



Locations of canola trials.

Minnesota Agricultural Experiment Station

VARIETY TRIALS

Canola

Successful canola crop production depends to a considerable extent on selecting the best varieties for a particular farm. For that reason, canola varieties are currently in trials on farmers' fields near Crookston, Roseau, Fosston and Kennedy. Important old varieties and new varieties are grown in replicated plots at each location. These plots are handled so that the factors affecting yield and other characteristics are as nearly the same for all varieties at each location as is possible.

Variety Classifications

Canola varieties are not classified into "recommended" or other groupings. The varieties are listed alphabetically. The majority of the varieties are either privately developed or from Agriculture Canada. The developer of each variety is designated by the letter "D" and the marketer by the letter "M" in this report's tables. Seed of the varieties tested should be available from the designated marketer.

Interpreting the Tables

The LSD (Least Significant Difference) figures listed under the yield columns in the tables are statistical measures of variability within the trials. This statistic is used to determine whether the differences between two variety's values are due primarily to genetic difference in the varieties.

If the yield difference between two varieties equals or exceeds the LSD value listed at the bottom of each yield column, one can conclude that the higher yielding variety was superior in yield. If the difference is less, greater attention should be given to other traits which are also important in making your variety choices.

Authors/Researchers

Authors of this canola report are: Ervin A. Oelke, and David G. LeGare. General assistance for field work was provided by county extension educators Herman J. Kandel, Russell K. Severson, Vincent W. Crary, Troy M. Salzer, and Curtis W. Nyegaard. Karen Andol, Erik Levorson and Donn J. Vellekson also provided assistance.

The Crookston testing site was on the Monte Casavan farm, at Roseau the testing site was on the Steve Dahl farm, at Kennedy the testing site was on the Rob and Tim Ryanning farm, and at Fosston the testing site was on the Darryl Rinkenberger farm.

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CANOLA **VARIETY TRIALS**

**Minnesota Agricultural Experiment Station — University of Minnesota
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Results of canola variety performance tests conducted by the Minnesota Agricultural Experiment Station on publicly and privately developed canola varieties. This report was prepared by extension agronomist Ervin A. Oelke [phone: 612/625-1211; e-mail: <oelke002@maroon.tc.umn.edu>] and assistant scientist David G. LeGare [phone: 612/625-1784; e-mail: <legar001@maroon.tc.umn.edu>], Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN 55108.

Spring Canola Variety Trials

Canola (*Brassica napus* or *B. rapa*) 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. In 1990 there were about 8,000 acres grown in Minnesota while acreage planted to canola grew to about 100,000 acres in 1997.

Canola is a crop developed from oilseed rape by Canadian plant breeders. The first canola variety was licensed in 1974.

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. Therefore, 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, less than 30 percent of the trials successfully overwintered, making current varieties too risky for Minnesota’s growing conditions.

Production information is provided in the canola chapter of the *Alternative Field Crops Manual*. The cost of the manual is \$45. Contact your county extension educa-

tor or the Center for Alternative Plant & Animal Products, 352 Alderman Hall, University of Minnesota, St. Paul, MN 55108 for more information about this publication.

A more complete *Canola Growers Manual* on canola production is available from the Canola Council of Canada, 400-167 Lombard Ave, Winnipeg, Manitoba R3B 0T6 (phone: 204-982-2100). It contains detailed information on canola production practices and costs \$68 (U.S.). The Canola Council also provides free annual updates to keep the information in the manual current. Please keep in mind while 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.

Variety/Test Line Name Changes Since Last Year

Variety Name	Test Line
Battleford	SW02568
Beacon	SW02536
Cavalier	CN 509
Dakini	PR3413
DMS-100	EXP 94-06
Eagle	SW02530
Figaro	SWLM9701
Golden Boy	SWLM02579
Hybrid 007	SCH 007
HyC 606	SCH 006
IMC 137	CID 44223
IMC 140	JA 594
OAC Dynamite	BC 94-123
ProMark 220	SWLM02578

Table 1. Seed yield of canola (*Brassica napus*) varieties, in pounds per acre, at Roseau, Crookston, Fosston and Kennedy, Minnesota, in 1997. [1]

Note Key:

[1] Pounds per acre is measured at 10% moisture.

[2] Variety Information includes Source Codes (D#=developer; M#=marketer) keyed to listings in Table 6, and these supplemental codes:

'98 Available in 1998
 '99 Available in 1999
 Exp Experimental Line
 HE High Erucic Acid Rapeseed
 Hy Hybrid Canola
 L Laurate Canola
 PS Pursuit Smart
 SP Specialty Oil
 Syn Synthetic

[3] Yield for 1997. Average column is for Roseau and Crookston only.

