PROJECT TITLE: Commercial Canola Variety Performance Evaluations near Conrad, Havre and Moccasin, Montana. (Exps. 08-CN18-CN, 08-CN02-CN & 08-CN07-CN)

PROJECT LEADERS: Peggy F. Lamb, Agronomy Research Associate, NARC, Havre
Gregg R. Carlson, Associate Professor of Agronomy, NARC, Havre

PROJECT PERSONNEL: Eleri Morgan-Jones, Agronomy Research Assistant, NARC, Havre
Chengci Chen, Associate Professor of Cropping Systems, CARC, Moccasin
Karnes Neill, Cropping Systems Research Associate, CARC, Moccasin
Grant Jackson, Professor of Agronomy, WTARC, Conrad
John Miller, Soils Research Associate, WTARC, Conrad

OBJECTIVES:

To provide canola growers in Montana with a reliable, unbiased, up-to-date source of information that will permit valid dryland seed production comparisons among improved canola hybrids submitted for testing by participating commercial entities. Over time, this information should help canola producers in Montana select hybrids best suited to different regions of the state.

METHODS:

In 2008, three sponsors submitted eleven canola hybrids for testing near Conrad, Moccasin and Havre, MT (Table 4).

Central Agricultural Research Center, Moccasin: The trial was seeded no-till into spring wheat stubble on April 14, 2008 in replicated, 25-foot, 5-row plots with 11-inch row spacing utilizing a three-point-mounted custom made plot drill equipped with disk openers. Each plot was seeded using a rate of 6.0 lbs per acre at a 0.5" to 0.75" seeding depth. A custom fertilizer blend was applied following seeding. The blend was applied such that 65 lbs of N, 20 lbs of P_2O_5, 20 lbs K_2O, and 10 lbs of S on a per acre basis was achieved. A 10-oz per acre rate of quizalofop p-ethyl (Assure II, EPA Reg. No. 352-541, DuPont Crop Protection) herbicide was applied post-emergence to control volunteer cereals, downy brome and other grassy weeds. Visual plant stand evaluations were conducted during flowering observations (June 24 – 26, 2008) and rated on a scale of 1 to 10, with a "1" having very few plants and a "10" being an ideal stand. Plant canopy heights were measured at grain harvest. The trial was straight-cut harvested on August 12, 2008 using a 'Wintersteiger Elite' 5'-header, plot-combine. Plots were weighed in following harvest, cleaned using a standard blower cleaner, then weighed to record plot clean weight. Test weight and moisture content were then recorded using a 'Dickey-john GAC 2100' grain analyzer.

Northern Agricultural Research Center, Havre: The trial was seeded on April 16, under no-till, dryland, chemical fallow conditions in replicated, 22-foot, 4-row plots with 12-inch row spacing utilizing a three-point-mounted `Hege 1000' plot drill equipped with `John Deere Tru-Vee' disk openers. Each plot was seeded with 4.58 grams, equal to seeding 5 lbs per acre. Seeding depth was 1". Percent plant stand was determined by visually determining the amount of "open" space six-inches and larger between plants within all rows. No post-emergence herbicides were applied, and all plots were kept weed free utilizing hand labor. Flowering date was recorded as the date when 50 percent of the plants within a plot had at least one open floret. Pod shatter was determined by visual assessment prior to harvest, and was recorded as a total percent in each plot. Tilled 4-foot alleys were used for plot differentiation, reducing the harvested area to 4 rows wide by 18 feet long. The $72ft^2$ plots were direct harvested using a `Wintersteiger Elite 1541-21' plot combine. Seed samples were cleaned in the laboratory using a 'Clipper Office Tester and Cleaner' and then weighed following cleaning to determine seed yield. Seed test weight (pounds per bushel) and percent grain moisture content were obtained for each plot using a 'Dickey-john GAC 2100' grain analyzer. Recorded grain yields were adjusted to eight percent grain moisture content and are reported in pounds per acre. Grain oil percentages were determined using nuclear magnetic resonance (NMR) spectroscopy and are reported on a dry matter basis. Trial management information for the trial located at NARC is listed in Table 7.

