

PERFORMANCE OF COMMERCIAL SOYBEANS IN ILLINOIS

THE UNIVERSITY OF ILLINOIS commercial soybean testing program was started in 1969 as a result of requests by seedsmen that their private varieties be tested. There were 66 conventional and 552 roundup resistant varieties from 62 seed companies tested in 2008. This total included 218 varieties entered as 'Producer Nominated' varieties, fees for the Producer Nominated varieties were paid by the Illinois Soybean Checkoff Board.

The purpose of this commercial soybean testing program is to provide unbiased, objective, and accurate testing of all varieties entered. The tests are conducted on as uniform a soil as is available in the testing area. Small plots are used to reduce the chance of soil and climatic variations occurring between one variety plot and another.

The results of these tests should help you judge the merits of varieties in comparison with other private and public varieties. Because your soils and management may differ from those of the test location, you may wish to plant variety strips of the higher-performing varieties on your farm. The results printed in this circular should help you decide which varieties to try.

TEST PROGRAM

Selection of entries. Seed companies in Illinois and surrounding states were invited to enter soybean varieties, brands, or blends in the 2008 Illinois soybean performance trials. Entrants were required to enter all nonirrigated, 30-inch-row-width trials on a regional basis. To finance the testing program, a fee of \$90 per location was charged for each variety entered by the seed company. Most of these varieties, brands, or blends are commercially available, but some experimental varieties were also entered. A total of 2,986 entries were tested in 2008.

Number and location of tests. In 2008, tests were conducted at 13 locations in the state (see map). These sites represent the major soils and maturity zones of the state.

Nonirrigated, 30-inch-row-width trials, conventional and roundup resistant, were conducted on a regional basis. The regions are as follows:

- Region 1 Erie, Mt. Morris and DeKalb
- Region 2 Monmouth, Goodfield and Dwight
- Region 3 Perry, New Berlin and Urbana
- Region 4 St. Peter and Belleville
- Region 5 Elkhart and Harrisburg

Seven-inch-row-width conventional and roundup resistant trials were conducted at Urbana.

Field plot design. Entries of each test were replicated three times in a randomized complete block or alpha lattice design. The 30-inch-row trial plots consisted of four rows, each 21 feet long. The center two rows of each plot were harvested to measure yield. The 7-inch-row trial plots consisted of eight rows, each 21 feet long. The center six rows were harvested to measure yield.

Fertility and weed control. All test locations were at a high level of fertility. Herbicides were used at all test locations for weed control. Weed control for the roundup resistant trials consisted of post-emergence application of Roundup following a pre-emergence foundation herbicide application. Plots were also weeded by hand if needed.

Method of planting and harvesting. The 30-inch-row variety trials were planted with a modified bean planter at 166,000ppa. A custom-built, cone type, narrow-row drill was used to plant the 7-inch trials at 215,000ppa. Harvesting was done with a small-plot combine. No allowances were made for soybeans that may have

been lost as a result of combining or shattering.

Soybean Cyst Nematode. Soil samples were taken from variety plots at each location in August and evaluated for cyst populations.

Threshold numbers of cysts per 100cc of soil are as follows:

Low	1-5
Medium	6-25
High	>25

PERFORMANCE DATA

Yield. Soybean yield was measured in bushels (60 pounds) per acre at a moisture content of 13 percent. An electronic moisture monitor was used on the combine for all moisture readings.

Maturity. Maturity was stated as the date when approximately 95 percent of the pods were ripe.

Lodging. The amount of lodging was rated at harvest time. The following scale was used:

- 1 - Almost all plants erect
- 2 - All plants leaning slightly or a few plants down
- 3 - All plants leaning moderately (45°), or 25 to 50 percent of the plants down
- 4 - All plants leaning considerably, or 50 to 80 percent of the plants down
- 5 - Almost all plants down

Height. Height was measured shortly before harvest as the average length of plants from the ground to the tip of the main stem.

Shattering. The percentage of open pods was estimated at harvest time. The following scale was used:

- 1 - No shattering
- 2 - 1 to 10% of pods open
- 3 - 10 to 25% of pods open
- 4 - 25 to 50% of pods open
- 5 - Over 50% of pods open

Shattering was not significant at any location.

SUGGESTIONS FOR COMPARING ENTRIES

It is impossible to obtain an exact measure of performance when conducting 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 are more reliable than those of a single year or a single-strip test. When one variety 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 considered in selecting a variety. However, yield is not the only indicator. You should also consider maturity, lodging, plant height and shattering.

