2001 Pa. Commercial Hybrid Test Reports

How to Use This Report

This report provides independent and unbiased information for the evaluation of commercial corn hybrids available in Pennsylvania It should be used to supplement other sources of information, such as seed industry performance tests, other independent testing data, and on-farm performance records when making hybrid selection decisions.

The first factor to consider when using this report is hybrid maturity. The hybrids listed in Tables 1 and 3 are ranked in ascending order by grain moisture with the earliest hybrids (lowest grain moisture) at the top Silage hybrids (Table 4) are ranked by whole-plant moisture at the time of harvest. In Table 2, hybrids are listed alphabetically. Grain or silage moisture is a good indicator of hybrid maturity; those with lower moisture are generally adapted to shorter season environments. Identify hybrids in the list that you know are adapted to your area, and then evaluate new hybrids that have similar moisture contents. Selecting hybrids based on yield alone may result in a hybrid that is too late for your farm. Note that there is considerable range among maturity in hybrids entered in each zone. Once you have identified the appropriate hybrid maturity range, compare the yields of the hybrids that have been evaluated.

Yield performance is variable across locations and is best predicted by using data averaged over multiple locations, so the mean yield over all sites is the best guide to hybrid performance. Individual location hybrid means (Table 2) can help to assess how consistent, or stable, the hybrid was across locations. For example, some hybrids may do well at high-yielding sites but may not do well at low-yielding sites. We DO NOT recommend using data from a single site, even if it is close to your farm, to make hybrid selection choices.

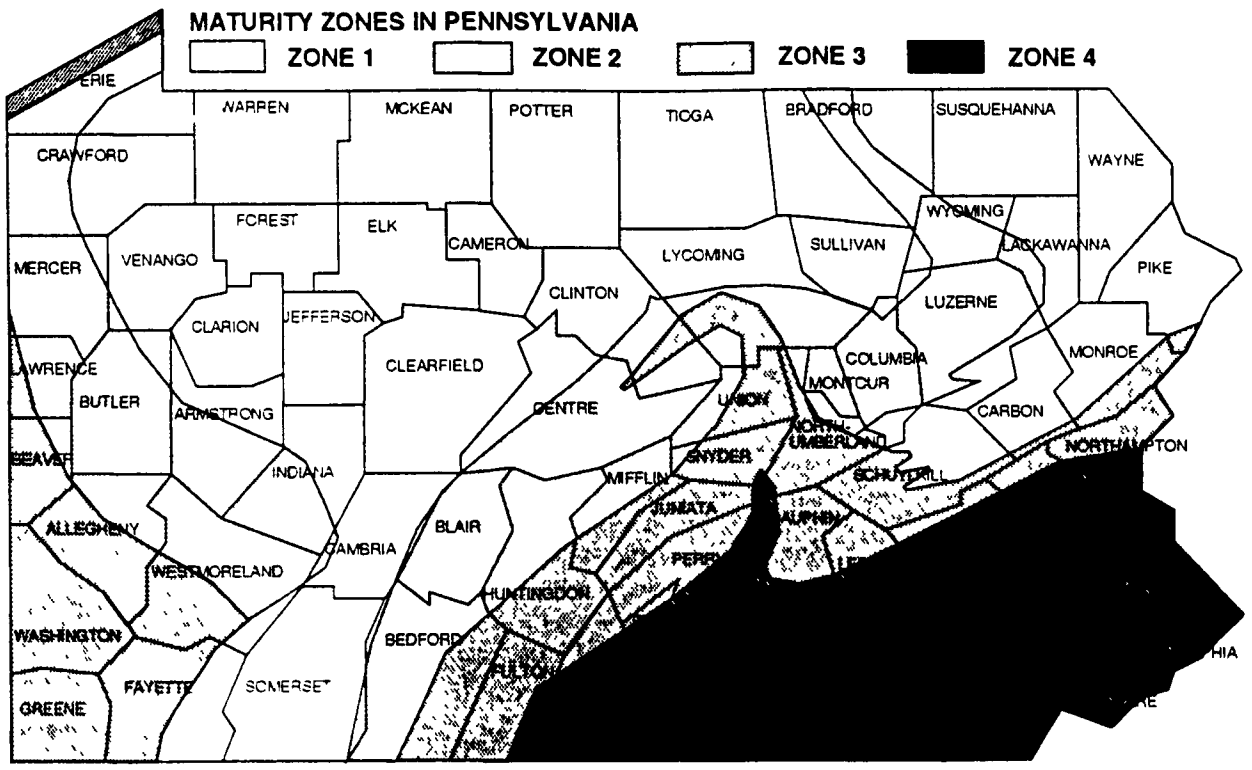
Once you have identified some prospective hybrids, consider their standability from the erect plants column as well as any disease-rating data that may have been collected. It also is important to check with a seed company representative about other characteristics of the hybrid that may be important for your operation

