1,522	1,966	1,923
PR 5296	D10,M13, Op	MR	1,603	2,214	1,909	1,268	–	–
<b>Quest*</b>	D16,M11, Op	MR	1,506	1,782	1,644	1,358	2,017	1,900
SW B2674RR	D15,M4, Syn	MR	1,561	2,123	1,842	–	–	–
SW B2675RR	D15,M4, Op	MR	1,475	1,794	1,635	–	–	–
SW B2677RR	D15,M4, Syn	MR	1,377	2,121	1,749	–	–	–
SW RideR	D15,M11, Syn	MR	1,717	–	–	1,293	–	–
SWRaideRR	D15,M9, Op	MR	1,707	2,125	1,916	–	–	–
Mean			1,531	1,980	1,747	1,980	2,133	–
LSD (0.05)			220.5	282.7	182.2	282.7	257.3	–
C.V.			10.2	10.1	10.5	10.1	8.7	–

**Growth characteristics and oil content of Roundup Ready canola varieties grown near Roseau, planted June 18, 1999.**

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To			Height, Inches	Lodging, 1 = Erect 9 = Flat	Sclerotinia, % of Plants Infected
			95% Canopy Closure	Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme			
449RR	1,366	35.7	30	38	94	48	4.3	13
<b>45A51*</b>	1,555	39.7	32	40	99	51	3.5	11
46A52	1,355	37.6	30	40	99	51	2.5	11
4992.125	1,473	38.4	30	40	100	54	2.3	7
5152.098	1,539	39.0	32	40	102	53	2.0	8
5153.104	1,567	39.5	31	40	101	56	2.0	9
561RR	1,378	38.7	31	39	100	53	2.0	13
A 98-9NR	1,711	38.7	29	40	98	50	2.0	10
A4992.125	1,367	39.2	31	40	101	50	2.8	11
A5152.098	1,549	42.2	31	39	100	50	3.3	8
A5153.104	1,631	41.8	30	40	98	49	4.3	9
Arrow	1,383	37.6	33	40	100	54	4.0	9
CL2061	1,732	39.6	30	39	99	50	3.0	9
GoldnRdyRR	1,700	38.1	31	38	98	49	4.3	10
Hyola 357RR	1,652	38.4	29	36	94	43	4.3	10
IMC-203	1,434	36.3	32	41	97	53	3.5	10
LG 3235	1,497	37.0	31	37	95	44	4.3	9
LG 3275	1,494	38.5	31	37	95	45	3.0	11
<b>LG 3295*</b>	1,462	37.3	32	40	98	49	3.8	12
LG 3345	1,524	39.7	32	38	96	44	4.5	10
Minot	1,574	38.9	31	39	97	46	3.3	10
PR 3665	1,622	39.6	31	38	96	48	3.8	11
PR 5292	1,425	39.4	32	38	97	46	4.5	10
PR 5296	1,603	38.2	31	39	99	49	5.0	11
<b>Quest*</b>	1,506	37.5	31	38	98	46	4.3	11
SW B2674RR	1,561	38.5	30	39	97	50	2.5	8
SW B2675RR	1,475	38.1	31	39	100	49	3.0	9
SW B2677RR	1,377	38.5	31	39	100	55	3.0	8
SW RideR	1,717	38.4	30	39	98	52	2.3	11
SWRaideRR	1,707	37.6	30	39	97	55	2.5	11
Mean	1,531	38.6	31	39	98	50	3.3	10
LSD (0.05)	220	0.91	1.6	0.9	2.1	4.0	1.14	3.2
C.V.	10	1.7	3.6	1.6	1.5	5.7	24.4	23.0

**Growth characteristics and oil content of Roundup Ready canola varieties grown near Kennedy, planted April 29, 1999.**

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To			Height, Inches	Lodging, 1 = Erect 9 = Flat	Sclerotinia, % of Plants Infected
			95% Canopy Closure	Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme			
449RR	1,959	34.6	42	52	95	40	3.5	33
<b>45A51*</b>	2,139	36.4	44	54	100	45	2.3	26
46A52	1,863	35.3	43	54	98	43	2.3	33
561RR	1,770	36.0	43	54	98	44	1.8	25
A98-9NR	1,927	34.7	43	55	100	46	2.8	20
Arrow	1,721	34.1	43	53	95	43	3.5	40
Golden Ready RR	2,232	34.9	43	53	101	41	4.5	25
Hyola 357	2,114	35.8	40	50	99	37	2.0	20
LG3235	1,934	36.0	42	52	97	42	2.0	33
LG3275	1,846	34.8	41	51	96	40	2.0	36
<b>LG3295*</b>	1,959	35.0	41	54	97	42	2.8	29
Minot	2,065	36.1	42	52	97	41	3.0	35
PR3665	1,912	36.4	43	52	98	43	2.8	33
PR5292	1,879	36.0	42	52	97	42	2.8	38
PR5296	2,214	34.7	43	53	101	43	3.5	23
<b>Quest*</b>	1,782	35.7	44	53	100	41	3.0	22
SWB2674RR	2,123	36.3	39	53	98	47	1.8	29
SWB2675RR	1,794	35.2	44	53	97	41	2.3	25
SWB2677RR	2,121	35.6	41	53	98	44	2.0	26
SWRaideRR	2,125	36.5	41	55	100	52	1.3	36
Mean	1,980	35.5	42	53	98	43	2.6	29
LSD (0.05)	283	0.82	1.9	0.7	2.4	3.5	0.72	11.4
C.V.	10	1.6	3.1	0.9	1.8	5.7	19.9	27.7

**Growth characteristics and oil content of Roundup Ready canola varieties grown Near Fosston, planted May 29, 1999.**

Variety	Yield, Lb/Acre at 8% Moisture	Oil, % of Seed Wt at 8% Moisture	Days After Planting To			Height, Inches	Lodging, 1 = Erect 9 = Flat
			95% Canopy Closure	Plot at 10% Bloom	Maturity: 30% Seed Color Change On Main Raceme		
<b>45A51*</b>	1,423	36.8	31	41	88	44	3.5
Arrow	917	35.0	34	41	88	48	2.8
Golden Ready	1,438	35.8	32	40	88	48	3.5
Hyola 357RR	1,613	37.2	27	38	85	44	2.8
LG 3235	1,539	36.5	28	38	83	46	2.5
LG 3275	1,323	36.1	29	39	84	44	2.3
<b>LG 3295*</b>	1,436	36.0	33	41	86	47	2.8
LG 3345	1,366	38.2	30	39	88	47	3.3
Minot RR	1,541	37.2	31	40	86	46	2.8
PR 3665	1,361	37.9	30	39	87	47	2.5
PR 5292	1,522	37.5	28	40	87	47	4.5
PR 5296	1,268	35.6	30	41	90	55	3.8
<b>Quest*</b>	1,358	36.5	29	39	87	49	3.0
SW Rider	1,293	35.8	28	41	88	50	3.0
Mean	1,386	36.6	30	40	87	47	3.1
LSD (0.05)	232	1.29	4.5	1.0	3.2	6.5	1.30
C.V.	12	2.5	10.5	1.8	2.6	9.7	29.8