VIII VARIETY AND SYSTEMS COMPARISON TRIAL

Objective: Establish agronomic criteria for choosing among varieties and herbicide options.

Background: The availability of canola with innovative traits (herbicide tolerance, specialty oils) has given growers many options for variety selection. Yield, crop quality, lodging resistance, harvestability and disease resistance are important variety traits to consider in the selection process. The greatest economic return will occur by choosing the most appropriate combination of suitable varieties and appropriate herbicides for each field. Factors to consider beyond the performance of the variety include specialty trait oil premiums, weed spectrum, tillage system and herbicide rotation.

Methodology: Each treatment was replicated four times in a modified split block system. Hybrids (including synthetics) were seeded at 4 to 5 lb/ac. Other varieties were seeded at 'normal' seeding rates. The companies that submitted each variety provided the seed treatments. Herbicide applications were appropriate for the particular variety. The check variety for this trial was Q2 sprayed with conventional herbicides. Swathing commenced when seed colour change reached 30 to 40%, and harvest was completed when appropriate.

Western Canadian Summary:

CPC Location	Selkirk, MB		Dauphin, MB		Yorkton, SK		Nipawin, SK		Beiseker, AB		Lethbridge (Irr), AB		Lethbridge (Dry), AB		Dawson Creek, B.C.	
	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD
VARIETY AND SYSTEMS COMPARISON TRIAL																
InVigor 2573	-	-	34.7	175	25.0	98	-	-	-	-	55.3	342	9.3	1	-	-
InVigor 2663	33.9	182	-	-	-	-	24.6	94	24.1	100	-	-	-	-	43.6	275
InVigor 2733	33.1	171	30.8	136	24.9	93	23.0	84	21.9	77	47.6	272	8.2	(9)	48.4	311
LBD 2393	-	-	33.1	160	-	-	-	-	-	-	-	-	-	-	-	-
Canterra 1604 CL	-	-	-	-	24.1	79	20.1	43	-	-	-	-	-	-	-	-
SW RazoR	-	-	-	-	23.7	87	23.3	84	-	-	-	-	-	-	-	-
LBD 612RR	27.4	127	29.5	126	23.1	85	23.7	90	22.7	90	-	-	-	-	-	-
IMC 208*	18.5	70	22.2	87	22.1	102	16.0	41	17.3	63	31.9	186	-	-	35.2	227
IMC 109*	-	-	26.6	130	20.4	85	21.0	90	14.0	32	42.4	289	-	-	36.0	233
IMC 304*	15.8	39	-	-	-	-	-	-	-		-	-	-	-	-	-
Canterra 1812	-	-	-	-	25.4	102	-	-	-	-	-	-	-	-	-	-
Canterra 1841	-	-	-	-	26.0	105	-	-	-	-	-	-	-	-	-	-
DKL 35-85	-	-	-	-	-	-	-	-	-	-	46.7	286	-	-	-	-
DKL 34-55	-	-	-	-	25.6	107	22.7	81	-	-	-	-	-	-	43.1	247
45H21	-	-	-	-	-	-	26.2	107	-	-	-	-	-	-	-	-
Field King 811RR	-	-	-	-	-	-	24.6	98	-	-	-	-	-	-	-	-
MilleniUM 03*	24.4	97	26.4	123	12.7	(20)	15.6	23	17.8	48	38.1	228	-	-	38.4	265
ACS C7	-	-	-	-	-	-	5.9	(73)	-	-	-	-	-	-	-	-
Nex 705*	29.5	140	33.1	181	23.2	80	23.7	74	13.7	(9)	45.1	277	10.3	22	36.7	195
Nex 715*	24.7	90	30.1	149	21.5	59	22.2	56	17.8	35	47.3	297	9.6	13	36.4	191
Nex 720*	28.7	130	-	-	-	-	-	-	-	-	47.6	300	10.0	17	-	-
Q2	24.8	74	28.1	109	15.9	(3)	19.5	43	18.1	19	43.3	222	11.6	26	37.9	168
AC Sunbeam	-	-	-	-	-	-	6.5	(73)	-	-	-	-	-	-	-	-
LSD	2.84		2.02		2.78		2.30		2.93		5.80		1.43		6.37	
CV%	9.0		5.7		10.4		9.7		13.0		10.8		11.8		12.2	

Note: NYD - Net Yield Data (bu/ac), CMD - Contribution Margin Data ($/ac)
(-) Indicates treatment not conducted.
Brackets in the CMD reflect a negative value.
* Specialty oil canola varieties.

