

CDC CHURCHILL

VARIETY HIGHLIGHTS:

- **Very high grain yield, 3% higher than AAC Synergy**
- **Shorter and stronger straw with good lodging resistance**
- **Moderate enzyme activity, comparable to CDC Copeland**

CDC Churchill is a spring, two-row, hulled malting barley variety registered in Canada in 2018. A cross of TR08116 x TR07299; it was developed by Dr. Aaron Beattie at the Crop Development Centre, University of Saskatchewan.

All barley varieties in Canada undergo a rigorous process of evaluation prior to registration, and are required to meet minimum agronomic, disease and quality standards established by check varieties. The following are highlights of the results of the Cooperative and Collaborative trials taken from the breeder's registration application.

AGRONOMIC TRAITS:

- High yield, 16% higher yield than AC Metcalfe; 12% higher than CDC Copeland
- Grain protein lower/equal to CDC Copeland
- Shorter and stronger straw with good lodging resistance
- Maturity date comparable to CDC Copeland

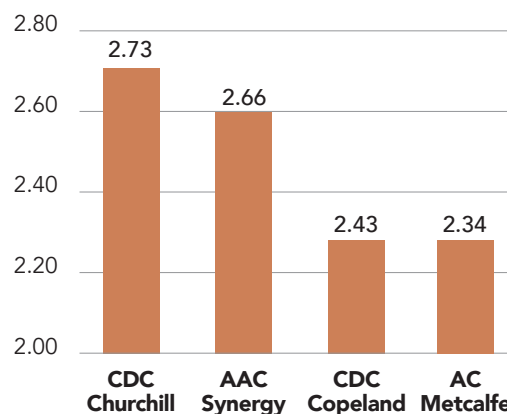
The tables below provide yield and disease comparisons of CDC Churchill with control varieties. Producers should check their provincial seed guides for more information on new varieties.

GENETIC DISEASE RESISTANCE

	AC Metcalfe	CDC Copeland	AAC Synergy	CDC Churchill
Scald	MS-S	MS-S	S	S
Spot form net blotch	I	I	R	MR
Net form net blotch	S	I	MR	MR
Spot blotch	I	S	R	I
FHB	I	I	I	MS

S = susceptible; MS = moderately susceptible, I = intermediate resistance, MR = moderate resistance, R = resistant

YIELD COMPARISON (TONNE/ACRE)



From breeder registration submission.

YIELD DATA (BUSHELS/ACRE)

2023 SaskSeed Guide			2023 Alberta Seed Guide		2023 Manitoba Seed Guide	
% of AAC Synergy	Area 1 & 2	Area 3 & 4	% of CDC Copeland*		% of AAC Synergy**	
CDC Churchill	105	104	CDC Churchill	110	AAC Synergy	100
AAC Synergy	100	100	AAC Synergy	106	CDC Churchill	99
CDC Copeland	92	93	CDC Copeland	100	CDC Copeland	88
AC Metcalfe	87	86	AC Metcalfe	99	AC Metcalfe	87

*Base CDC Copeland yield 110 bushels per acre; **Base AAC Synergy yield 111 bushels per acre

QUALITY & PERFORMANCE RESULTS FROM CMBTC 2020-2022 WESTERN CANADIAN FIELD TRIALS

Once varieties have been registered in Canada the CMBTC collects samples annually to evaluate barley & malt quality differences between new and established varieties. These trials are performed to help support new varieties toward market acceptance. The data below represents 3-year averages from 2020-2022 of barley samples sourced from multiple sites across western Canada from the CMBTC's Western Canadian Field Trials.

Table 1. Barley Quality Data

CDC Churchill shows desirable malt barley quality comparable to the control samples. CDC Churchill consistently shows the lowest protein average, however not statistically different from CDC Copeland and AAC Synergy. Additionally, CDC Churchill has moderate water sensitivity that is not statistically different to the checks.

	AC Metcalfe	CDC Copeland	AAC Synergy	CDC Churchill	p-value by variety*
n	70	70	70	70	
Protein %	13.5 a	12.9 ab	12.7 ab	12.5 b	0.0151
Germination Energy %	91.6	94.1	94.3	95.0	0.2216
Water Sensitivity %	74.7 b	83.2 a	82.2 ab	81.6 ab	0.0203
Thousand Kernel Weight, grams	43.9	44.7	45.9	44.1	0.0655
Plumpness %	91.9	91.2	93.4	90.7	0.4016
SN RVU	116	128	122	128	0.6977

Table 2. Malt Quality Data

CDC Churchill shows desirable malt qualities. CDC Churchill has key features that include high friability and low diastatic power compared to AC Metcalfe. As for α -Amylase, CDC Churchill is not statistically different from the checks.

	AC Metcalfe	CDC Copeland	AAC Synergy	CDC Churchill	p-value by variety*
n	70	70	70	70	
Moisture %	4.1	4.0	4.1	4.2	
Friability %	76.6 b	83.2 ab	83.2 ab	83.5 a	0.0255
Protein %	13.47	12.94	12.70	12.45	0.3156
Fine Extract % db	80.0	79.6	80.7	80.7	0.1727
Diastatic Power °L	177 a	154 b	157 b	145 b	<0.0001
α -Amylase DU	84.3 a	69.0 b	81.1 ab	80.3 ab	0.0045
Soluble Protein %	5.76	5.62	5.76	5.25	0.1900
S/T Ratio %	43.2	43.7	45.9	42.5	0.2590
FAN mg/L	227	207	222	200	0.2590
Colour SRM	3.11	2.68	2.94	2.49	0.1956
β -Glucan mg/L	127	146	103	144	0.2382
Viscosity cP	1.48	1.47	1.45	1.46	0.3035

*A p value <0.05 indicates statistical significance between values.

Letter display generated by Tukey's test. Varieties not connected by the same letter are significantly different.

For more information:
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The CMBTC does not offer advice or recommendations with respect to production or marketing decisions to the barley industry, and this information should not be construed as such.

