The 2002 Iowa Corn Yield Test Report, District 7

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Iowa State University

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The 2002 Iowa Corn Yield Test Report, District 7

Abstract
Results of the Iowa Crop Performance Test-Com are published to aid Iowa farmers in selecting corn hybrids. This is the 83rd consecutive year for the test. These data are first released on the Iowa Crop Improvement Association's homepage at http://www.agron.iastate.edu/icia/ usually around the end of November.

Disciplines
Agriculture

This report is available at Iowa State University Digital Repository: https://lib.dr.iastate.edu/cornyield/219
2002
Iowa Crop Performance Test—Corn
District 7

Results of the Iowa Crop Performance Test—Corn are published to aid Iowa farmers in selecting corn hybrids. This is the 83rd consecutive year for the test.

These data are first released on the Iowa Crop Improvement Association's homepage at http://www.agron.iastate.edu/icia/ usually around the end of November.

The next released format of these data is in the Iowa Crop Management Database program. A description of this program and an order form can be found at http://extension.agron.iastate.edu/CMD/. A short description of how this program manages these data is provided in the "Other Reports" section of this report.

In 2002, DTN (Data Transmission Network) will be including a summarized version of these data on their system.

The final format is the printed version, which is printed and distributed by Iowa Farmer Today in its Dec. 14, 2002 issue. A few days later, the printed reports also are available from county extension offices.

The presentation of data for the hybrids tested does not imply approval or endorsement by the authors or the agencies sponsoring or conducting the test. Entries in Tables 1 and 2 are designated by brand name and variety.

Use of These Data in Advertisements
Iowa State University and the Iowa Crop Improvement Association desire to maintain the credibility of data from the Iowa Crop Performance Test—Corn. Misuse of these data in advertisements can have a negative effect on the perception of the value of these data. For advertising purposes, brand-to-brand comparisons should not be made unless more than one competitor brand is used in the ad and all entries of competitor brands in a reported table are included in the ad. Advertisement statements by an individual company about the performance of its entries can be made as long as they are accurate statements about the data as published with no reference to other companies’ hybrids. A statement similar to: “See the official Iowa Crop Performance Test—Corn report, PM 660 (1–7) 02, for details," should be included in the ad.

2002 Procedure
Producers of seed corn and Iowa State University were eligible to enter hybrids in the Iowa Crop Performance Test—Corn. Each producer was allowed a maximum of 12 paid entries per district. All commercial entries had to be available in a quantity of at least 10 bushels of seed.

In 2002, data are reported on 125 entries in this district. Fourteen of the entries determined to be check hybrids were entered by the Iowa Crop Improvement Association. In June, survey cards were mailed to a random sample of corn growers in Iowa. Based on the survey results, the 14 hybrids grown on the most acres in the district were classified as check hybrids for the district. The check hybrids ($ and !) in this report were determined by the 2001 survey. The Iowa Crop Improvement Association entered a maximum of three check hybrids of any given brand. These entries were given priority over the remaining 111 entries made by seed producers.

Each entry was replicated four times in four-row plots at a planting rate of 29,000 kernels per acre at each location. All locations were machine planted. The center two rows of each plot were harvested with a corn combine. No gleanings or dropped ears were included in yield data. A moisture determination was made from each plot and yields were corrected to 15.5 percent moisture.

Since 1988, data for protein, oil, and starch percentages have been included in the Iowa Crop Performance Test—Corn reports. Protein, oil, and starch were measured on an Infratec 1225 near-infrared transmittance analyzer calibrated against accepted chemical methods as done by Woodson-Tenant Labs, Des Moines, Iowa. Dr. Charles R. Hurburgh, Jr. of the ISU Department of Agricultural and Biosystems Engineering was responsible for analyzing the samples. Samples for nutrient analysis were collected from one field in each district. Data presented are averages of the four replicated plots in that field. To be consistent with the yield data, the protein, oil, and starch data were corrected to 15.5 percent moisture.
<table>
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<td>Average of All Entries</td>
<td></td>
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<td>162.8 16.4</td>
<td>17.7 16.5</td>
<td>14 18</td>
<td>3.7 3</td>
<td>0.2 0.2</td>
<td>92.8 93.2</td>
<td>8.1 8.1</td>
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<td>68.6 68.1</td>
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### Table 1: Average Performance of Varieties Tested in District 7

