

## XIV SYSTEMS COMPARISON TRIAL

**Objective:** To establish agronomic criteria for choosing a combination of varieties and herbicide options of novel trait canola.

**Background:** The introduction of canola with novel traits for herbicide tolerance has given producers many options for herbicide and variety selection. The greatest 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 weed population, weed spectrum, tillage system and herbicide rotation.

**Methodology:** The trial was conducted as a modified split block with four replicates. Hybrids (including synthetics) were seeded at 4 to 5 lb/ac. Other varieties were seeded at 'normal' seeding rates. The canola varieties with novel traits for herbicide tolerance were compared to the conventional varieties AC Excel and Q2 and a conventional herbicide program.

### Western Canadian Summary:

CPC Location	Selkirk MB		Dauphin MB		Grenfell SK		Naicam SK		N. Battleford SK		Vegreville AB		Lethbridge (Irr) AB		Rycroft AB		Rolla BC	
	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD
<b>SYSTEMS COMPARISON TRIAL</b>																		
AC Excel	34.0	105	29.4	34	31.7	55	24.8	62	21.5	27	26.8	82	22.9	(6)	33.1	111	45.2	198
Q2	33.6	85	32.5	46	32.0	48	23.9	47	19.3	4	30.6	99	21.4	(22)	37.7	131	50.0	202
InVigor 2573	38.3	131	34.6	73	36.2	97	29.2	72	26.3	56	35.0	121	28.9	46	45.2	167	52.1	216
InVigor 2663	38.2	120	36.1	83	36.6	100	29.7	76	28.2	69	33.1	108	31.2	61	43.8	157	51.0	209
InVigor 2733	-	-	-	-	-	-	-	-	-	-	-	-	31.3	62	-	-	-	-
Renegade BX	36.9	112	-	-	33.8	99	-	-	-	-	-	-	-	-	-	-	-	-
A98-13NR	35.1	100	31.2	49	32.6	81	24.2	47	19.6	20	31.9	108	21.8	4	33.6	111	46.0	184
Admire	38.8	121	33.9	64	35.0	90	28.9	72	25.7	55	34.7	121	23.8	17	-	-	-	-
Conquest	-	-	-	-	32.6	79	26.7	63	24.1	44	-	-	-	-	-	-	-	-
IMC 106 RR	-	-	30.2	67	31.1	92	27.8	90	19.5	34	27.3	96	23	41	37.5	168	41.7	187
IMC 206 RR	-	-	-	-	30.5	87	-	-	-	-	19.6	39	22.8	31	-	-	-	-
Kelsey	38.6	133	32.1	55	-	-	-	-	-	-	29.7	90	23.1	14	37.6	128	45.4	179
LBD 449RR	-	-	29.2	38	-	-	28.0	71	23.8	47	25.8	66	-	-	35.9	130	-	-
LBD 561RR	36.7	113	-	-	33.4	85	27.5	68	24.4	51	30.0	94	-	-	-	-	-	-
LBD 799RR-S	38.1	122	31.5	55	31.7	74	28.7	76	24.8	50	24.3	52	-	-	-	-	-	-
Prairie 499RR	38.6	133	31.9	55	35.6	98	30.0	82	25.5	52	27.7	72	-	-	35.5	111	-	-

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

### SELKIRK

**Methodology:** Seeding of this trial was delayed until May 27 by wet weather. The hybrid and synthetic varieties were seeded at 5 lb/ac, while the open

pollinated varieties were seeded at 6.1 lb/ac. In-crop herbicide applications were made to each of the systems as follows: Liberty Link - Liberty (1.35 L/ac) at the 2-leaf stage; Roundup Ready - Roundup Transorb (0.5 L/ac) at the 2-leaf stage; Navigator/Compas - Select (0.08 L/ac) at the 2-leaf stage, Compas 480EC (0.23 L/ac) 8 days later; Conventional - Edge granular (9 kg/ac) incorporated prior to seeding, Select (0.065 L/ac) at 2-leaf stage.

**Observation:**

In spite of the late seeding date, warm weather and ample moisture throughout June and July hastened crop growth and maturity. The majority of the weed competition was from wild oats, with some volunteer wheat and green foxtail. Some broadleaf weeds were also present, including wild buckwheat, wild mustard, smartweed and stinkweed. Weed control was very good in all treatments. The fungicide application provided good control in spite of conditions that were ideal for sclerotinia. Hot and dry weather prevailed in the latter part of August, resulting in rapid dry down at swathing. There was very little rainfall between swathing and combining.

