PERFORMANCE OF COMMERCIAL CORN HYBRIDS IN ILLINOIS, 2017

TEST PROGRAM

Selection of entries. Each year, producers of corn hybrids in Illinois and surrounding states are invited to enter hybrids in the Illinois performance trials. Financing is provided thru entry fees. Entrants are required to enter their corn hybrids regionally at a fee of $270 for each corn hybrid entered in a region or $90 per hybrid for the corn following corn tests. Most of these hybrids are commercially available, although a few experimental hybrids are also entered.

Number and location of tests. In 2017, hybrid corn entrants were required to enter hybrid(s) in at least one of 4 regions each consisting of 3 locations with a total of 12 locations in the state (see map). These sites represent the major soil and climatic areas of the state.

Hybrids. There were 190 corn hybrids from 24 companies tested in 2017.

Field-plot design. Three replications of an alpha lattice design or randomized complete block were used to give each corn hybrid an equal chance to show its merits.

Planting methods. All trials were planted by a modern four row planter modified for small plot work. A soil insecticide (Force) was applied in furrow at planting for all corn trials. Corn plots were planted to stand and later counted to confirm population. Each plot was four rows wide and 23 feet long. The center two rows of each plot were harvested to determine yields.

Fertilization. All test fields were at a high level of fertility. Additional fertilizer was plowed down or side dressed as needed to ensure top yields.

Method of harvest. All corn plots were harvested with a custom-built, self-propelled, corn plot combine. Grain collected from each plot was weighed, and tested for moisture content. An electronic moisture monitor was used in the combine for all moisture readings. No allowance was made for grain that might have been lost in harvest.

SUGGESTIONS FOR COMPARING HYBRIDS

It is impossible to measure performance exactly in any test of plant material. Harvesting efficiency may vary, soils may not be uniform, and many other conditions may produce variability. Results of repeated tests, like those reported here, are more reliable than those of a single-year or a single-strip test. When one hybrid consistently out yields another at several test locations and over several years of testing, the chances are good that this difference is real and should be a consideration in choosing a hybrid. When comparing yields, however, grain moisture content, percentage of erect plants, and plant population must also be considered.

A number of statistical tests are available for comparing hybrids within a single trial. One of these tests, the least significant difference (L.S.D.), when used in the manner suggested by Carmer and Swanson1 is quite simple to apply and is more appropriate than most other tests. When two hybrids are compared and the difference between them is greater than the tabulated L.S.D. value, the hybrids are judged "significantly different."

The L.S.D. is a number expressed in bushels per acre and presented following the average yield for each location. An L.S.D. level of 25% is shown. Find the highest yielding hybrid within the regional table or single location table of interest, subtract the 25% L.S.D. value from the highest yielding hybrid, every hybrid with a greater yield than the resulting number is 'statistically the same' as the highest yielding hybrid. Consider the merits of the hybrids in this group when making hybrid selections.

In a study of the frequencies of occurrence of three types of statistical errors and their relative seriousness, Carmer2 found strong arguments for an optimal significance level in the range \( \alpha = 0.20 \) to 0.40, where \( \alpha \) is the Type I statistical error rate for comparisons between means that are really equal. Herein, a value of \( \alpha = 0.25 \) is used in computing the L.S.D. 25- percent level shown in the tables.

To make the best use of the information presented in this circular and to avoid any misunderstanding or misrepresentation of it, the reader should consider an additional caution about comparing hybrids. Readers who compare hybrids in different trials should be extremely careful, because no statistical tests are presented for that purpose. Readers should note that the difference between a single hybrid's performance at one location and its performance at another is caused primarily by environmental effects and random variability. Furthermore, the difference between the performance of hybrid A in one trial and that of hybrid B in another is the result not only of environmental effects and random variability, but of genetic effects as well.