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<th>Breed</th>
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<tr>
<td></td>
<td></td>
<td>2002</td>
<td>2003</td>
<td>2004</td>
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<td>2006</td>
<td>2007</td>
<td>2008</td>
<td>2009</td>
<td>2010</td>
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</table>

With the quick development of new hybrids today, it is becoming more difficult for growers to view several years of data on each hybrid to help them decide which hybrids to select for planting the following year. The next best thing is to look at hybrid performance across several locations in one year. So, data from additional location groupings along with the standard district groupings are provided on the Iowa Crop Improvement Association’s Web page at http://www.agron.iastate.edu/ica. These additional tables, summarizing data across districts, make it possible to look at hybrid performance averaged across more locations than in the past to help predict which hybrids may have the best relative performance potential under next year’s growing conditions. These 16 new tables double or triple the number of locations reflected in each hybrid’s performance data.

### District 7

#### Designations of Brands in the Test

- AgSource: AgSource Seeds, Boone, IA 50036
  - 315 432 8310, www.AgSource.com
- A Grow: Mowern, Delphos, IL 61315
  - 815 738 5323, www.farmwrecker.com
- Crows: Crows Hybrid Corn, Madison, WI 53711
  - 608 274 8215, www.crowshybrid.com
- DEKALB: Moosman, Delphos, IL 61315
  - 815 738 5323, www.farmwrecker.com
- Deyo: Deyo, Amos, IA 503010
  - 800 568 0528
- Fontanelle: Fontanelle Hybrids, Fontanelle, NE 68944-2505
  - 402 721 1410, www.fontanelle.com
- Four Star: Four Star Seed, Parkenburg, IA 50065
  - 712 694 1400, www.fourstarseed.com
- FS: Gowanmark, Bloomington, IL 61702
  - 309 357 6398, www.gowanmark.com
- Garst: Garst Seed, Marion, IA 52302
  - 319 373 7498
- Golden Harvest: J.C. Robinson Seed, Watertown, NE 68889
  - 402 289 0603, www.goldenharroweed.com
- Golden Harvest: J.C. Robinson Seed, Cadiz, IN 47222
  - 402 621 1369, www.goldenharroweed.com
- Hawkeye Hybrid: Hawkeye Hybrid, Pella, IA 50219
  - 641 228 3627
- High Cycles: Fontanelle Hybrids, Fontanelle, NE 68944-2505
  - 402 721 1410, www.fontanelle.com
- Hoogenayer: Hoogenayer Hybrids, Hooper, NE 68802
  - 402 655 3309, www.hoogenayer.com
- Krup Seed: Krup Seed, West Point, NE 68786
- Kaystar: Kaystar Seed, Huron, SD 57350
  - 605 332 8971, www.kaystar.com
- Kruger: Kruger Seed Co., Dike, IA 50624
  - 800 722 7272
- KSC/Challenger: KSC/Challenger Seed, Dike, IA 50624
  - 641 889 2414
- Leiss: Leiss Hybrid, Urp, IL 62770
  - 217 921 2138, www.leisshybrids.com
- M&W Genetics: Midwest Seed Genetics, Mallard, WI 53741
  - 608 274 8215
- Mark: Mark Seed Co., Perry, IA 50220
  - 315 905 2122, www.markeed.com
- Merchman: Merchman Seeds, West Point, IA 52476
  - 319 437 6111 Ext. 3131, www.merchmanseeds.com
- Middlsoop: Middlebrook Corn, Carroll, IA 51401
  - 319 895 3200
- Mycogen: Mycogen Seeds, Indianapolis, IN 46268-1054
  - 317 337 7590, www.mycogen.com
- NC: NC Hybrids, Lincoln, NE 68504-0018
  - 800 467 2517, www.nc-plant.com
- NetSeed: NetSeed, Olmsted, IA 52322
  - 319 351 0699, www.netseed.com
- NK Brand: Syngenta Seeds, Ames, IA 50010
  - 515 239 3305, www.syngenta.com
- Otte: Otte B3 Seed, Marshalltown, IA 50138
  - 641 675 7500
- Pfister: Pfister Hybrid Corn, El Paso, IL 61736
  - 309 627 6000, www.pfisterhybrid.com
- Pioneer: Pioneer Hi-Bred Intl., Inc., Johnston, IA 50305-0454
  - 515 223 3072, www.pioneer.com
- Precision: Precision Seed, Berrick, IL 61417
  - 309 462 2396, www.seedquest.net/precisionseed
- Rainbow: Rainbow Seeds, Sigourney, IA 52333
  - 641 527 4677, www.rainbows.com
- Renz: Renz Hybrids, Carroll, IA 51401
  - 712 569 3041, www.renzhybrid.com
- Scott: Scott Seed Service, Inc., Muncie, IN 47305
  - 713 376 6435, www.sandlefellow.com
- Sittler: Sittler Seed, Adel, IA 50003
  - 800 722 7272
- U.S. Seeds: United Sapphire, Eldora, IA 50627-0530
  - 877 714 9023
- Wilco: Wilco Seeds, Madison, WI 53717
  - 608 274 8215
- Zimmerman: Zimmerman Genetics, LLC, Harlan, IA 51537
  - 712 793 7399