As an aid in comparing soybean varieties, brands, and blends within a single trial, certain statistical tests have been devised. One of these tests, the least significant difference (L.S.D.), when used in the manner suggested by Carner and Swanson¹ is quite simple to apply and is more appropriate than most other tests. When two varieties are compared and the difference between them is greater than the tabulated L.S.D. value, the varieties are judged to be "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 soybean variety within the regional table or single location table of interest, subtract the 25% L.S.D. value from the highest yielding variety, every variety with a greater yield than the resulting number is 'statistically the same' as the highest yielding variety. Consider the merits of the varieties in this group when making varietal 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 α 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 varieties. Readers who compare varieties in different trials or row spacings should be extremely careful, because no statistical tests are presented for that purpose. Readers should note that the difference between a single varieties performance at one location or row spacing and its performance at another is caused primarily by environmental effects and random variability. Furthermore, the difference between the performance of variety A in one trial or row spacing and the performance of variety B in another trial or row spacing is the result not only of environmental effects and random variability, but of genetic effects as well.

¹Carmer, S.G. and M.R. Swanson. "An Evaluation of Ten Pairwise Multiple Comparison Procedures by Monte Carlo Methods." Journal of American Statistical Association 68:66-74. 1973.

²Carmer, S.G. "Optimal Significance Levels for Application of the Least Significant Difference in Crop Performance Trials." Crop Science 16:95-99, 1976.

2008 SOYBEAN LOCATIONS



2008 TEST FIELDS

Erie

Location: Slaymaker Farm, Whiteside county, west of Rock Falls, northwestern Illinois.

Soil Type: Beaucoup silty clay loam.

Cooperator: Robert Slaymaker.

Planting Date: May 8. Harvest Date: October 10.

Herbicide: Pre-Intro, FirstRate.

Post-CV-FirstRate, Select; RR-Roundup.

Insecticide: Mustang Max (aerial), Lorsban.(aerial)

Tillage: fall chisel, spring field cultivate.

S.C.N.: high.

Mt. Morris

Location: Nelson Farm, Ogle county, North of Mt. Morris, north central Illinois.

Cooperator: Rick Nelson.

Soil type: Muscatine silt loam.

Planting Date: May 9. Harvest Date: October 11.

Herbicide: Pre-Intro, FirstRate.

Post-CV-FirstRate, Select; RR-Roundup.

Tillage: fall chisel, spring field cultivate.

S.C.N.: medium.

DeKalb

Location: University of Illinois, Northern Illinois Agronomy Research Center, DeKalb County, southwest of DeKalb.

Soil type: Flanagan silt loam.

Cooperators: Lyle Paul, research director; Dave Lindgren, farm foreman.

Planting date: May 10.

Harvest dates: October 3,4 & 11.

Herbicide: Pre-Intro, FirstRate.

Post-CV-FirstRate, Select; RR-Roundup.

Insecticide: Mustang.

Tillage: fall plow, spring mulch finisher.

S.C.N.: medium.

Monmouth

Location: University of Illinois, Northwestern Illinois Agricultural Research and Demonstration Center, Warren County, northwest of Monmouth.

Soil type: Sable silty clay loam.

Cooperators: Eric Adee, agronomist; Martin Johnson, farm foreman.

Planting date: May 16.

Harvest dates: September 26 & October 10.

Herbicide: Pre-Intro, FirstRate. Post-CV-First Rate, Fusion;

RR-Roundup, Assure II.

Tillage: fall chisel, spring field cultivate.

S.C.N.: medium.

Goodfield

Location: Wurmnest Farm, Woodford county, north of Goodfield, central Illinois.
 Cooperator: Mike Wurmnest.
 Soil Type: Ipava silt loam.
 Planting date: May 17. Harvest dates: October 1 & 9.
 Herbicide: Pre-Intro, FirstRate. Post-CV-FirstRate, Select;
 RR-Roundup, Select.
 Insecticide: Leverage, Warrior.
 Tillage: fall chisel, spring soil finisher.
 S.C.N.: medium.

Dwight

Location: Grundy County, Hoffman Farm.
 Soil type: Reddick silty clay loam.
 Cooperator: Allen Hoffman.
 Planting date: May 19. Harvest dates: September 27 & Oct. 12.
 Herbicide: Pre-Intro, FirstRate. Post-CV-FirstRate, Select;
 RR-Roundup, Select.
 Tillage: fall deep rip, spring field cultivate.
 S.C.N.: medium.