**Results:**

<b>SYSTEMS COMPARISON TRIAL</b>						
<b>Selkirk, MB</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b><i>Liberty Link</i></b>						
InVigor 2573	113	38.3	131.18	44.7	1097	84
InVigor 2663	112	38.2	120.19	44.5	1097	84
<b><i>Roundup Ready</i></b>						
Admire	114	38.8	120.96	44.0	1114	85
Prairie 499RR	114	38.6	133.05	44.3	1084	83
Kelsey	114	38.6	133.00	43.9	1076	82
LBD 799RR-S	112	38.1	121.98	44.3	1114	85
LBD 561RR	108	36.7	112.62	43.9	1084	83
A98-13NR	103	35.1	99.90	43.8	1084	83
<b><i>Navigator / Compas</i></b>						
Renegade BX	109	36.9	112.35	44.5	1097	84
<b><i>Conventional</i></b>						
AC Excel	100	34.0	105.08	43.8	1114	85
Q2	99	33.6	84.82	43.1	1084	83
LSD		1.87		0.86		
CV%		4.2		1.6		

**Discussion:**

All varieties significantly out-yielded AC Excel, with the exception of Q2 and A98-13NR. InVigor 2573 had significantly higher oil than the check. The hot and dry weather from swathing through harvest hampered the curing process, and as a result a number of the varieties were downgraded to #2. Only AC Excel, Kelsey, Prairie 499RR and InVigor 2573 achieved a #1 grade. Contribution margins reflected yield, seed cost, herbicide cost and grade. The hot weather likely contributed to a fairly small range in maturity among the varieties, from 82 to 85 days.

**DAUPHIN****Methodology:**

This trial was seeded on May 29 in wet soil conditions. Herbicide application occurred when the canola was at approximately the 4-leaf stage. The herbicides and rates were as follows: Conventional - Muster Gold II (40 ac/case), Select (0.09 L/ac); Liberty Link - Liberty (1.35 L/ac); Roundup Ready - Roundup Transorb (0.5 L/ac).

**Observations:**

Emergence was quick due to adequate moisture and heat. Weeds present included wild oats, volunteer wheat, wild mustard and hemp-nettle. The conventional system had to be resprayed with the Select as a result of poor grassy weed control, and this occurred at the 5 to 6-leaf stage. Weed control in the Roundup Ready and Liberty Link systems were generally good. The trial was sprayed for sclerotinia with Rovral Flo and negligible levels of infection were observed at swathing. No other diseases were observed throughout the growing season. Lygus bugs and diamondback larvae were present but well below threshold levels. Flea beetles caused a few shot holes at the cotyledon stage, but were present in high numbers at swathing time.

**Results:**

<b>SYSTEMS COMPARISON TRIAL</b>						
<b>Dauphin, MB</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b>Liberty Link</b>						
InVigor 2663	123	36.1	83.34	42.7	1053	85
InVigor 2573	118	34.6	73.21	42.6	1040	84
<b>Roundup Ready</b>						
Admire	115	33.9	64.20	42.5	1070	86
Kelsey	109	32.1	55.16	44.0	1025	83
Prairie 499RR	109	31.9	54.86	43.0	1053	85
LBD 799RR-S	107	31.5	54.82	43.1	1070	86
A98-13NR	106	31.2	49.09	42.8	1070	86
IMC 106*	103	30.2	66.92	42.7	1053	85
LBD 449RR	99	29.2	38.09	42.6	1040	84
<b>Conventional</b>						
Q2	111	32.5	45.93	42.8	1070	86
AC Excel	100	29.4	34.07	42.2	1053	85
LSD		2.04		1.15		
CV%		5.3		2.2		

Note: \*Specialty oil

**Discussion:**

Yields of most varieties were better than AC Excel, with the exception of A98-13NR, IMC 106 and LBD 449RR. Only Kelsey produced a significantly higher oil content than the check. Contribution margins reflected yield, seed cost, herbicide cost and premiums on specialty oils (IMC 106). All varieties graded #1. At maturity, seed colour change took place rapidly due to the warm conditions, resulting in a range of only 83 to 86 days among the varieties.

