

Objective: Compare the harvestability of varieties entered in the variety and system comparison trial.

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, standardized criteria for a subjective measurement were used.

Methodology: Harvestability was evaluated as swathing and combining were completed on the variety and system comparison trial. Swathing and combining were each evaluated on a scale of one to five with Q2 (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 were subjective. The machine operator, crop conditions, weather and time of day can affect the harvestability of a variety.

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

SELKIRK

Methodology: All plots were swathed with an 18 ft Versatile 400 swather equipped with a Ull pick-up reel. The trial was combined with an IHC 1460 combine.

Observations: Early stress from excessive moisture followed by dry conditions throughout the last three weeks of July and first week of August resulted in plant heights that were shorter than would normally be expected. This fact together with a lack of severe lodging resulted in few challenges with respect to swathing and combining. Differences in ease of swathing and combining were generally a function of the amount of plant material and the impact this had on the speed of the operations.

Results:

| HARVESTABILITY TRIAL Variety and System Comparison Selkirk, MB | | | |
|---|----------------------|-----------------------------|-------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| IMC 208 | 0.76 | 2 | 3 |
| IMC 304 | 0.75 | 2 | 2 |
| InVigor 2663 | 0.80 | 1 | 3 |
| InVigor 2733 | 0.75 | 2 | 2 |
| LBD 612 RR | 0.76 | 2 | 2 |
| MilleniUM 03 | 0.70 | 4 | 3 |
| Nex 705 | 0.72 | 2 | 3 |
| Nex 715 | 0.67 | 1 | 3 |
| Nex 720 | 0.74 | 3 | 3 |
| Q2 (Check) | 0.82 | 3 | 3 |

Discussion:

Lodging ratios indicated that none of the varieties were severely lodged, though there were some minor differences. Ease of swathing was generally related to the amount of plant material, although some of the shorter varieties (IMC 304, InVigor 2733, MilleniUM 03) still presented some challenges since they had to be swathed very close to the ground. There were fewer differences noted in ease of combining, since the generally short stature of the crop did not produce any excessively large swaths.

DAUPHIN

Methodology:

All plots were swathed with an 18 ft Versatile 400 swather equipped with a Ull pick-up reel. The trial was combined with a John Deere 7720 combine.

Observations:

Early stress from cool conditions and minor flea beetle feeding resulted in a very short crop in terms of plant heights. Heavy rains in the last week of June and the second week in August contributed to considerable lodging in some varieties. The combination of short stature and severe lodging caused the greatest difficulties and resulted in poorer harvestability ratings.

Results:

| HARVESTABILITY TRIAL Variety and System Comparison Dauphin, MB | | | |
|---|----------------------|-----------------------------|-------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| IMC 109 | 0.51 | 4 | 3 |
| IMC 208 | 0.70 | 3 | 3 |
| InVigor 2573 | 0.72 | 3 | 3 |
| InVigor 2733 | 0.55 | 3 | 3 |
| LBD 2393 | 0.81 | 3 | 3 |
| LBD 612 RR | 0.65 | 3 | 3 |
| MilleniUM 03 | 0.46 | 4 | 3 |
| Nex 705 | 0.81 | 3 | 3 |
| Nex 715 | 0.55 | 3 | 3 |
| Q2 | 0.67 | 3 | 3 |

Discussion:

IMC 109 and MilleniUM 03 were the most lodged, and this together with plant heights around 3 ft resulted in greater difficulty in swathing. These varieties had to be swathed very close to the ground. No differences in ease of combining were noted. This was due to the short plant heights that reduced the amount of plant material that had to be put through the combine. The combine used had ample capacity for all swaths.

YORKTON

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.

Observations:

Differences in plant characteristics such as height, straw stiffness, stem strength, branching and initial podding height affected harvestability. Stiffer stemmed or more severely lodged varieties were more difficult to swath.

