

## VIII VARIETY TRIAL - B. NAPUS

**Objective:** To evaluate agronomic differences between newly registered and recommended varieties in a given area as submitted by the seed trade.

**Background:** The increase in numbers of new varieties available over the past several years has made the task of choosing a variety for a specific farm challenging. Yield, crop quality and disease resistance are important variety traits to consider in the selection process. However, other agronomic factors such as lodging resistance and harvestability are also important factors. Varieties in the trial are selected and submitted by the seed trade and compared against the check (AC Excel) and the industry standard Q2.

**Methodology:** The variety trial was a randomized block with four replicates. Identical agronomic practices were used for the entire trial. This included the same tillage, fertilizer, weed control and post-emergent fungicide treatments. Seed treatments included any treatment that was standard for the variety. The entire trial was seeded on the same day. Swathing commenced when seed colour change was 30 to 40 % on the main stem. Harvest was completed under suitable conditions.

### Western Canadian Summary:

CPC Location	Selkirk MB		Dauphin MB		Grenfell SK		Naicam SK		N. Battleford SK		Vegreville AB		Lethbridge (Irr) AB		Rolla BC	
	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD	NYD	CMD
<b>B. NAPUS VARIETY TRIAL</b>																
Nex 500	32.1	54	32.4	47	33.6	61	24.3	51	19.1	4	34.3	126	22.4	(11)	48.5	211
Nex 705	29.4	41	33.3	50	35.6	82	23.7	49	14.6	(28)	32.5	120	20.1	(24)	50.1	233
Nex 715	25.7	13	29.8	23	34.1	68	24.2	50	16.4	(18)	35	135	21.6	(16)	42.6	164
Nex 720	28.6	33	31.3	33	-	-	-	-	-	-	-	-	-	-	-	-
SP Armada	31.3	59	36.0	73	35.9	78	27.0	71	16.6	(11)	35.9	138	24.8	3	52.1	237
IMC 105	-	-	28.3	39	30.7	63	25.2	75	21.9	39	27.5	99	23.6	9	-	-
IMC 207	-	-	-	-	-	-	-	-	-	-	27.7	101	21.9	(4)	-	-
IMC 302	-	-	-	-	29.8	56	-	-	-	-	-	-	-	-	-	-
MilleniUM 03	27.8	66	30.6	70	34.1	104	26.0	93	23.1	58	30.5	135	-	-	-	-
Q2	31.0	45	34.4	59	31.1	42	24.3	50	21	15	35.4	132	24.3	(2)	52.5	236
AC Excel	29.3	43	30.2	39	30.3	46	23.6	54	23.8	43	29.7	101	21.6	(15)	46.4	206

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:** Wet conditions delayed seeding of this trial until May 27, but allowed for shallow seeding (about \_"). Edge granular was applied and incorporated

through cultivation and harrowing about one week prior to seeding. Wet conditions following the incorporation reduced the control of the weeds that were present. As a result of this, together with a few escapes, a follow-up application of Select (0.065 L/ac) and Muster (8 g/ac) was required. Two of the four reps also received a half rate of Lontrel (0.085 L/ac) for wild buckwheat suppression. Ronilan EG (0.3 kg/ac) was applied at around 30 % bloom based on high potential for sclerotinia as a result of frequent rainfall.

**Observations:**

Emergence was excellent for all varieties and plant growth was hastened throughout the summer by warm, humid conditions. Some shot holes were observed initially from flea beetles, but the crop quickly outgrew any damage. Counts of diamondback moth larvae approached economic threshold near the middle of July, but heavy rain on July 16 appeared to reduce populations, and they never recovered. Conditions were ideal for sclerotinia during flowering and early podding, but the fungicide was effective in limiting any disease development. Hot, dry weather during and following swathing resulted in rapid dry down of the swaths.

**Results:**

<b>B. NAPUS VARIETY TRIAL YIELD, ECONOMIC &amp; QUALITY RESULTS Selkirk, MB</b>							
<b>Treatment</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>Grade</b>
Nex 500	110	32.1	53.95	43.1	1114	85	2
SP Armada	107	31.3	58.87	41.9	1051	80	1
Q2	106	31.0	45.31	41.8	1114	85	2
Nex 705*	100	29.4	40.94	44.6	1133	86	2
AC Excel	100	29.3	42.79	43.5	1133	86	2
Nex 720*	98	28.6	33.17	41.4	1133	86	2
MilleniUM 03*	95	27.8	65.89	43.5	1063	81	1
Nex 715*	88	25.7	13.07	41.1	1133	86	2
LSD		2.43		1.30			
CV%		6.8		2.5			

Note: \*Specialty oil varieties.