**GRENFELL****Methodology:**

Seeding took place on May 17. 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 10-25-10-5 (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). Compas (40 ac/case) was applied to the Navigator treatment. A fungicide was applied to control sclerotinia stem rot at the 20 to 25 % bloom stage.

**Observations:** Excellent moisture and warm soil temperatures resulted in rapid emergence. Growing conditions (see *Site Information - Comments*) were next to ideal throughout the season. Weed pressure was moderate to heavy in most areas. Weed control was excellent. Flea beetles caused damage during early plant development. Up to 25 % shot hole damage was identified in some areas. Plants outgrew damage quickly because of excellent growing conditions. IMC 206 was the first variety to reach 100 % ground cover, 34 days after seeding. Height and standability (lodging) differences were noted among the varieties (see *Harvestability Trial - Discussion*).

**Results:**

<b>SYSTEMS COMPARISON TRIAL Grenfell, SK</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b><i>Liberty Link</i></b>						
InVigor 2663	115	36.6	99.70	43.4	1057	92
InVigor 2573	114	36.2	97.00	42.7	1057	92
<b><i>Roundup Ready</i></b>						
Prairie 499RR	112	35.6	97.68	42.6	1070	93
Admire	110	35.0	90.26	42.1	1057	92
LBD 561RR	105	33.4	84.82	42.2	1031	90
A98-13NR	103	32.6	81.38	41.7	1095	95
Conquest	103	32.6	79.42	43.1	1082	94
LBD 799RR-S	100	31.7	73.96	42.3	1057	92
IMC 106*	98	31.1	91.70	43.5	1015	89
IMC 206*	96	30.5	87.29	41.5	1031	90
<b><i>Navigator / Compas</i></b>						
Renegade Bx	107	33.8	99.26	42.8	1043	91
<b><i>Conventional</i></b>						
Q2	101	32.0	48.46	41.3	1031	90
AC Excel	100	31.7	55.17	42.8	1043	91
LSD		2.16		2.59		
CV%		4.6		5.5		

Note: \*Specialty oil

**Discussion:** Yield differences of 2.16 bu/ac or more are significant. Four varieties (InVigor 2663, InVigor 2573, Prairie 499RR and Admire) yielded significantly higher than AC Excel and the industry check (Q2). Each system had at least one variety exceeding \$90 contribution margin, with the exception of the conventional system. Economic returns of the conventional varieties were lower due to additional herbicide costs for

Canada thistle and wild buckwheat control. Contribution margins reflect differences in yield, seed cost, herbicide cost and specific oil premiums.

Days to maturity varied by six days (89 to 95). There were no significant differences in oil content.

## **NAICAM**

### **Methodology:**

This trial was seeded May 5. 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 7-20-10-5 (actual) was seed-placed for all treatments. Herbicides were applied at the 1 to 3-leaf stage. In-crop application of Muster Gold II (40 ac/case) was applied for all 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).

### **Observations:**

Variable growing conditions outlined in the *Site Information - Comments* section affected the yield potential. Weed pressure was variable across all treatments. Weed control was good for all treatments. Crop density and dry weather reduced the risk of sclerotinia (*Grow with Canola Manual*, p. 1054). All varieties matured rapidly and evenly within a given treatment due to the lack of moisture. Four varieties (LBD 449RR, IMC 106, LBD 561RR and Conquest) were the first varieties to reach 100 % ground cover, 38 days after seeding. Plant height did not vary greatly among varieties.

Light infestations of blackleg were observed. Flea beetles caused minimal damage during early plant development. Diamondback moth larvae were also present in this trial, but damage was minimal.

**Results:**

<b>SYSTEMS COMPARISON TRIAL</b>						
<b>Naicam, SK</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b>Liberty Link</b>						
InVigor 2663	120	29.7	75.65	43.2	1055	101
InVigor 2573	118	29.2	72.27	42.4	1055	101
<b>Roundup Ready</b>						
Prairie 499RR	121	30.0	82.41	44.1	1055	101
Admire	117	28.9	71.61	43.6	1046	100
LBD 799RR-S	116	28.7	76.23	43.3	1063	102
LBD 449RR	113	28.0	70.89	43.4	1020	99
IMC 106*	112	27.8	90.00	45.1	1020	99
LBD 561RR	111	27.5	67.52	43.4	1020	99
Conquest	108	26.7	62.95	44.1	1055	101
A98-13NR	98	24.2	47.21	43.0	1077	103
<b>Conventional</b>						
AC Excel	100	24.8	61.73	42.9	1046	100
Q2	96	23.9	47.01	42.4	1046	100
LSD		1.52		1.35		
CV%		4.0		2.2		

Note: \*Specialty oil

**Discussion:**

Yield differences of 1.52 bu/ac or more are significant. Nine varieties yielded significantly higher than AC Excel and the industry check (Q2). The highest contribution margin was associated with the specialty oil variety IMC 106. Contribution margins reflect differences in yield, seed cost, herbicide costs and specialty oil premiums.