Results:

| HARVESTABILITY TRIAL Variety and System Comparison Yorkton, SK | | | |
|---|----------------------|-----------------------------|-------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| Canterra 1604 CL | 0.95 | 3 | 3 |
| Canterra 1812 | 0.95 | 3 | 3 |
| Canterra 1841 | 0.99 | 3 | 2 |
| DKL 34-55 | 0.94 | 3 | 2 |
| IMC 109 | 0.70 | 4 | 3 |
| IMC 208 | 0.91 | 3 | 3 |
| InVigor 2573 | 0.91 | 3 | 4 |
| InVigor 2733 | 0.79 | 4 | 3 |
| LBD 612 RR | 0.93 | 3 | 3 |
| MilleniUM 03 | 0.63 | 5 | 3 |
| Nex 705 | 0.87 | 3 | 3 |
| Nex 715 | 0.94 | 3 | 3 |
| Q2 | 0.88 | 3 | 3 |
| SW RazoR | 0.93 | 3 | 3 |

Discussion:

The severity of the lodging ranged from 0.63 to 0.99, where 1.00 would indicate no lodging. Plant height, stem stiffness and lodging directly related to swath-ability ratings. MilleniUM 03 was badly lodged. This resulted in operating the swather table and reel on or near the ground, making swathing more difficult. Higher combine-ability ratings (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) combine-ability ratings.

NIPAWIN

Methodology:

The treatments were swathed with an 18 ft Versatile 400 equipped with a bat reel and harvested with a New Holland TR 85 combine.

Observations:

There were no noticeable differences in plant characteristics such as height, straw stiffness, stem strength, branching and initial podding height due to the dry growing conditions.

Results:

| HARVESTABILITY TRIAL Variety and System Comparison Nipawin, SK | | | |
|---|----------------------|-----------------------------|-------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| AC Sunbeam | 0.94 | 3 | 3 |
| ACS C7 | 0.95 | 3 | 3 |
| Canterra 1604 CL | 0.98 | 3 | 3 |
| 45H21 | 0.94 | 3 | 3 |
| DKL 34-55 | 0.96 | 3 | 3 |
| Field King 811RR | 0.92 | 3 | 3 |
| IMC 109 | 0.89 | 3 | 3 |
| IMC 208 | 0.94 | 3 | 3 |
| InVigor 2663 | 0.93 | 3 | 3 |
| InVigor 2733 | 0.92 | 3 | 3 |
| LBD 612 RR | 0.93 | 3 | 3 |
| MilleniUM 03 | 0.86 | 3 | 3 |
| Nex 705 | 0.91 | 3 | 3 |
| Nex 715 | 0.92 | 3 | 3 |
| Q2 | 0.92 | 3 | 3 |
| SW RazoR | 0.93 | 3 | 3 |

Discussion: There were no noticeable differences in harvestability of the varieties. The severity of the lodging ranged from 0.89 to 0.98, where 1.00 would indicate no lodging.

BEISEKER

Methodology: The treatments were swathed with an 18 ft Hesston swather equipped with a pick-up reel and harvested with a JD 7700 combine.

Observations: There were few differences noted due to the thinness of the stand.

Results:

| HARVESTABILITY TRIAL Variety and System Comparison Beiseker, AB | | | |
|--|----------------------|-----------------------------|-------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| IMC 109 | 0.85 | 3 | 3 |
| IMC 208 | 0.79 | 3 | 3 |
| InVigor 2663 | 0.88 | 3 | 3 |
| InVigor 2733 | 0.71 | 3 | 3 |
| LBD 612 RR | 0.86 | 3 | 3 |
| MilleniUM 03 | 0.76 | 4 | 3 |
| Nex 705 | 0.82 | 3 | 3 |
| Nex 715 | 0.85 | 3 | 3 |
| Q2 | 0.85 | 3 | 3 |

Discussion: No differences in swathing or combining were noted among varieties, with the exception of MilleniUM 03. MilleniUM 03 was lodged enough to create difficulties when swathing with the lean of the crop.

LETHBRIDGE (IRRIGATION)

Methodology: The treatments were swathed with an 18 ft 750 Massey Ferguson swather equipped with a bat reel and harvested with a JD 7700 combine.

Observations: Although lodging at the site was moderate, few problems occurred during swathing with the exception of MilleniUM 03, Nex 715, and Nex 720. Swathing with the lean created more problems for the swather in these three varieties as compared to the other varieties evaluated.