Western Triangle Agricultural Research Center, Conrad: Canola varieties were seeded on April 17, into fallow with a six-row, 12-inch spaced, double disk, no-till plot drill. Nitrogen, potassium, and chloride were broadcast and phosphorus was placed with the seed at planting (total fertility 30-30-0-20). Plot size was 6 x 25 feet with four replicates and the seeding rate was seven lbs per acre. Plant heights were taken prior to harvest. Plots were direct cut with a Hege plot combine and the seed was dried prior to cleaning and weighting. Grain oil percentages were determined using nuclear

magnetic resonance (NMR) spectroscopy and are reported on a dry matter basis.

RESULTS and SUMMARY:

Contact information for canola seed sources submitted for this trial is summarized in Table 4.

Central Agricultural Research Center, Moccasin: The oilseed cropping environment in 2008 at Moccasin was categorized as poor with lower than normal precipitation. Total annual growing season precipitation (9/1/07 through 8/31/08) was 12.52 inches, 18.17 percent less than the average for all years since 1909 (Table 1). April 1 through July 31 precipitation was 8.15 inches or 95 percent of the 100-year average. The last spring frost was 16 days late with the first fall frost 10 days early, resulting in 105 frost-free days, 6 days shorter than the 100-year average. September 2007 through March 2008 precipitation was 68 percent of the long-term average. The April through June growing season saw an average daily temperature at 47.7 degrees F, 1.9 degrees below normal. July and August average temperatures were 2.5 percent higher than normal with the high for 2008 recorded on August 25 at 100 degrees F. April growing conditions were drier and cooler than normal resulting in delayed emergence of early seeded crops. Hail damage was received on June 10, followed by frost on June 11 and 2" of snow on June 12. The minimum winter temperature was -26 degrees F on January 29. Oilseed crop outlook was initially not very good with March and April conditions drier and cooler than normal. Early season drought and cool temperatures, coupled with hail, frost and snow during the second week in June resulted in the 2008 growing season being less than ideal.

Overall canola seed yield at CARC ranged from 434 to 734 lb/ac. Seed yield averaged 589 lb/ac with eight of the eleven entries yielding statistically equivalent to the highest yielding line 'IS 7145' from Monsanto (734 lb/ac). Canola test weight at CARC averaged 49.4 lb/bu. Percent grain oil is pending.

Company, ID, genetic herbicide resistance category, plant stand evaluation, percent flowering, plant height, grain yield, test weight, grain moisture and grain oil data are summarized for CARC in Table 5.

Northern Agricultural Research Center, Havre: The oilseed cropping environment in 2008 at Havre was categorized as good with higher than normal precipitation. Total annual growing season precipitation (9/1/07 through 8/31/08) was 12.21 inches, 2.69 percent more than the average for all years since 1916 (Table 2). April 1 through July 31 precipitation was 8.09 inches or 120 percent of the 93-year average. Heat units expressed as "Growing Degree Days" (GDD, base 50) from May through July were 1182.5, or 91 percent of the average for the last 58 years (1951-2008). The last spring frost was 2 days early with the first fall frost 20 days late, resulting in 151 frost-free days, 22 days longer than the 93-year average. September 2007 through March 2008 precipitation was 85 percent of the long-term average. The April through June growing season saw an average daily temperature at 51.1 degrees F, 2.1 degrees below normal. July and August average temperatures were 1.3 percent higher than normal with the high for 2008 recorded on August 8 at 100 degrees F. There were 27 days 90 degrees F or above, and 1 day with temperatures 100 degrees F or above. April growing conditions were drier and cooler than normal resulting in delayed emergence of early seeded crops. May and June were wetter and cooler than normal resulting in phenomenal oilseed production at NARC. Overall, the growing season was on average warmer than the 93-year average. The minimum winter temperature was -29 degrees F on January 29. Oilseed crop outlook was initially not very good with March and April conditions drier and cooler than normal. Rainfall during May, coupled with adequate fallow-stored soil moisture resulted in spring crop performance that was substantially better than anticipated.