[4] Average yield for Roseau and Crookston only, 1996-97.

[5] Long term averages for Global (1991-93,95-97) and Hyola 401(1991-97) are 1,575 and 1,985 lbs/A respectively.

Locations: R=Roseau; C=Crookston; F=Fosston; K=Kennedy; AVG=average.

Variety	Variety Information [2]	R [3]	C [3]	R-C AVG [3]	F [3]	K [3]	1996-97 R-C AVG [4]
44A89	D15/M18/'98	1591	981	1286	1564	1305	—
45A71	D15/M18/'98/PS	2010	1143	1577	1746	1364	1593
46A65	D15/M18/'98	1811	1325	1568	1704	1466	1878
97060	D3/M5/L	1481	953	1217	1347	1334	—
97080	D3/M5/L	1611	1227	1419	1699	1391	—
97170	D3/M5/L	1502	1186	1344	1637	1441	—
Battleford	D16/M3	1819	—	—	—	—	—
Beacon	D16/M8	1906	—	—	—	—	—
BNS 94043	D8/M4/'99	1750	1405	1578	1643	1443	—
Brigade	D16/M12	1789	—	—	—	—	—
Castor	D18/M15/HE	1492	—	—	—	—	—
Cavalier	D10/M10	1637	1001	1319	—	—	1452
CL EX57	D5/M7/Exp	1878	—	—	—	—	—
CL2020	D5/M7/Hy	1578	1171	1375	1544	—	—
CL2070	D5/M7/Hy	1725	1506	1615	1730	—	—
Coronet	D16/M3	1570	—	—	—	—	—
Crusher	D16/M12	1694	1528	1611	1717	1586	1700
D1-9124	D6/M1	2017	1346	1681	1751	—	—
Dakini	D6/M1	1785	1245	1515	1756	—	—
Defender	D16/M12	1902	—	—	—	—	—
DMS-100	D12/M16/'98	1502	1187	1345	—	—	—
Eagle	D16/M11	1659	—	—	—	—	—
Ebony	D11/M14	1776	1310	1543	1698	1625	1609
Figaro	D16/M3/Hy	1825	—	—	—	—	—
Garnet	D17/M6/HE	1535	1141	1338	1409	1289	—

Table 1 continued. Seed yield of canola (*Brassica napus*) varieties, in pounds per acre, at Roseau, Crookston, Fosston and Kennedy, Minnesota, in 1997.

Variety	Variety Information [2]	R [3]	C [3]	R-C AVG [3]	F [3]	K [3]	1996-97 R-C AVG [4]
Global [5]	D16/M17	1683	1519	1601	1715	1577	1683
GOH 18	D8/M4/'98	1901	1452	1677	1634	1612	—
Golden Boy	D16/M20/Syn	2002	—	—	—	—	—
HN-9466	D9/M9/Hy/'98	1652	1274	1463	1389	1528	—
Hudson	D5/M7	1596	1218	1407	1660	—	1631
Hybrid 007	D4/M10/Hy	1844	1542	1693	—	—	1908
HyC 606	D4/M10/Hy	1604	1587	1595	—	—	1806
Hyola 308	D19/M12/Hy	1644	1098	1371	1686	1602	—
Hyola 330	D19/M12/Hy	1848	1313	1580	1597	1634	—
Hyola 401 [5]	D19/M12/Hy	1861	1239	1550	1635	1825	1846
Hyola 420	D19/M12/Hy	1832	1471	1652	1716	1592	1858
IMC 03	D10/M10/SP	1798	1126	1462	—	—	1703
IMC 130	D10/M10/SP	1698	1114	1406	—	—	1486
IMC 137	D10/M10/SP	1133	1014	1074	—	—	—
IMC 140	D10/M10/SP	1739	1083	1411	—	—	—
Impulse	D16/M12	1790	1431	1610	1676	1334	1639
KC-701	D13/M13/Hy/Exp/'98	2000	—	—	—	—	—
KC-X702	D13/M13/Hy/Exp	1713	—	—	—	—	—
KC-X703	D13/M13/Hy/Exp	1622	—	—	—	—	—
LG 3260	D11/M14	1659	1263	1461	1446	1588	1568
LG 3310	D11/M14	1723	1444	1584	1704	1399	1707
OAC Dynamite	D14/M12/'98	1797	1311	1554	1565	1310	—
OAC Summit	D14/M2	1862	—	—	—	—	—
Optimum 500	D19/M15	1795	1325	1560	1902	1933	—
Oscar	D5/M7	1520	1451	1485	1462	—	1605
ProMark 220	D16/M19/Syn	1803	—	—	—	—	—
Proseed Exp 2	D7/M19/Exp	1973	1723	1848	—	—	—
Proseed Exp 3	D7/M19/Exp	1736	1428	1582	—	—	—
Proseed Exp 4	D7/M19/Exp	1719	1353	1536	—	—	—
Quantum	D1/M15	1931	1288	1610	1744	1621	1853
Sponsor	D16/M2	1907	1501	1704	1726	1463	1895
Sterling	D17/M6/HE	1145	1119	1132	1629	1244	—
SW02582	D16/M3	1672	—	—	—	—	—
SW H 02606	D16/M3/Hy	1890	—	—	—	—	—
SWLM9702	D16/M3/Hy	1855	—	—	—	—	—
Topscore	D7/M19	1715	1448	1582	1539	1189	1767
UI 47.2.1	D17/M6/HE	1590	929	1259	1210	1309	—
X 710	D11/M14	1816	1481	1648	1606	1642	—
X 801	D11/M14	1713	1503	1608	1754	1542	—
Mean		1728	1298	1501	1627	1489	—
LSD 5%		265	233	169	238	413	—