2017 TEST FIELDS

Mt. Morris
Location: Nelson farm, Ogle county, north of Mt. Morris, north central Illinois.
Cooperator: Rick Nelson.
Soil type: Muscatine silt loam.
Planting date: April 24th.
Harvest date: October 19th.
Nitrogen: 182 lbs. as PPI UAN.
Herbicides: PRE- Bicep Il Magnum; POST- Impact.
Tillage: Spring- field cultivator.

DeKalb
Location: Drendel farm, DeKalb County, southwest of DeKalb.
Cooperator: Steve Drendel.
Soil type: Elpaso silty clay loam.
Planting date: (Conv) May 8th; (CFC) May 16th.
Harvest date: October 26th.
Nitrogen: (Conv) 220 lbs., 190 lbs. as 28% PPI, 30 lbs. as fall DAP.
Herbicides: PPI- Degree Xtra, Hornet; POST- Impact.
Tillage: Fall- disk ripper; spring NH3, 30 lbs. as spring 32%.

Fenton
Location: Mickley farm, Whiteside county, west of Rock Falls, northwestern Illinois.
Soil Type: Coffeen silt loam.
Cooperator: Ron and Dave Mickley.
Planting Date: May 8th.
Harvest Date: October 18th.
Nitrogen: 180 lbs., 160 lbs. as spring NH3, 20 lbs. as PPI UAN.
Herbicides: PPI- Degree Xtra, Hornet; POST- Impact.
Tillage: Fall- disk ripper; spring- field cultivate.

Monmouth
Location: University of Illinois, Northwestern Illinois Agricultural Research and Demonstration Center, Warren County, northwest of Monmouth.
Cooperators: Greg Steckel; research director, Martin Johnson; farm foreman.
Soil type: Sable silt loam.
Planting date: April 15th.
Harvest date: September 28th.
Nitrogen: (Conv) 170 lbs.; (CFC) 210 lbs. as PPI 28%.
Herbicides: PRE- Resicore and Atrazine.
Post- Resource, Atrazine.
Tillage: Fall- disk ripper; spring- field cultivate.

New Berlin
Location: Bennett Farm, Sangamon county, north of New Berlin, central Illinois.
Cooperators: Leahy Bennett.
Soil type: Sable silt loam.
Planting date: April 13th.
Harvest date: September 26th.
Nitrogen: 220 lbs., 185 lbs. as spring NH3, 30 lbs. as spring 32%.
Herbicides: PPI- Parallel Plus; POST- Impact.
Fungicide: Headline AMP (7/07).
Tillage: Fall- V rip; Spring- vertical finisher.

Perry
Location: University of Illinois, Orr Agricultural Research and Demonstration Center, Pike county, west of Perry, west-central Illinois.
Cooperator: Mike Vose; farm foreman.
Soil type: Herrick silt loam.
Planting date: April 13th.
Harvest date: September 29th.
Nitrogen: 220 lbs., 190 lbs. as 28% PPI, 30 lbs. as fall DAP.
Herbicides: PPI- Lexar.
Tillage: Fall- Chisel, Spring- field cultivate.

Dwight
Location: Hoffman farm, Grundy county, north of Dwight, northwestern Illinois.
Cooperator: Allen Hoffman.
Soil type: Reddick silty clay loam.
Planting date: April 19th.
Harvest date: October 13th.
Nitrogen: 220 lbs. as UAN Side dress.
Herbicides: PPI- Salvo, Atrazine; POST- Impact.
Tillage: Fall strip till.

Goodfield
Location: Wurmnest farm, Woodford county, north of Goodfield, central Illinois.
Cooperator: Mike Wurmnest.
Soil Type: Ipava silt loam.
Planting date: April 19th.
Harvest date: October 10th.
Nitrogen: 196 lbs., 66 lbs as PPI UAN, 80 lbs. as sidedress , 50 lbs. as fall DAP.
Herbicide: Pre- Accuron; POST- Impact.
Tillage: Fall- chisel, Spring- field cultivator.

