

EVENT SUMMARY: 2021 SMALL GRAINS FOR BREWING & DISTILLING FIELD DAY

Dean Baas, Rachel Drobnak, Allison Smith, Brook Wilke

On Friday, June 25, 2021, Michigan State University Extension hosted a Small Grains for Brewing and Distilling Field Day at the W.K. Kellogg Biological Station. [MSU Extension](#) hosts various research projects at the [Kellogg Biological Station](#) to expand their understanding on the variety performance of [small grains](#) used for brewing and distilling throughout the state. Despite the heavy rain, farmers and stakeholders were able to learn about the latest small grains research, as well as share their own experiences.

Several speakers gave insight on variety, management, and fungicide trials, as well as information on the brewing industry in the past year and how research can help farmers and brewers. Support for this research is provided by the [Michigan Craft Beverage Council](#), [Michigan Department of Agriculture and Rural Development](#), [Michigan Crop Improvement Association](#), [American Malting Barley Association](#), [Michigan Brewers Guild](#), [Bell's Brewery](#) and [Origin Malt](#).



The 2021 Small Grains Fungicide Trial at KBS

Jenelle Jagmin, Director of the Michigan Craft Beverage Council, began the presentations by expressing her support for small grains research at KBS. She shared that 50% of the beverage council's operating budget goes towards research in order to advance the craft beverage industry in Michigan.

Moving outside to the winter hardiness and winter barley variety trials, Dr. Brook Wilke shared overall weather effects on winter barley in Southern Michigan. After experiencing about four months of drought and a week of heavy rain, Wilke expects the winter barley to have poor test weight, poor plumpness, and higher protein. This is because there was a lack of water during grain fill, and an abundance of water too late in winter barley's growth.

2021 Small Grains Trials at W.K. Kellogg Biological Station

- Winter Barley Hardiness Trial
- Winter Barley Variety Trial
- Cereal Rye Variety Trial
- Small Grains Fungicide Trial
- Oat Variety Trial
- Spring Barley Variety Trial

Other Trials

- Winter Barley Planting Rate & Date
- Variety & Management for Wheat Malting
- Variety & Nitrogen Rate for Oat Malting



Dr. Brook Wilke discussing the Winter Hardiness Trial



Pre-harvest sprout, taken June 29.

In fact, Wilke predicts higher pre-harvest sprout in some varieties, which will lead to unacceptable quality for malting. The high spring and early summer temperatures didn't affect barley as much as the dryness did. Wilke explained that "barley doesn't mind heat but likes to cool down, but dry weather plays a larger role in barley growth and quality."

Dr. Manni Singh shared results from his work on studying planting time of winter barley. He shared that it is best to plant winter barley in the 10-days period following the Hessian fly-free date, as yield and quality loss can occur even as soon as early-October plantings. Planting early helps increase both yield and quality, although when planting any earlier than mid-September, yield stops increasing and quality decreases.

Wilke shared some current observations from the 2021 Winter Hardiness Variety Trial, which investigates the hardiness of seven winter barley varieties and one rye variety at multiple research stations throughout the state. In Alger county, all the winter barley at the Upper Peninsula Research and Extension Center winter-killed, while winter barley in the southern part of the state survived at significantly higher rates. Dr. Dean Baas shared that the Winter Hardiness trial also investigates why winter barley survives. To do this temperature and snow-fall data (time of snowfall, depth and snowmelt) are recorded.

Ryan Hamilton, a graduate student at MSU, shared the latest information on the malting barley industry. Although spring barley was previously more popular in Michigan, winter barley is now dominating in the state. About 500 total acres of barley are grown in the state for the malting industry. Hamilton noted that the price for malting barley has remained steady in recent years, at about \$7 per bushel. He also shared that the most popular winter and spring varieties in the state are Calypso and Violetta (winter) and LCS Odyssey (spring). Discussion arose about the difference between 2- and 6-row barley, as 2-row is grown for brewing and 6-row for distilling, despite there not being a clear difference in quality or yield potential. Interestingly, seed availability is low for 6-row varieties.