*Companies with one or more check hybrids entered by the Iowa Crop Improvement Association.*
Interpretation of Results

Yield differences due to variation in soil, fertility, moisture availability, insect infestation, and diseases, plus any variation due to planting and harvesting techniques, are identified through statistical analysis. The LSD values for yield shown in Tables 1 and 2, represent, in bushels per acre, the amount of yield variation that could be due to variations in the factors just mentioned. In comparing varieties, yield differences greater than the LSD value can be attributed to genetic differences in the yield potential of these varieties; yield differences less than the LSD value are not statistically different and could have been due to other factors. Grain moistures shown in Tables 1 and 2 are indications of maturity and natural drying rate. Maturity of varieties entered generally ranged from short to full season. Yield comparisons should be made among varieties of similar maturity.

It is important to select varieties having stable performance over a range of environmental conditions. High yields for two or more consecutive years, Table 2, indicate stable performance. Also, in 2002, to increase the range of environmental conditions reported on in one year, 16 additional tables are provided electronically on the Iowa Crop Improvement Web page that merge data across districts. These tables double, and in some cases, even triple, the number of locations reported on for hybrids entered in several districts. Supplemental yield and agronomic information about specific varieties may be obtained from seed corn dealers, crop consultants, and from neighbors who have grown these varieties.

The protein, oil, and starch percentage data (Tables 1 and 2) are quality traits important to different end-users of corn. For feed, protein is of primary interest; for wet-mill processing (ethanol and sweeteners); oil and starch content are important. Several firms have begun testing these characteristics on a routine basis. There are now more than 50 Iowa grain elevators with this testing capability.

Whole-grain near-infrared equipment measures composition of unground corn kernels in 1 to 1.5 minutes per sample. This equipment measures moisture simultaneously with composition. Using these instruments, country elevators can test and segregate grain as it is received. Obviously, all compositional factors cannot be high in the same hybrid. The grain market is expanding the production and marketing of certain hybrids for specific uses. This is an important change from the generic commodity approach widely used now.

The economic impact of compositional factors can be significant. Corn protein trades off with other protein sources in many feed rations. At $2.00 per ton, 44 percent protein soybean meal, the value of a 1 percent increase (e.g., from 8 percent to 9 percent) in corn protein is about 12 cents per bushel of corn. Likewise, an additional percent of oil yields about 10 to 14 cents per bushel in increased oil output in a wet processing plant or when substituted for white grease in feed rations. The additional ethanol or sweetener from an extra percent of starch provides 8 to 14 cents per bushel of increased revenue. Producers feeding livestock are in the best position to capture immediate benefits from these composition data. Country elevators with feed mills also have the ability to capitalize on increased protein in corn. The Iowa Corn Growers Association has prepared a publication to aid growers in using the nutrient data in the Iowa Crop Performance Test—Corn reports: Nutrient Content and Feeding Value of Iowa Corn, Iowa Corn Growers Association, Des Moines, Iowa 50265.

