

2017 University of Delaware Small Grains Variety Trials

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Thank you to all of the companies who have generously supported and participated in the 2017 University of Delaware small grains trials. Appreciation and gratitude is extended to the following cooperators who generously provided land and support for our off-site locations; Craig Murray (Murray Bros. Farm) of Selbyville; John Thomas of Thomas Family Farm in Marydel; and Rob Emerson of Emerson Farms in Middletown. Thank you to the farm staff at the UD Thurman Adams Research Farm; Brian Hearn (Farm Manager), Ward Harris, William Hawkins, Kyle Mitchell, George Willey, and Gunnar Isaacs for their help in maintaining equipment and plots. The variety trial program could not be done without any of them.

Wheat Summary

Fall weather conditions were favorable for timely planting. We had an unusually warm December followed by more seasonal weather in January, and again, unseasonably warm February before normalizing, making for a relatively early harvest. Our fertilizer applications, spray and harvest dates all reflect this as we attempted to be timely with actual crop growth stage.

Wheat plots did not have tremendous disease or insect pressure. For more specific weather data, the DEOS site is recommended <http://www.deos.udel.edu/#>, or I can send this data if requested.

Lodging notes were taken, however, there was no significant lodging in any of the plots or locations. Plant heights were recorded for most of the locations. Heading dates were recorded only at Georgetown for logistical reasons.

Planting rates were 1.5 million seeds/acre (35 seeds/ft²). Planting was done with an Almaco research plot planter. Seed was drilled on 7.5" row spacing. Plots consisted of 9 rows and final plot harvest was 17 feet. Harvest was done with a Kincaid MF-8XP combine using a Harvestmaster grain gauge data collection system. Data collected at harvest was plot weight, test weight, and grain moisture. Yield data was corrected to 13.8% moisture for final report.

The two Georgetown trials (Georgetown 1 with Fungicide, Georgetown 2 without fungicide) were mirrors of each other though technically they were separate trials and analyzed individually. Except for the fungicide spray, everything was treated the same and they were in the same soil type and planted adjacent to each other. The fungicide obviously protected yield in Georgetown 1, and a comparison between the two plots is provided in the summary data. A word of caution in making comparisons... it is inaccurate to conclude that a fungicide protected x amount of yield for a particular variety because these were two statistically separate trials and also due to the variable maturity in the field due to the many different varieties interacting with when the fungicide was applied.

Planting and harvest dates are recorded in the summary for each location.

Fertility: All plots were fertilized with N-sul (27-0-0-6) in two split applications for a total of 100 lbs.

Herbicide: Harmony Extra @.9 ounce/A. This was applied with the second nitrogen application.

Georgetown

Planted: 10/19/17

Split topdress applications: 2/20/17, 3/20/17

Harvest: 6/14/17

The Georgetown 1 trial was sprayed with Lambda II (Lambda-cyhalothrin) insecticide for cereal leaf beetle @ 1.9 ounces/A, plus Caramba fungicide @ 14 ounces/A 5/1/17. Growth stage was "headed" Feekes 10.5

Selbyville

Planted: 10/20/17

Topdress: 2/21/17, 3/8/17

Harvest: 6/26/17

Kent

Planted: 10/18/17

Topdress: 2/23/17, 3/7/17

Harvest: 6/28/17

Middletown

Planted: 10/26/17

Topdress: 2/23/17, 3/21/17

Harvest: 6/29/17

Fungicide/Insecticide: Sprayed Lambda II (Lambda-cyhalothrin) insecticide for cereal leaf beetle @ 1.9 ounces/A plus Caramba fungicide @ 14 ounces/acre on 5/11/17. Growth stage was "headed" Feekes 10.5.

Barley Summary

We conducted two separate barley trials in 2017, both located at Georgetown. Companies submitted both malting and grain varieties for testing. All of the varieties were tested together. The fertilizer program was the same as we have been using in previous years (split applications totaling approximately 100 lbs. N.). The only additional accommodation made for the malt varieties was a planned fungicide application to reduce disease pressure and maintain high quality at harvest.

If there is interest we may in the future conduct malting variety trials separate from the grain variety trial. We sent grain samples post-harvest for laboratory analysis (Michigan State) and were pleased that most of the samples were within the protein range and DON limits that brewers require. This confirms that our current fertilizer and spray program are adequate, though admittedly there is more work to be done. Also, this applies only to Georgetown on sandy, coarse soils.

There was a lot of barley yellow dwarf virus (BYDV) from the warm winter. There was some moderate lodging mostly in the plots affected by BYDV however it did not impact harvest. Prior to harvest there was a prolonged wet and cloudy weather preventing harvest and causing concern for grain quality, however, it did not appear to affect quality as confirmed by the lab reports. In the future we would like to conduct more quality analysis if there is interest in it. There was a noticeable reduction in yield

between the two trials due to soil type, increased BYDV pressure and some fertility issues between the two locations.

Plant: 10/19/17

Topdress: 2/20/17, 3/20/17 (with Harmony Extra herbicide @ .9 ounces/a.)

Harvest: 6/8/17

Fungicide/Insecticide: Sprayed Lambda II (Lambda-cyhalothrin) insecticide for cereal leaf beetle @ 1.9 ounces/A plus Caramba fungicide @ 14 ounces/acre on 4/14/17.