

2013 Malting Barley Plot Results Buffalo County

Barley plots in 2013 included a winter plot (planting in fall 2012 and 2013) and three spring plots (one replicated plots and two farm demonstration plots).

Winter Barley Plots:

The winter plot was planted, following corn silage on October 10, 2012 (extremely dry conditions at planting). Four varieties, including McGregor, OR76, Thoroughbred, and Charles were planted each replicated 3 times. Three fertilizer levels were also included in the plot. Unfortunately, we had 100% death loss in the plot due to the open winter conditions including January rain immediately followed by subzero temperatures. A winter variety plot was planted again fall of 2013 in cooperation with the University of Minnesota to analysis winter hardiness of 19 varieties. As of March 31, 2014, it appears that close to 100% of the winter plot did not survive the winter.

Spring Barley Plots:

Spring plots were 4 foot by 20 foot plots replicated three times. Four varieties; Quest, Rasmussen, Scarlett, and Pinnacle were also planted at 1.3 million live seeds per acre and 1.5 million live seeds per acre. Yield and DON information are found in the table listed below.

Name	Moisture %	Yield Bu/Acre	Yield Dif	DON ppm
Quest 1.3	11.43	110.19	abc	0.09
Quest 1.5	11.80	106.47	a-d	0.06
Rasmussen 1.3	12.30	105.01	a-d	0.21
Rasmussen 1.5	12.23	94.45	a-f	0.16
Lacy	11.80	67.28	efg	0.08
Tradition	12.00	108.90	a-d	0.14
Innovation	11.77	111.06	ab	0.10
Scarlett 1.3	13.40	96.51	a-e	0.08
Scarlett 1.5	13.57	102.93	a-d	0.12
Pinnacle 1.3	14.97	103.15	a-d	0.09
Pinnacle 1.5	15.43	106.75	a-d	0.08
AC Metcalfe	12.83	84.04	a-g	0.06
CDC Copeland	12.60	82.56	b-g	0.10
C131	12.87	76.68	d-g	0.05
Craft	13.60	116.57	a	0.18
Hockett	13.23	101.86	a-d	0.08
C132	13.47	64.30	fg	0.09
C134	18.17	104.06	a-d	0.18
C135	13.30	85.73	a-g	0.08
Odyssey	14.87	100.07	a-d	0.05
Ovature	15.97	87.22	a-g	0.14
Genie	18.60	56.87	g	0.10
NSA 1820A	13.77	77.39	c-g	0.10
Hadley	15.77	99.90	a-d	0.11
LSD (P=.05)	2.402	27.31		0.06

Highlight – high visual Fusarium on barley heads

The replicated plot was planted on May 15, 2013 using a Hege plot planter. The 2012 crop was corn silage. 40 pounds of N were applied in the form of urea on the entire plot. The plot was sprayed twice with fungicide, the first time on June 6 with Stratego, the 2nd time on around July 6 (exact date varied with the maturity of the variety) with ProSaro. No herbicide was applied to the plot. Very little weed pressure was seen throughout the summer, with the exception of some late yellow foxtail.

Very Low DON levels were measured, even with considerable Fusarium Head Blight being visibly present before harvest.

Protein levels in the demo plots (Bragger and Schlessner) were 1.5 – 3% higher, indicating that even very poor stands of alfalfa have too much available nitrogen to make good malting quality.

Sponsors:

**UW-Extension
USDA Malting Barley Lab
Buffalo County
John Albers
DS Farms
Bragger Family Farm
Mike Schlessner
USDA-SARE
University of Minnesota
AMBA
Cargill
Malteurope**

**Personnel and statistics
Malting sample analysis
Personnel
Plot planting and harvesting equipment
Land for plot
Land for plot (SARE Farmer Grant)
Land for plot
Grant funds (SARE Farmer Grant Program)
DON sample analysis & specialist help
Seed purchase funds
Seed samples
Seed samples**