Results:

| HARVESTABILITY TRIAL Variety and System Comparison Lethbridge (Irrigation), AB | | | |
|---|----------------------|-----------------------------|-------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| DKL 35-85 | 0.59 | 2 | 2 |
| IMC 109 | 0.53 | 3 | 3 |
| IMC 208 | 0.54 | 3 | 3 |
| InVigor 2573 | 0.57 | 2 | 2 |
| InVigor 2733 | 0.49 | 2 | 2 |
| LBD 612 RR | 0.59 | 2 | 2 |
| MilleniUM 03 | 0.45 | 4 | 3 |
| Nex 705 | 0.68 | 3 | 3 |
| Nex 715 | 0.49 | 3 | 3 |
| Nex 720 | 0.59 | 4 | 3 |
| Q2 | 0.65 | 3 | 3 |

Discussion: The hybrid varieties fed through and thrashed easier than the other varieties in the trial in spite of greater amounts of plant material.

LETHBRIDGE (DRYLAND)

Methodology: The treatments were harvested with a JD 7700 combine equipped with a straight cut header.

Observation: No swathing was done at the site. There were no noticeable differences in harvestability while straight combining the varieties.

Results:

| HARVESTABILITY TRIAL Variety and System Comparison Lethbridge (Dryland), AB | | | |
|--|----------------------|-----------------------------|-------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| InVigor 2573 | 0.76 | N/A | 3 |
| InVigor 2733 | 0.52 | N/A | 3 |
| Nex 705 | 0.64 | N/A | 3 |
| Nex 715 | 0.49 | N/A | 3 |
| Nex 720 | 0.52 | N/A | 3 |
| Q2 | 0.56 | N/A | 3 |

Discussion: There were no differences in combine-ability ratings.

RYCROFT

Methodology: The treatments were swathed using a 20 ft Case IH 4000 equipped with a pick-up reel or a 400 Versatile and harvested with a JD 9600 combine.

Observation: Varieties that had a shorter plant stand lodged more than others.

Results:

| HARVESTABILITY TRIAL Rycroft, AB | | | |
|---|----------------------|-----------------------------|-------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| AC Sunbeam | 0.50 | N/A | N/A |
| ACS C7 | 0.54 | N/A | N/A |
| Canterra 1604 CL | 0.92 | N/A | N/A |
| DKL 34-55 | 0.86 | N/A | N/A |
| IMC 109 | 0.76 | N/A | N/A |
| IMC 208 | 0.83 | N/A | N/A |
| InVigor 2663 | 0.95 | N/A | N/A |
| InVigor 2733 | 0.81 | N/A | N/A |
| LBD 449RR | 0.78 | N/A | N/A |
| LBD 612 RR | 0.87 | N/A | N/A |
| MilleniUM 03 | 0.69 | N/A | N/A |
| Nex 705 | 0.93 | N/A | N/A |
| Nex 715 | 0.76 | N/A | N/A |
| Q2 | 0.84 | N/A | N/A |

N/A – not available.

Discussion: Due to equipment variability at harvest, a proper comparison between varieties could not be made.

DAWSON CREEK

Methodology: The treatments were swathed using a 20 ft Case IH 4000 equipped with a pick-up reel or a 21 ft Premier and harvested with a 1440 IH combine.

Observation: Lodging differences were not noticed among treatments.

Results:

| HARVESTABILITY TRIAL Dawson Creek, B.C. | | | |
|--|--------------------------|---------------------------------|-----------------------------------|
| Variety | Lodging Ratio | Swath-ability Rating | Combine-ability Rating |
| DKL 34-55 | 0.80 | N/A | N/A |
| IMC 109 | 0.75 | N/A | N/A |
| IMC 208 | 0.77 | N/A | N/A |
| InVigor 2663 | 0.78 | N/A | N/A |
| InVigor 2733 | 0.72 | N/A | N/A |
| MilleniUM 03 | 0.75 | N/A | N/A |
| Nex 705 | 0.81 | N/A | N/A |
| Nex 715 | 0.76 | N/A | N/A |
| Q2 | 0.78 | N/A | N/A |

N/A – not available.

Discussion:

Due to equipment variability at harvest, a proper comparison between varieties could not be made.