Due to high temperatures and lack of moisture at swathing, days to maturity varied by only four days (99 to 103). Oil contents varied significantly, with IMC 106 providing significantly more oil than the check (AC Excel).

**NORTH BATTLEFORD**

**Methodology:**

This trial was seeded on May 10. Conventional varieties were sprayed with Muster Gold II (40 ac/case) on June 6. Lontrel (0.23 L/ac or 19.3 ac/jug) was spot sprayed on June 16 and a value of \$15.81/ac was added to herbicide costs for the conventional varieties. Liberty Link varieties were sprayed with a Liberty (1.35 L/ac or 10 ac/jug) and Select (120 ac/case) tank mix on June 5. Roundup Ready varieties were sprayed with Roundup Transorb (0.5 L/ac) on June 6.

**Observations:**

Stand establishment was similar for all varieties. Weed pressure was light to moderate throughout the trial. Weeds present were stinkweed, wild buckwheat, volunteer barley, wild oats, cleavers, Canada thistle and perennial sow thistle. Weed control was adequate for all treatments. Due to dry conditions, remaining cleavers in the trial were spindly and weak. Thistle patches in the Liberty Link system were suppressed for most of the season and were not visible above the crop canopy until swathing time. Swathing of all varieties occurred during a short period of time due to the hot, dry conditions experienced in the middle of August.

**Results:**

<b>SYSTEMS COMPARISON TRIAL</b>						
<b>North Battleford, SK</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b><i>Liberty Link</i></b>						
InVigor 2663	131	28.2	68.87	43.4	1036	97
InVigor 2573	122	26.3	56.04	41.9	1036	97
<b><i>Roundup Ready</i></b>						
Admire	120	25.7	54.75	41.7	1019	96
Prairie 499RR	119	25.5	52.10	42.5	1036	97
LBD 799RR-S	115	24.8	49.94	42.6	1036	97
LBD 561RR	113	24.4	51.15	42.3	1036	97
Conquest	112	24.1	43.95	43.4	1019	96
LBD 449RR	111	23.8	47.10	42.8	1036	97
A98-13NR	91	19.6	20.07	40.7	1119	103
IMC 106*	91	19.5	33.51	42.8	1036	97
<b><i>Conventional</i></b>						
AC Excel	100	21.5	27.17	41.9	1047	98
Q2	90	19.3	3.96	40.8	1047	98
LSD		1.74		0.62		
CV%		6.2		1.24		

Note: \*Specialty oil

**Discussion:**

InVigor 2663 was significantly higher yielding than all other varieties. Admire, the highest yielding Roundup Ready variety, was significantly higher yielding than IMC 106, A98-13NR, LBD 449RR and the conventional varieties. InVigor 2663 and Conquest had significantly higher oil content than all other varieties except for IMC 106 and LBD 449RR. Maturity ranged from 96 days to 103 days. Contribution margins reflect differences in yield, seed costs, herbicide costs and specialty oil premiums (IMC 106).

## **VEGREVILLE**

### ***Methodology:***

This trial was seeded on May 8. All varieties were sprayed twice. The first herbicide application on the conventional varieties was with Select (40 ac/case) on June 6. The second application was with Fusion (20 ac/case) on June 20. Liberty Link varieties were sprayed with Liberty (1.35 L/ac or 10 ac/jug) and Select (120 ac/case) on June 6. A follow up application of Fusion (20 ac/case) was applied on June 20. Roundup Ready varieties were sprayed with Roundup Transorb (0.5 L/ac) on June 6 and again on June 20.