**Discussion:**

Nex 500 was the only variety to produce significantly higher yield than the check (AC Excel), while Nex 715 was the only one that yielded significantly lower. Nex 705 provided the highest oil content, and was the only one that was significantly higher from AC Excel. Contribution margins reflected yield, seed cost, grade and premiums for specialty oils. MilleniUM 03 and SP Armada were the earliest to mature, and also the only varieties that graded #1. The downgrading of the other varieties was likely a result of the rapid dry down of the swaths, combined with little rainfall prior to harvest.

## DAUPHIN

**Methodology:** Rains and extremely wet soil conditions during early May delayed seeding until May 29. Herbicide applications included Muster Gold II (40 ac/case) and Select (0.09 L/ac). Rovral Flo (0.85 L/ac) was applied at 40 % bloom.

**Observations:** Emergence was quick although not uniform due to clumping of soil. Flea beetles were present but no significant damage occurred. Wild oats and volunteer wheat were the main weeds, while hemp-nettle and wild mustard were present. Control of wild mustard and hemp-nettle by the Muster Gold II was excellent. However, there were a considerable number of wild oat and volunteer wheat escapes. The number of escapes was high enough to justify the application of Select 10 days later, which worked very well. Conditions were favorable for sclerotinia development, but the fungicide was effective. Very low levels of infection were visible at time of swathing. Dry conditions at swathing and combining allowed for quick drydown but caused some problems with green seed.

### Results:

<b>B. NAPUS VARIETY TRIAL YIELD, ECONOMIC &amp; QUALITY RESULTS Dauphin, MB</b>							
<b>Treatment</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>Grade</b>
SP Armada	119	36.0	72.94	42.8	1053	85	1
Q2	114	34.4	58.76	42.1	1087	87	1
Nex 705*	110	33.3	49.62	45.2	1115	89	2
Nex 500	107	32.4	46.88	43.4	1070	86	1
Nex 720*	104	31.3	33.37	43.1	1128	90	2
MilleniUM 03*	101	30.6	70.26	43.4	1040	84	1
AC Excel	100	30.2	39.47	43.1	1070	86	1
Nex 715*	99	29.8	22.97	42.0	1102	88	2
IMC 105*	94	28.3	39.14	42.4	1070	86	1
LSD		1.70		1.92			
CV%		4.4		3.7			

Note: \*Specialty oil varieties.

**Discussion:** A number of varieties yielded significantly better than AC Excel, including SP Armada, Q2, Nex 705 and Nex 500, with only IMC 105 yielding significantly lower. Nex 705 produced significantly higher oil content than the check. Contribution margins reflected yield, seed cost, grade and premiums for specialty oils. Maturity ranged from 84 to 90 days, with MilleniUM 03 being the earliest and Nex 720 the latest. The later maturing Nex 705, Nex 715 and Nex 720 suffered downgrading to a #2,

due to the timing of the hot dry weather at swathing. These varieties did not get the moisture to allow them to cure properly.

## **GRENFELL**

### **Methodology:**

Seeding took place on May 17. All varieties were seeded at 6.2 lb/ac. A fertilizer blend of 10-25-10-5 (actual) was seed-placed for all treatments. Excellent moisture and warm soil temperatures resulted in rapid emergence. Weed pressure was moderate to heavy in most areas. 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 at the 2 to 3-leaf stage. A fungicide was applied to control sclerotinia stem rot at 20 to 25 % bloom stage.

### **Observations:**

Growing conditions (see *Site Information - Comments*) were very good throughout the season. Weed control was excellent. Flea beetles caused damage during early plant development. Shot hole damage reached 25 % in some areas. Plants outgrew the damage quickly. IMC 105 and MilleniUM 03 were first to reach 100 % ground cover. Height and standability (lodging) differences were noted among the varieties (see *Harvestability Trial - Discussion*).

