

WINTER MALTING BARLEY TRIAL – 2019 RESULTS

The Winter Malting Barley Trial (WMBT), through the University of Minnesota served as the basis for the winter barley variety trials planted in Hickory Corners and Kawkawlin, MI in the fall of 2018. The plots included 27 varieties with three replications in a lattice design.

Hickory Corners, MI

Variety	Yield (bu/ac)	Test Weight (lbs/bu) (before cleaning)	Heading Date	Height (Inches)	Lodging (0-5) [§]	Spring Vigor [#] (0-10)
08ARS509-1	100.9	44.1	5/30	33.7	0	7.7
08ARS632-5	78.2	41.6	6/3	32.7	0	6.3
13ARS537-13	92.3	42.6	5/30	31.7	0	4.7
13ARS537-19	64.6	45.3	5/26	31.7	0	4.3
AC10/028/53*	101.8	42.6	5/28	34.7	0.8	7.7
Amaze 10*	41.0	48.6	5/27	35.3	0.1	8.3
Charles	63.4	39.3	6/1	29.3	0.2	4.3
DH120304	78.0	40.6	5/26	32.7	0.1	7.3
DH130910	58.3	42.2	5/30	33	0	7.7
DH140088	92.0	41.8	5/31	35.3	0.3	5.3
DH140963	97.6	41.2	5/31	33.3	0	5.7
Endeavor	66.4	44.9	6/3	35.3	0.4	4.7
Flavia	95.5	43.9	5/27	30.7	0.4	6.3
Hirondella*	100.1	42.1	5/31	35.3	0.2	5.7
KWS Scala	86.6	41.5	6/1	32	0	5.3
LCS Calypso	78.0	43.2	5/27	29.7	0	7.3
LCS Casanova	85.1	44.7	5/31	29.3	0	5.7
LCS Nenea	99.3	44.0	5/25	30.3	0	7.0
LCS Puffin	89.4	46.0	5/31	31.7	0.1	5.7
LCS Violetta	75.6	40.2	5/29	33.3	0	3.3
Lyberac	78.4	44.6	5/31	32.7	0	5.3
Nomini	64.0	39.8	5/21	34	3.7	8.7
Rossignola*	116.2	42.0	5/27	32	0.3	6.3
Secretariat	79.0	43.4	5/26	27	1	6.0
Thoroughbred*	59.0	42.9	5/26	34	0.9	7.3
VA11B-141LA	86.8	43.7	5/25	33	0	8.0
Wintmalt	68.3	41.3	6/9	36	0.1	3.3
Grand Mean	81.3	42.9	15.1	32.6	0.3	
CV	14.3	4.8	5.0	5.43	NA	
LSD @ 5%	18.4	3.6	1.2	2.9	NA	

*Six-row varieties, all others two-row

[§]0 = no lodging, 5 = all plants flat on ground

[#]7-10: Thick stand with lush, multi leafed plants ~4" tall. Good yield anticipated.

5-6: Occasionally spotty. Plants ~3" tall.

3-4: Has bare spots. Stand is thin with small plants. Poor yield anticipated.

0-2: Few to no plants. Termination and replant recommended.

HICKORY CORNERS TRIAL DETAILS

Planting date: 10/16/2018

Fertility: 10/16/2018 – 20 lbs N/acre, 45 lbs P/acre, 65 lbs K/acre, 6.3 lbs S/acre.

4/10/2019 100 lbs N/acre (urea)

Fungicide: 5/31/2019 8.2 oz/A Prosaro

Harvest: 7/17/2019

Growing season conditions: An unusually cold wet spring delayed development. There was also some winter kill.

Research site details:

W.K. Kellogg Biological Station (KBS): Project managed by Brook Wilke, Dean Baas, Josh Dykstra and Christian Kapp