Table 2. Bloom and maturity characteristics, expressed as days after planting (DAP) of canola varieties at Roseau, Crookston, Fosston and Kennedy, Minnesota (1997).

Locations: R=Roseau; C=Crookston; F=Fosston; K=Kennedy.

Variety	10% Bloom			90% Bloom			Physiological Maturity			
	R	C	F	R	C	F	R	C	F	K
44A89	43	41	42	64	61	61	88	82	83	91
45A71	42	42	44	65	63	64	91	84	90	101
46A65	42	43	44	64	64	63	91	88	92	98
97060	47	44	51	75	65	67	95	87	99	104
97080	47	45	50	69	68	67	95	90	97	112
97170	47	46	50	68	68	67	97	90	98	110
Battleford	42	—	—	64	—	—	91	—	—	—
Beacon	42	—	—	65	—	—	90	—	—	—
BNS 94043	43	43	46	65	65	65	90	88	98	100
Brigade	42	—	—	66	—	—	90	—	—	—
Castor	43	—	—	61	—	—	90	—	—	—
Cavalier	42	41	—	62	60	—	90	83	—	—
CL EX57	44	—	—	65	—	—	92	—	—	—
CL2020	40	40	40	57	58	59	89	82	88	—
CL2070	44	44	46	68	66	66	92	89	98	—
Coronet	43	—	—	66	—	—	90	—	—	—
Crusher	45	46	49	68	67	67	90	88	99	105
D1-9124	41	41	42	60	61	61	91	89	90	—
Dakini	46	47	49	66	67	67	92	90	99	—
Defender	42	—	—	62	—	—	90	—	—	—
DMS-100	45	43	—	66	65	—	93	89	—	—
Eagle	42	—	—	65	—	—	90	—	—	—
Ebony	45	44	48	65	64	66	92	89	98	108
SWLM 9701	41	—	—	66	—	—	89	—	—	—
Garnet	43	42	44	64	63	64	91	83	95	97
Global	46	46	51	69	68	67	95	89	99	108
GOH 18	44	43	45	66	67	66	90	89	98	103
Golden Boy	44	—	—	65	—	—	90	—	—	—
HN-9466	44	41	46	70	67	66	90	89	100	104
Hudson	40	41	41	65	62	62	87	81	84	—
Hybrid 007	43	43	—	65	51	—	91	86	—	—
HyC 606	42	42	—	66	65	—	90	88	—	—
Hyola 308	36	40	40	55	60	57	78	79	77	89
Hyola 330	36	40	39	54	57	57	89	80	81	93
Hyola 401	38	39	39	56	57	58	87	80	83	102
Hyola 420	42	41	41	60	59	60	91	85	87	93
IMC 03	44	44	—	63	60	—	91	85	—	—
IMC 130	45	44	—	63	63	—	91	88	—	—
IMC 137	43	42	—	63	60	—	91	85	—	—
IMC 140	44	42	—	64	63	—	91	87	—	—
Impulse	45	47	50	68	68	67	90	88	99	97
KC-701	43	—	—	67	—	—	91	—	—	—
KC-X702	47	—	—	72	—	—	103	—	—	—
KC-X703	46	—	—	71	—	—	105	—	—	—
LG 3260	41	41	41	63	61	62	88	83	82	95

Table 2 continued. Bloom and maturity characteristics, expressed as days after planting (DAP) of canola varieties at Roseau, Crookston, Fosston and Kennedy, Minnesota (1997).

