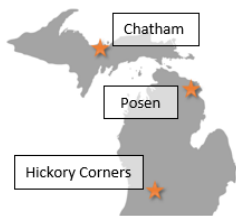


SPRING MALTING BARLEY TRIAL – 2020 YIELD RESULTS

J. DeDecker, D. Baas, B. Wilke, C. Kapp, & C. Tollini, with NDSU, The Brewer's Assoc. & Wilk Farms



For a fifth year, Michigan State University continued spring malting barley variety research as part of the Eastern Spring Barley Nursery (ESBN). ESBN is sponsored by the Brewers Association and administered through North Dakota State University in an effort to test current malting barley variety adaptability and performance in Midwestern and Mid-Atlantic seaboard environments. This information supports variety selection by growers, maltsters and brewers sourcing local barley and malt for craft beverage production.

This year's Michigan ESBN trials were planted in Chatham, Posen and Hickory Corners. Twenty-five spring barley varieties were assessed for yield and quality, with quality results forthcoming from North Dakota State University. Our experimental design was a randomized lattice with three replications across all locations. Planting was done with a research plot drill, and 50 lbs. of nitrogen was top-dressed after planting. In addition to nitrogen, 21 lbs. of available sulfur was also top-dressed at all locations. Disease was rated on a 1-5 scale at Chatham and Posen, with 1 signifying no disease present and 5 signifying complete leaf infection. Unfortunately, COVID-19 prevented the collection of disease and height data at Hickory Corners. Harvest was completed with a plot combine, and all samples were weighed and yield calculated at a standard moisture of 13.5%.

In Chatham, planting was completed May 6th on Eben Very Cobbly Sandy Loam. Herbicide was applied June 26th prior to stem elongation, using 1 qt/acre of Bromoxynil. A fungicide application of Prosaro at 8.2 oz/acre was applied July 16th at 95% anthesis. Weather conditions were especially warm and wet in Chatham this year. Frequent rainfall events kept leaf and canopy moisture high, resulting in significant leaf disease pressure. This led to lower than normal yields at harvest on August 25th. The highest yielding experimental and commercial varieties at Chatham were 2ND37111 (72.0 bu/a) and Esma (58.1 bu/a) respectively. The trial averaged 46.1 bu/a (Table 1).

In Posen, planting was completed April 27th on Alstad Loam soil. Conditions were similar to Chatham, with above normal temperatures and precipitation, resulting in heavy disease pressure, particularly spot blotch. 1 qt/acre of Bromoxynil herbicide was applied June 15th. Prosaro fungicide was applied July 8th at the rate of 8.2 oz, and harvest was completed on August 20th. Weather conditions also negatively impacted grain quality, as evidenced by significant weathering of the kernels and overall low germination. The highest yielding experimental and commercial varieties at

TRIAL DETAILS

Planting date:

Chatham – May 6th
Posen – April 27th
Hickory Corners – April 6th

Fertility:

50 lbs/acre actual nitrogen and
21 lbs/acre available sulfur
across all locations at planting.

Herbicide:

1 qt/ac of Bromoxynil applied at
Chatham and Posen.
N/A at Hickory Corners.

Fungicide:

8.2 oz/ac of Prosaro® applied at
Chatham and Posen at 95%
anthesis. 13.7 oz/ac of Miravis
Ace at Hickory Corners a 95%
anthesis.

Harvest Date:

Chatham – August 25th
Posen – August 20th
Hickory Corners- July 21st

Take Aways:

- Plant treated seed, as soon as weather/soil conditions allow
- Use seeding rates equivalent to at least 1.2 M seeds/acre
- Use appropriate fungicide at anthesis to control Fusarium
- Consider varieties of European origin for max yield and quality in MI.

Posen were 2ND36642 (61.7 bu/a) and KWS Jessie (57.9 bu/a) respectively. The trial averaged only 39.7 bu/a (Table 2).