### ***Observations:***

Stand establishment was similar for most varieties. However, plant stands within IMC 206 treatments were low compared to the other varieties. Weed pressure was moderate at spraying time. The predominant weed present was volunteer barley. Other weeds present were lamb's quarters, smartweed, ball mustard, hemp-nettle and field horsetail. Initial weed control was good for all treatments. However, a second flush of volunteer barley emerged and the trial was re-sprayed. Weed control was good with the second herbicide application. At the end of the growing season, some lamb's quarters were noticed above the crop canopy throughout the field. Some ball mustard and hemp-nettle were also noticed in low-lying areas.

**Results:**

<b>SYSTEMS COMPARISON TRIAL</b>						
<b>Vegreville, AB</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b><i>Liberty Link</i></b>						
InVigor 2573	131	35.0	120.52	45.3	1133	109
InVigor 2663	124	33.1	107.69	44.5	1133	109
<b><i>Roundup Ready</i></b>						
Admire	129	34.7	120.73	44.2	1178	113
A98-13NR	119	31.9	108.33	45.0	1225	118
LBD 561RR	112	30.0	94.18	43.8	1157	111
Kelsey	111	29.7	89.85	46.2	1145	110
Prairie 499RR	103	27.7	72.18	42.5	1178	113
IMC 106*	102	27.3	96.00	46.1	1124	108
LBD 449RR	96	25.8	65.83	43.8	1115	107
LBD 799RR-S	91	24.3	51.78	43.2	1178	113
IMC 206*	73	19.6	39.48	42.2	1133	109
<b><i>Conventional</i></b>						
Q2	114	30.6	99.14	44.7	1145	110
AC Excel	100	26.8	81.85	44.2	1145	110
LSD		3.52		1.05		
CV%		10.2		2.0		

Note: \*Specialty oil

**Discussion:**

InVigor 2573, the highest yielding variety, was significantly higher yielding than all other varieties except for InVigor 2663, A98-13NR and Admire. Admire, the highest yielding Roundup Ready variety, was significantly higher yielding than all other varieties except for InVigor 2663, InVigor 2573 and A98-13NR. Kelsey had significantly higher oil content than all varieties except for InVigor 2573 and IMC 106. Maturity ranged from 108 to 118 days. Contribution margins reflect differences in yield, seed costs, herbicide costs and specialty oil premiums (IMC 106 and IMC 206).

**BEISEKER**

**Methodology:**

All treatments were seeded on May 16 at a rate of 5 lb/ac. Each of the systems were sprayed with their appropriate herbicides (See *Site Information* for rates and tank mixes).

**Observations:** Emergence for all the varieties was even. Weed growth and populations were moderate. Predominant weeds were wild oats, wild buckwheat and stinkweed. Canada thistle and perennial sow thistle were also noted. Spraying for weeds occurred at the 2-leaf stage of the crop. Weed control for all systems was good. All varieties suffered from heat and moisture stress. However, hybrid and synthetic varieties coped better than the open pollinated varieties. Maturity was noted to be more uniform within the hybrid and synthetic varieties than the open pollinated varieties.

**Results:** Due to the high coefficient of variation for this trial, which was caused by environmental conditions, no accurate conclusions could be made. Therefore, the results have not been reported.

### **LETHBRIDGE (IRRIGATION)**

**Methodology:** This trial was seeded on May 9 at a seeding rate of 4 lb/ac for all varieties. All varieties were sprayed with their appropriate system (See *Site Information* for rates and tank mixes).

**Observation:** Emergence was rapid and even for all varieties. The limited supply of irrigation water restricted plant height. High temperatures caused blossom blast.

**Results:**

<b>SYSTEMS COMPARISON TRIAL</b>						
<b>Lethbridge, AB (Irrigation)</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b><i>Liberty Link</i></b>						
InVigor 2733	137	31.3	62.04	42.0	992	93
InVigor 2663	137	31.2	61.36	41.2	1073	98
InVigor 2573	126	28.9	45.84	40.5	1073	98
<b><i>Roundup Ready</i></b>						
Admire	104	23.8	17.34	39.1	1059	96
IMC 106*	103	23.6	41.40	36.5	1031	95
Kelsey	101	23.1	14.53	41.0	992	93
IMC 206*	100	22.8	30.57	39.9	1031	95
A98-13NR	94	21.6	4.40	39.4	1073	98
<b><i>Conventional</i></b>						
AC Excel	100	22.9	(6.21)	41.0	1059	96
Q2	93	21.4	(21.91)	40.6	1059	96
LSD		3.38		0.99		
CV%		11.2		2.0		

Note: \*Specialty oil

Brackets in the contribution margin reflect a negative value.