Winter barley hardiness trial at KBS, taken June 14.



2-row (left image) and 6-row (right image) winter barley at KBS, taken June 14.



Wilke gave insight into the rye variety trial being conducted at KBS, now in its second year. Rye can be used as a cover crop, forage, feed, and by distillers for spirits. Since rye is wind pollinated, unlike barley, it is hard to maintain varietal purity and it is helpful to research the differences between existing varieties.

Left: Cereal rye at KBS, taken June 14.

Tara Watkins, a current graduate student at MSU, shared research on pest & disease management of rye and barley. She discussed timing of fungicide applications as well as the options on the market. An ideal time to spray is typically Feekes 10.5, or flowering stage; however, she noted that spraying up to 4-6 days post flowering still prevents various diseases, especially fusarium head blight. After about 10 days post-flowering, it is usually too late for fungicides to be effective. In addition, Watkins found that Miravis Ace is a more effective treatment in preventing FHB and other diseases than Prosaro and others on the market. Watkins explained that fungicide applications are important because they protect against and lessen diseases like FHB. In addition, these treatments ensure a healthier plant to fight diseases that may occur in later growth or maturity stages.



Tara Watkins gives an overview of the fungicide trials.

Finally, Scott Graham, Executive Director of the Michigan Brewers Guild, shared information about the brewing and distilling industry over the last year. His hope is that Michigan breweries and distilleries will use local barley varieties in their production, rather than relying on grains from outside the state. He believes Michigan is uniquely suited to be a state to grow the local brewing industry. This vision is complicated, however, by the many logistical needs of the states' breweries. Graham shared insight about COVID-19's effect on the industry: "Government loans have helped small brewers hang on, and surprisingly few have closed." However, small breweries faced unique distribution challenges, as many only sell their beer at tasting rooms and not at grocery stores, where most consumers purchased alcohol during the pandemic.

RESOURCES

There are two quality labs in the state available for producers and stakeholders to submit samples. The [MSU Malting Barley Quality Analysis Lab](#) offers a variety of tests on malting barley grain, including germination, DON, protein, pre-harvest sprout, and more. Questions and inquiries for the lab can be directed to colema98@anr.msu.edu or 906-439-5114. The Fermented Beverage Analysis Lab at MSU offers multiple tests for malts and cereal grains. For analysis, questions and project inquiry please contact Nicole Shriner at shrinern@msu.edu or call 517-896-4635.

Questions can be sent to any of the following:

- Dr. Dean Baas (baasdean@msu.edu), *MSU Extension, Sustainable Agriculture Educator*
- Scott Graham (director@michiganbrewersguild.org), *Executive Director, Michigan Brewers Guild*
- Ryan Hamilton (hamil486@msu.edu), *MSU Graduate Student, Field Crops Pathology*
- Jenelle Jagmin (jagminj@michigan.gov), *MCBC Director, MDARD*
- Nicole Shriner (shrinern@msu.edu), *Manager, Fermented Beverage Analysis Lab*
- Dr. Manni Singh (msingh@msu.edu), *MSU Assistant Professor of Cropping Systems Agronomy, PSM*
- Tara Watkins (watki228@msu.edu), *MSU Graduate Student, Field Crops Pathology*
- Dr. Brook Wilke (wilkebro@msu.edu), *MSU Associate Director for Science and Agronomy*
- MSU Malting Barley Quality Analysis Lab (colema98@anr.msu.edu or 906-439-5114)
- Fermented Beverage Analysis Lab (shrinern@msu.edu or 517-896-4635)

For more information about small grains for brewing and distilling visit the [MSU Extension Malting Barley website](#). Questions regarding the event can be directed to Brook Wilke (wilkebro@msu.edu) or Dean Baas (baasdean@msu.edu).

MSU is an affirmative-action, equal opportunity employer. MSU Extension programs and materials are open to all without regard to race, color, national origin, gender, gender identity, religion, age, height, weight, disability, political beliefs, sexual orientation, marital status, family status, or veteran status.