Previous crop: Soybeans

Soil type: Kalamazoo Sandy Loam



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Kawkawlin, MI

Variety	Yield (bu/ac)	Test Weight (lbs/bu) (before cleaning)	% Moisture	Height (Inches)	Spring Vigor# (0-10)
08ARS509-1	112.1	45.1	13.4	32.3	4.5
08ARS632-5	66.8	40.5	20.9	36.3	2.3
13ARS537-13	94.2	45.4	15.0	28.7	4.3
13ARS537-19	99.3	46.1	14.4	30	4.3
AC10/028/53*	120.4	43.1	12.5	29.7	8.7
Amaze 10*	115.5	56.8	14.0	32	8.0
Charles	56.8	39.3	16.4	31	2.0
DH120304	109.0	44.2	12.6	28.7	6.3
DH130910	107.5	44.3	13.7	31.3	5.0
DH140088	102.6	44.3	12.8	36	4.0
DH140963	116.0	41.5	13.1	31.3	6.7
Endeavor	69.5	43.4	16.5	33.7	2.7
Flavia	116.3	44.5	13.1	27.7	6.0
Hirondella*	96.2	42.3	16.9	33.3	2.7
KWS Scala	105.4	41.5	14.0	31	7.0
LCS Calypso	108.3	45.0	12.5	30.3	7.7
LCS Casanova	78.8	44.4	14.4	30.3	3.5
LCS Nenea	123.6	45.7	13.3	30.7	6.0
LCS Puffin	70.3	42.7	14.8	29	2.7
LCS Violetta	78.8	41.3	13.6	31.7	1.8
Lyberac	99.5	44.3	13.4	31.7	5.0
Nomini	90.1	40.6	16.2	34.3	4.7
Rossignola*	116.4	44.5	12.0	25.7	7.0
Secretariat	96.4	46.0	14.4	26	4.0
Thoroughbred*	106.6	46.5	12.5	27.7	4.3
VA11B-141LA	132.0	49.6	12.0	29.7	9.0
Wintmalt	106.4	43.2	14.2	34.7	4.0
Grand Mean	99.8	44.3	14.2	30.9	
CV	17.0	4.6	14.1	5.2	
LSD @ 5%	27.8	3.4	3.3	2.7	

*Six-row varieties, all others two-row

7-10: Thick stand with lush, multi leafed plants ~4" tall. Good yield anticipated.

5-6: Occasionally spotty. Plants ~3" tall.

3-4: Has bare spots. Stand is thin with small plants. Poor yield anticipated.

0-2: Few to no plants. Termination and replant recommended.

KAWKAWLIN TRIAL DETAILS

Planting date: 10/17/2018

Fertility: Fall – 10 lbs N/acre, 10 lbs P/acre, 30 lbs K/acre

4/25/2019 – 100 lbs N/acre (28%)

Fungicide: 5/18/2019 – 10 oz./acre Nexicor

Harvest: 7/26/219

Growing season conditions: An unusually cold wet spring delayed development. There was also some winter kill.

Research site details:

Cooperating Farmers: Don Shelagowski and Chris Schmidt.

Previous crop: Dry beans

Soil type: Wixom Sandy Loam



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WINTER MALTING BARLEY TRIAL – 2019 QUALITY

The Winter Malting Barley Trial (WMBT), through the University of Minnesota served as the basis for the winter barley variety trials planted in Hickory Corners and Kawkawlin, MI in the fall of 2018. The plots included 27 varieties with three replications in a lattice design.

Hickory Corners, MI

Variety	GC	4 ml GE	8 ml GE	Plump	CP	DON	RVA
08ARS509-1	97	80	52	93.2	11.0	2.6	58
08ARS632-5	93	80	60	94.3	11.8	4.1	132
13ARS537-13	96	86	65	93.9	11.3	1.8	63
13ARS537-19	90	73	44	91.4	11.0	4.2	15
AC10/028/53*	98	87	44	98.1	10.4	2.3	117
Amaze 10*	96	81	81	26.4	12.5	0.3	157
Charles	97	90	59	94.4	11.7	2	37
DH120304	81	69	48	96.9	12.0	2.7	9
DH130910	98	59	24	95.7	11.8	1	166
DH140088	91	92	78	98.7	12.3	1.9	79
DH140963	97	73	25	98.4	11.6	3.8	134
Endeavor	94	80	66	90.2	11.3	2.4	49
Flavia	94	81	28	98.1	11.6	1.3	160
Hirondella*	95	85	49	96.1	11.2	3.1	138
KWS Scala	98	80	40	98.5	11.3	1.1	180
LCS Calypso	94	48	22	95.4	12.0	0.8	166
LCS Casanova	97	74	22	98.6	11.6	2.4	155
LCS Nenea	100	91	25	94	11.5	1	178
LCS Puffin	92	53	17	94.1	12.3	0.8	158
LCS Violetta	93	75	37	97.2	11.8	4.1	160
Lyberac	94	88	42	97.3	10.6	1.6	176
Nomini	81	25	15	80.7	11.9	4	169
Rossignola*	91	93	58	98.9	10.7	3.2	119
Secretariat	96	62	32	93.6	11.9	2	163
Thoroughbred*	95	53	32	85.2	11.4	0.8	149
VA11B-141LA	94	63	31	88.1	11.7	2.3	172
Wintmalt	97	77	33	95.2	12.4	3.6	137

*Six-row varieties, all others two-row

GC – Germination Capacity

GE – Germination Energy (Conducted 1 month post-harvest)

CP - % Crude Protein

DON – Deoxynivalenol

RVA – Rapid Visco Analysis

GRAIN QUALITY

Grain quality is the most important characteristic for malting barley.

If the barley doesn't meet quality specifications, it may be rejected by the malthouse. Conversely, premiums may be offered for barley that meets or exceeds quality standards.

Ideal values for the quality data shown on this page are shown below.

Grain quality from the Hickory Corners site was analyzed between 2-4 weeks after harvest.