Discussion:

Adverse environmental conditions impacted the performance of the varieties at a number of locations. The differences in yield performance of the varieties among sites are in part a reflection of the system's ability to control the weed spectrum. Yields and contribution margins tended to be the highest with the Liberty Link system at half of the locations. Contribution margins were a function of yield, herbicide cost (including TUA for Roundup Ready), seed cost, grade and oil premiums. Therefore, check on specific premiums associated with those varieties and the required specifications to obtain the premium.

Differences in oil contents varied from variety to variety and from site to site. Weed conditions and growing conditions (frost, excessive moisture and drought) varied greatly, and the ideal combination of herbicide system and variety varied accordingly. The ideal system (in terms of variety and herbicide package) for one grower is not necessarily the best combination for a neighbour. Growers must consider the spectrum of weeds present, typical growing conditions for their area, disease concerns, crop rotation, herbicide rotation, volunteer canola control and genetic potential of the varieties before making the choice of one particular system for a field.

Keep proper records of varieties and herbicide systems used. This is crucial in planning the weed control strategy for the entire rotation, and in reducing the chances of developing weed resistance to specific herbicides or classes of herbicides that may be frequently used in the rotation.

Due to the adverse growing conditions at many sites, crop canopies were generally light and, therefore, there were few differences in harvestability at most locations. Varieties that were more susceptible to lodging were consistently more difficult to swath. No noticeable differences were noted during combining at most locations.

SELKIRK

Methodology: Seeding of this trial was delayed until May 24 by cold and wet soil conditions. The seed was placed at a depth of about ¾" into excellent moisture, at rates of 6.1 lb/ac for the open pollinated varieties and 5.0 lb/ac for the hybrids. In-crop herbicide applications were made to each of the varieties at the 5 to 6-leaf stage as follows: conventional varieties - Select (0.075 L/ac), Muster (8 g/ac) and Lontrel (0.17 L/ac); Liberty Link varieties - Liberty (1.35 L/ac) and Select (0.025 L/ac); Roundup Ready varieties - Roundup Transorb (0.5 L/ac). Swathing of most of the plots was delayed until at least 40% seed colour change based on crop conditions at maturity.

Observations: Emergence was similar for all varieties and occurred about a week following seeding. Heavy rains in early June caused crop stress due to excess moisture and weed competition resulting from delayed herbicide applications. Weed pressure was moderate to heavy throughout the trial, with the main weeds present including wild mustard, Lady's thumb, wild oats and volunteer wheat. Wild buckwheat, dandelion, redroot pigweed and stinkweed were also present at lower densities. Weed control was generally good for all treatments, with the exception of some wild mustard regrowth in the conventional varieties. This may have been due to the advanced stage of some plants at the time of spraying, and some late flushes may have also occurred. At maturity seed colour change increased rapidly (greater than 10 % per day) in most varieties due to high temperatures, so swathing was delayed to minimize potential for green seed problems. However, rain showers following swathing provided good conditions for curing to take place.

Results:

VARIETY AND SYSTEMS COMPARISON TRIAL Selkirk, MB							
Treatment / System	**Yield (%)**	**Yield (bu/ac)**	**Contribution Margin ($/ac)**	**Oil (%)**	**Growing Degree Days**	**Days To Maturity**	**Grade**
Liberty Link							
InVigor 2663	137	33.9	181.80	47.1	1106	84	1
InVigor 2733	133	33.1	170.74	47.2	1106	84	1
Roundup Ready							
LBD 612RR	110	27.4	127.16	46.6	1123	86	1
IMC 208*	75	18.5	69.82	44.0	1148	88	1
IMC 304*	64	15.8	38.62	44.2	1185	91	2
Conventional							
Nex 705*	119	29.5	140.44	47.2	1185	91	1
Nex 720*	116	28.7	130.23	44.5	1168	90	1
Q2 (check)	100	24.8	74.16	46.1	1134	87	1
Nex 715*	100	24.7	90.23	44.7	1168	90	1
MilleniUM 03*	98	24.4	97.12	45.2	1134	87	1
LSD CV%		2.84 9.0		0.74 1.3			

Note: *Specialty oil varieties.

