2018 EASTERN SPRING BARLEY NURSERY – MI YIELD REPORT

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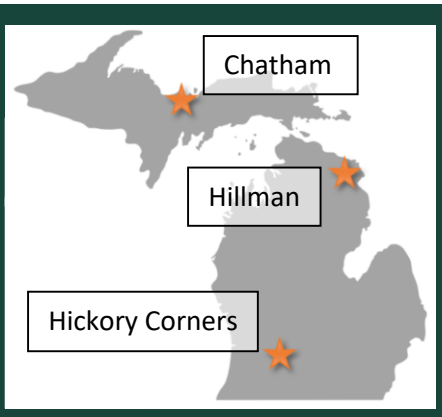
For a fourth year, Michigan State University continued malting barley variety research as part of the Eastern Spring Barley Nursery (ESBN). The ESBN project is sponsered by the Brewers Association and adminstered through North Dakota State University in an effort to research malting barley variety adaptability and performance in Midwestern and Mid-Atlantic seaboard environments. This information is needed to support maltsters and brewers in these areas as they seek to source more local barley grain for malt production. There is great potential in Michigan specifically for development of a malting barley industry, due to the growing number of malt houses and breweries located within the state, as well as a favorable climate for growing small grains.

Despite growing markets and a favorable climate, little data is available for both producers and end users regarding what spring barley varieties are best suited for production in Michigan. What is especially problematic for Michigan is that most commercial malting barley varieties are developed and adapted for either the dry climate of the Western U.S., or conditions found in Great Britain and continental Europe. Because of this, local research on disease resistance, lodging resistance, harvest timing, and yield across commercial varieties is needed to identify which varieties will perform best in our state.

This year's Michigan ESBN trials were planted in Hickory Corners, Hillman and Chatham. Twenty-eight spring barley varieties were assessed for yield and quality, with quality results forthcoming from North Dakota State University this spring. Most of the varieties were of the two row type, with the exception of Tradition and Quest which are six row. The research design used was a randomized lattice with three replications across all locations. Planting was done with a research plot drill with 50 lbs. of nitrogen top-dressed after planting. In addition to nitrogen, 21 lbs. of available sulfur was also top-dressed at the Chatham location. Harvest was conducted with a plot combine, and all samples were weighed and yield calculated with adjustment for a standard moisture of 13.5%.

At the Hickory Corners location, planting was done May 2nd on Kalamazoo Loam soil. Herbicide was applied prior to stem elongation, including Husky® at rate of 13 oz/acre and Axial XL® at a rate of 16.4 oz/acre was used. An insecticide application was made June 8th, using 3.2 oz/acre of Grizzly Z®. A fungicide application of Prosaro® was made at flowering on June 25th at a rate of 8 oz/acre, and the plot was harvested July 25th. Rainfall was adequate after planting, with totals slightly above normal, but weather began to dry out quickly after flowering, with only 0.5 inches of rain falling in the 3 weeks following flowering. The crop received a total of 13 inches of rain and accumulated 3150 base 32 Growing Degree Days (GGDs) from planting to harvest. Newdale was the highest yielding variety at this location, with a yield

TRIAL DETAILS



Planting date:

Hickory Corners- May 2nd

Hillman- May 24th

Chatham- May 8th

Fertility:

50 lbs/acre actual nitrogen across all locations at planting.

21 lbs/acre available sulfur at Chatham location at planting.

Herbicide:

15 oz/acre Huskie® prior to stem elongation at Chatham and Hillman.

16.4 oz/acre Axial XL® with 13oz/acre Huskie® prior to stem elongation at Hickory Corners location.

Fungicide:

Prosaro® applied at flowering, with the exception of Hillman.

Harvest Date:

Hickory Corners- July 25th

Hillman- August 23rd

Chatham- August 16th

of 47.8 bushels/acre. 7 other varieties at this location yielded over 40 bushels per acre.

In Hillman, planting was delayed until May 24th due to wet field conditions in the spring. An April snowstorm kept fields snow covered until the first week of May, delaying planting across the region. The trial was planted on a heavy, Negwegon Silt Loam soil. Herbicide was applied prior to stem elongation on June 21st, using 15 oz/acre of Huskie®. Conditions dried out immediately after planting, with little measureable rainfall until a few weeks prior to harvest. Only 4.3 inches of rain fell from planting though harvest. Due to drought, it was determined there was no need for fungicide application. Temperatures were significantly above average throughout the growing season, with 3199 base 32 GGDs accumulating from planting to harvest. Harvest was completed on August 23rd. Yields were surprisingly good considering the weather conditions, likely due to the great water holding capacity of the soil in this particular field, with Eifel yielding the highest at 80.6 bushels/acre. 12 other varieties at this location yielded above 70 bushels/acre.

In Chatham, planting was done May 8th, as field conditions were favorable for an early planting. The trial was planted on an Eben Very Cobbly Sandy Loam. Herbicide was applied in mid-June prior to stem elongation, using 15 oz/acre of Huskie®. A fungicide application of Prosaro® at 8.2 oz/acre was applied in mid-July at 95% flowering. It was an excellent growing season at Chatham this year, where above normal temperatures and adequate rainfall allowed for exceptional yields. A total of 11.75 inches of rain fell from planting to harvest, with 3146 base 32 GGDs accumulating in that same period. Harvest was completed August 16th. Tradition was the highest yielding variety at 102.9 bushels/acre. 7 other varieties at this location yielded over 95 bushels per acre.

Overall it was another successful year for the Michigan Locations in the ESBN trials. We look forward to continuing this work across the state in the 2019 growing season. Barley and malting quality data form this trial is coming soon, and will be reported when available.

Variety	Average across locations	Hickory Corners	Hillman	Chatham
Tradition	73.6	40.3	77.5	102.9
2ND32529	73.5	44.1	78.4	98
2ND33760	71.1	43.7	77.6	91.9
AAC Synergy	70.7	43.2	74.4	94.5
Esma	69.9	42.6	72.3	94.8
Eifel	69.7	37.6	80.6	91
Accordine	69.5	39.6	73.8	95
2ND34999	68.7	36.8	78.1	91.3
2ND33757	68.5	41.6	74.9	88.9
2ND34954	67.7	31.5	72.7	98.9
ND Genesis	67	41.8	63.1	96.1
KWS Tinka	67	35	64.3	101.7
Quest	66.2	32.4	73.7	92.5
2ND33821	65.3	30.6	65.6	99.9
Newdale	63.9	47.8	61.5	82.3
LCS Odyssey	63.6	36.9	73.3	80.7
2ND35001	63.6	30.1	68.9	91.8
Sangria	61.7	36.4	69.2	79.6
Expo	61.7	32.2	61.7	91.3
2ND28065	61.5	28.8	62.2	93.6
KWS Fantex	59.6	32.6	58.6	87.6
Crescendo	59.3	32.1	71.9	74
LCS Opera	59	29.5	65.9	81.5
Manta	56.7	39.8	47.9	82.4
KWS Beckie	52.2	28	51.4	77
LCS Sienna	50.5	18.9	49.5	83
LCS Genie	48.8	13.4	54.3	78.6
Pinnacle	40.6	32.2	61.4	28.2
LSD P=.05	8.9	11.7	20.3	13.3
CV	15.1	20.7	18.7	9.3