



University of Kentucky
UKnowledge

Agronomy Notes

Plant and Soil Sciences

1995

An Evaluation of Twelve Maturity Group II Soybean Varieties at Lexington, Kentucky

Larry J. Grabau

University of Kentucky, larry.grabau@uky.edu

Colleen C. Steele

University of Kentucky, colleen.steele@uky.edu

Follow this and additional works at: https://uknowledge.uky.edu/pss_notes



Part of the [Agronomy and Crop Sciences Commons](#)

[Right click to open a feedback form in a new tab to let us know how this document benefits you.](#)

Repository Citation

Grabau, Larry J. and Steele, Colleen C., "An Evaluation of Twelve Maturity Group II Soybean Varieties at Lexington, Kentucky" (1995). *Agronomy Notes*. 30.

https://uknowledge.uky.edu/pss_notes/30

This Report is brought to you for free and open access by the Plant and Soil Sciences at UKnowledge. It has been accepted for inclusion in Agronomy Notes by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.



Agronomy *notes*

Vol. 28, No. 7, 1995

An Evaluation of Twelve Maturity Group II Soybean Varieties at Lexington, Kentucky

L. J. Grabau and C. C. Steele

In both 1993 and 1994, the Kentucky Soybean Promotion Board funded an on-farm test of a small set of Maturity Group (MG) II varieties. Those studies showed that several MG II varieties were competitive with a high-yielding MG IV variety. However, other MG II varieties did not perform as well in those tests, indicating that variety selection is an important management consideration if this early maturing cropping system is to be successful in Kentucky soybean producers' fields. MG II varieties used in past University of Kentucky tests have been chosen based on their performance in university variety trials where such varieties are normally grown. For example, we have used data from Iowa, Indiana, Illinois, and Ohio to make our choices. Such tests often include large numbers of MG II varieties; for example, the Iowa State University trials routinely include over 200 MG II varieties.

Given such broad testing by northern states, it would seem that Kentucky soybean growers should be able to simply use northern data to select MG II varieties for production in Kentucky. Previous cooperative work in 1990 and 1991 between the

University of Kentucky and the University of Minnesota showed no evidence that some early maturing breeding lines were better suited to "move south" than were other early maturing breeding lines. However, some growers have expressed interest in obtaining yield performance data for MG II varieties grown under Kentucky conditions. Some still suspect that our warmer temperatures, heavier insect and disease pressures, and more prevalent soybean cyst nematodes might alter the relative yield ranking of varieties moved south of their intended growing area. Thus, the Kentucky Soybean Promotion Board has funded a 1995 cooperative effort between the Universities of Kentucky and Illinois to determine if private and public MG II varieties will show altered yield rankings when they are moved south of their intended zone of production.

In addition to the above concerns about using northern data to select MG II soybean varieties for production under Kentucky conditions, there is another practical problem. Firms frequently target their varieties for specific northern growing areas. For example, some varieties are marketed only west of the Mississippi River, or

others are only marketed in the state(s) where a company routinely sells its varieties. As a result, when MG II varieties are offered for sale in Kentucky, it becomes quite difficult to make valid comparisons of yield performance across states when all the varieties of interest are not entered in a single set of studies. Therefore, the objective of this study was to collect preliminary yield performance data for a group of twelve MG II varieties which have either been grown in Kentucky or are available for use in coming seasons. A larger MG II variety trial is now under way in Kentucky (tests at Princeton and Lexington in both full season and late-planted cropping systems, each including 27 MG II varieties along with 3 MG IV check varieties). Most, if not all of these varieties will also be tested in 1995 University of Illinois trials, allowing a comparison of variety rankings between Kentucky and Illinois. Results from those studies should be available in early 1996.

Materials and Methods

Eight of the twelve MG II varieties

tested were from private companies; the remaining four were from public institutions. We included all of the varieties tested in either of the previously mentioned 1993 or 1994 on-farm variety trials; those varieties were Agripro 2880, Asgrow A2396, IA 2008 (public), Jack (public), Pioneer 9273, and Stine 2250. Elgin 87 and Burlison were added from the public sector. Elgin 87 had been tested for several years at the University of Kentucky, and thus provided a good long-term check variety. Burlison had done well in fields in Ohio County in previous growing seasons. The remaining four private varieties [Asgrow A2506, Callahan 1290, Lynk's 5297, and Southern States (SS) FFR 298] were from firms interested in the MG II cropping system in Kentucky but whose varieties had not been chosen for use in our on-farm testing program.

The test site was on the University of Kentucky's Spindletop Farm near Lexington, Kentucky on a well-drained Maury silt loam soil. The test involved four planting dates to provide a range of growing conditions and to determine an optimal target planting date for this MG in Kentucky. Planting dates were April 29, May 24, June 14, and July 13, 1993 and May 13, June 2, June 22, and July 12, 1994. Each planting date included four replications. Row spacing was 15 inches, and planting rates were 210,000 seeds/A for the first and last planting dates each year and 175,000 seeds/A for the middle two planting dates each season. Plots were harvested with a small plot combine, and yields were converted to a 13% moisture basis. Data were compared using a Least Significance Difference (LSD) test at the 10% level of probability.