Perry

Location: Pike County, Fencik Farm, west central Illinois.
 Soil type: Herrick silt loam
 Cooperator: Mike Vose, farm foreman.
 Planting date: May 17. Harvest dates: Sept. 25 & October 4 & 5.
 Herbicide: Pre-Intro, FirstRate.
 Post-CV-FirstRate, AssureII; RR-Roundup.
 Tillage: spring disk, Dyna drive.
 S.C.N.: low.

New Berlin

Location: Bennett Farm, Sangamon county, north of New Berlin, Central Illinois.
 Cooperator: Leahy Bennett.
 Soil type: Sable silty clay loam.
 Planting date: May 19. Harvest dates: Sept. 25 & October 6 & 14.
 Herbicide: Pre-Intro, FirstRate.
 Post-CV-FirstRate, Select; RR-Roundup.
 Tillage: fall V ripper, spring vertical finisher.
 S.C.N.: low.

Urbana

Location: University of Illinois, Crop Sciences Research & Education Center, Champaign County, east central Illinois.
 Soil type: Flanagan silt loam.
 Cooperators: Robert Dunker, Agronomist; Mike Kleiss, farm foreman.
 Planting dates: May 29, June 17 (replant 30" CV MG 2 & 3)
 Harvest dates: September 30, Oct. 12, 14 & 20.
 Herbicide: Pre-Intro, FirstRate.
 Post-CV-Basagran, Select; RR-Roundup.
 Tillage: fall chisel, spring soil finisher twice.
 S.C.N.: low.

St. Peter

Location: Magnus Farm, Fayette County, west of St. Peter, south central Illinois.
 Soil type: Hoyleton silt loam.
 Cooperator: Torrey Magnus.
 Planting date: June 19, Harvest: Oct. 13 & 19.
 Herbicide: Pre-Intro, FirstRate.
 Post-CV-Select, FirstRate; RR-Roundup.
 Tillage: spring disk twice, soil crumbler. S.C.N.: medium.

Belleville

Location: Southern Illinois University Research Center, east of Belleville, St. Clair County.
 Soil type: Ebbert silt loam.
 Cooperator: Ron Krausz, field manager.
 Planting date: June 12. Harvest date: October 18.
 Herbicide: Pre-Intro, FirstRate.
 Post-CV-Flexstar, Assure II; RR-Roundup.
 Tillage: spring disk, field cultivate, cultmulch.
 S.C.N.: high.

Elkville

Location: Funk farm, North of Carbondale, Jackson County, extreme southern Illinois.
 Soil type: Okaw silt loam.
 Cooperator: Trent Funk.
 Planting date: May 25.
 Harvest dates: October 4 & 13.
 Herbicide: Pre-Intro, FirstRate.
 Post-CV-FirstRate; RR-Roundup.
 Tillage: fall chisel, spring field cultivate, soil finisher.
 S.C.N.: medium.

Harrisburg

Location: Wintizer farm, Saline County, extreme southern Illinois.
 Soil type: Harco silt loam/Patton silty clay loam.
 Cooperator: Kevin Wintizer.
 Planting date: May 20.
 Harvest dates: September 24 & October 4 & 13.
 Herbicide: Pre- Touchdown, 2,4-D, Valor.
 Post-CV-FirstRate, Select; RR-Roundup.
 Tillage: fall chisel, spring field cultivate.
 S.C.N.: low.

GROWING SEASON RAINFALL, 2008

Location	May	June	July	Aug	Sept
Erie	7.00	6.90	3.20	1.20	9.30
Mt. Morris	3.50	5.75	5.40	3.00	6.00
DeKalb	4.96	3.88	6.96	1.63	11.5
Monmouth	4.48	8.19	3.22	2.83	9.47
Goodfield	3.40	3.20	2.60	2.00	10.8
Dwight	2.98	1.88	6.15	1.50	13.2
Perry	4.11	7.87	5.49	2.81	12.2
New Berlin	4.84	4.64	6.32	1.84	7.19
Urbana	6.25	6.46	8.45	0.65	8.13
St. Peter	9.71	4.74	4.80	2.16	3.42
Belleville	9.22	3.14	6.97	2.06	4.87
Elkville	5.94	1.58	4.79	1.67	2.32
Harrisburg	6.90	3.85	9.15	1.40	2.00