**Discussion:**

InVigor 2733 had the highest yield, contribution margin and oil content among the varieties. Yield differences of 3.38 bu/ac or more are significant. Contribution margins reflect differences in yield, seed costs, herbicide costs and specialty oil premiums (IMC 106 and IMC 206).

**RYCROFT****Methodology:**

The trial was seeded on May 22 at a seeding rate of 8 lb/ac for all treatments. A dense stand of wild oats quickly emerged after seeding. Wet weather delayed herbicide applications. Based on the stage and density of the wild oat population, the whole trial was sprayed with Select (0.053 L/ac), in order to protect the yield potential of all varieties. When weather conditions improved, the Roundup Ready varieties were sprayed with Roundup Transorb (0.5 L/ac), Liberty Link varieties were sprayed with Liberty (1.35 L/ac) and the 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 on August 31 or September 2. The whole trial was harvested on October 2.

**Observation:** Soil moisture was good at the time of seeding. Rain after seeding allowed for quick emergence and an even plant stand. Excess amounts of rain caused areas of the trial to be flooded for the majority of the season. As a result of this flooding, one whole rep was eliminated and data was only taken from the three remaining replicates.

**Results:**

<b>SYSTEMS COMPARISON TRIAL</b>						
<b>Rycroft, AB</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b>Liberty Link</b>						
InVigor 2573	137	45.2	166.64	45.5	1035	102
InVigor 2663	132	43.8	157.19	44.7	1035	102
<b>Roundup Ready</b>						
Kelsey	114	37.6	127.74	45.9	1027	101
IMC 106*	113	37.5	167.66	46.8	1035	102
LBD 449RR	108	35.9	129.50	45.2	1035	101
Prairie 499RR	107	35.5	111.24	44.0	1035	102
A98-13NR	102	33.6	110.89	44.1	1035	102
<b>Conventional</b>						
Q2	114	37.7	131.03	44.5	1035	102
AC Excel	100	33.1	111.13	44.3	1035	102
LSD		3.63		0.76		
CV%		6.7		1.2		

Note: \*Specialty oil

**Discussion:** Yield differences of 3.63 bu/ac or greater and oil content differences of 0.76 % or greater are significant. It is important to note that due to the Select application across the entire trial, these yields are primarily a reflection of broadleaf weed control and genetics. IMC 106 had the highest contribution margin even though it did not have the highest yield. Contribution margins are a reflection of yield, seed costs, herbicide costs and specialty oil premiums (IMC 106).

**ROLLA**

**Methodology:** Each treatment was seeded at a rate of 8 lb/ac on May 10 into excellent soil moisture. Decis 5EC (60 mL/ac) was aerial applied on August 2 for diamondback moth larvae control. Due to low weed pressures and unfavourable weather during the appropriate crop stage, no herbicides were applied.

**Observations:** Optimum growing conditions occurred throughout the growing season. This allowed the crop to emerge quickly and evenly. Adequate moisture levels were also reached. InVigor 2663 was the first variety to reach 100 % ground cover.

**Results:**

<b>SYSTEMS COMPARISON TRIAL</b>						
<b>Rolla, BC</b>						
<b>System</b>	<b>Yield (%)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Growing Degree Days</b>	<b>Days To Maturity</b>
<b><i>Liberty Link</i></b>						
InVigor 2573	115	52.1	216.29	43.6	945	112
InVigor 2663	113	51.0	208.86	43.8	945	111
<b><i>Roundup Ready</i></b>						
A98-13NR	102	46.0	183.52	45.3	979	119
Kelsey	100	45.4	179.47	45.4	945	113
IMC 106*	92	41.7	187.41	45.5	945	113
<b><i>Conventional</i></b>						
Q2	110	50.0	202.10	44.4	969	117
AC Excel	100	45.2	197.58	43.9	979	120
LSD		3.02		0.72		
CV%		5.2		1.3		

Note: \*Specialty oil

**Discussion:** Yield differences of 3.02 bu/ac or more and oil content differences of 0.72 % or more are significant. Although InVigor 2573 had the lowest oil content, it had the highest yield and contribution margin. The contribution margins are a reflection of yield and seed costs.

Maturity ranged from 111 to 120 days. AC Excel (check) took the longest time to mature, while InVigor 2663 matured the earliest.