Urbana
Location: University of Illinois, Crop Sciences Research and Education Center, Champaign county, Urbana, east-central Illinois.
Cooperator: Jeff Warren; farm foreman.
Soil type: Flanagan silt loam.
Planting date: (conv) April 20th; (CFC) April 25th.
Harvest date: (conv) October 9th; (CFC) October 14th.
Nitrogen: (Conv) 210 lbs. as 28% PPI (CFC) 210 lbs. as 28% PPI.
Herbicides: PPI- Outlook, Infantry; POST- Impact.
Tillage: Spring- soil finisher, Fall- chisel plow.

St. Peter
Location: Schwarm Farm, Fayette county, North of St. Peter, south-central Illinois.
Cooperator: Russ Schwarm
Scott Reynolds.
Soil type: Darmstadt silt loam.
Planting date: May 23rd.
Harvest date: October 19th.
Nitrogen: 140 lbs. as PPI 32%.
Herbicides: PPI- Balance Flex, Roundup; POST- Resicore, Roundup.
Tillage: Fall- Disk; spring- Field cultivate.

Belleville
Location: Tiedemann Farm, east of Belleville, St. Clair county.
Cooperator: David and Dan Tiedemann.
Soil type: Caseyville silt loam.
Planting date: May 18th.
Harvest date: October 3rd.
Nitrogen: 180 lbs. as spring NH3.
Herbicides: PPI- Lexar, Aatrex; POST- Impact.
Fungicide: Trivapro at R1.
Tillage: Spring- field cultivator.

Elkville
Location: Funk farm, Jackson county, Elkville, north of Carbondale, southern Illinois.
Cooperators: John and Trent Funk.
Soil Type: Okaw silt loam.
Planting date: April 14th.
Harvest date: September 11th.
Nitrogen: 185 lbs. as Anhydrous (spring).
Herbicides: PPI- Lumax; POST- Impact.
Tillage : Fall- Chisel, Spring- field cultivator.
## GROWING SEASON RAINFALL

<table>
<thead>
<tr>
<th>Location</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mt. Morris</td>
<td>6.7</td>
<td>6.4</td>
<td>4.9</td>
<td>9.9</td>
<td>1.6</td>
<td>0.5</td>
<td>31</td>
</tr>
<tr>
<td>DeKalb</td>
<td>6.5</td>
<td>5.4</td>
<td>5.1</td>
<td>8.9</td>
<td>1.8</td>
<td>0.3</td>
<td>28</td>
</tr>
<tr>
<td>Fenton</td>
<td>7.9</td>
<td>4.0</td>
<td>4.2</td>
<td>9.1</td>
<td>2.1</td>
<td>0.7</td>
<td>28</td>
</tr>
<tr>
<td>Monmouth</td>
<td>5.9</td>
<td>3.0</td>
<td>2.9</td>
<td>5.5</td>
<td>2.3</td>
<td>0.7</td>
<td>20</td>
</tr>
<tr>
<td>New Berlin</td>
<td>7.1</td>
<td>5.3</td>
<td>2.2</td>
<td>2.3</td>
<td>1.7</td>
<td>0.1</td>
<td>19</td>
</tr>
<tr>
<td>Perry</td>
<td>6.5</td>
<td>5.8</td>
<td>4.1</td>
<td>2.1</td>
<td>3.7</td>
<td>0.7</td>
<td>23</td>
</tr>
<tr>
<td>Dwight</td>
<td>5.8</td>
<td>5.4</td>
<td>6.3</td>
<td>6.9</td>
<td>2.0</td>
<td>1.0</td>
<td>27</td>
</tr>
<tr>
<td>Goodfield</td>
<td>7.0</td>
<td>4.4</td>
<td>5.4</td>
<td>3.1</td>
<td>4.5</td>
<td>1.2</td>
<td>25</td>
</tr>
<tr>
<td>Urbana</td>
<td>6.4</td>
<td>5.8</td>
<td>2.6</td>
<td>3.8</td>
<td>2.0</td>
<td>1.1</td>
<td>22</td>
</tr>
<tr>
<td>St. Peter</td>
<td>8.3</td>
<td>7.8</td>
<td>3.6</td>
<td>4.7</td>
<td>2.9</td>
<td>0.2</td>
<td>27</td>
</tr>
<tr>
<td>Belleville</td>
<td>9.9</td>
<td>5.8</td>
<td>2.6</td>
<td>3.5</td>
<td>2.5</td>
<td>0.9</td>
<td>25</td>
</tr>
<tr>
<td>Elkville</td>
<td>11.9</td>
<td>4.4</td>
<td>2.6</td>
<td>4.5</td>
<td>3.0</td>
<td>2.0</td>
<td>28</td>
</tr>
</tbody>
</table>