Variety	10% Bloom			90% Bloom			Physiological Maturity			
	R	C	F	R	C	F	R	C	F	K
LG 3310	43	43	46	65	57	65	90	88	96	100
OAC Dynamite	43	42	44	65	63	64	91	84	89	91
OAC Summit	44	—	—	65	—	—	93	—	—	—
Optimum 500	43	43	45	65	66	64	90	89	95	107
Oscar	45	43	49	70	64	67	95	87	98	—
ProMark 220	44	—	—	67	—	—	90	—	—	—
Proseed Exp 2	46	47	—	70	67	—	98	89	—	—
Proseed Exp 3	45	43	—	66	68	—	92	89	—	—
Proseed Exp 4	44	44	—	66	67	—	90	88	—	—
Quantum	43	42	44	66	64	64	90	86	92	104
Sponsor	45	46	49	68	67	66	90	87	97	98
Sterling	43	43	45	64	65	65	91	88	96	96
SW02582	43	—	—	67	—	—	93	—	—	—
SW H 02606	44	—	—	68	—	—	90	—	—	—
SWLM9702	43	—	—	66	—	—	91	—	—	—
Topscore	44	43	46	66	65	65	90	87	97	103
UI 47.2.1	41	42	44	64	63	64	89	83	91	91
X 710	42	42	43	64	63	64	91	88	93	105
X 801	44	43	46	65	64	65	90	88	96	105
Mean	43	43	45	65	63	64	91	86	93	100
LSD (0.05)	1	1	2	2	6	1	4	3	4	9

Table 3. Disease, canopy closure, and test weight information for canola varieties at Roseau, Crookston, Fosston and Kennedy, Minnesota (1997).

Note Key:

[1] Blackleg resistance rating provided by the seed companies. R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible, na=Ratings not available.

[2] White mold: *Sclerotinia* infection ratings based on a visual estimate of percent incidence.

[3] Canopy: Days from planting to canopy closure.

[4] Test weight expressed in pounds per bushel, based on 5% moisture.

Locations: R=Roseau; C=Crookston; F=Fosston; K=Kennedy.

Variety	Blackleg [1]	White Mold [2]			Canopy [3]		Test weight [4]			
		R	C	F	R	C	R	C	F	K
44A89	MR	3	0	9	24	31	51.3	51.8	51.4	52.3
45A71	MR	1	1	5	24	32	50.9	51.3	51.3	51.8
46A65	MR	2	1	6	22	30	51.1	51.7	51.4	52.1
97060	MS	0	1	0	25	31	51.8	53.0	51.9	53.0
97080	MR	0	0	0	25	30	51.3	53.2	52.3	52.2
97170	MS	0	0	0	24	32	50.8	52.3	51.8	51.8
Battleford	MR	2	—	—	24	—	51.2	—	—	—
Beacon	MR	1	—	—	25	—	50.3	—	—	—
BNS 94043	MR	0	0	0	24	28	50.3	51.3	50.1	51.4
Brigade	MR	0	—	—	24	—	51.1	—	—	—
Castor	R	3	—	—	24	—	51.2	—	—	—
Cavalier	MR	1	1	—	24	30	51.4	52.4	—	—
CL EX57	na	1	—	—	24	—	50.2	—	—	—
CL2020	MS	2	0	4	24	28	51.1	52.2	51.2	—
CL2070	MR	0	0	1	24	29	49.8	50.7	49.6	—
Coronet	MR	0	—	—	25	—	51.4	—	—	—
Crusher	MS	1	0	0	25	31	51.5	51.4	51.8	52.3
D1-9124	MS	1	0	3	25	30	50.6	51.1	51.1	—
Dakini	MS	0	1	0	25	32	50.8	51.9	50.9	—
Defender	MR	1	—	—	24	—	51.5	—	—	—
DMS-100	MS	1	0	—	25	30	51.3	51.1	—	—
Eagle	MR	1	—	—	24	—	51.5	—	—	—
Ebony	MR	0	0	0	24	30	50.1	51.3	50.6	50.8
SWLM 9701	MR	1	—	—	24	—	49.9	—	—	—
Garnet	MR	2	0	3	25	30	50.5	51.7	50.8	52.0
Global	na	1	0	0	24	30	50.4	51.7	51.1	51.6
GOH 18	MS	0	0	0	24	29	50.5	51.3	50.7	51.5
Golden Boy	MR	1	—	—	23	—	50.7	—	—	—
HN-9466	na	0	1	1	24	31	50.8	51.4	50.9	51.5
Hudson	MS	1	0	6	24	30	50.6	51.9	51.3	—
Hybrid 007	MR	1	2	—	24	31	51.1	52.1	—	—
HyC 606	MR	0	1	—	24	29	50.7	51.8	—	—
Hyola 308	MS	5	0	11	24	30	51.7	52.8	51.6	52.5
Hyola 330	MS	4	1	12	22	28	50.9	52.2	51.7	52.0
Hyola 401	S	2	0	9	23	28	51.2	52.2	51.9	51.7

Table 3 continued. Disease, canopy closure, and test weight information for canola varieties at Roseau, Crookston, Fosston and Kennedy, Minnesota (1997).