Discussion: The two InVigor hybrids produced significantly higher yields than all other varieties, but Nex 705 and Nex 720 also yielded significantly higher than the check (Q2). InVigor 2663 and 2733 also produced the best returns. Yield, seed cost, herbicide cost, specialty oil premiums and grade affected the contribution margins. Nex 705 and the two InVigor hybrids also produced significantly more oil content than Q2, while LBD 612 RR had similar oil content and the rest of the varieties were significantly lower. InVigor 2663 and 2733 were first to mature, while Nex 705 and IMC 304 were last.

DAUPHIN

Methodology: Seeding of this trial took place on May 15. The seed was placed at a depth of ¾ to 1" into good moisture, at rates of 6.6 lb/ac for the open pollinated varieties and 4.9 lb/ac for the hybrids. In-crop herbicide applications were made to each of the varieties at the 2 to 3-leaf stage as follows: conventional varieties - Select (0.075 L/ac) and Muster (8 g/ac); Liberty Link varieties - Liberty (1.35 L/ac); Roundup Ready varieties - Roundup Transorb (0.5 L/ac).

Observations: Emergence was slow and uneven for all varieties, as a result of very cold and wet soil conditions. The site received some snow approximately a week after seeding. However, by two weeks after seeding all plots had achieved adequate plant densities. Timely rains throughout the growing season provided generally good growing conditions. Flea beetle damage was noted, but did not exceed the threshold for spraying in any of the treatments. Weed pressure was light to moderate throughout the trial, with the main weeds present including volunteer wheat, wild mustard, wild buckwheat and some quack grass patches. Weed control was generally good for all treatments. At maturity the canola was generally short in stature, probably a result of the stress early in its development. Rain showers continued up to and following swathing, which provided good conditions for curing to take place.

Results:

VARIETY AND SYSTEMS COMPARISON TRIAL
Dauphin, MB

Treatment / System	Yield (%)	Yield (bu/ac)	Contribution Margin ($/ac)	Oil (%)	Growing Degree Days	Days To Maturity	Grade
Liberty Link							
InVigor 2573	123	34.7	174.61	42.7	1122	89	1
LBD 2393	118	33.1	159.77	44.1	1245	100	1
InVigor 2733	110	30.8	135.73	42.5	1122	89	1
Roundup Ready							
LBD 612RR	105	29.5	125.92	43.1	1135	90	1
IMC 109*	95	26.6	130.11	42.1	1172	93	1
IMC 208*	79	22.2	86.72	41.1	1135	90	1
Conventional							
Nex 705*	118	33.1	181.41	45.5	1217	98	1
Nex 715*	107	30.1	149.03	42.5	1178	94	1
Q2 (check)	100	28.1	109.30	42.4	1135	90	1
MilleniUM 03*	94	26.4	122.73	43.5	1122	89	1
LSD		2.02		0.72			
CV%		5.7		1.4			

Note: *Specialty oil varieties.

Discussion: InVigor 2573, Nex 705 and LBD 2393 produced significantly higher yields than all other varieties, but InVigor 2733 also yielded significantly higher than the check (Q2). Nex 705 gave the best economic returns. Yield, seed cost, herbicide cost, and specialty oil premiums affected the contribution margins. Nex 705 also produced significantly more oil

content than all the other varieties, but LBD 2393 and MillenniUM 03 also had significantly higher contents than Q2. The range in maturity was 11 days, with the two InVigor hybrids and MillenniUM 03 maturing first and LBD 2393 reaching maturity last.