Overall canola seed yield at NARC averaged 2410 lb/ac, 894 lb/ac above the 2007 yields. Two submissions by Bayer CropScience, LLP were statistically the highest yielding entries in the trial with 'InVigor 8440' at 2876 lb/ac and 'InVigor 5440' at 2777 lb/ac. Test weights of all entries averaged over 51.7 lb/bu. Grain oil ranged from 45.9% to 42.7% with InVigor 5440 producing the most oil per acre at 1248 lbs.

Company, ID, genetic herbicide resistance category, plant stand, flowering date, plant height, pod shatter, grain yield, test weight, grain moisture and grain oil data are summarized for NARC in Table 6.

Western Triangle Agricultural Research Center, Conrad: The oilseed cropping environment in 2008 at Conrad was categorized as good with higher than normal precipitation. Total annual growing season precipitation (9/1/07 through 8/31/08) was 11.89 inches, 5.1 percent more than the average for all years since 1986 (Table 3). April 1 through July 31 precipitation was 7.79 inches or 111 percent of the 23-year average. The last spring frost was 26 days late with the first fall frost 16 days late, resulting in 118 frost-free days, 10 days shorter than the 23-year average. September 2007

through March 2008 precipitation was 119 percent of the long-term average. The April through June growing season saw an average daily temperature at 48.6 degrees F, 3.3 degrees below normal. July and August average temperatures were normal with the high for 2008 recorded on July 1 and August 19 at 95 degrees F. May was wetter and cooler than normal resulting in descent oilseed production at WTARC. Overall, the growing season was on average cooler than the 23-year average. The minimum winter temperature was -25 degrees F on January 29. Oilseed crop outlook was initially not very good with March and April conditions drier and cooler than normal. Rainfall during May, coupled with adequate fallow-stored soil moisture resulted in spring crop performance that was better than anticipated.

Due to inadvertent chemical injury, only seven of the eleven entries planted at WTARC survived until harvest. Overall canola seed yield of the seven Roundup Ready lines planted at WTARC ranged from 1259 to 1535 lb/ac. Seed yield averaged 1364 lb/ac and there was no significant difference in yield among entries. Grain oil ranged from 50% to 54% with 'IS 7145' producing the most oil per acre at 828 lbs.

Company, ID, genetic herbicide resistance category, plant height, grain yield and grain oil data are summarized for WTARC in Table 8.

FUTURE PLANS:

With continued support from the canola industry, multi-location canola evaluations will continue in 2009 at selected sites across Montana.

Table 1. Summary of climatic data by months for the 2007-2008 crop year (September to August) and averages for the period 1909-2008 at the Central Agricultural Research Center, Moccasin, Montana.

Month Year	Sep 2007	Oct 2007	Nov 2007	Dec 2007	Jan 2008	Feb 2008	Mar 2008	Apr 2008	May 2008	Jun 2008	Jul 2008	Aug 2008	Crop Year
Precipitation (inches)													**Total**
Current Year	1.11	0.93	0.91	0.02	0.19	0.21	0.11	0.44	4.32	2.94	0.45	0.89	12.52
100-Year Average (1909 to 2007-08)	1.40	0.89	0.56	0.55	0.55	0.45	0.72	1.19	2.55	3.16	1.68	1.60	15.30
Mean Temperature (^{o}F)													**Average**
Current Year	56.4	47.6	34.5	26.1	22.0	28.6	32.9	37.1	49.6	56.5	66.7	67.0	43.8
98-Year Average (1911 to 2007-08)	54.7	44.8	32.8	25.1	21.4	24.6	30.3	40.8	50.2	57.9	65.8	64.8	42.8

Last killing frost in spring*

2008 _____ **June 11th (31 F)**

Ave. 1909-2008 _____ **May 27th**

First killing frost in fall*

2008 _____ **September 24th (32 F)**

Ave. 1909-2008 _____ **September 15th**

Frost free period

2008 _____ **105 days**

Ave. 1909-2008 _____ **111 days**

Maximum summer temperature _____ **100° on August 25th**

Minimum winter temperature _____ **-26° on January 29th**

*In this summary 32^{o} is considered a killing frost.

