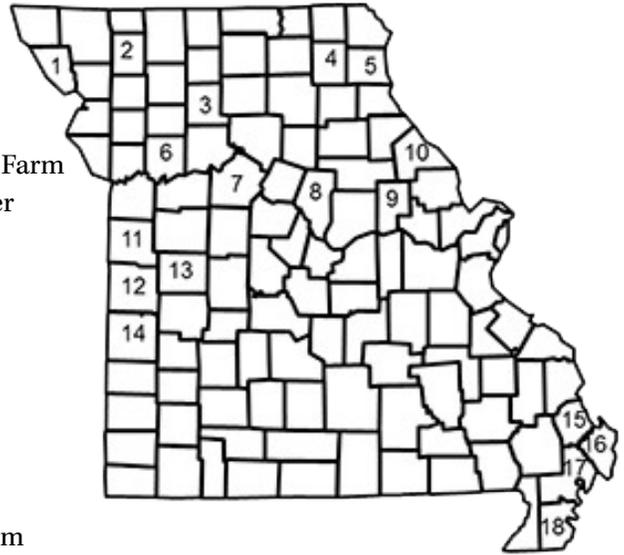


PROCEDURES

Regions and locations

The MU Variety Testing Program divides the soybean growing region of Missouri into four regions: North, Central, Southeast, and Southwest. North, Central, and Southeast regions contain five locations, while the Southwest contains four. The same varieties are tested in all locations within a region. Locations for 2017 are as follows:

1. **Craig** (Holt County); Steve Cunningham Farm
2. **Albany** (Gentry County); Hundley-Whaley Research Center
3. **Mooreville** (Livingston County); Beetsma Farms
4. **Novelty** (Knox County); Greenley Research Center
5. **Canton** (Lewis County); Lloyd & McCutchan Farm
6. **Henrietta** (Ray County); John Williams Farm
7. **Grand Pass** (Saline County); Ryland and Fred Utlaut Farm
8. **Columbia** (Boone County); Bradford Research Center
9. **Truxton** (Montgomery County); Roy Cope Farm
10. **Annada** (Pike County); Bob Burkemper Farm
11. **Garden City** (Cass County); Bill Cook Farm
12. **Adrian** (Bates County); Tenholder Farms
13. **Urich** (Henry County); Kurt Gretzinger Farm
14. **Lamar** (Barton County); Wally Norton Farm
15. **Chaffee** (Scott County); Martin Eftink Farm
16. **Charleston** (Mississippi County); Don Deline Farm
17. **Morehouse** (New Madrid County); Tom Jennings Farm
and **New Madrid** (New Madrid County) Peter Rost Farm
18. **Portageville** (Pemiscot County); Fisher Delta Research Center



Entries

All seed companies and organizations were eligible to enter the 2017 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.

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 Group information was provided by seed companies.

Field plot design and plot management

Varieties were randomly arranged in the field according to a lattice design with three replications. Row spacing for all locations was 30 inches and seeding rate was 160,000 seeds/acre. Plots were two rows wide (5 feet) and 27 feet long. 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 pre-plant 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. The MU Variety Testing program attempted to locate sites in fields of low to moderate levels of SCN.

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.

Accessibility of data

Results of the 2017 crop performance tests are available online at varietytesting.missouri.edu. If you need help accessing the website or would like to receive a printed copy, please call 573-882-2307.

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