YORKTON

Methodology: Seeding took place on May 10. Open pollinated varieties were seeded at 6.2 lb/ac. Hybrid and synthetic varieties were seeded at 5.0 lb/ac. A fertilizer blend of 7-30-10-0 (actual) was seed-placed for all treatments. Herbicides were applied at the 2 to 3-leaf stage of the crop. A tank mix of Muster (8 g/ac or 40 ac/pouch), Poast Ultra (0.13 L/ac or 60 ac/case) and Lontrel (0.17 L/ac or 26 ac/jug) was applied to conventional treatments. Liberty Link treatments received Liberty (1.35 L/ac or 10 ac/jug) and Select (0.025 L/ac or 120 ac/jug) as a tank mix. Roundup Ready treatments received Roundup Transorb (0.5 L/ac). Absolute (Odyssey at 17.3 g/ac and Lontrel at 0.17 L/ac) was applied to Clearfield treatments. Two applications of Matador (0.034 L/ac), a foliar insectide, were required to control flea beetles.

Observations: Cool and dry growing conditions resulted in slow and uneven emergence (see *Site Information - Comments*). It was estimated that emergence reached 70% by May 24. Flea beetle pressure was high (5 to 7 flea beetles/plant) to extreme (11 to 14 flea beetles/plant) in many areas of the trial during early plant development. Leaf damage had exceeded the action threshold of 25% in many parts of the trial within seven day's of emergence. Matador was applied on June 1 to all treatments. The insecticide worked well in terms of contact control on actively feeding flea beetles, but residual (vapour) control was reduced by rain the next day. A second application (June 5) of Matador was required due to continued flea beetle damage.

MilleniUM 03 and Q2 treatments had the most leaf area damage. Flea beetle damage rated a 3 (26 to 50% leaf area damage) on forty percent of the plants up until the 4-leaf stage. The remaining sixty percent had a flea beetle damage rating up to 5 (76 to 100% leaf area damage). Plant counts at the 4 to 6 leaf stage showed a 50% reduction from original plant counts taken at the cotyledon to 1 leaf stage.

Herbicide efficacy was generally very good. However, there was a second flush of grassy weeds due to reduced plant stands in the Q2 and MilleniUM 03 treatments. Missing pods on the main stem at swathing confirmed the effects of flower blast. This was observed during high temperatures at flowering among treatments.

Results:

VARIETY AND SYSTEMS COMPARISON TRIAL Yorkton, SK							
Treatment / System	**Yield (%)**	**Yield (bu/ac)**	**Contribution Margin ($/ac)**	**Oil (%)**	**Growing Degree Days**	**Days To Maturity**	**Grade**
Liberty Link							
InVigor 2573	157	25.0	98.25	44.8	1021	97	1
InVigor 2733	157	24.9	93.49	45.0	989	92	1
Clearfield							
Canterra 1604 CL	152	24.1	79.43	46.4	1049	101	1
Roundup Ready							
Canterra 1841	164	26.0	105.43	45.8	1030	98	1
DKL 34-55	161	25.6	107.05	46.4	998	95	1
Canterra 1812	160	25.4	101.86	47.4	1021	97	1
SW RazoR	149	23.7	87.45	44.4	998	95	1
LBD 612RR	145	23.1	84.61	45.7	998	95	1
IMC 208*	139	22.1	101.58	45.8	1010	96	1
IMC 109*	128	20.4	84.82	45.4	1030	98	1
Conventional							
Nex 705*	150	23.2	80.15	46.6	1104	106	1
Nex 715*	135	21.5	58.80	43.0	1037	99	1
Q2 (check)	100	15.9	(3.18)	43.5	1037	99	1
MilleniUM 03*	80	12.7	(19.60)	44.8	998	95	1
LSD CV%		2.78 10.4		1.50 2.7			

Note: *Specialty oil varieties.
Brackets in Contribution Margin column reflect a negative value.

Discussion:

Yield differences of 2.78 bu/ac or more are significant. All varieties yielded significantly greater than the check variety (Q2) except for MilleniUM 03. Flea beetle damage during early plant development contributed to the significantly lower yields of Q2 and MilleniUM 03.

Contribution margins reflected differences in yield, pesticide costs, seed costs and specific oil premiums.

