

Missouri 2012 Corn 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 provided by companies submitting hybrids for evaluation. The University of Missouri's hybrid performance testing program began in the mid-1930s, with results first published in 1937. The number of entries in the program has grown from fewer than 50 in the early years to more than 215 today. The large number of commercial hybrids available makes selection of a superior hybrid difficult. To select intelligently, producers need a reliable, unbiased, up-to-date source of information that will permit valid comparisons among available hybrids. The objective of the MU Variety Testing Program is to provide this information. The tests are conducted under the most nearly uniform conditions possible. Small plots are used to reduce the chance of soil and climatic variations occurring between one hybrid plot and another. Results obtained should aid the individual grower in judging the relative merits of many of the commercial corn hybrids currently available in Missouri.

Comparing Hybrids

The performance of a hybrid 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 hybrids. The statistical tool used by the MU Variety Testing Program is called "least significant difference" (LSD). The LSD is simple to use. When two hybrids are compared and the difference between them is greater than the LSD, the entries are considered to be significantly different. Differences between two hybrids that are smaller than the LSD may have occurred by chance and are considered to be not significant. In other words, the two hybrids 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 hybrids within each table from highest yield to lowest yield. The "top yielding" hybrid in each test is identified by a double asterisk (**) placed next to its yield. Hybrids that did not yield significantly less than the highest yielding hybrid 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 hybrids in a test.

Hybrid 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 hybrid performance, readers should consider results from more than one environment (locations and/or years). The vast majority of hybrids are entered into our tests for only one year, so comparing hybrids across multiple locations becomes even more important. The MU Variety Testing Program facilitates hybrid 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 hybrid with the highest average yield and hybrids that do not differ for yield from that hybrid are designated with double (**) and single (*) asterisks.

Although yield usually receives first consideration, other agronomic characteristics may be important when selecting a corn hybrid. Stalk strength, maturity, and resistance to insects and diseases are among the hybrid characteristics that deserve careful consideration. We provide a table that contains several important characteristics of hybrids 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 hybrid characteristics.

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Experimental Procedures

Regions and Locations

The MU Variety Testing Program divides the corn growing region of Missouri into four regions: North, Central, Southeast, and Southwest. These regions contain two to five locations, and the same hybrids are tested in all locations of a test within a region. Locations names for 2012 are as follows:

1. Craig (Holt County); Steve Cunningham Farm
2. Albany (Gentry County); Hundley-Whaley 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. Marshall (Saline County); Frank Swisher Farm
8. Columbia (Boone County); Bradford Research Center
9. Laddonia (Audrain County); Kevin Freyer Farm
10. Truxton (Montgomery County) Roy Cope Farm
11. Annada (Pike County); Bob Burkemper Farm
12. Harrisonville (Cass County); Doug Roth Farm
13. Adrian (Bates County); Darrel Tenholder Farm
14. Urich (Henry County); Kurt Gretzinger Farm
15. Lamar (Vernon County); Ron Bean Farm
16. Oran (Scott County); Glenn Nothdurft Farm
17. Charleston (Mississippi County); H.S. Byrd Farm
18. Portageville Loam (Pemiscot County); Delta Research Center
18. Portageville Clay (Pemiscot County); Delta Research Center



2012 Test Descriptions

Non-Irrigated Corn Test consists of five locations each in the north and central regions of the state and three locations in the southwest region. Plots were not irrigated in this test.

Irrigated Corn Test consists of two locations in the central region, three locations in the southwest region, and four locations in the southeast region. Plots were irrigated as weather conditions warranted.

Entries

All seed companies were eligible to enter the 2012 corn tests. Participation was voluntary and the MU Variety Testing Program exercised no control over which, or how many hybrids, 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

Hybrids were randomly arranged in the field according to a lattice design with three replications. At all locations, plots were four rows wide (10 feet) and 27 feet long. The center two rows were harvested to determine yield. All tests were planted and harvested with commercial equipment modified for small plot work. Row spacing for all corn tests was 30 inches. Seeding rates were 30,000 kernels/acre for the non-irrigated corn test and 36,000 seeds/acre for the irrigated corn test. Fertilizer was applied at each site at the discretion of the farmer or the research station manager. Herbicides were used to control weeds, and additional hand weeding was done as required. An in-furrow insecticide was applied at all locations. Management details varied among locations and are specified in individual regional crop management summaries.

Data Recorded

Plant stands were recorded mid-season. Lodging was rated immediately before harvest using a scale of 1 to 5 where 1 = less than 20% plants lodged, 3 = all plants leaning moderately or 40% to 60% lodged, and 5 = 80% or more plants lodged. 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 15.5% and expressed as bushels/acre.

Accessibility of Data

Results of the 2012 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.