7. Manitoba Crop Variety Evaluation trials (MCVET)

PESAI is one of the many sites of MCVET program. MCVET facilitates variety evaluations of different crop types at various sites within Manitoba. The purpose of the MCVET trials is to grow both familiar (check varieties) and new varieties side by side in a replicated manner in order to compare and contrast various variety characteristics such as yield, maturity, protein content, disease tolerance, and many others.



Picture 1. 2021 MCVET Soybean plots at Beausejour site

From each MCVET site across the province, yearly data is collected, combined, and summarized in the 'Seed Manitoba' guide. Seed Manitoba guide and the websites www.seedinteractive.ca and www.seedmb.ca provide valuable variety performance information for Manitoba farmers. Hard copies are available at most Manitoba Agriculture and Ag Industry Offices.

PESAI managed two MCVET sites (Arborg and Beausejour) during 2021 growing season. Variety trials of spring wheat, winter wheat, fall rye, oats, barley and soybeans (both roundup ready and conventional) were conducted at both sites (Table 7.1), whereas trials of peas, silage corn, annual forages and flax were conducted only at Arborg site.

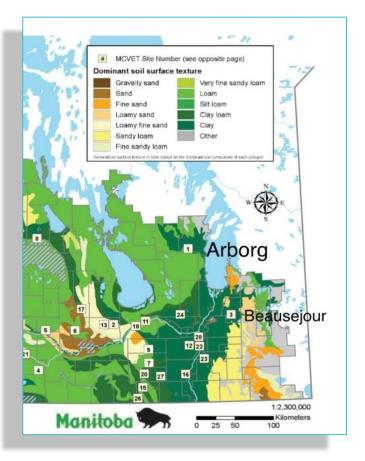


Table 7.1. Agronomic management practices followed at PESAI MCVET sites during 2021 growing season.

| Site | Crop type | Stubble | Seeding date | Fertilizer applied (N-P-K) | Harvest date | No. of plots | |
|------------|--------------------------------|---------|-----------------|-----------------------------------|-----------------|-----------------|--|
| | | | | lb /ac | | | |
| Arborg | | | | | | | |
| | Spring wheat | Fallow | 06-May | 55-20-0 | 17-Aug | 108 | |
| | Oats | Fallow | 07-May | 55-20-0 | 18-Aug | 27 | |
| | Barley | Fallow | 07-May | 55-20-0 | 18-Aug | 66 | |
| | Winter wheat [¥] | Canola | 10-Sep | 30-25-0 (100-0-0) [§] | 03-Aug | 18 | |
| | Fall rye | Canola | 10-Sep | 30-25-0 (100-0-0) | 03-Aug | 18 | |
| | Peas | Pasture | 11-May | 3-15-0 | 17-Aug | 63 | |
| | Conv. Soybeans [‡] | Pasture | 27-May | 4-20-0 | 29-Sep | 60 | |
| | RR soybeans [‡] | Pasture | 27-May | 4-20-0 | 29-Sep | 132 | |
| | Silage corn | Canola | 21-May | 72-25-0 [†] + 0-35-0 | 22-Sep | 90 | |
| | Flax | Wheat | 13-May | 4-20-0 | 08-Sep | 21 | |
| | Annual forages | Fallow | 20-May | 55-20-0 | 26-Jul | 36 | |
| Beausejour | | | | | | | |
| | Winter wheat [¥] | Canola | 14-Sep | 30-25-0 (100-0-0) | 13-Aug | 18 | |
| | Fall rye | Canola | 14-Sep | 30-25-0 (100-0-0) | 13-Aug | 18 | |
| | Spring wheat | Soybean | 14-May | 75-25-0 | 16-Aug | 81 | |
| | Oats | Soybean | 14-May | 75-25-0 | 16-Aug | 15 | |
| | Barley | Soybean | 14-May | 75-25-0 | 16-Aug | 33 | |
| | Conv. soybeans | Wheat | 17-May | 3-15-0 | 27-Sep | 60 | |
| | RR soybeans | Wheat | 17-May | 3-15-0 | 24-Sep | 132 | |

* winter wheat was seeded in fall 2020

[§] fertilizer values in paranthesis were broadcasted in spring.
[†] fertilizer (N-P-K) was broadcasted before seeding and P =35 lb/ac was band applied with seed.
[‡] Conventional and RR soybean plots were written off at Arborg site due to drought, weed and deer damage.