Cool wet weather during swathing resulted in days to maturity (30 % seed colour change) ranging from 92 to 106 days. Eight varieties had significantly higher oil content than Q2. Canterra 1812 had the highest oil content at 47.4 %.

NIPAWIN

Methodology: Seeding took place on May 18. Open pollinated varieties were seeded at 6.2 lb/ac. Hybrid and synthetic varieties were seeded at 5.0 lb/ac. A liquid fertilizer blend of 87-30-10-20 (actual) was side-banded with all treatments. Herbicides were applied at the 2 to 3-leaf stage of the crop In-crop application of Muster Gold II (40 ac/case) was applied to all conventional treatments. Lontrel (0.17 L/ac or 26 ac/jug) was applied to conventional treatments six days later. Liberty Link treatments received Liberty (1.35 L/ac or 10 ac/jug) and Select (0.025 L/ac or 120 ac/jug) as a tank mix. Roundup Ready treatments received Roundup Transorb (0.5 L/ac). Absolute (Odyssey at 17.3 g/ac and Lontrel at 0.17 L/ac) was applied to Clearfield treatments.

Observations: Cool conditions combined with heavy trash resulted in slow and uneven emergence. Weed pressure was variable across all treatments. Rain on June 2 resulted in a second flush of volunteer barley, which warranted an application of Select to all treatments (see *Site Information - Comments*). Weed control was good for all treatments. Maturity among plants within the treatments varied greatly due to late July frosts and rain. *B. rapa* varieties were further advanced (10 to 15% seed colour change) during this period of frost. This raised concerns of potential green and damaged seed problems at harvest. Secondary regrowth in the *B. napus* varieties made determining the proper stage to swath difficult. Plant height did not vary greatly among varieties.

Results:

VARIETY AND SYSTEMS COMPARISON TRIAL Nipawin, SK							
Treatment / System	**Yield (%)**	**Yield (bu/ac)**	**Contribution Margin ($/ac)**	**Oil (%)**	**Growing Degree Days**	**Days To Maturity**	**Grade**
Liberty Link							
InVigor 2663	126	24.6	94.32	43.6	1126	97	1
InVigor 2733	118	23.0	83.53	42.8	1075	93	1
Clearfield							
Canterra 1604 CL	103	20.1	43.10	44.1	1186	101	1
Roundup Ready							
45H21	134	26.2	106.64	43.9	1158	99	1
Field King 811RR	126	24.6	97.72	43.9	1144	98	1
LBD 612RR	122	23.7	89.68	43.8	1144	98	1
SW RazoR	119	23.3	83.53	43.3	1126	97	1
DKL 34-55	116	22.7	80.62	44.5	1158	99	1
IMC 109*	108	21.0	90.48	43.5	1158	99	1
IMC 208*	82	16.0	41.10	43.0	1144	98	1
Conventional B. napus							
Nex 705*	122	23.7	74.19	45.8	1271	107	1
Nex 715*	113	22.2	56.39	43.2	1158	99	1
Q2 (check)	100	19.5	42.91	42.0	1144	98	1
MilleniUM 03*	80	15.6	22.51	42.9	1144	98	1
Conventional B. rapa							
AC Sunbeam (check)	100	6.5	(73.22)	41.4	914	78	2
ACS C7	91	5.9	(73.24)	41.9	914	78	2
LSD CV%		2.30 9.7		0.97 1.9			

Note: *Specialty oil varieties.
Brackets in Contribution Margin column reflect a negative value.

Discussion: Yield differences of 2.30 bu/ac or more are significant. Seven *B. napus* varieties yielded significantly higher than the check (Q2), while only one B*. napus* variety yielded significantly lower. There were no significant yield differences between *B. rapa* varieties.

All varieties graded number one, with the exception of *B. rapa* varieties. This can be attributed to crop stage (10 to 15% seed colour change) when the frost occurred. There was considerably more damaged seed (average of 7.6% damaged) in the *B. rapa* varieties than *B. napus* varieties (average of 0.73% damaged). Contribution margins reflected differences in yield, herbicide costs, seed costs, grade and specific oil premiums. Negative contribution margins for both *B. rapa* varieties (AC Sunbeam and ACS-C7) were primarily due to low yields and poor grades.

