

Missouri 2011 Soybean Performance Tests

This report is published by the MU Variety Testing Program, Division of Plant Sciences, University of Missouri. The work was supported by fees from companies and organizations submitting varieties for evaluation. Soybean was first included in the University of Missouri's variety testing program in 1973. The number of entries has increased from 51 varieties in 1973 to more than 375 varieties today. The large number of varieties available makes selection of a superior variety difficult. To select intelligently, producers need a reliable, unbiased, up-to-date source of information that will permit valid comparisons among available varieties. The objective of the MU Variety Testing Program is to provide this information. Tests are conducted under as close to uniform conditions as possible. Small plots are used to reduce the chance of soil and other variations occurring among variety plots. Results obtained should aid the individual grower in judging the relative merits of many of the commercial varieties available in Missouri.

Comparing Varieties

The performance of a variety cannot be measured with absolute precision. Uncontrolled variability is involved in the determination of each plot's yield. This variability exists in all field experiments and in farmer fields. Statistics are used to account for this variability and to assist farmers in selecting superior varieties. The statistical tool used by the MU Variety Testing Program is called "least significant difference" (LSD). The LSD is simple to use. When two varieties are compared and the difference between them is greater than the LSD, the entries are considered to be significantly different. Differences between two varieties that are smaller than the LSD may have occurred by chance and are considered to be not significant. In other words, the two varieties might have the same yield, grain moisture or other characteristics of interest. The LSD can be found at the bottom of each table.

The MU Variety Testing Program arranges varieties within each table from highest yield to lowest yield. The "top yielding" variety in each test is identified by a double asterisk (**) placed next to its yield. Varieties that did not yield significantly less than the highest yielding variety in the test are denoted in the tables by a single asterisk (*). Thus, by reading down the yield column, readers can readily identify the highest yielding varieties in a test.

Variety performance may seem inconsistent from location to location and from year to year. These differences are caused by differences among environments for rainfall, temperatures, soil fertility, diseases, insects, and many other factors. To obtain an improved estimate of relative variety performance, readers should consider results from more than one environment (locations and/or years). The vast majority of varieties are entered into our tests for only one year, so comparing varieties across multiple locations becomes even more important. The MU Variety Testing Program facilitates variety comparisons across locations by publishing Region Means. Region Means tables contain yield data from all individual locations in the region with yields averaged across the locations. The variety with the highest average yield and varieties that do not differ for yield from that variety are designated with double (**) and single (*) asterisks.

Although yield usually receives first consideration, other agronomic characteristics may be equally important when selecting a soybean variety. Standability, maturity, herbicide tolerance and disease resistance are among the characteristics that deserve careful consideration. We provide a table that contains several important characteristics of varieties entered into the MU Variety Testing Program. This information was provided by seed companies. Please contact seed company representatives for the latest

information. Seed entered into the MU Variety Testing Program is usually treated with one or more seed treatments. These seed treatments are identified in the table listing the variety characteristics.

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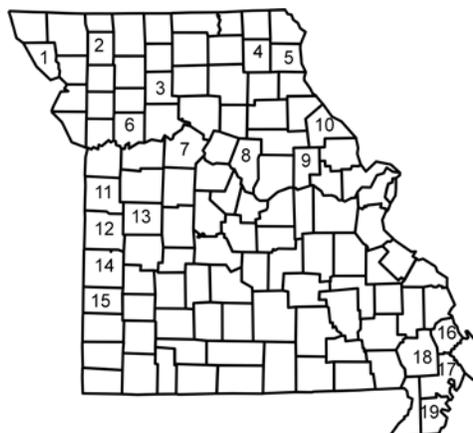
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Experimental Procedures

Regions and Locations

The MU Variety Testing Program divides the soybean growing region of Missouri into four regions: North, Central, Southeast, and Southwest. Each region contains five locations, and the same varieties are tested in all locations within a region. Locations names for 2011 are as follows:

1. Craig (Holt County); Steve Cunningham Farm
2. Albany (Gentry County); Hundley-Whaley Research Center
3. Mooresville (Livingston County.); Beetsma farm
4. Novelty (Knox County); Greenley Research Center
5. LaGrange (Lewis County); Roger Tiemann Farm
6. Henrietta (Ray County); John Williams Farm
7. Grand Pass (Saline County); Ryland and Fred Utlaut Farm
8. Columbia (Boone County); Bradford Research and Extension Center.
9. Truxton (Montgomery County); Roy Cope Farm
10. Annada (Pike County.); Bob Burkemper Farm
11. Harrisonville (Cass County); Roth Farm
12. Adrian (Bates County); Darrel Tenholder Farm
13. Urich (Henry County); Kurt Gretzinger Farm
14. Nevada (Vernon County); Steve Cabbage Farm
15. Lamar (Barton County); Wally Norton Farm
16. Chaffee (Scott County); Martin Eftink Farm
17. Morehouse (New Madrid County); Tom Jennings Farm
18. Dexter (Stoddard County) Scott Morgan Farm
19. Portageville Loam (Pemiscot County); Delta Research Center
19. Portageville Clay (Pemiscot County); Delta Research Center



2011 Test Descriptions

All soybean varieties, regardless of herbicide trait, were entered into a single test. Varieties were separated by Maturity Group e.g. MG 3, MG 4, and MG 5. Maturity information was provided by the seed company.

Entries

All seed companies and organizations were eligible to enter the 2011 soybean test. Participation was voluntary and the MU Variety Testing Program exercised no control over which or how many varieties were entered. The MU Variety Testing Program receives no Missouri tax dollars, so a fee was collected for each entry to fund the program.

Field Plot Design and Plot Management

Varieties were randomly arranged in the field according to a lattice design with three replications. Row spacing at locations in the North, Central and Southwest Regions was 15 inches. Row spacing at locations in the Southeast Region was 30 inches. Seeding rate for all plots, regardless of row spacing, was 174,200 seeds/acre. Individual plots were four rows wide for the 15-inch row spacing and two rows wide for the 30-inch row spacing with a row length of 25 feet for both. All rows of each plot were harvested to determine yield. Plots were planted and harvested with commercial equipment modified for small plot work. Fertilizer was applied at each location at the discretion of the farmer or the station manager. Weed control was achieved with preplant herbicides and various conventional post-emergence herbicides. Additional hand weeding was done as required. Management details varied among locations and are specified in the regional crop management summaries.

Data Recorded

Lodging and height were determined immediately before harvest. A scale of 1 to 5 was used to score lodging where 1 = less than 20% plants lodged, 3 = all plants leaning moderately or 40% - 60% plants down, 5 = more than 80% plants down. During harvest, plot grain weights were measured and an electronic moisture tester was used to determine the moisture content of the grain. Yields were corrected to a moisture content of 13% and expressed as bushels/acre. All soybean locations were tested for SCN egg number before planting. The MU Variety Testing program attempted to locate sites in fields of low to moderate levels of SCN.

Accessibility of Data

Results of the 2011 crop performance tests are available in print format and online at "varietytesting.missouri.edu". If you need assistance in accessing the web site or would like to receive a printed copy please call 573-882-2307.