Table 2. Summary of climatic data by months for the 2007-2008 crop year (September to August) and averages for the period 1916-2008 at the Northern Agricultural Research Center, Havre, Montana.

Month Year	Sep 2007	Oct 2007	Nov 2007	Dec 2007	Jan 2008	Feb 2008	Mar 2008	Apr 2008	May 2008	Jun 2008	Jul 2008	Aug 2008	Crop Year
Precipitation (inches)													**Total**
Current Year	1.76	0.26	0.07	0.31	0.17	0.69	0.12	0.35	3.01	3.57	1.16	0.74	12.21
93-Year Average (1916 to 2007-08)	1.15	0.66	0.42	0.44	0.43	0.33	0.54	0.97	1.78	2.57	1.42	1.19	11.89
Mean Temperature (^{o}F)													**Average**
Current Year	57.3	48.0	33.6	21.1	18.2	20.6	34.6	39.7	53.1	60.4	69.8	68.6	43.7
93-Year Average (1916 to 2007-08)	56.1	45.9	30.0	19.7	15.3	20.0	30.0	43.6	54.1	61.8	69.2	67.3	42.8

Last killing frost in spring*

2008 _____ **May 11th**

Ave. 1916-2008 _____ **May 13th**

First killing frost in fall*

2008 _____ **October 9th (21°)**

Ave. 1916-2008 _____ **September 19th**

Frost free period

2008 _____ **151 days**

Ave. 1916-2008 _____ **129 days**

Growing degree days (base 50)

May 1-Oct 31, 2008 _____ **2220.5**

Ave. 1951-2008 _____ **2384.8**

Maximum summer temperature _____ **100° on August 8th**

Minimum winter temperature _____ **-29° on January 29th**

*In this summary 32^{o} is considered a killing frost.

Table 3. Summary of climatic data by months for the 2007-2008 crop year (September to August) and averages for the period 1986-2008 at the Western Triange Agricultural Research Center, Conrad, Montana.

Month Year	Sep 2007	Oct 2007	Nov 2007	Dec 2007	Jan 2008	Feb 2008	Mar 2008	Apr 2008	May 2008	Jun 2008	Jul 2008	Aug 2008	Crop Year
Precipitation (inches)													**Total**
Current Year	2.51	0.56	0.00	0.06	0.19	0.14	0.19	0.35	4.11	2.43	0.90	0.45	11.89
23-Year Average (1986 to 2007-08)	1.17	0.61	0.29	0.16	0.18	0.22	0.44	0.94	1.84	2.91	1.30	1.26	11.31
Mean Temperature (^{o}F)													**Average**
Current Year	54.4	45.9	33.8	23.8	19.3	25.5	33.6	37.2	50.8	57.8	66.9	66.3	42.9
23-Year Average (1986 to 2007-08)	56.9	45.2	32.2	25.2	23.2	24.9	33.4	43.4	52.4	59.8	67.2	66.2	44.2

Last killing frost in spring*

2008 _____ **June 12th**

Ave. 1986-2008 _____ **May 18th**

First killing frost in fall*

2008 _____ **October 9th**

Ave. 1986-2008 _____ **September 23rd**

Frost free period

2008 _____ **119 days**

Ave. 1986-2008 _____ **129 days**

Maximum summer temperature _____ **95° on July 1st and August 19th**

Minimum winter temperature _____ **-25° on January 29th**

*In this summary 32^{o} is considered a killing frost.

