

## **IX HARVESTABILITY TRIAL**

**Objective:** To compare the harvestability of varieties entered in the variety trials.

**Background:** A number of varieties have very similar yield and quality traits. In choosing a variety, a grower needs to consider additional traits like lodging and harvestability. Harvestability is the measurement of swathing and combining ease. Currently, there is no meaningful scientific measurement for harvestability. Therefore, a standardized criteria for a subjective measurement was used.

**Methodology:** Harvestability was evaluated as swathing and combining were completed on the *B. napus* variety and system comparison trials. Swathing and combining were each evaluated on a scale of one to five with AC Excel (the check) being three. The following criteria were considered; lodging, height, straw stiffness, straw strength, stand uniformity, swath fluffiness (pod dispersion), tendency to clump, flowability, feeding and speed of operation.

The following ratings are subjective. The machine operator, crop conditions, weather and time of day can affect the harvestability of a variety.

Ratings:        1 = much better than check  
                     2 = better than check  
                     3 = check  
                     4 = worse than check  
                     5 = much worse than check

### **Western Canadian Summary:**

Harvestability is a very subjective evaluation and there are often differences in the ease of operation experienced by the operation of the equipment. Factors in swathing include the uniformity of stand, plant height, straw stiffness and lodging. When combining, a uniform stand usually translates into an even swath that feeds smoothly. Any difficulties when swathing are usually magnified at combining time. Stressful environmental conditions minimized the differences in harvestability among the varieties at several locations.

### **SELKIRK**

**Methodology:** All plots were swathed with an 18 ft Versatile 400 swather equipped with a UII pick-up reel. Three reps were combined with a John Deere 6600 Turbo, while the fourth rep was combined with an IHC 1460 combine.

**Observation:** Heavy rains during late flowering contributed to moderate to severe lodging in the plots. The combination of this lodging and greater

amounts of plant material for some of the varieties led to poorer swathability ratings. With regard to combining ease, the varieties with less plant material and less clumping of the swath were rated the highest.

**Results:**

<b>HARVESTABILITY TRIAL</b>			
<b><i>B. napus</i> Varieties</b>			
<b>Selkirk, MB</b>			
<b>Variety</b>	<b>Lodging Ratio</b>	<b>Swathability Rating</b>	<b>Combinability Rating</b>
A98-13NR	0.89	1	3
AC Excel	0.64	3	3
Admire	0.87	1	3
InVigor 2573	0.71	3	3
InVigor 2663	0.82	3	3
Kelsey	0.78	2	3
LBD 561RR	0.88	1	3
LBD 799RR-S	0.90	1	3
MilleniUM 03	0.70	3	3
Nex 500	0.76	2	3
Nex 705	0.80	2	3
Nex 715	0.75	2	3
Nex 720	0.77	2	3
Prairie 499RR	0.83	1	3
Q2	0.80	2	3
Renegade BX	0.81	3	3
SP Armada	0.87	1	2

**Discussion:**

In terms of lodging ratio, none of the varieties were worse than AC Excel, and this was also true for swathability and combinability. The greatest differences were in the swathability, with six varieties performing better than the check (AC Excel), and six performing much better than the check. Only SP Armada performed better in terms of combinability.

**DAUPHIN**

**Methodology:**

All plots were swathed with an 18 ft Versatile swather, equipped with a MacDon pickup reel and lifter guards. Combining was done with a JD 7700.

**Observation:**

At swathing, the entire crop was lodged towards the east because of several strong westerly winds during the summer. The plots were situated so that they had to be swathed north and south. This

complicated swathing as sometimes the crop would fold under the cutting bar and then drag, resulting in some piles. The taller varieties were a little easier to swath because it was easier to get the cutter bar under the canopy. However, because of the extra height, there was more biomass to put through the swather. Differences in combinability ratings were due mainly to the amount of piles made at swathing.

**Results:**

<b>HARVESTABILITY TRIAL</b>			
<b><i>B. napus</i> Varieties</b>			
<b>Dauphin, MB</b>			
<b>Variety</b>	<b>Lodging Ratio</b>	<b>Swathability Rating</b>	<b>Combinability Rating</b>
A98-13NR	0.74	4	3
AC Excel	0.43	3	3
Admire	0.64	4	3
IMC 105	0.49	4	3
IMC 106 RR	0.64	4	3
InVigor 2573	0.63	3	3
InVigor 2663	0.60	4	3
Kelsey	0.60	4	3
LBD 449RR	0.58	3	3
LBD 799RR-S	0.83	3	3
MilleniUM 03	0.46	3	2
Nex 500	0.58	3	3
Nex 705	0.61	3	3
Nex 715	0.62	4	3
Nex 720	0.58	3	3
Prairie 499RR	0.75	4	3
Q2	0.52	3	3
SP Armada	0.68	3	3

**Discussion:**

All the varieties had a better lodging ratio than the check AC Excel. There were eight varieties that had a poorer swathability rating and none that were rated better than AC Excel. There were not many differences in the combinability ratings as MilleniUM 03 was the only variety rated better than the check and none were rated worse.