SOURCES OF SEED

AgAlumni, Ag Alumni Seed, 702 State Rd. 28 E, Romney IN 47981 (800-822-7134)
AgVenture, AgVenture D&M, PO Box 102, Kentland, IN 47951 (219-474-3339)
Arise, Brown Seed Enterprises, Inc. 289 Co. Rd. 550 N, Neoga, IL 62447 (217-895-2335)
Asgrow, Monsanto, 800 N Lindbergh Blvd. St. Louis, MO 63167 (800-335-2676)
Asoyia, Asoyia, Inc, 2730 Naples Ave SW #104, Iowa City, IA 52240 (319-339-4645)
Baker, Baker Seed Co., 610 W. Seminary St. West Salem, IL 62476 (618-456-8851)
Beck's, Beck's Superior Hybrids, 6767 E 276th St. Atlanta, IN 46031 (317-984-3508)
Bio Gene, Bio Gene Seeds, 5477 Tri-County Hwy. Sardinia, OH 45171 (888-862-3276)
Campbell, Campbell Seed Inc., 1375 N 800 W. Tipton, IN 46072 (800-788-5950)
Clarkson, Clarkson Grain Co., 320 East South St. Cerro Gordo, IL 61818 (800-252-1638)
Croplan, Croplan Genetics, P.O. Box 64281, St. Paul, MN 55164 (608-633-0857)
Crow's, Crow's Hybrid Corn Co., 612 E Dunlap St. Kentland, IN 47951 (800-331-7201)
Dairyland, Dairyland Seed Co. Inc., PO Box 958, West Bend, WI 53095 (800-236-0163)
DeKalb, Monsanto, 800 N Lindbergh Blvd. St. Louis, MO 63167 (800-335-2676)
Delta Grow, Delta Grow Seed, PO Box 219, England, AR 72046 (800-530-7933)
DeRaedt, DeRaedt Seed Corp., 10 N 971 Tower Rd. Hampshire, IL 60140 (847-514-8844)
Diener, Heritage-Diener, 371 N. Diener RD. Reynolds, IN 47980 (800-545-8611)
Dyna-Gro, UAP Dist., Inc, 1267 W Washington, Pittsfield, IL 62363 (217-285-4461)
Excel, Agrinetics Inc., 1764 Windward Ave., Naperville, IL 60563 (630-417-4265)
Excel, Excel Brand, 116 E State, Camp Point, IL 62320 (800-593-7708)
Excel, Coldwater Seed Farm, 26845 S Coldwater Rd, Elwood, IL 60421 (815-423-5357)
Excel, Hartke Seed Farms, 22679 Sunset Rd. Litchfield, IL 62056 (217-324-2680)
Excel, Miller Bros Farm & Fert., 2001 Niemannsville Trail, Walshville, IL 62091 (217-456-9311)
Fontanelle, Fontanelle Hybrids, 10981 8th St. Fontanelle, NE 68044-2505 (402-721-1410)
FS Hisoy, Growmark Inc., 1701 Towanda Ave, Bloomington, IL 61701 (888-222-4405)
G2 Genetics, G2 Genitics, 36131 Hwy 69, Forest City, IA 50436 (641-581-3350)
Great Heart, Great Heart Seed, 220 W Washington, Paris, IL 61944 (217-465-4132)
Helena, Helena Chemical Co., 11711 N Pennsylvania St. Carmel, IN 46032 (317-815-6370)
Hoblit, Hoblit Seed, 2189 1900 th Ave.- PO Box 487, Atlanta, IL 61723 (217-648-2392)
Hoffman, Hoffman Seed House, 200 E 4th St, Hoffman, IL 62250 (618-495-2617)
Horizon, Horizon Genetics, P.O. Box 31, Mason City, IL 62664 (217-482-3281)
Hubner, Hubner Seed, 10280 West SR 28, West Lebanon, IN 47991 (765-893-4428)
Hughes, Hughes Seed Farms, 206 N Hughes Rd, Woodstock, IL 60098 (815-338-2480)
iCorn, iCorn, 792 N. Peru St., Cicero, IN 46034 (800-240-0101)
Kaltenberg, Kaltenberg Seeds, 5506 State Rd 19, PO Box 278, Waunakee, WI 53597-0278 (608-849-5021)
Kitchen, Kitchen Seed Company Inc., PO Box 286, Arthur, IL 61911 (217-543-3476)
Kruger, Kruger Seeds Inc., PO Box A, Dike, IA 50624 (800-772-2721)