## SOURCES OF SEED

- **AgVenture**, Wehmeyer Seed, [www.agventure.com](http://www.agventure.com)
- **Axis**, Axis Seed Direct, [www.axisseed.com](http://www.axisseed.com)
- **Beck**, Beck's Hybrids, [www.beckshybrids.com](http://www.beckshybrids.com)
- **Burrus**, Burrus Seed, [www.burrusseed.com](http://www.burrusseed.com)
- **Channel**, Channel, [www.channel.com](http://www.channel.com)
- **Cornelius**, Cornelius, Seed, [www.corneliusseed.com](http://www.corneliusseed.com)
- **Dairyland**, Dairyland Seed, [www.dairylandseed.com](http://www.dairylandseed.com)
- **DeKalb**, Dekalb, [www.asgrowanddekalb.com](http://www.asgrowanddekalb.com)
- **Dyna-Gro**, Dyna-Gro Seed, [www.dynagroseed.com](http://www.dynagroseed.com)
- **Great Lakes**, Great Lakes Hybrid, [www.greatlakeshybrids.com](http://www.greatlakeshybrids.com)
- **Hughes**, Hughes Hybrids, [www.hugheshybrids.com](http://www.hugheshybrids.com)
- **InVISION**, FS InVISION, [www.fsinvision.com](http://www.fsinvision.com)
- **Lewis**, Lewis Hybrids, [www.millerhybrids.com](http://www.millerhybrids.com)
- **Munson**, Munson Hybrids, [www.munsonhybrids.com](http://www.munsonhybrids.com)
- **NuTech/G2 Genetics**, NuTech Seed, LLC, [www.nutechseed.com](http://www.nutechseed.com)
- **OMG**, Original Maize Genetics, [www.omgcorn.com](http://www.omgcorn.com)
- **Pioneer**, Dupont/Pioneer Hybrids, [www.pioneer.com](http://www.pioneer.com)
- **Prairie**, Prairie Hybrids, [www.prairiehybrids.com](http://www.prairiehybrids.com)
- **Renk**, Renk Seed Co., [www.renkseed.com](http://www.renkseed.com)
- **Roeschley**, Roeschley Hybrids, [www.roeschleyhybrids.com](http://www.roeschleyhybrids.com)
- **Stone**, Stone Seed Group, [www.stoneseed.com](http://www.stoneseed.com)
- **Sun Prairie Seeds**, Sun Prairie Seeds, [www.sunprairiehybrids.com](http://www.sunprairiehybrids.com)
- **Viking**, Albert Lea Seed, [www.alseed.com](http://www.alseed.com)
- **Whisnand**, Whisnand Hybrids, (217-268-3714)
- **YIELDirect**, YIELDirect, [www.yieldirect.com](http://www.yieldirect.com)

## 2017 CORN LOCATIONS

![Map of Illinois showing corn locations](image)

### KEY TO REGIONS

1 (North) = Mt. Morris, DeKalb, Fenton
2 (W.Central) = Monmouth, Perry, New Berlin
3 (E. Central) = Dwight, Goodfield, Urbana
4 (South) = St. Peter, Belleville, Elkville
5 DeKalb Corn Following Corn
6 Monmouth Corn Following Corn
7 Urbana Corn Following Corn

**RM** = Relative Maturity in Days