| v | ariety | 60 | 70 | 8 | 0 | 90 | 1 | 00 | 110 | 120 | 13 |
|--------------|--------------------|----------|----------------|------|-----------|----|------|-------|-----|-----|----|
| | S007-A2XS | | | | | | | | + | 124 | 4 |
| • | DKB008-48 | | | | | | | 110 | | | |
| 5 | TH82005 R2X | e | mmon | | | i | 99 | | | | |
| Mid season | SI 007XTN | <u> </u> | mmary | P | | | | 108 | | | |
| Se. | SI 00620XTN | - | eding da | | eausejou | | | 105 | | | |
| ē | DKB005-52 | | - | | 7-May-2 | | | 100 | | | |
| ≥ . | B0051RX | | rvest dat | e 24 | 4-Sep-2 | • | | 103 | | | |
| | TH 87003 R2X | | / (%) D (%) | | 6.8 11 | | | 108 | | | |
| | Pv 16s004R2X | | D (%) | | | | | 107 | | | |
| | RX Acron | 510 | g. diff. | | Yes | | | 11 | 1 | | |
| | DXB0008-87 | | | | | | | - 103 | | | |
| | Mikado R2X | | | | | | 98 – | | | | |
| | S005-C9x | | | | | | | 103 | | | |
| | PV22s002 R2X | | | | | | | 102 | | | |
| - | B0041RX | | | | | | | | 113 | | |
| | S003-Z4X | | | | | | | 103 | | | |
| | Young R2X | | | | | | 92 | | | | |
| 6 | Akras R2 | | | | | | | | | 122 | |
| as | NSC Redvers RR2X | | | | | | | 110 | | | |
| ŝ | SI 001XTN | | | | | | 92 | | | | |
| Early season | SV185067-06-04 | | | | | | 97 – | | | | |
| ш | SV185067-06-03 | | | | | 9 |)1 | | | | |
| | PV 15s0009R2X | | | | | | | 106 | | | |
| | P006A37X | | | | | | | | 1 | 119 | |
| | DKB002-32 | | | | | | | 107 | | | |
| | Sunna R2X | | | | | | | 1 | 12 | | |
| | Merritt R2X | | | | | | | 108 | | | |
| | NSC Holland RR2X | | | | | | | | | 1 | 25 |
| | Bourke R2X | | | | | | | 109 | | | |
| | Hart R2X | | | | | | 97 – | | | | |
| - | SV175101Z-02-07-07 | | | | 80 | | | | | | |
| | B0012RX | | | | | | | 101 | | | |
| season | TH89004 R2X | | | | | | 97 | | | | |
| | P005A83X | | | | | 86 | | | | | |
| | Komodo R2 | | | | | | | 101 | | | |
| | 003-R5X | | | | | | | 106 | | | |
| ∑. | P001A48X | | | | | | 98 — | | | | |
| är | SI 000919XT | | | | | | | | 113 | | |
| Very ear | P003A97X | | | | | | | 101 | | | |
| ler. | SI 00319XT | | | | 84 | 1 | | | | | |
| | S001-D8X | | | _ | 80 | | | | | | |
| | Fresco R2X | | | 75 | | | | | | | |
| | BY Rundle XT | | 69 | 9 | | | | | | | |
| | NSC Dauphin RR2X | | | | 8 | 35 | | | | | |

% yield of check variety (DKB0005 = 55 bu /ac)

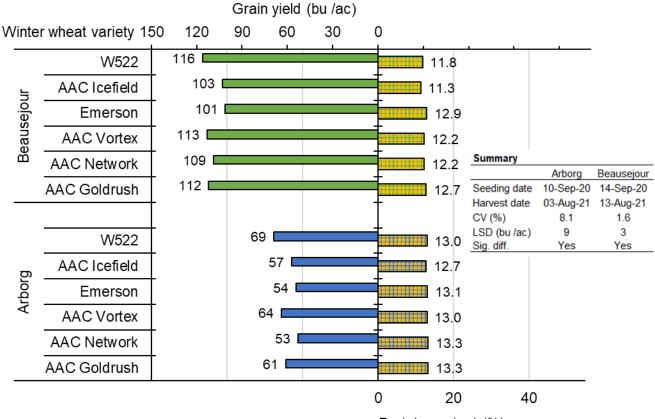
Fig. 7.1. Yield performance of herbicide tolerant soybean varieties as a per cent of the check variety (DKB0005) at Beausejour site. Red bars show yield of a variety lower than the check variety whereas green bars show yield of a variety higher than the check variety.