Variety	Blackleg [1]	White Mold [2]			Canopy [3]		Test weight [4]			
		R	C	F	R	C	R	C	F	K
Hyola 420	MR	0	0	6	22	29	50.5	51.5	51.2	51.8
IMC 03	MR	1	1	—	24	31	50.9	51.6	—	—
IMC 130	MS	1	1	—	25	31	51.0	51.7	—	—
IMC 137	MS	0	1	—	25	31	50.3	51.4	—	—
IMC 140	MS	1	1	—	23	29	50.3	51.2	—	—
Impulse	R	0	0	0	24	30	51.3	51.8	51.6	52.6
KC-701	MR	0	—	—	24	—	49.8	—	—	—
KC-X702	na	0	—	—	25	—	50.5	—	—	—
KC-X703	na	0	—	—	24	—	51.2	—	—	—
LG 3260	S	6	1	9	24	30	51.4	51.7	51.9	52.5
LG 3310	R	1	1	1	24	30	50.5	51.3	50.6	51.7
OAC Dynamite	R	0	0	3	24	31	50.6	51.1	51.0	52.6
OAC Summit	MS	0	—	—	24	—	51.2	—	—	—
Optimum 500	MR	0	0	2	24	31	50.1	50.8	50.7	51.2
Oscar	MR	0	0	1	25	30	52.0	52.6	52.5	—
ProMark 220	MR	0	—	—	24	—	50.8	—	—	—
Proseed Exp 2	MR	0	2	—	24	32	51.3	52.1	—	—
Proseed Exp 3	MR	0	1	—	24	31	50.6	51.8	—	—
Proseed Exp 4	MR	1	1	—	24	30	50.5	51.0	—	—
Quantum	R	1	0	2	24	32	52.0	52.5	52.3	52.6
Sponsor	na	0	0	3	24	31	51.8	52.2	52.2	52.9
Sterling	MR	8	0	5	26	31	50.0	50.3	50.6	50.6
SW02582	MS	0	—	—	23	—	51.3	—	—	—
SW H 02606	na	0	—	—	24	—	51.0	—	—	—
SWLM9702	na	1	—	—	24	—	50.2	—	—	—
Topscore	MR	1	2	3	24	31	50.8	51.9	51.1	52.3
UI 47.2.1	MR	3	0	5	25	31	51.2	52.2	51.4	53.2
X 710	MR	1	0	3	24	30	50.5	51.3	51.1	51.6
X 801	R	1	1	2	24	30	49.6	50.7	49.8	49.9
Mean		1	1	3	24	30	50.9	51.7	51.2	51.9
LSD 5%		2	2	4	1	2	0.6	0.4	0.5	0.8

Table 4. Canola seed oil and protein content, expressed as a percent of seed weight at 10 percent moisture (1997).

Locations: R=Roseau; C=Crookston; F=Fosston; K=Kennedy.