Cool wet weather during swathing resulted in days to maturity (30 % seed colour change) ranging from 93 to 107 days. Oil content also varied significantly among *B. napus* varieties.

BEISEKER

Methodology: All varieties were seeded at 5 lb/ac on May 24. Conventional varieties were sprayed with a tank mix of Poast Ultra (0.19 L/ac) and Muster (12 g/ac), followed with an application of Lontrel (0.2 L/ac) three days later. Liberty Link varieties were sprayed with a tank mix of Liberty (1.35 L/ac) and Select (0.025 L/ac). Roundup Ready varieties were sprayed once with Roundup Transorb (0.5 L/ac). All treatments were sprayed at the 1 to 2-leaf stage of the crop.

Observations: Emergence was rapid and even. Most varieties were slow to develop through early June due to cool weather. High temperatures and dry conditions in July affected all varieties. The open pollinated varieties exhibited more symptoms of drought than the hybrid varieties. The flowering period was short for all varieties due to lack of moisture and high temperatures. A frost on August 2 did not appear to affect the crop. The open pollinated varieties started to reflower due to cool moist conditions in August, which delayed maturity and created problems in determining the proper stage to swath. These varieties were swathed when over all seed colour change of the plant reached 25% due to the potential risk of frost. The hybrid varieties did not reflower and were swathed when the plants reached 30% seed colour change on the main stem. Cool conditions in September and October prevented proper curing of the crop.

Results:

VARIETY AND SYSTEMS COMPARISON TRIAL Beisker, AB							
Treatment / System	**Yield (%)**	**Yield (bu/ac)**	**Contribution Margin ($/ac)**	**Oil (%)**	**Growing Degree Days**	**Days To Maturity**	**Grade**
Liberty Link							
InVigor 2663	133	24.1	100.19	42.0	1092	102	1
InVigor 2733	121	21.9	76.49	42.9	1043	95	1
Roundup Ready							
LBD 612RR	125	22.7	89.79	42.6	1082	100	2
IMC 208*	96	17.3	63.30	42.6	1092	102	2
IMC 109*	77	14.0	31.72	41.6	1092	102	2
Conventional							
Q2 (check)	100	18.1	18.61	41.3	1092	102	3
MilleniUM 03*	98	17.8	47.80	43.0	1107	105	2
Nex 715*	98	17.8	34.82	40.7	1107	105	3
Nex 705*	76	13.7	(8.79)	43.0	1107	105	3
LSD CV%		2.93 13.0		0.65 1.3			

Note: *Specialty oil varieties.
Brackets in Contribution Margin column reflect a negative value.

Discussion: InVigor 2663 yielded significantly higher than all the varieties except LBD 612RR and InVigor 2733. Contribution margins were a reflection of yield, herbicide costs, seed costs, grade, and premiums paid on specialty oil varieties. Six varieties had significantly higher oil content than the check (Q2). Down grading of the open pollinated varieties was attributed to reflowering that occurred in late August.

LETHBRIDGE (IRRIGATION)

Methodology: All varieties were seeded at 4 lb/ac on May 20. Conventional varieties were sprayed with a tank mix of Poast Ultra (0.19 L/ac) and Muster (12 g/ac), followed with an application of Lontrel (0.2 L/ac) three days later. Liberty Link varieties were sprayed with a tank mix of Liberty (1.35 L/ac) and Select (0.025 L/ac). Roundup Ready varieties were sprayed once with Roundup Transorb (0.5 L/ac). All treatments were sprayed at the 1 to 2-leaf stage of the crop.