(Note: Soybean varieties differ in yield if the difference is at least 11 % yield of check variety).

| Conventional soybean variety 60 | | | % yield of check (OAC Prudence = 48 bu /ac) | | | | | | | | |
|------------------------------------|--------------|----|---|----|----|------|------|-----|-----|-----|--|
| | | 60 | 70 | 80 | 90 | 1 | 00 1 | 10 | 120 | 130 | |
| Long Season | SVX22T00S35 | | | | | | 110 | | | | |
| | SVX22T000S34 | | | | | | | 118 | | | |
| | Jago | | | | | | 109 | | | | |
| | Meteor | | | | | | 107 | | | | |
| Mid Season | SVX22T000S33 | | | | | | 109 | | | | |
| | PR130077Z-28 | | | | | 99 – | | | | | |
| | SVX21T00S2 | | | | | | 110 | | | | |
| | CM-6 | | | | | 94 | | | | | |
| | SVX21T000S1 | | | | | | 100 | | | | |
| | Baffin | | | | | | 107 | | | | |
| | Kebek | | | | | | 103 | | | | |
| | Primo | | | | | | 100 | | | | |
| | Liska | | | | | | 109 | | | | |
| | Reynolds | | | | | | 106 | | | | |
| | OAC Prudence | | | | | | 100 | | | | |
| Early season | SVX22T000S32 | | | | | | 101 | | | | |
| | Siberia | | | | 84 | | | | | | |
| | AAC Halli | | | | | 98 — | | | | | |
| | Fjord | | | 8 | 2 | | | | | | |
| | Norfolk | | 68 | | | | | | | | |

Fig. 7.2. Yield performance of conventional soybean varieties as a per cent of check variety (OAC Prudence) at Beausejour site. Red bars show yield of a variety lower than the check variety whereas green bars show yield of a variety higher than the check variety.

(Note: Soybean varieties differ in yield if the difference is at least 9 % yield of check variety).



Protein content (%)

Fig. 7.3. Grain yield (solid bars) and protein content (check pattern bars) comparison of winter wheat varieties tested at Arborg and Beausejour sites in 2021.

(Note: Varieties differ in yield if the difference is 9 bu /ac at Arborg and 3 bu /ac at Beausejour).

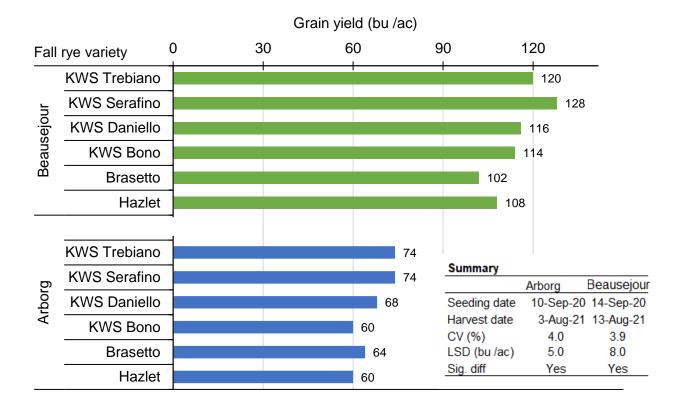


Fig. 7.4. Grain yield comparison of fall rye varieties evaluated at Arborg and Beausejour sites in 2021.

(Note: Varieties differ in yield if the difference is 5 bu /ac at Arborg and 8 bu /ac at Beausejour).

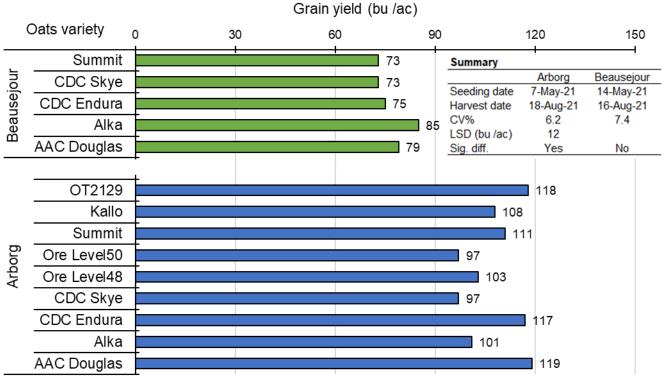


Fig. 7.5. Grain yield comparison of oats varieties evaluated at Arborg and Beausejour sites in 2021.

(Note: Varieties differ in yield if the difference is 12 bu /ac at Arborg. Varieties do not differ in yield at Beausejour site when results were analysed statistically).

