MSU CEREAL RYE VARIETY TRIALS – 2020 RESULTS

With the support of the Michigan Craft Beverage Council, trials to compare cereal rye varieties were established in the fall of 2019 at three locations in Michigan. Data are being collected to evaluate suitability for use in the distilling industry. Yield, agronomic and quality data were collected at two locations (Hickory Corners and Chatham) and only yield data at one location (Gratiot). Plots included 15 varieties with four replications in a randomized complete block design. Two locations (Hickory Corners and Chatham) included four additional replicates with enhanced management including a plant growth regulator and fungicide application.

Hickory Corners, MI

Variety	Yield (bu/A)	Density (lb/bu)	Heading Date	Height (cm)	Lodging (0-5)[$]	Spring Vigor[#] (0-10)
Normal Management						
AC Hazlet	77.1	53.7	5/26	161.3	3.38	10
Aroostook	54.3	53.1	5/22	178.8	2.75	10
Danko	77.0	54.4	5/25	148.8	1.13	10
Elbon	51.2	55.1	5/22	176.7	2.33	10
FL401	37.0	53.7	5/22	182.5	1.38	9
Guardian	65.6	53.3	5/26	171.3	3.50	10
KWS Bono*	100.1	53.9	5/26	135.0	2.00	10
KWS Brasetto*	99.0	53.6	5/26	135.0	1.38	10
KWS Serafino*	99.7	53.9	5/26	145.0	2.00	10
Maton	48.2	54.8	5/21	176.3	2.63	9.75
Merced	38.8	53.5	5/21	152.5	3.88	8.75
ND Dylan	67.8	52.8	5/27	175.0	3.00	9.75
VNS	71.8	54.0	5/26	161.3	2.00	9.5
Wheeler	34.5	52.1	5/27	202.5	0.13	10
Wrens Abruzzi	41.2	55.0	5/22	173.8	2.75	10
Normal Mean	**64.4**	**53.8**	**5/24**	**164.8**	**2.28**	**9.76**
Enhanced Management						
AC Hazlet	70.8	54.3	5/26	166.3	3.00	10
Aroostook	54.5	54.3	5/22	177.5	2.63	10
Danko	78.4	55.1	5/26	146.3	0.75	10
Elbon	50.8	55.2	5/22	174.0	2.40	10
FL401	35.4	54.3	5/21	176.3	2.50	9
Guardian	71.3	54.6	5/25	167.5	2.75	10
KWS Bono*	103.8	54.5	5/26	130.0	1.25	10
KWS Brasetto*	108.4	54.4	5/26	138.8	0.38	10
KWS Serafino*	112.4	54.5	5/26	130.0	0.63	10
Maton	47.0	55.6	5/21	175.0	3.00	9.75
Merced	44.6	54.9	5/21	150.0	3.50	8.75
ND Dylan	60.8	53.6	5/26	171.3	2.88	9.75
VNS	69.3	54.7	5/26	160.0	1.50	9.5
Wheeler	37.3	52.8	5/26	197.5	0.13	10
Wrens Abruzzi	56.4	55.5	5/23	171.3	2.75	10
Enhanced Mean	66.5	54.6	5/24	162.3	2.01	9.79

* Hybrid variety; All others open pollinated

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

HICKORY CORNERS TRIAL DETAILS

Planting date: 10/15/19

Fertility: 10/8/19 – 32 lbs N/A, 52 lbs P/A, 12 lbs S/A:

4/3/20 - 70 lbs N/A, 10 lbs S/A

Plant Growth Regulator (Enhanced Management Only): 4/27/20 14.4 oz/A Palisade EC

Fungicide (Enhanced Management Only): 5/27/20 13.7 oz/A Miravis Ace

Harvest: 7/23/2020

Growing season conditions: April and May were cool and moist but June was warm and dry.

Research site details:

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

Previous crop: Soybeans

Soil type: Kalamazoo Sandy Loam

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Yield and test weight data from Gratiot county are included below. Due to later harvest of cereal grains in Michigan's Upper Peninsula, **the yield and agronomic data for the Chatham site** are still being collected and summarized. These data will be shared on additional pages as soon as possible.

Gratiot County, MI

Variety	Yield (bu/A)	Density (lb/bu)
AC Hazlet	77.8	54.5
Aroostook	63.9	53.4
Danko	80.2	53.6
Elbon	48.5	51.4
FL401	36.4	41.1
Guardian	79.6	54.1
KWS Bono*	108.0	55.9
KWS Brasetto*	103.5	55.2
KWS EXP-B*	107.4	54.7
KWS ProPower*	100.5	54.9
Maton	50.6	49.5
Merced	35.4	44.6
ND Dylan	72.8	53.9
Wheeler	42.8	50.1
Wrens Abruzzi	58.1	54.7
Mean	**71.0**	**52.1**

* Hybrid variety; All others open pollinated

Yield data from Hickory Corners and Gratiot show up to a three-fold difference in average yield between the hybrid varieties and varieties typically used for cover crops or forage (e.g. Wheeler, FL401, Merced). Other open pollinated varieties that have been developed for grain production (e.g. Danko, AC Hazlet) yielded more than the lowest yielding varieties, but less than the hybrids.

Initial observations appear to indicate that the enhanced management influenced the hybrid variety characteristics but not the open pollinated varieties. Statistical analyses are being completed to quantify these potential differential effects of enhanced management on grain yield and other characteristics.

Grain quality, spirit yield, and sensory analyses are also being completed on the varieties grown in Hickory Corners and Chatham. These laboratory analyses will take some additional time, but we will continue to update this publication with information as it becomes available.

GRATIOT COUNTY TRIAL DETAILS

Research site details:

Site managed alongside MSU winter wheat trials by Dennis Pennington

Previous crop: Soybeans

Agronomic information is being summarized and will be posted here soon.

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