Variety	Oil Content				Protein Content			
	R	C	F	K	R	C	F	K
44A89	41.4	40.3	39.1	37.9	24.3	23.8	24.1	24.6
45A71	38.7	40.7	38.7	37.6	23.3	20.9	22.7	25.2
46A65	37.5	40.1	38.5	36.7	23.8	20.7	22.3	23.9
97060	34.6	32.7	35.5	32.1	25.3	23.4	23.2	25.6
97080	36.7	38.4	38.4	36.0	24.2	21.4	22.9	24.3
97170	36.3	37.9	35.6	36.4	23.9	21.5	24.2	24.2
Battleford	39.7	—	—	—	23.7	—	—	—
Beacon	38.8	—	—	—	25.0	—	—	—
BNS 94043	37.8	39.4	40.0	37.5	24.1	22.1	23.1	24.2
Brigade	39.0	—	—	—	24.6	—	—	—
Castor	39.7	—	—	—	23.4	—	—	—
Cavalier	41.6	41.7	—	—	25.1	23.9	—	—
CL EX57	39.7	—	—	—	23.9	—	—	—
CL2020	38.3	38.6	38.0	—	24.2	23.8	23.7	—
CL2070	37.3	39.9	39.1	—	25.4	22.7	23.9	—
Coronet	38.3	—	—	—	25.4	—	—	—
Crusher	40.0	40.9	41.0	40.5	24.3	21.7	23.9	24.8
D1-9124	40.1	40.7	41.2	—	23.5	22.2	21.7	—
Dakini	40.0	41.2	41.5	—	22.5	21.8	20.9	—
Defender	39.0	—	—	—	24.2	—	—	—
DMS-100	37.4	39.6	—	—	23.9	19.9	—	—
Eagle	38.2	—	—	—	26.2	—	—	—
Ebony	39.8	42.4	40.4	41.5	24.3	20.6	22.8	24.1
SWLM 9701	39.9	—	—	—	23.9	—	—	—
Garnet	37.9	39.9	38.9	38.5	24.9	23.5	23.7	25.2
Global	38.4	40.7	38.7	38.5	24.5	20.4	22.7	23.8
GOH 18	38.1	40.1	38.8	36.9	23.4	21.0	23.8	24.6
Golden Boy	39.1	—	—	—	23.7	—	—	—
HN-9466	38.6	40.7	39.5	39.4	24.6	22.0	23.6	23.4
Hudson	38.9	39.1	38.8	—	25.4	23.8	24.5	—
Hybrid 007	36.7	38.6	—	—	22.8	20.8	—	—
HyC 606	34.4	36.5	—	—	23.2	20.7	—	—
Hyola 308	36.3	37.9	37.6	35.5	24.5	22.6	22.2	22.1
Hyola 330	40.1	38.8	39.0	36.4	23.7	21.8	22.9	23.9
Hyola 401	37.3	39.6	38.3	38.8	24.1	21.6	23.7	23.9
Hyola 420	37.2	40.2	39.5	35.9	23.3	20.3	21.8	23.4
IMC 03	38.2	39.6	—	—	23.6	22.2	—	—
IMC 130	37.6	37.4	—	—	24.0	23.6	—	—
IMC 137	37.9	39.0	—	—	24.2	23.1	—	—
IMC 140	39.2	39.9	—	—	23.8	23.1	—	—
Impulse	37.4	39.6	39.4	37.5	24.0	20.4	23.3	24.2
KC-701	39.2	—	—	—	24.8	—	—	—
KC-X702	38.8	—	—	—	26.3	—	—	—
KC-X703	39.7	—	—	—	25.2	—	—	—
LG 3260	40.4	42.5	40.7	39.5	25.0	21.4	23.0	24.6

Table 4 continued. Canola seed oil and protein content, expressed as a percent of seed weight at 10 percent moisture (1997).

Locations: R=Roseau; C=Crookston; F=Fosston; K=Kennedy.

Variety	Oil Content				Protein Content			
	R	C	F	K	R	C	F	K
LG 3310	39.3	41.9	41.2	38.5	25.6	21.7	23.6	25.3
OAC Dynamite	39.9	39.5	41.0	37.1	24.2	21.4	23.1	25.3
OAC Summit	38.4	—	—	—	24.9	—	—	—
Optimum 500	40.1	41.3	41.1	40.3	23.4	20.6	21.8	24.9
Oscar	35.7	37.0	34.7	—	25.0	22.7	24.1	—
ProMark 220	39.1	—	—	—	24.4	—	—	—
Proseed Exp 2	39.0	39.6	—	—	24.6	21.2	—	—
Proseed Exp 3	37.5	40.0	—	—	24.6	21.1	—	—
Proseed Exp 4	36.8	39.7	—	—	24.7	21.8	—	—
Quantum	35.4	40.1	37.6	37.8	25.1	21.4	24.2	26.4
Sponsor	35.4	39.8	37.4	37.4	25.6	22.6	25.8	26.4
Sterling	37.8	42.1	39.5	37.2	22.9	19.4	22.1	24.0
SW02582	38.0	—	—	—	26.3	—	—	—
SW H 02606	35.7	—	—	—	23.9	—	—	—
SWLM9702	39.4	—	—	—	23.4	—	—	—
Topscore	37.1	39.3	38.7	38.4	23.8	21.9	23.7	25.1
UI 47.2.1	40.9	41.5	37.5	34.8	23.2	22.2	23.8	24.2
X 710	39.1	40.1	39.5	39.3	23.7	22.7	23.4	26.0
X 801	38.7	41.1	39.7	39.5	23.1	20.5	22.1	23.6
Mean	38.4	39.7	39.0	37.7	24.3	21.8	23.2	24.5
LSD 5%	1.7	1.9	1.7	2.2	1.2	1.5	1.3	1.6

Table 5. Canola plant height and lodging, based on notes taken shortly before swathing (1997).

