

University of Maryland Soybean Variety Trials – Check Varieties

Progress Report to Maryland Soybean Board

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Project Objectives

The goal of this project is to provide Maryland producers with an unbiased comparison of soybean variety performance across the geographic and climatic regions of Maryland. These data can aid producers in soybean variety selection with the global goal of increasing producer profitability through increased yields.

Progress of Work

The University of Maryland Soybean Variety trials have been completed for the 2021 growing season. Results of the trials can be found at the MD Crops page on the Department of Plant Science and Landscape Architecture website at <https://psla.umd.edu/extension/md-crops>. The Trials Center team, who performs the work, wrapped up harvest by mid-November this year and the report was compiled and published online the end of November – significantly earlier than has been typical in the last few years. While most expenditures related to field operations have been complete, we are awaiting transfer of budgeted technician salary at this time.

Prior to planting the trials, the Trials Center team fabricated a seed-delivery system on an existing no-till planter in order to plant all plots with the same equipment. We felt it was important to mimic the condition on Maryland soybean farms in our variety trials and planting our plots into no-till field conditions was a major step forward with the variety trials to accomplish this.

Results

In the soybean variety trials results document, we present data separately by location of the trials and maturity group. Low yields and a lack of yield differences were observed across all maturity groups at the Clarksville location due to poor seed to soil contact at planting, where excessive fodder remained on the soil surface.

The selection of a variety based solely on performance at one location is not recommended. It is better to select variety based upon performance over a number of locations and years, if possible. To compare the performance of each variety across the test locations, relative yield was included in the report. Relative yield is the ratio of the yield of a variety at a location to the mean yield of all the varieties at that location expressed in percentage. A variety that has a relative yield consistently greater than 100 across all testing locations is considered to have excellent stability. Of the MG 3 soybeans, two varieties in the full season test and six varieties in the double crop test had relative yield >100 at all locations in 2021. Two early MG 4 varieties in the full season test and seven varieties in the double crop test had relative yield >100 at all locations, while of the late MG 4 varieties, six varieties in the full season test and ten varieties in the double crop test met this standard. Finally, of the MG 5 varieties, three varieties each in the full season and double crop tests met this standard.

Benefits to Soybean Farmers

Soybean farmers need an unbiased source of performance data comparing commercially-available varieties to make decisions that maximize profitability on their operations. Moreover, it is important to evaluate seed varieties across the geographic and climatic regions of the state so farmers across the state can select varieties appropriate for their specific conditions as well as varieties with performance stability. As weather conditions continue to be unpredictable and variable, there is value in selecting soybean varieties that perform well across variable conditions to minimize risk of profit loss.

Detailed Expenditures

As previously mentioned, a new no-till planter was fabricated prior to the start of planting the variety trials in 2021. The slightly higher expenditures on equipment maintenance listed here than what were budgeted in the proposal were due to the purchase of parts for fabrication of this planter – which was completed in time for planting in 2021.

Item	Total Spent
Fuel for travel	\$499.56
Purchase of check varieties	\$1,850.60
Equipment parts and maintenance	\$3,982.36
<i>Pending Charges</i>	
Technician Salary	\$3,960
Technician Fringe	\$962.23
Total	\$11,254.60

Figure 1. Modified no-till planter fabricated in 2021 for no-till planting of all plots in the soybean variety trials.