At the Hickory Corners location, planting was done April 6th on Kalamazoo Loam soil. No herbicide application was needed due to low weed pressure. A fungicide application of Miravis Ace was made at flowering on June 17th at a rate of 13.7 oz/acre, and the plot was harvested July 21st. Rainfall was above average at this location, with totals above normal through April and May, and average between June 1st and harvest. ND Genesis was the highest yielding variety at this location with a yield of 76.3 bu/a, and the trial averaged 52.6 bu/a (Table 3).

Table 1. ESN Barley Variety Performance at Chatham, MI
 *(varieties followed by the same letter are not significantly different in yield)

Variety	Yield (bu/a)	Sig.*	Test Wt.	Heading Date	Height (in)	Disease (1-5)	72 hr GE (%)
2ND32184	52.0	abc	44.7	13-Jul	23.0	2.00	82
2ND32529	63.1	ab	44.1	12-Jul	23.2	3.00	90
2ND36638	54.1	abc	43.4	12-Jul	23.8	2.30	88
2ND36642	60.2	abc	45.3	9-Jul	23.7	2.70	94
2ND37111	72.0	a	41.4	7-Jul	24.0	2.30	91
2ND37130	43.4	abc	41.6	10-Jul	23.0	2.70	93
2ND37568	49.1	abc	41.5	9-Jul	24.0	2.70	94
AAC Connect	43.9	abc	42.1	15-Jul	21.7	3.30	93
AAC Synergy	53.6	abc	42.5	15-Jul	23.3	2.30	92
Accordine	27.9	bc	41.8	12-Jul	19.8	3.70	92
Barbarella	35.7	abc	41.0	11-Jul	19.3	4.70	91
Brunilda	38.8	abc	42.0	13-Jul	19.3	3.30	82
Eifel	36.3	abc	41.6	13-Jul	18.7	4.30	77
Esma	58.1	abc	44.1	16-Jul	19.7	4.30	91
Explorer	48.2	abc	43.9	13-Jul	17.7	4.30	92
Focus	45.2	abc	43.9	11-Jul	22.7	3.00	78
Klarinette	43.9	abc	40.5	14-Jul	17.7	5.00	97
KWS Fantex	38.2	abc	41.3	15-Jul	17.0	4.00	86
KWS Jessie	32.8	abc	38.3	11-Jul	18.3	5.00	84
KWS Willis	47.4	abc	41.1	7-Jul	20.3	4.00	95
LCS Genie	27.9	c	42.3	11-Jul	19.0	4.70	88
ND Genesis	51.5	abc	44.7	10-Jul	24.0	2.70	90
Pinnacle	37.7	abc	43.7	9-Jul	23.3	4.30	87
Sangria	36.8	abc	41.7	11-Jul	19.3	4.30	92
Tradition	54.0	abc	45.2	8-Jul	22.7	2.70	95
Average	46.1		42.55	11-Jul	21.1	3.5	89.3

Table 2. ESNB Barley Variety Performance at Posen, MI
 *(varieties followed by the same letter are not significantly different in yield)