**GRENFELL**

**Methodology:**

The treatments were swathed with a 20 ft Versatile 4400 equipped with a pick-up reel and harvested with a New Holland TR 85 combine.

**Observation:**

Differences in plant characteristics such as height, straw stiffness, stem strength, branching and initial podding height affected harvestability.

Varieties that were tall, stiffer stemmed or more severely lodged were considerably more difficult to swath. Low-lying areas had more plant material. Some varieties were more severely lodged than others.

**Results:**

<b>HARVESTABILITY TRIAL</b> <b><i>B. napus</i> Varieties</b> <b>Grenfell, SK</b>			
Variety	Lodging Ratio	Swathability Rating	Combinability Rating
45A51	0.90	3	3
A98-13NR	0.98	3	3
AC Excel	0.92	3	3
Admire	0.93	2	2
Conquest	0.98	4	4
DKL34-55	0.94	3	4
Hyola 440	0.90	3	3
IMC 105	0.80	3	3
IMC 106 RR	0.91	3	3
IMC 206 RR	0.94	3	3
IMC 302	0.84	3	3
InVigor 2573	0.94	4	5
InVigor 2663	0.96	4	4
LBD 561RR	0.96	2	2
LBD 799RR-S	0.95	2	2
MilleniUM 03	0.64	4	3
Nex 500	0.82	3	3
Nex 705	0.83	2	3
Nex 710	0.89	3	3
Nex 715	0.82	4	4
Prairie 499RR	0.88	3	3
Q2	0.90	3	3
Renegade BX	0.92	3	3
SP Armada	0.89	4	3

**Discussion:**

There were notable differences in the harvestability of a number of the *B. napus* varieties. The severity of the lodging ranged from 0.64 to 0.98, where 1.00 would indicate no lodging. Plant height, stem stiffness and lodging directly related to swathability ratings. MilleniUM 03 was badly lodged. This resulted in operating the swather table and reel on or near to the ground, making swathing more difficult. Taller and stiffer stemmed varieties were considerably harder to swath. They had a tendency to hang up in the throat of the swather. Shorter less lodged varieties were easier to swath. Higher combinability ratings (1 and 2) were related to

ease of thrashing and speed of operation. Poor flowability and reduced speed of operation, due to clumping, resulted in lower (4 and 5) combinability ratings.

## **NAICAM**

**Methodology:** Treatments were swathed with an 18 ft Co-op swather equipped with a bat reel, and harvested with a New Holland TR 85 combine.

**Observation:** Differences in plant characteristics such as height, straw stiffness, initial podding height and uniformity of the stand did not vary greatly due to moderate plant canopy and environmental conditions outlined in the *Site Information - Comments*.

### **Results:**

<b>HARVESTABILITY TRIAL</b>			
<b><i>B. napus</i> Varieties</b>			
<b>Naicam, SK</b>			
<b>Variety</b>	<b>Lodging Ratio</b>	<b>Swathability Rating</b>	<b>Combinability Rating</b>
46A76	0.98	3	3
A98-13NR	0.99	3	3
AC Excel	0.97	3	3
Admire	0.98	3	3
Conquest	0.99	3	3
DKL34-55	0.98	3	3
IMC 105	0.96	3	3
IMC 106 RR	0.94	3	3
InVigor 2573	0.98	3	3
InVigor 2663	0.95	3	3
LBD 449RR	0.98	3	3
LBD 561RR	0.98	3	3
LBD 799RR-S	0.99	3	3
MilleniUM 03	0.89	3	3
Nex 500	0.92	3	3
Nex 705	0.92	3	3
Nex 715	0.92	3	3
Prairie 499RR	0.98	3	3
Q2	0.97	3	3
SP Armada	0.95	3	3

**Discussion:** Lodging ratios varied only slightly. There were no notable differences in the harvestability of the *B. napus* varieties.

## **NORTH BATTLEFORD**

**Observation:** Growth of varieties in this trial was limited due to environmental conditions experienced at the site (see *Site Information - Comments*).