Variety or Selection	Rowed	on 6/64" (%)	Barley Color (Agtron)	Malt Extract (%)	Wort Color	Wort Clarity	Barley Protein (%)	Wort Protein (%)	S/T (%)	DP (°ASBC)	Alpha- amylase (20°DU)	Beta- glucan (ppm)	FAN (ppm)
Quest 101	6	91.0	47	79.4	2.2	1	12.6	5.15	44.2	142	76.1	582	224
Quest 102	6	92.8	48	79.6	2.4	1	12.5	5.07	42.3	142	73.1	592	227
Rasmussen 103	6	96.8	42	80.0	2.9	1	13.7	5.82	45.0	165	74.7	403	275
Rasmussen 104	6	97.0	47	80.1	3.0	1	13.1	5.50	44.1	150	74.8	374	267
Lacy 105	6	97.7	45	78.3	2.7	1	13.6	5.39	40.0	139	68.3	411	247
Tradition 106	6	95.8	50	78.9	2.5	1	13.6	5.07	39.1	188	72.6	349	232
Innovation 107	6	95.2	51	80.3	2.6	1	12.5	5.33	43.5	144	75.2	487	256
Scarlett 108	2	97.7	40	82.1	2.9	2	12.1	4.57	38.5	115	77.0	608	200
Scarlett 108	2	94.8	39	81.7	2.9	2	12.7	4.59	38.7	107	74.0	561	193
Pinnacle 110	2	96.8	33	82.0	2.9	2	11.6	4.81	42.3	87	61.5	498	214
Pinnacle 111	2	96.3	31	81.3	3.0	2	11.4	4.67	41.3	86	63.7	474	203
Metcalfe 112	2	92.9	45	80.9	2.8	1	13.6	5.63	43.5	136	96.2	384	274
Copeland 113	2	96.8	45	80.8	2.7	1	12.8	5.48	42.9	117	79.0	309	256
C131 114	2	90.5	42	82.0	2.5	1	12.8	5.32	41.9	118	91.9	510	240
Craft 115	2	95.5	40	80.6	2.1	1	12.8	4.79	39.1	127	69.6	291	196
Hockett 116	2	93.1	47	81.5	3.1	2	11.9	4.78	42.6	94	74.4	646	221
C132 117	2	99.1	27	79.9	2.5	1	13.9	5.09	38.2	98	60.2	566	228
C134 119	2	98.6	32	82.5	2.3	1	11.5	4.63	40.5	119	77.5	362	211
C135 120	2	94.0	33	81.4	2.5	1	12.2	4.98	41.8	106	74.3	116	225
Odyssey 121	2	98.6	34	83.3	2.4	1	11.7	4.77	43.7	94	66.7	319	225
Ovature 122	2	98.6	27	82.9	2.6	1	12.5	5.47	44.1	106	85.0	303	272
Genie 123	2	98.5	24	81.5	3.0	1	13.8	5.65	43.1	137	68.1	229	255
NSA 1820A 124	2	99.1	33	80.9	2.9	1	14.0	5.57	40.7	132	68.4	277	237
Hadley 125	2	96.6	41	81.4	2.3	1	12.1	4.96	41.6	86	65.6	667	225
Pinnacle 201	2	96.2	31	80.5	2.2	1	11.3	4.48	40.9	91	61.4	548	192
Genie 202	2	92.0	24	81.0	2.8	1	14.3	5.63	41.6	153	73.5	238	241
C131 203	2	96.9	40	82.0	2.2	1	12.7	5.27	43.1	122	97.9	390	233
Scarlett 204	2	94.9	35	81.1	2.8	2	12.8	4.45	35.4	115	76.0	506	178
Craft 205	2	96.0	40	80.7	1.9	1	13.1	4.82	38.5	129	72.8	245	201
Odyssey 206	2	98.3	31	82.3	2.6	1	11.7	4.71	42.0	101	71.6	209	209

