

## Canola

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Canola (*Brassica napus* and *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. Minnesota acreage increased from about 8,000 acres in 1990 to more than 200,000 acres in 1998. Acreage in recent years has declined to less than 60,000 acres.

The oil in canola seed contains less than 2% erucic acid, compared with 20% to 40% found in oilseed rape. The canola meal remaining after oil extraction contains less than 0.1% glucosinolates (sulfur-containing compounds) compared with about 1% in rapeseed meal. Consequently, canola is also referred to as "double low" or "00" rapeseed. High levels of erucic acid in oilseed rape are hazardous to human health, and high levels of glucosinolates are detrimental in livestock feeds.

Canola (*Brassica napus*) varieties are either spring types or fall-planted winter types. Historically, most all canola grown in Minnesota has been spring types. Fall-planted winter-type canola varieties were evaluated

by University of Minnesota researchers more than 15 years ago with limited success due to winter/spring mortality. Since 2002 research on fall-planted winter-type canola varieties has been conducted in Minnesota, again with limited success. Advances in variety development and agronomic production practices provide encouragement that fall-planted winter-type canola varieties can be grown successfully in Minnesota.

### Information Sources

The Minnesota Canola Council is a good source for information on canola. The council can be contacted by mail, 4630 Churchill St., Suite 1, St. Paul, MN 55126. Phone 651-638-9883, fax 651-638-0756; email, mn-canola@comcast.net.

A complete and revised *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. The manual contains detailed information on canola production practices.

Note that the *Canola Growers Manual* is also available online at www.canola-council.org. Please keep in mind when 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.

### 2011 Results

The 2011 Canola Production Centre (CPC) was located just north of the Northern Resources Cooperative building on the west side of Roseau. While early-season moisture stress was observed on a small portion of the research site, most studies experienced good growing conditions and produced average to above-average yields.

When compared to 2010, the 2011 growing season got off to a late start. While warmer-than-average spring temperatures in 2010 allowed most growers in the area to begin planting canola in late April and finish planting canola by May 10, most canola was planted from early May through mid May in 2011. The 2011 CPC was planted on May 18 and 19. Seedbed conditions were near ideal at planting, and timely rainfalls 4 days and 11 days after planting resulted in excellent stand establishment.

Slight moisture stress was observed shortly after herbicides were sprayed on June 16, as rainfall events on June 18, June 21-22, and June 26-27 deposited 0.66, 1.29, and 0.81 inches of rainfall, respectively. Rainfall conditions were not overly wet throughout the rest of the growing season, as rainfall varied from 75% to 105% of the 30-year average for Roseau from July 1 through August 15.

Temperatures throughout most of the growing season were near ideal for canola growth, with the average temperature from May through August being 0.6°F warmer than the 30-year average. However, high temperatures ranging from 85°F to 93°F from July 15 through July 20 may have led to high-temperature stress during the flowering period.

### Test Plot Research

Rob Proulx and Paul Porter supervised test plot establishment and management.



Location  
of 2011  
canola trials.