2002 Field Data

The District 7 test was planted on farms operated by Robert Hays near Malvern in Mills County, Marvin Fuller near Corning in Adams County, and Marvin Elvins west of Winterset near the Madison-Adair County line. Field data are presented in Table A.

Table A. Field Data

<table>
<thead>
<tr>
<th>Fertilizer applied, lb</th>
<th>Hays Farm</th>
<th>Fuller Farm*</th>
<th>Elvins Farm</th>
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<tr>
<td></td>
<td>Monona silt loam</td>
<td>Macksburg silt loam</td>
<td>Sharksburg silt loam</td>
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<tr>
<td>P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</td>
<td>K&lt;sub&gt;2&lt;/sub&gt;O</td>
<td>S</td>
<td>P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</td>
</tr>
<tr>
<td>Plowdown</td>
<td>151</td>
<td>36</td>
<td>150</td>
</tr>
<tr>
<td>Preplant</td>
<td>151</td>
<td>36</td>
<td>150</td>
</tr>
<tr>
<td>Total</td>
<td>302</td>
<td>72</td>
<td>300</td>
</tr>
<tr>
<td>Soybeans</td>
<td>30 inches</td>
<td>300</td>
<td>80</td>
</tr>
<tr>
<td>Planting date</td>
<td>April 20</td>
<td>May 7</td>
<td>Oct. 21 &amp; 22</td>
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<tr>
<td>Average yield</td>
<td>151 bu/a</td>
<td>161 bu/a</td>
<td>180 bu/a</td>
</tr>
</tbody>
</table>

*Field sampled for protein, oil, and starch percentage data.

Other Reports

Separate reports are available for each district shown in Figure 1. A limited supply of these publications is available at your county extension office or from Extension Distribution Center, 119 Printing and Publications Building, Iowa State University, Ames, Iowa 50011. Also, these data are available along with a hybrid selection program as a part of the Iowa Crop Management Database program. Along with all of the information as it appears in these written reports, the section of the Iowa Crop Management Database program that uses these data allows farmers to insert their own drying and shrink costs, expected price of corn, and final moisture percentage after drying. Using these specific criteria, the program calculates an adjusted economic value for each hybrid in the test. Farmers can then determine which hybrids might best fit their own production practices and provide the most profit. The computer program also can sort the hybrids by yield, moisture, adjusted value, root lodging, stalk lodging, dropped ears, protein, oil, starch, or brand and then print the data as sorted. It will also allow the user to tag selected hybrids and then list those selected hybrids as a new table for ease of viewing. A Pentium 1 computer or higher running Windows 95 or newer with a CD ROM drive and 30 megabytes of hard disk space are required to run the program. The cost of the program is a one-time purchase of $100. Future years' data can be downloaded from the Web at no charge. If the user cannot access the Web to download the new data, the price will be $25 for all seven districts' data. Order forms and a description of the program are available from Agribusiness Education Programs, telephone 515-294-6429, and on the Web at http://extension.agron.iastate.edu/CMD/. Future years' data can be downloaded from the Web at no charge. If the user cannot access the Web to download the new data, the price will be $25 for all seven districts' data. Order forms and a description of the program are available from Agribusiness Education Programs, telephone 515-294-6429, and on the Web at http://extension.agron.iastate.edu/CMD/.

The 2002 Iowa Crop Performance Test—Corn:

PM 660 1 02 District 1 PM 660 4 02 District 4 PM 660 6 02 District 6
PM 660 2 02 District 2 PM 660 5 02 District 5 PM 660 7 02 District 7
PM 660 3 02 District 3

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Cooperating Organizations

Iowa Crop Improvement Association
Agriculture & Home Economics Experiment Station
Cooperative Extension Service
Iowa Corn Promotion Board
U.S. Department of Agriculture

And justice for all . . .

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