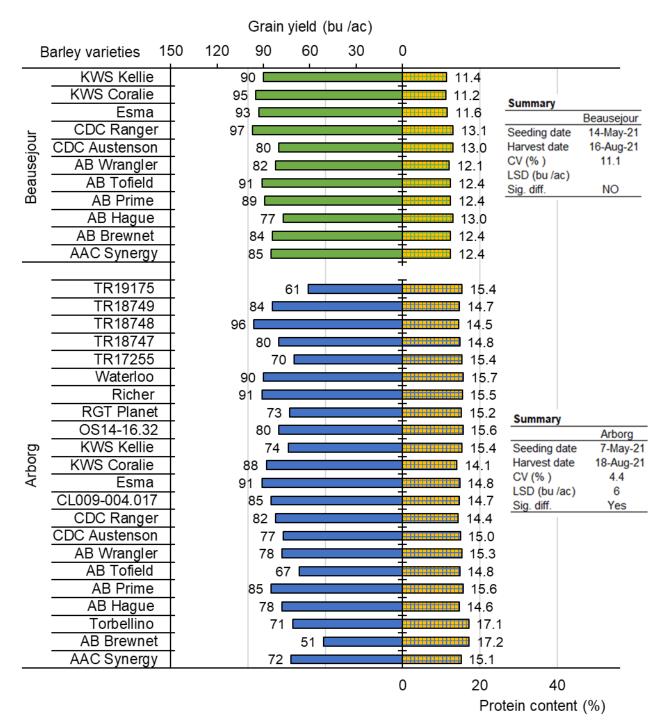
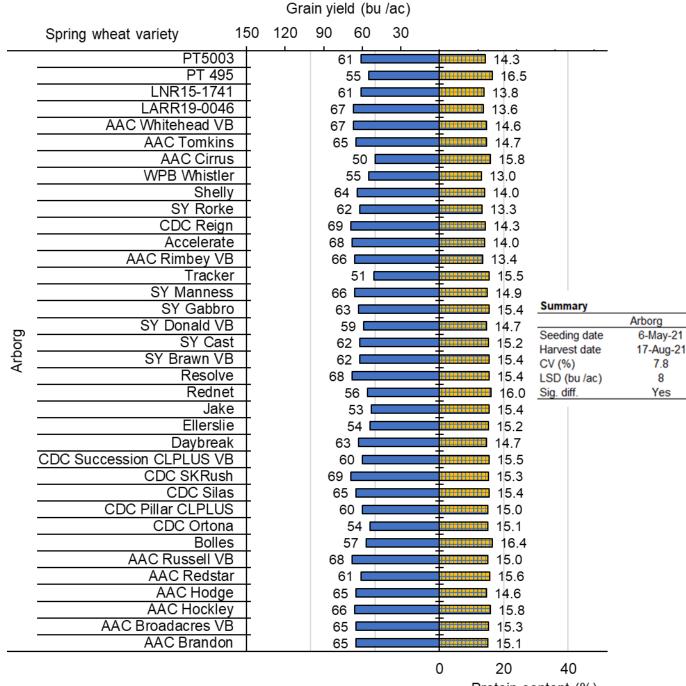


Fig. 7.6. Grain yield (solid bars) and protein content (check pattern bars) comparison of barley varieties evaluated at Arborg and Beausejour sites in 2021.

(Note: Varieties differ in yield if the difference is 6 bu /ac at Arborg. Varieties do not differ in yield at Beausejour site when results were analysed statistically).



Protein content (%)

Fig. 7.7. Grain yield (solid bar) and protein content (check patterned bar) comparison of spring wheat varieties evaluated at Arborg in 2021.

(Note: Varieties differ in yield if the difference is 8 bu /ac).

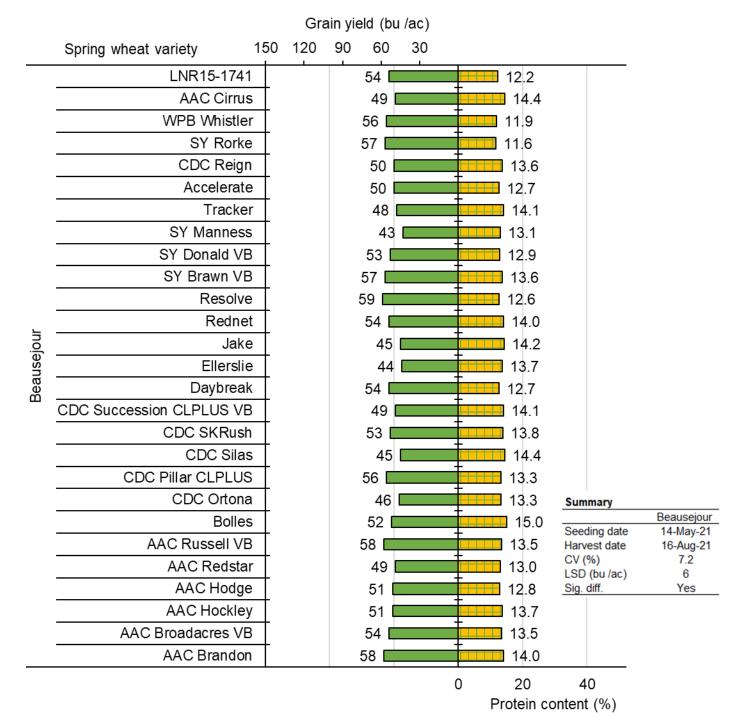


Fig. 7.8. Grain yield (solid bar) and protein content (check patterned bar) comparison of spring wheat varieties evaluated at Beausejour in 2021.

(Note: Varieties differ in yield if the difference is 6 bu /ac).