### **Results:**

<b>B. NAPUS VARIETY TRIAL YIELD, ECONOMIC &amp; QUALITY RESULTS Grenfell, SK</b>							
<b>Treatment</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>Grade</b>
SP Armada	118	35.9	78.11	41.6	1043	91	1
Nex 705*	117	35.6	81.52	45.2	1070	94	1
MilleniUM 03*	113	34.1	103.82	43.4	1015	89	1
Nex 715*	113	34.1	68.47	42.4	1057	92	1
Nex 500	111	33.6	30.91	42.9	1070	93	1
Q2	103	31.1	42.48	41.7	1031	90	1
IMC 105*	101	30.7	62.90	40.7	1031	90	1
AC Excel	100	30.3	45.72	41.9	1043	91	1
IMC 302*	98	29.8	56.20	40.9	1057	92	1
LSD		2.59		0.84			
CV%		5.5		1.4			

Note: \*Specialty oil varieties.

### **Discussion:**

Yield differences of 2.59 bu/ac or more are significant. Among the *B. napus* varieties five varieties yielded significantly greater than the check variety (AC Excel). Only four *B. napus* varieties yielded significantly higher than the industry check (Q2). MilleniUM 03 provided the greatest

economic return (\$103.82/ac), primarily due to a higher premium paid for its specialty oil profile. All treatments graded #1. Contribution margins reflect differences in yield, seed costs and specific oil premiums.

Days to maturity (30 % seed colour change) ranged from 89 to 94 days. Five varieties varied significantly from AC Excel in terms of oil content. Nex 705 had the highest oil content at 45.2 %.

## **NAICAM**

### **Methodology:**

This trial was seeded May 5. All varieties were seeded at 6.2 lb/ac. A fertilizer blend of 7-20-10-5 (actual) was seed-placed for all treatments. A conventional herbicide, Muster Gold II (40 ac/case), was applied at the 1 to 3-leaf stage.

### **Observations:**

Variable growing conditions outlined in *Comments* of the Naicam *Site Information* section affected the yield potential of the varieties. Weed pressure was variable across all treatments. Control of target weeds was adequate. Moderate crop canopy and dry weather reduced the risk of sclerotinia (*Grow with Canola Manual*, p. 1054). All varieties matured evenly within a given treatment due to the lack of moisture.

Light infestations of blackleg were observed. Flea beetles caused moderate damage during early plant development. Although shot hole damage reached 25 % in a number of treatments, plants recovered. Other insect damage was light.

**Results:**

<b>B. NAPUS VARIETY TRIAL YIELD, ECONOMIC &amp; QUALITY RESULTS Naicam, SK</b>							
<b>Treatment</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>Grade</b>
SP Armada	114	27.0	71.16	43.3	1020	99	1
MilleniUM 03*	110	26.0	92.96	45.9	1020	99	1
IMC 105*	107	25.2	75.11	43.3	1020	99	1
Nex 500	103	24.3	51.26	43.9	1055	101	1
Q2	103	24.3	49.71	43.6	1046	100	1
Nex 715*	103	24.2	50.32	43.3	1055	101	1
Nex 705*	100	23.7	48.98	44.9	1063	102	1
AC Excel	100	23.6	53.63	43.4	1046	100	1
LSD		1.26		0.84			
CV%		3.5		1.3			

Note: \*Specialty oil varieties.

**Discussion:**

Yield differences of 1.26 bu/ac or more are significant. Three varieties (Armada, MilleniUM 03 and IMC 105) yielded significantly higher than the check (AC Excel), while two varieties yielded significantly higher than the industry check (Q2). MilleniUM 03 had the highest contribution margin, primarily due to the premium paid for high erucic acid varieties. Contribution margins reflect differences in yield, seed cost and specific oil premiums.

Days to maturity varied by three days (99 to 102). Oil contents also varied significantly, with MilleniUM 03 and Nex 705 providing significantly more oil than AC Excel.

## **NORTH BATTLEFORD**

**Methodology:**

This trial was seeded on May 10. All 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. A value of \$15.81/ac was used for additional herbicide in calculating contribution margins for the varieties.

**Observations:**

See *Site Information - Comments* for growing conditions at the site. There were no noticeable differences in stand establishment and growth early in the season. The hot, dry conditions experienced throughout the growing season affected the yield potential of all varieties. The later maturing varieties appeared to be affected the most. These varieties were the lowest yielding, latest to mature and took the longest to clear green seed.