Table 4. Contact Information for Seed Sources of Eleven Commercial Hybrid Canola Entries Tested near Conrad, Havre and Moccasin, MT. 2008. (Exps. 08-CN07-CN, 08-CN02-CN and 08-CN18-CN)

COMPANY	HYBRIDS TESTED	CONTACT
Bayer CropScience	InVigor 5440 InVigor 5550 InVigor 5630 InVigor 8440	Mr. Kyle Schepp Bayer CropScience 700 24th Ave NW Minot, ND 58703 PH: 1-701-578-4063 FX: 1-701-852-9704 EM: kyle.schepp@bayercropscience.com
Croplan Genetics	HyClass 924-RR HyClass 940-RR	Mr. Monte Reiner Croplan Genetics PO Box 1291 Minot, ND 58702 PH: 1-701-852-3556 FX: 1-701-852-3036 EM: mrreiner@landolakes.com
Interstate Seed/Monsanto	DKL 30-42 DKL 52-41 Hyola 357 Magnum IS 3057 RR IS 7145 RR	Mr. Jim Johnson Monsanto 304 Center St. West Fargo, ND 58078 PH: 1-800-437-4120 FX: 1-701-282-8218 EM: jjohnson@interstateseed.com

Table 5. Agronomic Performance of Canola Hybrids Grown under Dryland, Conventional Fallow Conditions near Moccasin. Central Agricultural Research Center. Moccasin, MT. 2008. (Exp. 08-CN07-CN)

Company	ID	Herbicide Resistance	Stand Eval.	Percent Flowering		Plant Height	Pod Shatter	Grain Yield	Test Weight	Grain Moisture	Grain Oil
				Jun 24	Jun 26						
			1 - 10	% of plot in bloom		in	%	lb/ac	lb/bu	%	%
Monsanto (Interstate Seed)	DKL 30-42	Roundup Ready	6.3	50.0	73.8	29.30	-	**572.4***	49.1	10.5	45.3
Monsanto (Interstate Seed)	DKL 52-41	Roundup Ready	6.3	30.5	75.6	32.60	-	511.3	49.0	10.4	45.2
Croplan Genetics	HyClass 924-RR	Roundup Ready	7.5	55.0	80.0	32.70	-	463.5	48.9	10.1	44.2
Croplan Genetics	HyClass 940-RR	Roundup Ready	6.0	27.0	67.5	30.60	-	**669.8***	49.5	10.3	45.8
Monsanto (Interstate Seed)	Hyola 357 Magnum	Roundup Ready	7.8	76.3	86.3	28.50	-	**618.8***	48.9	11.2	43.4
Monsanto (Interstate Seed)	IS 3057 RR	Roundup Ready	8.0	15.8	60.0	35.80	-	**646.8***	50.4	10.0	46.7
Monsanto (Interstate Seed)	IS 7145 RR	Roundup Ready	8.8	36.3	77.5	36.10	-	**733.7****	50.7	10.4	46.0
Bayer CropScience LP	InVigor 5440	Liberty Link	7.5	9.5	50.0	35.60	-	**623.1***	48.7	10.6	45.7
Bayer CropScience LP	InVigor 5550	Liberty Link	8.0	50.0	80.0	31.50	-	**593.3***	49.5	10.1	45.3
Bayer CropScience LP	InVigor 5630	Liberty Link	5.8	76.3	81.3	30.30	-	465.6	49.4	10.2	46.5
Bayer CropScience LP	InVigor 8440	Liberty Link	5.8	18.0	40.0	35.10	-	**577.1***	49.4	10.9	45.5
		Average	7.0	40.4	70.2	32.60	-	588.7	49.4	10.4	45.4
		LSD (p=0.05)	2.40	22.40	14.40	3.20	-	188.40	1.10	1.00	1.25
		CV% (S/Mean)*100)	23.39	38.25	14.16	6.81	-	22.13	1.57	6.84	1.91

Stand Evaluation based on a scale of 1 (poor) to 10 (optimal).

** Indicates highest yielding cultivar within a column.

***** Indicates cultivars yielding equal to the highest yielding entry based on Fisher's Protected LSD at the 0.05 probability level.

Grain yield is adjusted to 10 percent grain moisture content.

Seeded: April 14, 2008

Fertilizer: 65-20-20-10

Herbicide: Assure II, 10 oz/ac

Precip seeding through harvest: 8.77"

Harvested: August 12, 2008

Unusual Events: Site received mild hail damage on June 9, followed by a frost (31 F) on June 11, then covered by 2" of snow on June 12.