- GC >95%
- Plump >90%
- CP <12.5%
- DON <1.0 ppm
- RVA >120



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Kawkawlin, MI

Variety	GC	4 ml GE	8 ml GE	Plump	CP	DON	RVA
08ARS509-1	100	95	70	83.8	11.7	0.3	129
08ARS632-5	88	84	62	93.4	14.6	< 0.3	62
13ARS537-13	98	93	71	91.3	12.2	< 0.3	159
13ARS537-19	97	99	60	91.2	12.4	0.7	122
AC10/028/53*	99	98	88	95.0	10.1	1.1	155
Amaze 10*	100	100	99	48.6	12.2	< 0.3	179
Charles	97	97	86	92.8	13.4	< 0.3	114
DH120304	95	100	74	96.0	11.9	0.6	126
DH130910	100	100	81	93.6	13.7	0.4	164
DH140088	100	100	67	97.0	13.2	< 0.3	138
DH140963	99	99	74	97.9	11.7	1	153
Endeavor	94	98	81	81.5	13.5	< 0.3	141
Flavia	99	95	66	97.2	11.7	0.9	156
Hirondella*	100	98	95	93.4	13.2	1.2	120
KWS Scala	100	95	91	97.7	12.2	0.5	170
LCS Calypso	100	97	81	97.4	11.7	0.6	164
LCS Casanova	100	98	78	96.7	13.8	0.6	127
LCS Nenea	100	95	90	94.6	12.5	0.6	155
LCS Puffin	97	95	74	94.4	13.8	0.3	133
LCS Violetta	100	95	77	95.5	14.3	0.4	142
Lyberac	100	100	87	95.7	11.8	< 0.3	165
Nomini	99	59	12	62.5	13.4	2.1	167
Rossignola*	99	91	81	97.3	12.2	2.8	132
Secretariat	95	97	89	86.6	12.9	3.1	188
Thoroughbred*	98	100	94	88.5	11.9	1.3	160
VA11B-141LA	100	100	67	78.1	12.2	1.2	163
Wintmalt	96	95	85	98.0	11.8	< 0.3	172

*Six-row varieties, all others two-row

GC – Germination Capacity

GE – Germination Energy (Conducted 6 months post-harvest)

CP - % Crude Protein

DON – Deoxynivalenol

RVA – Rapid Visco Analysis

GRAIN QUALITY

Grain quality is the most important characteristic for malting barley.

If the barley doesn't meet quality specifications, it may be rejected by the malthouse. Conversely, premiums may be offered for barley that meets or exceeds quality standards.

Ideal values for the quality data shown on this page are shown below.

- GC >95%
- Plump >90%
- CP <12.5%
- DON <1.0 ppm
- RVA >120



WINTER MALTING BARLEY TRIAL – 2019 MALT QUALITY

Malt quality data on select varieties from the Winter Malting Barley Trial (KBS, 2019) are shown below. The American Malting Barley Association (AMBA) has published guidelines for malting barley quality characteristics, which can be found on the web at: https://ambainc.org/wp-content/uploads/2019/10/Malting_Barley_Breeding_Guidelines_June_2019.pdf

Variety	Fine Malt Ext. (%)	Color °ASBC	Beta-glucan (ppm)	Soluble Protein (%)	Malt Protein (%)	S/T (%)	FAN (mg/L)	Diastatic Power °L	Alpha Amylase (D.U.)
08ARS632-5	82.2	3.66	133	5.72	12.0	47.7	226	133	67.8
AC10/028/53	80.5	3.28	331	5.05	10.8	46.8	203	121	64.7
DH130910	80.3	2.18	48	5.38	12.2	44.1	194	155	52.7
DH140963	80.4	2.82	233	4.63	11.6	39.9	165	116	44.3
Flavia	81.8	2.25	82	4.56	11.2	40.7	156	133	52.6
Hirondella	79.7	2.84	189	4.72	11.8	40.0	175	159	60.9
KWS Scala	82.2	2.83	67	5.13	11.4	45.0	195	152	61.5
LCS Calypso	81.3	2.13	83	4.92	12.1	40.7	174	167	57.5
LCS Casanova	80.2	2.46	177	4.89	11.9	41.1	176	140	52.9
LCS Nenea	80.5	2.44	197	5.02	11.7	42.9	176	157	60.9
LCS Puffin	79.9	2.15	257	5.03	12.7	39.6	183	134	55.5
LCS Violetta	81.3	2.65	122	5.53	12.3	45.0	199	177	60.4
Lyberac	83.0	2.24	56	4.54	10.5	43.2	160	146	57.6
Rossignola	81.3	2.54	234	4.75	11.5	41.3	164	145	63.6
Thoroughbred	79.0	2.08	392	4.40	11.8	37.3	140	145	58.5
Wintmalt	78.4	3.38	164	5.24	12.5	41.9	202	131	48.9