**Results:**

<b>B. NAPUS VARIETY TRIAL YIELD, ECONOMIC &amp; QUALITY RESULTS North Battleford, SK</b>							
<b>Treatment</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>Grade</b>
AC Excel	100	23.8	42.69	42.8	1063	99	1
MilleniUM 03*	97	23.1	57.98	44.3	1036	97	1
IMC 105*	92	21.9	38.49	41.9	1048	98	1
Q2	88	21.0	15.43	42.2	1063	99	1
Nex 500	80	19.1	4.10	41.8	1063	99	1
SP Armada	70	16.6	(11.15)	40.9	1077	100	1
Nex 715*	69	16.4	(17.54)	43.5	1133	104	1
Nex 705*	61	14.6	(28.31)	43.8	1133	104	1
LSD		1.39		0.97			
CV%		5.8		1.9			

Note: \*Specialty oil varieties.

Brackets in the contribution margin reflect a negative value.

**Discussion:**

AC Excel was significantly higher yielding than all other varieties except for MilleniUM 03. Maturity ranged from 97 days for MilleniUM 03 to 104 days for Nex 705 and Nex 715. MilleniUM 03 had significantly higher oil content than all varieties except for Nex 705 and Nex 715. Differences in contribution margins reflect differences in yield, seed costs and speciality oil premiums paid for some varieties.

**VEGREVILLE**

**Methodology:**

This trial was seeded on May 9. All varieties were sprayed with Select (40 ac/case) on June 6. They were sprayed again on June 20 with Fusion (20 ac/case) to control a second flush of volunteer barley.

**Observations:**

See *Site Information - Comments* for growing conditions at the site. Stand establishment was similar for all varieties. Varieties varied only slightly as they developed throughout the growing season.

**Results:**

<b>B. NAPUS VARIETY TRIAL YIELD, ECONOMIC &amp; QUALITY RESULTS Vegreville, AB</b>							
<b>Treatment</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>Grade</b>
SP Armada	121	35.9	138.03	44.7	1145	110	1
Q2	119	35.4	131.54	45.1	1157	111	1
Nex 715*	118	35.0	135.29	47.1	1217	117	1
Nex 500	115	34.3	125.61	45.1	1145	110	1
Nex 705*	109	32.5	119.48	47.3	1186	114	1
MilleniUM 03*	103	30.5	135.35	45.5	1115	107	1
AC Excel	100	29.7	101.43	43.9	1115	107	1
IMC 207*	93	27.7	100.55	44.8	1124	108	1
IMC 105*	93	27.5	99.06	41.5	1002	106	1
LSD		1.73		1.02			
CV%		4.5		1.9			

Note: \*Specialty oil varieties.

**Discussion:** SP Armada was significantly higher yielding than all other varieties except for Q2, Nex 715 and Nex 500. Nex 715 and Nex 705 had significantly higher oil content than all other varieties. Maturity ranged from 106 days for IMC 105 to 117 days for Nex 715. Differences in contribution margins reflect differences in yield, seed costs and speciality oil premiums paid for some varieties.

## **BEISEKER**

**Methodology:** Refer to *Site Description*.

**Observations:** A rain after seeding resulted in rapid emergence. Lack of subsurface moisture combined with hot, windy weather in June resulted in stressed plants. Plants were stunted and spindly and never reached 100 % ground cover. The average height of the varieties was 26". The lack of moisture combined with heat and windy conditions caused blossom blast. Towards the end of flowering a 14 mm rain brought on some second growth (new flowers) which resulted in variability in maturity at swathing.

**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 rate of 4 lb/ac.

**Observations:** As a result of seeding into dry soil, emergence did not occur until after an application of irrigation water. Emergence was even across all treatments. Restricted water access (see *Site Description*) affected plant development. Varieties were shorter than expected. Hot, windy conditions during flower caused some blossom blast. Cabbage seed pod weevil and lygus bugs were below threshold levels. Diamondback moth larvae were above threshold levels and were sprayed to control them. Maturity was rapid.