Table 6. Agronomic Performance of Canola Hybrids Grown under Dryland, Fallow, No-till Conditions near Havre. Northern Agricultural Research Center. Havre, MT. 2008. (Exp. 08-CN02-CN)

Company	ID	Herbicide Resistance	Plant Stand	Flowering Date		Plant Height	Pod Shatter	Grain Yield	Test Weight	Grain Moisture	Grain Oil
				Julian	Calendar						
			%	no.	day	in	%	lb/ac	lb/bu	%	%
Monsanto (Interstate Seed)	DKL 30-42	Roundup Ready	98.1	167.3	15-Jun	43.21	1.8	2344.6	50.7	6.9	45.4
Monsanto (Interstate Seed)	DKL 52-41	Roundup Ready	97.0	168.5	17-Jun	43.91	3.0	2313.1	51.8	7.5	43.2
Croplan Genetics	HyClass 924-RR	Roundup Ready	97.4	168.3	16-Jun	42.41	0.8	1952.9	51.8	6.4	42.7
Croplan Genetics	HyClass 940-RR	Roundup Ready	97.9	168.3	16-Jun	41.50	8.8	2252.8	51.8	6.6	45.0
Monsanto (Interstate Seed)	Hyola 357 Magnum	Roundup Ready	96.9	168.3	16-Jun	40.04	2.0	2317.5	51.2	7.7	43.5
Monsanto (Interstate Seed)	IS 3057 RR	Roundup Ready	97.2	167.3	15-Jun	43.85	3.3	2382.4	51.8	6.1	46.1
Monsanto (Interstate Seed)	IS 7145 RR	Roundup Ready	98.8	170.8	19-Jun	45.12	6.5	2296.3	51.6	8.3	45.9
Bayer CropScience LP	InVigor 5440	Liberty Link	97.0	170.3	18-Jun	50.92	0.3	**2777.0***	52.6	8.6	44.3
Bayer CropScience LP	InVigor 5550	Liberty Link	97.4	168.0	16-Jun	47.73	0.8	2446.3	52.4	7.3	44.5
Bayer CropScience LP	InVigor 5630	Liberty Link	96.9	170.3	18-Jun	45.60	1.0	2553.3	51.0	8.0	45.2
Bayer CropScience LP	InVigor 8440	Liberty Link	98.8	167.0	15-Jun	45.11	4.0	**2875.7****	51.8	8.3	43.4
		Average	97.6	168.5	17-Jun	44.49	2.9	2410.2	51.7	7.4	44.5
		LSD (p=0.05)	ns	1.19	-	3.92	3.19	272.32	ns	1.08	1.78
		CV% (S/Mean)*100)	1.54	0.49	-	6.09	75.99	7.82	1.79	10.08	2.35

Grain yield is adjusted to 8 percent grain moisture content.

Grain oil is adjusted to 92 percent dry matter content.

** Indicates highest yielding cultivar within a column.

***** Indicates cultivars yielding equal to the highest yielding entry based on Fisher's Protected LSD at the 0.05 probability level.