Latham, Latham Seed Company, 131 180th St. Alexander, IA 50420 (800-798-3258)
Lewis, Lewis Hybrids, Inc. PO Box 38 / 530 West Maple Ave. Ursa, IL 62376 (800-252-7851)
LG Seeds, LG Seeds, 22827 Shissler Rd. Elmwood, IL 61529 (800-752-6847)
Martin, Martin Seeds, 10045 W Second St. Williamsport, IN 47993 (765-986-2030)
Mavrick, Bo-Jac Seed Co./Mavrick Brand Soybeans, 245 1500th Avenue, Mt. Pulaski, IL 62548 (217-792-5001)
Merschman, Merschman Seeds, 103 Ave D, PO Box 67, West Point, IA 52656 (800-848-7333)
MW Premium Genetics, Midwest Premium Genetics, LLC, PO Box 688, 523 S Main St. Concordia, MO. 64020 (660-463-7333)
Midwest Seed Genetics, Midwest Seed Genetics, PO Box 518, Carroll, IA 51401 (800-369-8218)
Munson, Munson Hybrids, 1262 Knox Road 100 East Galesburg, IL 61401 (309-343-8410)
MWS, MWS Seeds LLC, 2737 N 700 E Rd. Ashkum, IL, 60911 (815-698-2204)
Mycogen, Mycogen Seeds, 9330 Zionsville Rd., Indianapolis, IN 46268 (800-692-6436)
NK Brand, Syngenta Seeds, Inc. 7500 Olson Memorial Highway, Golden Valley, MN 55427 (800-445-0956)
NU-AG, NU-AG, P.O. Box 345, Tuscola, IL 61953 (217-253-4066)
NuTech, NuTech Seed, LLC, 36131 Hwy 69, Forest City, IA 50436 (641-581-3350)
Pioneer, Pioneer Hi-Bred Int. Inc, 14171 Carole Dr, Bloomington, IL 61704 (309-821-9940)
Prairie Brand, Prairie Brand Seed, 15 X Avenue, Story City, IA 50248 (515-733-2101)
Prairie, Prairie Hybrids, 27445 Hurd Rd., Deer Grove, IL 61243 (815-438-7815)
Public Varieties, Illinois Foundation Seeds Inc., 1083 County Rd 900 N. Tolono, IL 61880 (217-485-6260)
Renk, Renk Seed, 6809 Wilburn Rd. Sun Prairie, WI 53590 (800-289-7365)
Roeschley, Roeschley Hybrids, 8222 E 1500 N Rd. Graymont, IL 61743 (815-743-5938)
Schillinger, Schillinger Seeds Inc., 4200 Corp Drive, Suite 106, West Des Moines, IA 50266 (515-225-1166)
Shepherd, Shepherd Seeds, 2636 E Staline Road, Beloit, WI 53511 (608-363-6552)
Southern Cross, Miles Farm Supply, LLC, PO Box 22879, Owensboro, KY 42304 (888-786-4537)
Southern States, Southern States Co-op, P.O. Box 26234, Richmond, VA 23260 (804-281-1203)
Steyer, Steyer Seeds LLC, 6154 N Co Rd 33, Tiffin, OH 44883 (800-231-4274)
Stine, Stine Seed Co., 22555 Laredo Trail, Adel, IA 50003 (515-677-2605)
Stone, Stone Seed Group, 5965 W State Rt 97, Pleasant Plains, IL 62677 (309-944-5131)
Sun Prairie, Champaign County Seed Co., 1676 County Rd. 2200 E. St. Joseph, IL 61873 (217-469-2351)
Trelay, Trelay Seed Co., 11623 Hwy 80, Livingston, WI 53554 (800-421-0397)
Trisler, Trisler Seeds, Inc. 3274 E 800 North Rd. Fairmount, IL 61841 (217-288-9301)
Vigoro, Crop Production Services, PO Box 1467, Galesburg, IL 61402 (309-342-4100 ext 18)
Wilken, Wilken Seed Grains, Inc. PO Box 770 14087 N 1800 East Road, Pontiac, IL 61764 (815-844-3458)
Willcross, NeCo Seed Farms, Inc. P.O. Box 379, Garden City, MO 64747 (816-862-8203)
Wycoff, Wycoff Hybrids Inc. 594 E 400 N, Valparaiso, IN 46383 (219-462-6716)