Observations: Two days after seeding the trial, a snowstorm dropped twelve inches of snow at the site. Prior to the snow, soil moisture conditions were fair. Emergence was even but slow due to cool growing conditions. The site received eleven inches of rain during a three-day period in June. No flooding was observed, but open pollinated varieties showed stress from excessive moisture. Warm temperatures in early July brought on rapid growth, and some signs of stress. Plants became wilted, off colour, and showed signs of nutrient deficiencies. Once irrigation water was applied and cooler conditions occurred, the plants recovered. Cooler conditions towards the end of flowering extended the flowering period. Re-flowering was observed in the middle of August in some of the varieties (IMC 208, Nex 705, Nex 715 and Nex 720). Annual sow thistle and some Canada thistle were observed among the Liberty Link and Roundup Ready plots at swathing. No thistles were observed in the conventional varieties. The addition of Lontrel at the 1 to 2-leaf stage of the crop had controlled emerging thistle seedlings. After swathing, the site experienced a few windstorms, which flipped some swaths. The flipped swaths occurred in plots with thin stands and in severely lodged areas. Cool conditions after swathing delayed the curing process.

Results:

VARIETY AND SYSTEMS COMPARISON TRIAL
Lethbridge (Irrigation), AB

Treatment / System	Yield (%)	Yield (bu/ac)	Contribution Margin ($/ac)	Oil (%)	Growing Degree Days	Days To Maturity	Grade
Liberty Link							
InVigor 2573	128	55.3	341.93	44.5	1187	103	1
InVigor 2733	110	47.6	271.74	45.5	1156	99	1
Roundup Ready							
DKL 35-85	108	46.7	286.32	43.9	1124	97	1
IMC 109*	98	42.4	289.07	45.8	1134	98	1
IMC 208*	74	31.9	185.54	43.9	1187	103	1
Conventional							
Nex 720*	110	47.6	299.92	43.3	1248	111	2
Nex 715*	110	47.3	297.01	43.5	1201	105	2
Nex 705*	104	45.1	276.90	46.3	1201	105	2
Q2 (check)	100	43.3	219.78	43.9	1187	103	2
MilleniUM 03*	88	38.1	228.35	44.9	1163	100	1
LSD		5.80		1.53			
CV%		10.8		0.99			

Note: *Specialty oil varieties.

Discussion: InVigor 2573 yielded significantly higher than all the varieties. Yield differences of 5.80 bu/ac or more are significant. Differences in contribution margin were a reflection of yield, seed costs, herbicide costs, grade, and premiums paid on specialty oil varieties. Nex 705, IMC 109 and InVigor 2733 had significantly higher oil content than the check.

LETHBRIDGE (DRYLAND)

Methodology: All varieties were seeded at 5 lb/ac on May 16. Conventional varieties were sprayed with a tank mix of Poast Ultra (0.19 L/ac) and Muster (12 g/ac), followed with an application of Lontrel (0.2 L/ac) three days later. Liberty Link varieties were sprayed with a tank mix of Liberty (1.35 L/ac) and Select (0.025 L/ac). No sequential applications were done. Roundup Ready varieties were sprayed once with Roundup Transorb (0.5 L/ac). All treatments were sprayed at the 1 to 2-leaf stage of the crop.

Observations: Emergence was even but slow due to cool weather. Eleven inches of rain in June contributed to leaching and shallow root development. Hot dry conditions after the rain created stressful conditions for the plants. The shallow roots could not obtain much-needed nutrients, and symptoms of nitrogen deficiency were observed. A rain near the end of flowering helped to revitalize the plants. At 30% seed colour change it was noted that the light stand would not allow enough stubble height to anchor the swath, making it prone to wind damage. The decision to straight cut the trial was made at this time. It was observed prior to combining that the open pollinated varieties were flowering on the upper portions of the plants.

Results:

VARIETY AND SYSTEMS COMPARISON TRIAL
Lethbridge (Dryland), AB

Treatment / System	Yield (%)	Yield (bu/ac)	Contribution Margin ($/ac)	Oil (%)	Growing Degree Days	Days To Maturity	Grade
Liberty Link							
InVigor 2573	82	9.3	0.47	43.4	1060	96	1
InVigor 2733	71	8.2	(9.43)	43.1	1039	94	1
Conventional							
Q2 (check)	100	11.6	25.83	43.1	1039	94	1
Nex 705*	89	10.3	21.19	46.5	1060	96	1
Nex 720*	86	10.0	16.82	44.1	1113	100	1
Nex 715*	83	9.6	12.82	41.8	1083	98	1
LSD		1.43		0.71			
CV%		11.8		1.3			

Note: *Specialty oil varieties.
Brackets in Contribution Margin column reflect a negative value.

