

## PROCEDURES

### Regions and Locations

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

#### *North Region*

Albany (1), Craig (2), Canton (3),  
Mooresville (4), Novelty (5)

#### *Central Region*

Annada (6), Columbia (7), Henrietta (8),  
Norborne (9), Truxton (10)

#### *Southwest Region*

Adrian (11), Garden City (12), Lamar  
(13), Urich (14),

#### *Southeast Region*

Bell City (15), Charleston (16), Peach  
Orchard (17), Portageville (17)



The MU Variety Testing Program depends upon and is highly appreciative of the cooperators that allow it to use their farms. Thank you Steve Cunningham, Ron and Ben Beetsma, Bill Lloyd, John Williams, Kyle Durham, Roy Cope, Bob Burkemper, Bill Cook, Darrel Tenholder, Kurt and Nathan Gretzinger, Wally Norton, Don Deline, Will Hunter, Jason Bean, and the Missouri Agriculture Experiment Station.

### Entries

All seed companies were eligible to enter varieties into the 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.

At least two “Standard Check” varieties from several major brands are included at each location of each test. The companies have asked that the variety names be kept proprietary. Varieties are identified in the data tables as “Brand Standard #”. These standard varieties were selected and entered by the MU Variety Testing Program.

### 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 crop management table.

### 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 at a location.

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 crop performance tests are available in print format and online at "[varietytesting.missouri.edu](http://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.

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