

Project Title: Statewide Canola Variety Trial - 2012

Project Leader: Brooke Bohannon

Project Personnel: Bob Stougaard

Objective: To evaluate canola varieties for agronomic performance in environments and cropping systems representative of northwestern Montana.

#### Results:

This year's canola variety trial consisted of one industrial rapeseed, 'Gem', and eleven canola varieties. The average day to 50% flowering was 76 days or June 28<sup>th</sup> (Table 1). There were significant differences in canola height with the average height being 52 inches. Heights ranged from 51 inches ('DKL 30-03' and 'HyClass 955') to 58 inches ('HyClass 988'). There were no significant differences in shatter, lodging or test weight. Canola yields averaged 2,214 lb/A and ranged from 1,394 lb/A for Gem to 2,575 lb/A for 'InVigor L150'. Seven of the 12 varieties yielded statistically equal to the highest yielding variety, 'InVigor L150'. Oil Yield averaged 1,046 lb/A, and ranged from 648 lb/A (Gem) to 1,223 lb/A ('DKL 70-07').

Fatty acid constituents are presented in Table 2. Table 3 summarizes yields by entry from 2009 – 2012. The four year canola yield average for NWARC is 2,171 lb/A. In 2012 the average canola yield was 2,214 lb/A.

#### Future Plans:

With continued support from both industry and research center personnel, the trial will continue in order to identify varieties suitable to northwestern Montana.

2012 Montana Statewide Canola Variety Trial at Northwestern Agricultural Research Center, Kalispell, MT.

Seeding Date:	4/11/2012	Soil Type:	Kalispell Sandy Loam	Harvest Date:	8/21/2012
Seeding Rate:	6.5 lb/A 6" rows	Soil Test:	57-6-55-42 pH 7.1		
Previous Crop:	Alfalfa	Fertilizer:	138-0-75-14 spring application		
Tillage:	Conventional	Herbicide:	NA		
Irrigation:	None	Insecticide:	NA		

Table 13. Performance of canola varieties tested at Kalispell, MT, 2012.

Variety	Flowering Days	Stand no/sqft	Height inches	Shatter %	Lodging %	Yield lb/A	TWT lb/bu	Oil Content %	Oil Yield lb/A	Protein Content %
DKL 30-03	75	7	51	1	0	2107	49	48.0	1011	23.2
DKL 30-42	76	3	46	0	0	1611	49	46.8	757	24.1
DKL 51-45	74	8	49	1	3	1896	47	47.1	893	23.3
DKL 55-55	75	8	53	0	1	<b>2462</b>	49	47.6	1172	23.4
DKL 70-07	77	7	53	0	0	<b>2552</b>	49	47.9	1223	23.2
HyCLASS 955	75	9	51	0	1	<b>2197</b>	49	47.6	1045	23.2
HyCLASS 947	76	6	54	0	5	<b>2359</b>	49	48.6	1146	22.6
HyCLASS 988	77	10	58	0	0	<b>2430</b>	49	46.7	1136	23.8
Gem <sup>1</sup>	76	9	45	1	5	1394	48	46.3	648	24.3
InVigor L130	75	6	53	0	0	<b>2528</b>	48	46.3	1172	24.2
InVigor L150	77	7	54	0	3	<b>2575</b>	49	47.1	1211	23.9
InVigor L120	75	5	53	0	1	<b>2457</b>	48	46.5	1142	24.5
Mean	76	7	52	0.3	1	2214	48	47.2	1046	23.6
CV	1.7	30.7	3.3	NA	NA	12.8	3.3	1.25	13.1	1.52
LSD	1.9	3.1	2.5	1.80	5.6	406.9	2.3	0.85	197.2	0.52
Pr>F	0.0145	0.0040	<.0001	0.6077	0.5431	<.0001	0.7308	<.0001	<.0001	<.0001

Yields and test weights adjusted to 8% moisture.

Oil yield and protein content presented on a dry matter basis.

**Underlined** indicates highest yielding variety. **Bold** indicates varieties yielding equal to highest yielding variety.

<sup>1</sup>industrial rapeseed

TWT: test weight, NA denotes data not available or not observed.