Variety	Yield (bu/a)	Sig.*	Test Wt.	Heading Date	Height (in)	Disease (1-5)	72 hr GE (%)
2ND32184	36.5	a-d	39.8	15-Jul	NA	3.00	56
2ND32529	58.8	ab	41.1	1-Jul	NA	2.17	61
2ND36638	54.9	abc	40.6	1-Jul	NA	2.67	68
2ND36642	61.7	a	42.3	1-Jul	NA	2.33	73
2ND37111	31	a-d	38.2	3-Jul	NA	3.33	76
2ND37130	21.1	d	37.5	3-Jul	NA	3.83	65
2ND37568	27.3	bcd	37.0	4-Jul	NA	3.33	72
AAC Connect	28.5	bcd	40.0	15-Jul	NA	3.67	67
AAC Synergy	31.5	a-d	39.9	14-Jul	NA	3.33	72
Accordine	29.3	bcd	41.0	9-Jul	NA	3.17	80
Barbarella	45.9	a-d	42.3	6-Jul	NA	2.50	75
Brunilda	44.9	a-d	43.1	12-Jul	NA	2.83	74
Eifel	35.3	a-d	41.5	14-Jul	NA	2.33	74
Esma	22.7	cd	41.3	14-Jul	NA	3.33	78
Explorer	45.8	a-d	41.9	10-Jul	NA	2.83	80
Focus	47.8	a-d	39.7	12-Jul	NA	2.67	53
Klarinette	33.8	a-d	42.0	15-Jul	NA	3.00	69
KWS Fantex	37.3	a-d	42.3	14-Jul	NA	2.83	72
KWS Jessie	57.9	ab	41.6	7-Jul	NA	3.00	71
KWS Willis	50.1	a-d	42.4	13-Jul	NA	2.83	79
LCS Genie	23.1	cd	43.1	14-Jul	NA	2.67	83
ND Genesis	44.2	a-d	42.1	9-Jul	NA	2.33	78
Pinnacle	47.3	a-d	40.9	5-Jul	NA	2.67	77
Sangria	33.5	a-d	41.5	9-Jul	NA	2.83	78
Tradition	44.3	a-d	41.0	29-Jun	NA	3.17	87
Average	39.7		41.0	9-Jul	NA	2.91	73



Figure 1. Chatham plots in early July



Figure 2. Hickory Corners plots near harvest

Table 3. ESNB Barley Variety Performance at Hickory Corners, MI
 *(varieties followed by the same letter are not significantly different in yield)

Variety	Yield (bu/a)	Sig.*	Test Wt.	Heading Date	Height (in)	Disease (1-5)	72 hr GE (%)
2ND32184	58.4	abcd	43.8	19-Jun	NA	NA	92
2ND32529	54.3	abcd	41.1	15-Jun	NA	NA	99
2ND36638	56.5	cd	41.7	18-Jun	NA	NA	96
2ND36642	63.5	abcd	41.7	19-Jun	NA	NA	96
2ND37111	44.2	bcd	40.0	14-Jun	NA	NA	96
2ND37130	43.2	cd	43.2	16-Jun	NA	NA	99
2ND37568	42.1	abcd	39.8	17-Jun	NA	NA	97
AAC Connect	43.8	bcd	40.8	19-Jun	NA	NA	94
AAC Synergy	51.6	abcd	40.4	19-Jun	NA	NA	94
Accordine	41.3	cd	45.1	19-Jun	NA	NA	86
Barbarella	49.6	abcd	45.1	19-Jun	NA	NA	95
Brunilda	50.5	abcd	46.6	19-Jun	NA	NA	95
Eifel	48.9	abcd	43.4	19-Jun	NA	NA	96
Esma	68.3	abc	43.4	19-Jun	NA	NA	98
Explorer	54.0	abcd	43.6	18-Jun	NA	NA	98
Focus	36.8	d	44.6	18-Jun	NA	NA	94
Klarinette	54.3	abcd	42.5	18-Jun	NA	NA	97
KWS Fantex	45.1	bcd	42.9	19-Jun	NA	NA	95
KWS Jessie	60.9	abcd	42.1	19-Jun	NA	NA	97
KWS Willis	73.5	ab	44.4	19-Jun	NA	NA	95
LCS Genie	47.6	abcd	44.7	19-Jun	NA	NA	97
ND Genesis	76.3	a	46.7	13-Jun	NA	NA	94
Pinnacle	46.6	bcd	46.2	18-Jun	NA	NA	97
Sangria	55.5	abcd	43.6	19-Jun	NA	NA	95
Tradition	48.1	abcd	43.0	14-Jun	NA	NA	100
Average	52.6		43.2	17-Jun	NA	NA	95.6



Figure 3. LCS Genie at Hickory Corners



Figure 4. Harvesting ESNB Barely in Chatham