Variety or Selection	Rowed	on 6/64" (%)	Barley Color (Agtron)	Malt Extract (%)	Wort Color	Wort Clarity	Barley Protein (%)	Wort Protein (%)	S/T (%)	DP (°ASBC)	Alpha- amylase (20°DU)	Beta- glucan (ppm)	FAN (ppm)
Copeland 207	2	95.3	46	80.6	2.1	1	13.0	5.43	42.4	134	83.5	276	243
Ovature 208	2	98.5	23	82.1	2.5	1	13.6	5.52	41.7	126	82.1	291	253
Quest 209	6	92.4	42	79.8	2.1	1	12.3	5.22	43.0	151	81.9	376	236
Hadley 210	2	91.3	42	81.0	2.2	1	11.7	5.06	43.2	119	82.8	584	220
Rasmussen 212	6	97.7	40	79.9	2.6	1	13.8	6.03	45.3	163	84.6	341	284
C135 213	2	96.3	27	80.9	2.4	1	13.1	5.04	39.0	119	74.5	177	204
Scalett 214	2	95.2	31	81.5	2.9	2	12.6	4.51	38.3	103	79.0	520	183
Lacy 215	6	97.5	44	78.4	2.3	1	13.9	5.58	41.2	152	75.8	312	242
C134 216	2	98.3	30	81.8	2.3	1	12.4	4.68	38.2	134	80.3	271	194
Tradition 217	6	95.1	47	78.4	2.4	1	13.6	5.17	38.6	189	78.1	263	234
NSA1820A 218	2	98.6	23	80.3	2.4	1	14.0	5.21	38.1	141	77.4	242	214
Quest 219	6	94.8	47	79.3	2.3	1	12.5	5.22	43.4	142	78.9	460	231
Pinnacle 220	2	96.7	27	81.3	2.6	1	11.6	4.75	42.5	108	70.2	337	205
C132 221	2	99.3	25	80.5	2.8	2	13.3	5.41	41.6	109	68.9	302	244
Metcalfe 222	2	94.6	43	79.0	2.3	1	12.3	5.55	45.2	145	102.6	265	277
Rasmussen 223	6	97.7	41	80.3	2.7	1	13.0	5.81	46.5	162	83.4	305	271
Hockett 224	2	96.1	46	81.8	2.2	1	11.7	5.03	43.4	122	87.6	540	233
Innovation 225	6	96.1	46	79.9	2.2	1	12.4	5.07	44.4	146	82.9	365	228
Rasmussen 301	6	96.8	40	79.3	3.3	2	13.0	5.45	44.3	165	85.3	347	256
Ovature 302	2	94.1	25	81.9	2.8	1	13.5	5.58	42.5	124	86.5	254	259
C135 303	2	95.3	32	81.4	2.3	1	12.6	4.93	40.9	113	72.0	155	210
Metcalfe 304	2	92.3	42	81.3	2.8	1	13.3	5.53	43.4	142	97.2	308	247
Tradition 305	6	95.2	53	79.1	2.6	2	12.9	4.96	40.5	195	80.0	301	216
Pinnacle 307	2	94.6	32	81.1	2.5	1	11.6	4.49	41.3	96	62.9	483	180
Rasmussen 308	6	96.3	39	80.3	2.9	1	13.9	5.88	44.6	193	84.3	380	277
Lacy 309	6	97.8	41	80.9	2.9	2	13.8	4.52	*33.6	176	78.1	524	181
Scalett 310	2	92.4	31	83.1	2.3	1	12.9	4.85	37.9	119	75.6	158	215
NSA1820A 311	2	96.8	25	79.7	2.5	2	14.4	4.99	35.9	148	77.2	257	216
C132 312	2	99.2	26	81.1	2.8	1	15.0	5.52	38.6	136	70.9	283	248
Genie 313	2	97.6	20	81.8	3.1	1	14.3	5.86	44.0	187	73.5	166	249

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Quest 314	6	93.3	43	80.3	2.4	1	12.8	5.47	44.5	171	87.1	302	242
Odyssey 315	2	96.9	30	82.4	2.6	1	12.1	4.80	41.0	110	71.5	275	207
Pinnacle 316	2	94.3	32	81.7	n.d.	3	11.5	4.62	42.4	103	63.4	534	185
Hadley 317	2	92.6	43	82.0	2.4	1	11.9	5.11	45.7	115	84.3	487	222
Craft 318	2	96.5	38	81.1	2.4	1	12.8	4.84	40.4	125	70.8	321	197
Innovation 319	6	93.8	42	80.4	2.6	1	12.9	5.42	44.0	149	77.9	511	242
Hockett 320	2	94.8	44	81.9	2.5	1	11.9	5.03	43.9	121	79.5	594	218
C131 321	2	91.2	37	82.5	2.4	1	12.5	5.06	42.0	111	90.9	502	216
Copeland 322	2	96.1	44	81.4	2.5	1	12.5	5.12	42.9	113	78.1	332	226
Scarlett 323	2	97.0	32	82.6	n.d.	3	12.3	4.43	37.1	105	71.6	526	178
Quest 324	6	93.6	44	79.6	2.6	1	12.7	5.23	43.0	136	77.9	536	233
C134 325	2	98.6	26	81.7	2.8	1	11.9	4.54	38.4	124	70.6	494	186
HARRINGTON MALT CHECK	2	97.2	74	82.8	1.9	1	11.8	4.90	44.1	104	81.2	157	223
HARRINGTON MALT CHECK	2	96.6	69	83.2	2.3	1	11.8	4.87	44.7	119	89.1	152	220
		90.5	20	78.3	1.9		11.3	4.43	35.4	86	60.2	116	178