Once you have gone through this process, you should be able to select hybrids that have above-average performance. This is an important part of profitable corn production, since, as these reports demonstrate, there is a wide range in the performance of corn hybrids.

Further, we recommend that you evaluate selected hybrids on your farm under your growing conditions and practices. This is the best way to make a final determination of the proper hybrids for your operation.

Tests of commercially available corn hybrids are conducted annually at several locations in each of the four maturity zones in Pennsylvania to provide farmers, seed producers, cooperative extension agents, and other interested persons with information about hybrid performance This report includes both the grain and silage results from the 2001 season

Table 1 contains the combined results for all locations harvested in this zone Table 2 contains the yield data generated at each location. We believe that the statewide performance averages found in Table 1 are most important to consider when making a final decision about variety capabilities, since they represent a wide variety of growing, soil, and management conditions A two-year summary of results for hybrids tested in both 2000 and 2001 growing seasons is given in Table 3 The results for hybrids entered in the silage performance test are reported in Table 4



Procedures

This testing program was available to any producer of hybrid seed corn. For the grain tests, hybrids were planted in paired-row plots equal to 1/500 of an acre. Planting was done with a vacuum precision planter, which minimized the number of plants needed to be removed to obtain a final population of 26,000 plants per acre. The planter was set to drop 30 kernels per row. When the corn was 12 to 18 inches tall, extra plants, primarily doubles and end-plants, were removed to reach to final population. For silage plots, hybrids were planted, as above, in single-row plots equal to 1/1000 acre. A final population of 28,000 plants per acre was obtained by dropping 32 kernels per row and removing extra plants as previously described. All grain entries were replicated three times in each test while silage entries were replicated four times. Cooperators and planting and harvesting dates are shown in Table 5.

Grain-test plots were harvested with a self-propelled combine equipped with electronic instrumentation for determining weight, moisture, and bushel weight (sometimes called test weight). Silage plots were harvested with a forage harvester. Grain yields are reported as bushels per acre, while grain moisture and erect plants are reported as percentages. Bushel weight is reported as pounds per bushel. Shelled grain yields were standardized at 15.5 percent grain moisture. Silage results are reported as actual field yield in tons per acre, calculated on the basis of 65 percent moisture, tons of dry matter per acre, and moisture content at harvest. Disease ratings were based on a scale of 0.5 to 5.0, progressing from little or no disease to premature death.

Growing conditions

Planting at all locations in this zone was completed on May 15. Planting conditions were excellent at all locations. Moisture and temperature stresses occurred at most locations with the Clarion County site most severely affected. The dry conditions that occurred following planting resulted in delayed germination and poor plant growth early in the season. This led to a late-maturing crop that was, in all likelihood, killed by frost before maturity. At the time of harvest, average grain moisture was 5–9% higher than at other locations, and yield was 55 bushels per acre less than the average of the four other locations that were harvested. Consequently, the data from Clarion County are not reported here. The plot in Crawford County was severely damaged by geese and not harvested. As an aid to interpreting the data, we are providing growing degree days (GDD) from the date of planting to the date of harvest or through October 8, whichever occurred first. The data in Table 5 show that there were 123–154 more growing degree days for the grain tests in 2001 compared to the 30-year average.

Diseases, insects, and other pests

Hybrids grown at the Centre County location were inoculated with the fungus causing northern leaf blight (NLB). Although

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