**Small-plot variety and systems trial at Roseau, 2011.**

Brand	Hybrid	Herbicide System <sup>1</sup>	Relative Yield <sup>2</sup>	Relative Oil <sup>3</sup>	Test Wt. (lb/bu) <sup>4</sup>	Moisture (%)	Early-Season Vigor <sup>5</sup>	% Flowering on July 7	Height (inches)	Lodging
Bayer CropScience	InVigor 5440	LL	117	97	49.7	5.9	6.0	30	49	4.5
Bayer CropScience	InVigor 8440	LL	114	97	47.8	6.2	6.0	30	47	3.0
Bayer CropScience	InVigor L130	LL	108	96	49.3	5.9	5.0	30	47	4.0
Bayer CropScience	InVigor L150	LL	98	100	49.6	5.9	5.0	25	48	2.5
BrettYoung	6040 RR	RR	100	98	48.1	6.2	5.0	25	46	3.5
BrettYoung	6070 RR	RR	107	99	49.1	6.0	3.5	30	45	4.0
BrettYoung	BY11-860	RR	103	98	48.2	6.3	5.0	23	48	3.5
Croplan Genetics	HyCLASS 947	RR	106	103	49.4	5.8	7.0	30	46	2.5
Croplan Genetics	HyCLASS 955	RR	96	101	49.3	5.7	5.0	30	44	2.5
Monsanto	DKL30-42	RR	91	98	49.8	5.8	4.5	30	42	2.5
Monsanto	DKL51-45	RR	92	102	49.3	5.8	4.5	30	42	2.5
Monsanto	DKL52-41	RR	85	99	48.7	5.9	3.5	33	44	2.5
Monsanto	DKL55-55	RR	92	103	49.3	6.0	4.0	33	45	2.5
Monsanto	DKL70-07	RR	105	102	49.6	5.8	6.0	30	44	3.0
Monsanto	DKL72-40	RR	100	102	49.5	6.1	6.0	30	45	2.0
Monsanto	DKL72-55	RR	103	100	49.6	6.0	4.0	33	44	3.5
Monsanto	G08027	RR	105	98	49.7	6.3	4.5	23	47	3.5
Monsanto	G08039	RR	108	102	49.2	5.8	5.5	28	44	2.5
Monsanto	G88605	RR	90	102	49.3	6.1	5.5	30	41	2.0
Monsanto	G89304	RR	98	101	49.1	5.9	4.5	30	42	2.5
Monsanto	G98689	RR	96	102	49.7	6.0	4.0	30	41	2.5
Monsanto	G98739	RR	96	102	49.1	5.9	4.5	30	42	2.5
Monsanto	G98767	RR	101	102	49.4	5.7	4.5	30	45	2.5
Monsanto	G99010	RR	89	103	49.5	5.5	5.0	30	43	2.0
Monsanto	G99396	RR	100	103	49.2	5.8	5.0	30	43	3.0
Monsanto	G99402	RR	95	104	49.3	6.1	5.0	33	48	2.5
Mycogen Seeds	2012 CL	CL	107	96	48.2	5.8	4.5	28	45	4.0
Mycogen Seeds	2014 CL	CL	117	100	48.8	5.2	2.5	23	45	5.0
Mycogen Seeds	CL166102H	CL	95	102	49.8	5.6	4.5	30	43	2.5
Mycogen Seeds	CL166103H	CL	90	98	49.2	5.7	6.5	30	44	3.5
Mycogen Seeds	1012 RR	RR	112	98	48.9	6.0	4.0	15	50	4.0
Mycogen Seeds	1014 RR	RR	103	97	49.3	6.4	5.5	15	45	2.0
Mycogen Seeds	G152936H	RR	111	99	48.9	6.3	4.5	30	47	4.5
Mycogen Seeds	G152951H	RR	96	96	49.3	6.2	6.0	15	52	3.0
NDSU	662c	RR	86	101	48.5	5.5	3.0	30	40	1.5
Pioneer	45H73	CL	98	97	48.1	5.9	4.0	33	45	3.0
Pioneer	46H75	CL	120	100	47.6	6.0	5.0	23	46	4.0
Pioneer	45H29	RR	89	99	49.1	6.2	4.5	30	49	3.0
Pioneer	45S52	RR	79	100	48.4	6.2	3.5	20	44	4.0
Pioneer	46S53	RR	100	103	48.2	5.5	6.0	20	49	3.5
LSD (0.10)			15	—	0.7	—	1.7	3.8	2.6	1.2
CV (%)			13.2	—	1.2	6.9	31.0	11.8	4.9	32.6

<sup>1</sup> RR = Roundup Ready, LL = Liberty Link, CL = Clearfield.

<sup>2</sup> Percent of the mean (mean yield = 2031 lb/acre) mean yield = 2,031 lb/acre).

<sup>3</sup> Percent of the mean (mean oil = 44.6%). Oil analysis for each hybrid was performed on a seed sample composited across all replications.

<sup>4</sup> Expressed on an 8.5% moisture basis.

<sup>5</sup> 1-3-5-7-9 scale, based on ground cover (1 = poorest & 9 = best).

<sup>6</sup> 1-3-5-7-9 scale, 1 = stem completely flat, 9 = erect stem.

Crops are listed by the name under which they are submitted for testing, which may be either variety or brand.