Results and Discussion

Yields were better in 1994 than in 1993. The 1994 yields averaged 50 bu/A, while the 1993 yields averaged 41 bu/A. In spite of that yield difference, the average planting date responses were similar for the two growing seasons. In order by planting date, 1994 yields averaged across 12 varieties were 48, 53, 58, and 42 bu/A; 1993 yields were 39, 44, 48, and 34 bu/A. For both seasons, yield increased with each successive planting date until they peaked out at the third planting date before declining for the fourth planting date. It appears that mid-June planting of MG II varieties may be a good choice, particularly in cooler, wetter years like we've been experiencing in the early 1990s. Perhaps MG II yields from earlier plantings are inhibited by cool temperatures during their relatively short period of vegetative growth. However, in the warmer, drier years of the late 1980s, our studies showed that MG II varieties may outperform later maturing varieties when planted in late April or early May. In any case, the range of planting dates used resulted in quite different growing conditions, helping us to generate useful data on variety yield performance over a range of yield potentials. As a footnote, the twelve MG II varieties averaged 38 bu/A over the two growing seasons when planted in mid-July, suggesting that growers forced to plant double crop soybeans later than normal might wish to consider planting some MG II varieties.

Across all planting dates and both years studied, Pioneer 9273 had the highest average yield (Table 1). However, seven other varieties were tightly

bunched just 3 or 4 bu/A behind that variety. Only Asgrow A2506, Elgin 87, IA 2008, and SS-FFR 298 were more than 4 bu/A below the best average yields. Results depended somewhat on year, with Pioneer 9273 significantly better than the other eleven varieties in 1993, but with eight varieties in the leading group in 1994. We encourage growers to use as broad a data base as possible to select their varieties. For instance, good performance over several years and at multiple locations is a more accurate indication of a variety's future performance than is data from just one year at one location. Further, it appears that growers can choose from a broad group of high-yielding varieties within MG II and still grow a variety which is among the best available.

When looking at the yield performance of the twelve varieties for individual planting dates in 1994 (Table 1), interpreting the results becomes somewhat more difficult. For the May 13 planting date, six varieties were within the leading group. For the June 2 planting date, seven varieties were in the leading group. Interestingly, all varieties were no more than 5 bu/A different from one another for both the highest yielding June 22 planting date and the lowest yielding July 12 planting date. Varieties which were in the top group for all four planting dates were Agripro 2880, Burlison, Callahan 1290, Jack, Lynk's 5297, and Pioneer 9273. Across both years, only Pioneer 9273 was in the leading group for all planting dates. Agripro 2880, Asgrow A2396, and Stine 2250 were in the leading group for seven of the eight planting dates across the two years.

We caution growers that these tests included only 12 of the many MG II

varieties which could potentially be grown in Kentucky, thus many other excellent varieties could also be chosen. The larger MG II test being conducted in 1995 should reveal whether growers can confidently se-

the cooler, wetter conditions like Kentucky experienced in the early 1990s. When averaged over both growing seasons and all four planting dates, six varieties no more than 3 bu/A behind the top variety. This indicates that

sion for this cropping system. This study has provided a preliminary data set to support that decision. Further data for more MG II varieties grown in Kentucky should be available in early 1996.

Table 1. Yield of 12 Maturity Group II soybean varieties from four different planting dates in Lexington in 1994, along with 1993 and two year averages.

Variety	Planting Date				1994	1993*	Two Year
	May 13	June 2	June 22	July 12	Average	Average	Average
	Bushels/A						
Apripro 2880	50	58	55	40	51	44	47
Asgrow A2396	47	52	59	45	50	44	47
Asgrow A2506	46	49	57	40	48	40	44
Burlison	48	57	57	41	51	41	46
Callahan 1290	50	56	60	40	52	42	47
Elgin 87	46	48	59	42	48	38	43
IA 2008	43	34	55	44	44	36	40
Jack	53	57	60	42	53	41	47
Lynk's 5297	48	59	59	45	53	42	47
Pioneer 9273	51	58	59	42	52	48	50
SS-FFR 298	45	51	58	42	49	38	44
Stine 2250	46	56	60	44	51	42	47
Planting Date Average	48	53	58	42			

LSD (0.10)

----- 5** -----

--- 3*** ---

2****

* 1993 date were averaged across the following four planting dates: April 29, May 24, June 14, and July 13. Individual planting date yields from 1993 were published in Agronomy Notes Vol. 27, No. 8, October 1994.

** For comparing varieties within a planting date.

*** For comparing varieties within a year.

**** For comparing varieties averaged across both years.

lect MG II varieties based on northern yield performance data, or whether we will need to set up a Kentucky variety trial emphasizing this MG.

Conclusions

Planting MG II varieties in mid-June seems to be a good choice under

Kentucky producers have a wide array of excellent MG II varieties from which to choose. Some varieties, while occasionally breaking into the highest yielding group, failed to stay there consistently. MG II variety selection for Kentucky growing conditions remains an important management deci-

Kenneth L. Wells
Extension Soils Specialist