Key Notes:

[1] Height expressed in inches.

[2] Lodging score: 1=erect; 9=flat.

Locations: R=Roseau; C=Crookston; F=Fosston; K=Kennedy.

Variety	Height				Lodging			
	R	C	F	K	R	C	F	K
44A89	47	38	49	34	1.8	5.5	1.3	3.0
45A71	52	46	51	42	3.5	4.5	3.3	3.3
46A65	55	49	53	39	3.8	4.3	1.5	2.5
97060	49	46	49	43	2.3	3.0	2.5	2.3
97080	51	54	54	45	3.8	4.0	3.0	2.0
97170	51	49	54	46	2.0	4.0	2.8	2.8
Battleford	51	—	—	—	3.5	—	—	—
Beacon	51	—	—	—	2.8	—	—	—
BNS 94043	52	48	54	42	2.0	3.8	2.3	1.8
Brigade	50	—	—	—	1.8	—	—	—
Castor	46	—	—	—	2.5	—	—	—
Cavalier	48	42	—	—	3.3	3.5	—	—
CL EX57	53	—	—	—	4.0	—	—	—
CL2020	42	38	41	—	3.8	4.0	2.3	—
CL2070	56	48	53	—	2.0	2.5	1.5	—
Coronet	54	—	—	—	3.0	—	—	—
Crusher	52	50	55	44	1.5	2.0	1.0	1.0
D1-9124	50	44	47	—	3.5	5.0	1.8	—
Dakini	51	52	56	—	2.8	5.0	2.0	—
Defender	49	—	—	—	3.3	—	—	—
DMS-100	52	47	—	—	2.8	3.5	—	—
Eagle	49	—	—	—	3.5	—	—	—
Ebony	51	47	54	46	1.8	2.3	1.5	1.5
SWLM 9701	50	—	—	—	1.5	—	—	—
Garnet	47	44	47	38	3.3	4.3	2.5	3.0
Global	53	54	59	48	2.8	2.3	1.3	1.8
GOH 18	53	53	56	48	2.3	2.3	2.3	2.3
Golden Boy	54	—	—	—	2.0	—	—	—
HN-9466	52	50	54	46	1.5	2.3	1.3	2.0
Hudson	46	42	45	—	2.3	3.5	1.5	—
Hybrid 007	53	49	—	—	2.3	3.0	—	—
HyC 606	55	56	—	—	2.0	2.5	—	—
Hyola 308	43	38	40	32	2.5	3.8	2.3	4.3
Hyola 330	42	40	40	36	2.5	3.8	1.8	3.0
Hyola 401	40	39	42	34	1.8	3.0	1.0	2.3
Hyola 420	51	42	45	37	3.3	3.8	2.3	2.3
IMC 03	53	42	—	—	5.5	5.3	—	—
IMC 130	50	46	—	—	2.3	4.8	—	—
IMC 137	47	41	—	—	6.8	4.5	—	—
IMC 140	52	43	—	—	4.3	5.3	—	—

Table 5 continued. Canola plant height and lodging, based on notes taken shortly before swathing (1997).

Variety	Height				Lodging			
	R	C	F	K	R	C	F	K
Impulse	52	50	54	46	2.3	2.5	1.3	2.0
KC-701	55	—	—	—	2.0	—	—	—
KC-X702	61	—	—	—	1.3	—	—	—
KC-X703	59	—	—	—	1.5	—	—	—
LG 3260	51	43	46	37	4.3	4.0	1.3	2.8
LG 3310	50	50	54	44	2.5	3.0	1.8	2.0
OAC Dynamite	49	43	48	37	2.0	2.8	1.3	2.5
OAC Summit	56	—	—	—	3.8	—	—	—
Optimum 500	50	49	52	42	2.8	3.3	2.0	3.0
Oscar	48	45	49	—	2.3	2.8	1.5	—
ProMark 220	56	—	—	—	1.5	—	—	—
Proseed Exp 2	59	59	—	—	2.3	2.3	—	—
Proseed Exp 3	55	52	—	—	2.5	3.3	—	—
Proseed Exp 4	51	50	—	—	2.3	2.8	—	—
Quantum	54	47	54	46	2.0	3.3	1.5	2.3
Sponsor	55	54	58	45	1.8	1.5	1.5	1.3
Sterling	50	43	49	37	5.3	4.8	2.3	4.3
SW02582	55	—	—	—	3.0	—	—	—
SW H 02606	52	—	—	—	1.5	—	—	—
SWLM9702	50	—	—	—	1.5	—	—	—
Topscore	53	50	53	43	2.3	3.3	2.0	2.3
UI 47.2.1	48	43	48	38	4.3	5.3	2.5	3.8
X 710	49	47	51	40	2.5	3.8	1.8	2.5
X 801	52	48	55	41	2.5	3.0	1.5	2.3
Mean	51	47	50	41	2.7	3.5	1.8	2.5
LSD 5%	5	4	3	4	1.2	1.0	1.0	1.0