### Results:

<b>B. NAPUS VARIETY TRIAL YIELD, ECONOMIC &amp; QUALITY RESULTS Lethbridge, AB (Irrigation)</b>								
Treatment	Yield (%)	Yield (bu/ac)	Contribution Margin (\$/ac)	Oil (%)	Ground Cover % (June 14)	Growing Degree Days	Days To Maturity	Grade
SP Armada	114	24.8	3.12	40.5	86	1059	96	2
Q2	113	24.3	(2.33)	41.4	85	1059	96	2
IMC 105*	109	23.6	8.59	41.0	94	1059	96	2
Nex 500	104	22.4	(10.58)	41.3	92	1073	97	2
IMC 207*	100	21.9	(3.93)	41.5	100	1046	95	2
AC Excel	100	21.6	(14.98)	41.3	93	1073	97	2
Nex 715*	100	21.6	(15.58)	39.0	89	1073	97	2
Nex 705*	98	20.1	(23.38)	40.9	98	1059	96	2
LSD		2.85		0.69				
CV%		10.4		1.4				

Note: \*Specialty oil varieties.

Brackets in the contribution margin reflect a negative value.

**Discussion:** SP Armada had the highest yield among the varieties. IMC 105 had the highest contribution margin. Q2 had the highest oil content. All varieties graded #2 as a result of extremely hot and dry conditions after swathing. Water rationing did not allow sufficient irrigation water to assist in curing the swath.

## RYCROFT

**Methodology:** Seeding was delayed until favourable moisture conditions existed. The trial was seeded on May 22, when soil moisture levels increased. A seeding rate of 8 lb/ac was used for all treatments. The site received a spring broadcast application of fertilizer (60-20-20-15 actual) which was incorporated into the soil using harrows. A dense stand of wild oats

resulted in the decision to spray the entire site with Select (53 mL/ac). To control the weeds that still remained, Muster Gold II (Muster @ 8 g/ac and Assure II @ 200 mL/ac) was used.

**Observations:** Emergence was even and fairly rapid as a result of a rainfall that came shortly after seeding. However, the continuation of the rain for three weeks caused some flooding in the trial. The excess moisture also caused the plants to show some signs of moisture stress. These signs included spindly plants that had poor ground cover percentages. Weed pressures were also very high from the time of crop emergence. Wild oat was the major weed present. Due to unfavourable spraying conditions, the wild oats reached the 6-leaf stage before they were sprayed. When the weather permitted the trial was sprayed and weed control was adequate. Rainfall continued throughout the remainder of the growing season. An infestation of diamondback moth larvae was sprayed on August 1 with Decis 5EC (60 mL/ac). Swathing stretched over a three-day span and harvest was completed in one day on October 2.

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

## **ROLLA**

**Methodology:** The trial was seeded on May 10 into excellent soil moisture levels using a seeding rate of 8 lb/ac. Due to low weed pressures and unfavourable environmental conditions at the proper crop stage for spraying, no herbicides were applied to this trial. Swathing was performed on two different dates, September 1 and September 7. The trial was harvested on October 6.

**Observations:** Optimum growing conditions resulted in quick emergence and exceptional stand establishment. Weed pressures were extremely low and the trial was not sprayed with any herbicides. A high population of diamondback moth larvae appeared in late July and on August 2 Decis 5EC (60 mL/ac) was applied by aerial application. Due to the high amount of moisture that was received throughout the growing season, the crop seemed to take a long time to mature.

**Results:**

<b>B. NAPUS VARIETY TRIAL YIELD, ECONOMIC &amp; QUALITY RESULTS Rolla, BC</b>							
<b>Treatment</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>Grade</b>
Q2	113	52.5	235.71	43.5	969	117	1
SP Armada	112	52.1	237.17	42.0	945	113	1
Nex 705*	108	50.1	232.57	46.0	969	117	1
Nex 500	105	48.5	210.71	44.0	965	116	1
AC Excel	100	46.4	205.68	42.0	952	114	1
Nex 715*	92	42.6	164.16	41.3	965	114	2
LSD		3.44		1.34			
CV%		5.7		2.5			

Note: \*Specialty oil varieties.

**Discussion:**

Yield differences of 3.44 bu/ac or more are significant. Q2, SP Armada and Nex 705 all yielded significantly higher than the check (AC Excel). Oil content was significantly higher in Q2, Nex 500 and Nex 705 as compared to the check.

Contribution margins are a reflection of yield, grade, seed costs and specialty oil premiums paid for some varieties. Even with a \$0.45/bu premium for Nex 715, the contribution margin still remained the lowest at \$164.16/ac. This was a result of having the lowest yield and being graded #2.