**Results:** No differences in lodging or harvestability were noticed among the varieties.

## **VEGREVILLE**

**Methodology:** All varieties were swathed with a 20 ft Versatile 400 swather equipped with a pickup reel. They were all combined with a John Deere Turbo 7700 combine.

**Observation:** All varieties were lodged across the direction of the plots. Some varieties were lodged more than others making swathing more difficult for some treatments. None of the varieties tested grew very tall and plant height did not limit ease of swathing any varieties. Combining speed varied slightly among the varieties.

**Results:**

<b>HARVESTABILITY TRIAL</b>			
<b><i>B. napus</i> Varieties</b>			
<b>Vegreville, AB</b>			
<b>Variety</b>	<b>Lodging Ratio</b>	<b>Swathability Rating</b>	<b>Combinability Rating</b>
<b><i>B. napus</i> Trial</b>			
AC Excel	0.84	3	3
IMC 105	0.78	3	3
IMC 207	0.75	4	3
MilleniUM 03	0.83	4	3
Nex 500	0.86	3	3
Nex 705	0.89	3	3
Nex 715	0.83	3	3
Q2	0.82	3	3
SP Armada	0.90	3	3
<b>Systems Comparison Trial</b>			
A98-13NR	0.84	3	4
Admire	0.85	3	3
IMC 106 RR	0.86	4	3
IMC 206 RR	0.76	4	2
InVigor 2573	0.83	2	3
InVigor 2663	0.83	2	3
Kelsey	0.84	3	4
LBD 449RR	0.78	4	2
LBD 561RR	0.83	2	3
LBD 799RR-S	0.85	2	3
Prairie 499RR	0.79	3	3

**Discussion:**

Differences in harvestability among the varieties were slight. Swathability differences were due to differences in crop height and lodging. Varieties that were more difficult to swath were shorter and lodged more than the other varieties. Differences in combinability were due to slight differences in combine speed.

**BEISEKER**

**Observation:**

Growth of varieties in this trial was limited due to environmental conditions experienced at the site (see *Site Information - Comments*).

**Results:**

No differences in lodging or harvestability were noticed among the varieties.

## **LETHBRIDGE (IRRIGATION)**

**Observation:** Growth of varieties in this trial was limited due to environmental conditions experienced at the site (see *Site Information - Comments*).

**Results:** No differences in lodging or harvestability were noticed among the varieties.

## **RYCROFT**

**Methodology:** This trial was harvested using an 18 ft Versatile swather equipped with a pick-up reel and a 1440 IH combine.

**Observation:** There were no major differences observed among varieties during harvest operations. Any differences were a direct result of speed of operation.

**Results:**

<b>HARVESTABILITY TRIAL B. napus Varieties Rycroft, AB</b>			
<b>Variety</b>	<b>Lodging Ratio</b>	<b>Swathability Rating</b>	<b>Combinability Rating</b>
A98-13NR	0.76	2	3
AC Excel	0.77	3	3
IMC 105	0.78	2	4
IMC 106 RR	0.84	3	2
InVigor 2573	0.78	3	4
InVigor 2663	0.79	3	3
Kelsey	0.62	3	3
LBD 449RR	0.80	3	2
Nex 500	0.82	2	3
Nex 705	0.85	3	2
Nex 715	0.73	3	3
Prairie 499RR	0.79	2	3
Q2	0.72	3	3
SP Armada	0.85	3	3

**Discussion:** Lodging had no direct impact on the ease of swathing. Harvestability differences were related to the speed of operation.

## **ROLLA**

**Methodology:** The trial was harvested using a 21 ft Premier swather equipped with a pick-up reel and a 1440 IH combine.

**Observation:** There were no major differences observed among the varieties during harvest.

### **Results:**

<b>HARVESTABILITY TRIAL <i>B. napus</i> Varieties Rolla, BC</b>			
<b>Variety</b>	<b>Lodging Ratio</b>	<b>Swathability Rating</b>	<b>Combinability Rating</b>
A98-13NR	0.76	2	3
AC Excel	0.69	3	3
IMC 106 RR	0.77	2	3
InVigor 2573	0.84	3	3
InVigor 2663	0.87	3	3
Kelsey	0.77	2	3
Nex 500	0.74	3	3
Nex 705	0.77	3	3
Nex 715	0.76	2	3
Q2	0.75	3	4
SP Armada	0.92	2	3

**Discussion:** Lodging did not have an effect on the ease of swathing. Any differences seen in the harvestability were due to the speed of operation.