Table 2. Fatty acid constituents of oil from canola varieties tested in the Montana Statewide Canola Variety Trial at NWARC, Kalispell, MT - 2012

Variety	Palmitic Acid	Stearic Acid	Oleic Acid	Linoleic Acid	$\alpha$ -Linolenic Acid
	C16:0	C18:0	C18:1	C18:2	C18:3
DKL 30-03	3.8	2.3	68.6	18.8	8.7
DKL 30-42	4.1	2.3	64.8	18.5	8.9
DKL 51-45	4.1	2.3	66.0	19.9	9.5
DKL 55-55	4.0	2.4	68.8	18.5	8.2
DKL 70-07	3.9	2.4	66.6	18.6	8.9
HyCLASS 955	4.0	2.4	66.4	18.8	8.3
HyCLASS 947	3.6	2.3	69.7	18.7	8.3
HyCLASS 988	4.0	2.8	68.6	17.0	8.3
Gem <sup>1</sup>	2.6	1.8	6.8	11.3	8.0
InVigor L130	4.1	2.5	66.3	17.5	9.8
InVigor L150	3.7	2.3	64.5	19.0	9.5
InVigor L120	3.8	2.6	63.7	18.3	9.6
Mean	3.8	2.4	61.7	17.9	8.8
CV	4.02	3.50	3.31	3.16	6.20
LSD	0.22	0.12	2.94	0.81	0.79
Pr>F	<.0001	<.0001	<.0001	<.0001	<.0001

Fatty acid constituents reported on a dry matter basis of the whole seed.

<sup>1</sup> industrial rapeseed

Table 3. Seed Yield (lb/A) Summary by Entry 2009 - 2012, NWARC, Kalispell, MT

Entry	2009	2010	2011	2012
InVigor 5440 LL	<b>2434</b>	<b>1893</b>	<b>2856</b>	.
InVigor 5550 LL	2310	<b>1599</b>	.	.
InVigor 5630 LL	<b>2519</b>	.	.	.
InVigor 8440 LL	<b>2524</b>	1540	<b>2759</b>	.
InVigor L150	.	.	<b>2621</b>	<b>2575</b>
InVigor L130	.	.	<b>2606</b>	<b>2528</b>
InVigor L120	.	.	.	<b>2457</b>
OasisCL	.	638	1345	.
XCEED 8571 CL	.	846	.	.
HyCLASS 921 RR	.	1381	<b>2483</b>	.
HyCLASS 940 RR	<b>2576</b>	<b>1718</b>	<b>2817</b>	.
HyCLASS 924 RR	2310	.	.	.
HyCLASS 947 RR	.	<b>1841</b>	<b>2844</b>	<b>2359</b>
HyCLASS 988 RR	.	<b>1756</b>	2219	<b>2430</b>
HyCLASS 955 RR	.	.	<b>2579</b>	<b>2197</b>
DKL 30-42 RR	<b>2578</b>	<b>2011</b>	<b>2636</b>	1611
DKL 52-41 RR	<b>2539</b>	<b>1642</b>	2128	.
DKL 72-55 RR	<b>2518</b>	<b>1954</b>	2348	.
DKL 51-45 RR	.	<b>1940</b>	<b>2671</b>	1896
DKL 70-07 RR	.	.	<b>2964</b>	<b>2552</b>
DKL 55-55 RR	.	.	<b>2940</b>	<b>2462</b>
DKL 30-03 RR	.	.	.	2107
Hyola 357 Magnum RR	<b>2526</b>	<b>1996</b>	.	.
IS 3057 RR	2226	.	.	.
IS 7145 RR	<b>2442</b>	.	.	.
UISC00.1.3.5	2102	1354	.	.
UISC00.3.1.17	1835	<b>1756</b>	1902	.
UISC00.3.8.DE	.	1183	2016	.
03.IL.5.6.1	.	1388	.	.
Gem	.	.	.	1394
Oscar	2061	.	.	.
Exp Line 624	.	<b>2040</b>	.	.
Exp Line 642	.	<b>1786</b>	.	.
Mean	2367	1613	2490	2214
LSD	263.5	450.0	518.5	406.9