Table 7. Site Resource and Management Data: HAVRE ONLY (Exp. 08-CN02-CN)									
Field	A-7-1		K (ppm) 0-6	371		Init PAW (in.) 0-6"	0.38		Fert. Rate (lbs/ac) P2O5	n/a
Quarter	NW		Ca (ppm) 0-6	3142		Init PAW (in.) 6-24"	1.85		Fert. Rate (lbs/ac) K2O	n/a
Section	33		Mg (ppm) 0-6	550		Init PAW (in.) 24-36"	1.36		Herbicide App. Date	none
Township	32N		Na (ppm) 0-6	30		Init PAW (in.) 36-48"	1.51		Herbicide Product	n/a
Range	15E		SaltHaz (MMHOS/cm) 0-6	0.52		Init PAW (in.) 0-48"	5.09		Herbicide Rate (/ac)	n/a
Latitude	N48 29.688'		SaltHaz(MMHOS/cm) 6-24	0.6		Cropping System	NT-ChmFlw		Precip (in.) Plnt'g-Harvest	6.64
Longitude	W109 47.987'		S (ppm) 0-24	154		Previous Crop	SB		Precip (>.1) Plnt'g-Harvest	5.67
Soil Series	Joplin CLm		Zn (ppm) 0-6	0.63		Planting Date	4/16		Harvest Date	8/4
pH 0-6	8.1		Fe (ppm) 0-6	9.60		Planting Depth (in.)	1.00		Rooting Depth (in.)	26"
Org.Matter (%) 0-6	1.3		Mn (ppm) 0-6	4.89		Moist Soil Depth @ Plnt'g	48+		Post PAW (in.) 0-6"	0.38
N (lbs/ac) 0-6	19		Cu (ppm) 0-6	1.19		Dry Surf Soil (in.) @ Plnt'g	1.5		Post PAW (in.) 6-24"	1.85
N (lbs/ac) 6-24	60		CEC 0-6	21.20		2" Soil Temp (^{o}F) @ Plnt'g	55		Post PAW (in.) 24-36"	1.36
N (lbs/ac) 24-36	46		Soil Texture 0-6	CL		4" Soil Temp (^{o}F) @ Plnt'g	48		Post PAW (in.) 36-48"	1.51
N (lbs/ac) 36-48	44		Soil Texture 6-24	CL+		Fertilizer Formulation	none		Post PAW (in.) 0-48"	5.09
N (lbs/ac) 0-48	169		Soil Texture 24-36	CL+		Fertilizer Placement	n/a		Precip (>.1) Hvst-Post	0.00
P (ppm) Olsen 0-6	31		Soil Texture 36-48	CL+		Fert. Rate (lbs/ac) N	n/a			

Table 8. Agronomic Performance of Canola Hybrids Grown under Dryland, Conventional Fallow Conditions near Conrad. Western Triangle Agricultural Research Center. Conrad, MT. 2008. (Exp. 08-CN18-CN)

Company	ID	Herbicide Resistance	Plant Stand	Flowering Date		Plant Height	Pod Shatter	Grain Yield	Test Weight	Grain Moisture	Grain Oil
				Julian	Calendar						
			%	no.	day	in	%	lb/ac	lb/bu	%	%
Monsanto (Interstate Seed)	DKL 30-42	Roundup Ready	-	-	-	28.75	-	1279.7	-	-	52.7
Monsanto (Interstate Seed)	DKL 52-41	Roundup Ready	-	-	-	32.00	-	1409.6	-	-	51.0
Croplan Genetics	HyClass 924-RR	Roundup Ready	-	-	-	36.50	-	1331.4	-	-	51.7
Croplan Genetics	HyClass 940-RR	Roundup Ready	-	-	-	33.00	-	1332.8	-	-	53.2
Monsanto (Interstate Seed)	Hyola 357 Magnum	Roundup Ready	-	-	-	29.50	-	1403.5	-	-	50.2
Monsanto (Interstate Seed)	IS 3057 RR	Roundup Ready	-	-	-	29.25	-	1259.2	-	-	51.9
Monsanto (Interstate Seed)	IS 7145 RR	Roundup Ready	-	-	-	38.50	-	1535.4	-	-	53.9
Bayer CropScience LP	InVigor 5440	Liberty Link	-	-	-	-	-	-	-	-	-
Bayer CropScience LP	InVigor 5550	Liberty Link	-	-	-	-	-	-	-	-	-
Bayer CropScience LP	InVigor 5630	Liberty Link	-	-	-	-	-	-	-	-	-
Bayer CropScience LP	InVigor 8440	Liberty Link	-	-	-	-	-	-	-	-	-
		Average	-	-	-	32.50	-	1364.5	-	-	52.1
		LSD (p=0.05)	-	-	-	5.62	-	ns	-	-	1.29
		CV% (S/Mean)*100)	-	-	-	11.65	-	22.70	-	-	1.39

Seeded: April 17, 2008
Fertilizer: 30-30-0-20
Precip seeding through harvest: 8.06"
Harvested: August 14, 2008
Samples were direct cut and then dried.
Chemical injury removed the Liberty Link lines from the trial.