Discussion: With the exception of Nex 705, the check (Q2) yielded significantly higher than all other varieties. Contribution margins were a reflection of yield, seed costs, herbicide costs and premiums paid on specialty oil varieties. Nex 705 and Nex 720 had significantly higher oil content than the check Q2. Differences of 0.71 % in oil content were significant.

RYCROFT

Methodology: This trial was seeded on May 30. All treatments were seeded at 6.2 lb/ac except for the hybrids, which were seeded at 5 lb/ac. A fertilizer blend of 70-30-15-15 (actual) was seed-placed. Each variety was sprayed with the appropriate chemistries as follows; Liberty Link varieties were sprayed with a Liberty and Select tank mix (1.35 L/ac Liberty + 0.025 L/ac Select), Roundup Ready varieties were sprayed with Roundup Transorb (0.5 L/ac), conventional varieties were sprayed with Muster Gold II (Assure II @ 0.2 L/ac and Muster @ 8 g/ac) and Clearfield varieties were sprayed with Absolute (Odyssey @ 17 g/ac and Lontrel @ 0.17 L/ac). The treatments within the trial were swathed between August 28 and September 18. The whole trial was harvested on November 3.

Observations: Soil moisture was optimal at the time of seeding, which allowed for quick and even emergence. Weed growth and populations were moderate. The predominant weeds were wild oats and volunteer wheat. All varieties were sprayed at the 2-leaf stage of the crop.

Results: Due to the high coefficient of variation for this trial, no accurate conclusions could be made. Therefore, the results have not been reported.

DAWSON CREEK

Methodology: This trial was seeded on May 25. All treatments were seeded at 6 lb/ac except for the hybrids, which were seeded at 5 lb/ac. A fertilizer blend of 25-25-15-20 (actual) was seed-placed. Each variety was sprayed with the appropriate chemistries as follows; Liberty Link varieties were sprayed with a Liberty and Select tank mix (1.35 L/ac Liberty + 0.025 L/ac Select), Roundup Ready varieties were sprayed with Roundup Transorb (0.5 L/ac), and conventional varieties were sprayed with Muster Gold II (Assure II @ 0.2 L/ac and Muster @ 8 g/ac). The treatments within the trial were swathed between September 6 and September 14. The whole trial was harvested on November 7.

Observations: Soil moisture was optimal at the time of seeding, which allowed for quick and even emergence. Weed growth and populations were low. All varieties were sprayed at the 2-leaf stage of the crop. Throughout the growing season Invigor 2733 and MilleniUM 03 were more advanced by three to four days.

Results:

VARIETY AND SYSTEMS COMPARISON TRIAL
Dawson Creek, B.C

Treatment / System	Yield (%)	Yield (bu/ac)	Contribution Margin ($/ac)	Oil (%)	Growing Degree Days	Days To Maturity	Grade
Liberty Link							
InVigor 2733	128	48.4	310.61	44.5	957	104	3a
InVigor 2663	115	43.6	275.17	44.0	979	108	3a
Roundup Ready							
DKL 34-55	114	43.1	247.28	45.1	989	110	3b
IMC 109*	95	36.0	233.43	43.9	984	109	3b
IMC 208*	93	35.2	227.12	43.8	984	109	3b
Conventional							
MilleniUM 03*	101	38.4	264.91	46.6	984	109	3b
Q2 (check)	100	37.9	168.10	44.4	984	109	sample
Nex 705*	97	36.7	195.08	46.2	993	111	sample
Nex 715*	96	36.4	190.84	44.2	984	109	sample
LSD CV%		6.37 12.2		N/A N/A			

Note: *Specialty oil varieties.
N/A – not available.

Discussion: InVigor 2733 yielded significantly higher than all other varieties except InVigor 2663 and DKL 34-55. Contribution margins were a reflection of yield, seed costs, herbicide costs, grade and premiums paid on specialty oil varieties.