Table 6. Canola seed sources for 1998 planting. Categorized under "developer" or "marketer" and listed alphabetically in each group.

Note Key:

[1] Coding to left of each developer and marketer is keyed to Source Codes column in Table 1.

Developers [1]:

D1 Alberta Wheat Pool, Alberta, Canada
 D2 Bonis & Company Ltd., Lindsay, Ontario, Canada
 D3 Calgene, Leesburg, Georgia
 D4 Cargill Seed, Fort Collins, Colorado
 D5 Croplan Genetics PO Box 1291, Minot, ND 58702

D6 Danisco Seed, Maribo Seeds, Copenhagen, Denmark
 D7 DLF Trifolium, Germany
 D8 DSV, Germany
 D9 Hungnong Breeding, Seoul, Korea
 D10 InterMountain Canola - Cargill Foods, Spokane, Wash.

D11 Limagrain Genetics, Saskatoon, Saskatchewan, Canada
 D12 Mycogen Seeds, St. Paul, MN
 D13 No information available
 D14 Ontario Agricultural College, Guelph, Ontario, Canada
 D15 Pioneer Hi-Bred Int. 720 S. 48th St., Grand Forks, ND 58201

D16 Svalof Weibull Seed, Lindsay, Ontario, Canada
 D17 University of Idaho, Moscow, Idaho
 D18 University of Manitoba
 D19 Zeneca Seeds, Winnipeg, Manitoba, Canada

Marketers [1]:

M1 Agriprogress Inc., PO Box 2499, Morden, MB R6M 1C2
 M2 Agri-Tel Grain Ltd., Box 808, Beausejour, MB CANADA R0E 0C0
 M3 Bonis & Company, Lindsay, Ontario, Canada
 M4 Brett-Young Seeds, Box 99, St. Norbert P.S., Winnipeg, MB CANADA R3V 1L5
 M5 Calgene, RR 2 Box 207, Park River, ND 58270

M6 Cargill Seeds, 2540 E. Drake Rd, Fort Collins, CO 80525
 M7 Croplan Genetics PO Box 1291, Minot, ND 58702
 M8 Farmers' Co-op Seeds Ltd., Rivers, MB
 M9 Hungnong Seed America, Inc. ,3065 Pachelo Pass Hwy, Gilroy, CA 95020
 M10 IMC-Cargill, 2300 N. Yellowstone Hwy, Idaho Falls, ID 83501

M11 IntegraSeed Ltd., Bozeman, Montana
 M12 Interstate Payco Seed, West Fargo, ND
 M13 Kaystar Seed, PO Box 947, Huron SD 57350
 M14 Limagrain Canada Seed, 4-411 Downy Rd., Saskatoon, SK CANADA S7N 4L8
 M15 Marketing not determined

Table 6 continued. Canola seed sources for 1998 planting. Categorized under "developer" or "marketer" and listed alphabetically in each group.

M16	Mycogen Seeds, St. Paul, MN
M17	Northern Sales, 135 Lombard Ave., Winnipeg, MB CANADA R3B 0T4
M18	Pioneer Hi-bred Int. 720 S. 48th St., Grand Forks, ND 58201
M19	Proseed, 110 E. 7th, Box 69, Harvey, ND 58341
M20	Seeds2000, Breckenridge, MN

M21	SeedTec International, P.O. Box 40, Bozeman, MT 59771-0040
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Canola Planting Rate and Date

Rate is based on normal seedbeds and on normal size, good quality seed. Rate used can vary greatly depending on seed cost, desired stand, expected mortality, emerging ability, seed weight, seed germination, seedbed condition, depth of planting and planting equipment.

Crop Use	Bushel Weight (pounds)	Seeds/pound (number)	Rate/acre (pounds)	Rate (seeds)	Planting Date
<i>B. napus</i>	50	75,000-150,000	4-8	12/square foot	May
<i>B. rapa</i>	50	190,000	3-5	12/square foot	May
