

1990 MICHIGAN SOYBEAN PERFORMANCE REPORT

Extension Bulletin E-1206 • Revised December 1990

M. L. Vitosh, C. Sneller and J. F. Boyse
Department of Crop and Soil Sciences

This bulletin provides information on the performance of soybean varieties available in Michigan.

Comprehensive variety yield trials were conducted in Southeastern Michigan (Lenawee County), Southwestern Michigan (St. Joseph County), South Central Michigan (Hillsdale and Ingham counties), Central Michigan (Saginaw County), and East Central Michigan (St. Clair County).

Testing Procedures

Commercial varieties voluntarily entered were obtained from seed companies. Public varieties were supplied by the Michigan Foundation Seed Association.

Cooperators, planting and harvest dates, fertilizer practices, previous crops, and soil management groups at the six locations are listed in Table 1.

Maturity groups of all varieties tested are listed in Table 2. Seed of entries was planted in 4-row plots 20 feet long with a 20-inch row spacing, 1 1/2 inches deep at 4.5 seeds per foot of row. Each variety was randomized in the trial and replicated 3 times in a lattice design. Fourteen feet of the center two rows were harvested for yield.

Evaluating Characteristics

YIELD — Yield is expressed in bushels per acre at 13% moisture.

MATURITY DATE — Entries were considered mature when 95% of the pods had attained their final color and would crack under finger pressure. Additional field drying was required before the plants were ready to harvest. Dates were recorded by month and day (Table 2), or as days relative to the check cultivar.

HEIGHT — Plant height, in inches, was measured at maturity from the soil surface to the tip of the main stem.

LODGING — Lodging scores reflect the erectness of the plants before harvest. Ratings are based on the following scale:

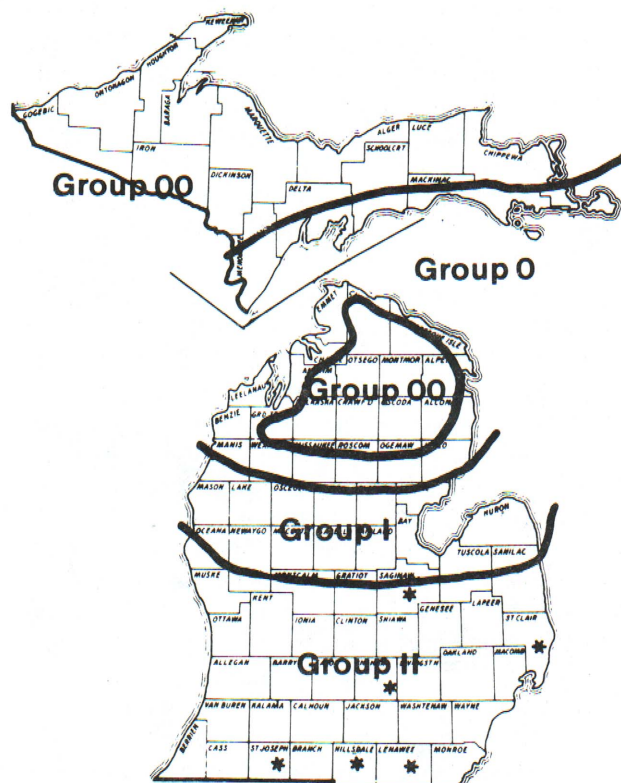
1. Almost all plants erect

2. All plants leaning slightly, or fewer than 25% of the plants down
3. All plants leaning moderately (45%), or 25% to 50% of the plants down
4. All plant leaning considerably, or 50% to 80% of the plants down
5. Almost all plants down

Interpreting the Results

Tables 2-4 show results of 1990 soybean variety trials. Values given are the averages of all replications harvested at each location.

Climatic conditions in 1990 were characterized by a cool, wet spring followed by a cool summer with adequate soil moisture. As a result, all varieties matured later than usual. The St. Joseph County site was irrigated.



Soybean Maturity Zones for Full-Season Varieties in Michigan, and Locations (*) of Trials.

The LSD (least significant difference) value is useful when comparing two varieties in the same table. Two varieties with the same genetic potential for yield may have different yields due to variation in soil fertility, compaction, and other environmental factors. If the difference is less than the LSD value, the difference between the varieties may be due to chance or minor environmental differences. However, if the difference between two varieties is greater than the LSD, there is a 95%, or better, probability that the performance is actually different. The CV value is an indicator of the degree of precision for a particular test. The lower the CV value, the more discriminating the test.

Selecting a Variety

The primary consideration in selecting a variety is yield. When evaluating a variety, consider yield performance over several years, if available. Give preference to data obtained in the nearest variety trial. Use all trials in determining a variety's performance under various environmental conditions.

Considerations other than yield are important in selecting a variety, and in some cases result in choosing a variety with only moderate performance. It is especially important to select a variety with proper maturity. From past weather data, farmers can determine the percent probability of the first fall frost. A general rule of thumb is to choose a variety that will mature (see maturity date definition) before the average date for 25% chance of the first killing frost in the fall. Farmers growing soybeans for the first time may wish to contact neighbors to determine what varieties mature before frost in their area. When large acreages of soybeans are planted, varieties of different maturities provide staggered maturity dates for a longer harvest season.

The degree of lodging varies among varieties. Lodged plants in variety trials are manually picked up and threshed, thus yield losses from lodging are not reflected in the yields reported. Lodging ratings should be used to evaluate potential losses. Farmers who have experienced lodging in the past and have had harvest problems may select a more lodging-resistant variety. Alternately, a variety susceptible to lodging may be planted at a slightly lower population to increase standability. Evaluate lodging data over all locations to determine a variety's lodging characteristics.

Note seed size when selecting planting rates. Planting rates should be based on number of seeds per foot of row and not on pounds per acre.

Many diseases occur in soybean fields in Michigan. The diseases which contribute most significantly to yield reduction are seed and seedling diseases and those causing root and stem rots. Root rots of soybeans are generally recognized when plants turn yellow prematurely, wilt, or die. Less noticeable is the yield reduction that occurs when root rot destroys part of the root system, but causes no visible symptoms to above-ground

parts. The fungi that cause root rots often survive in the soil for several years, even in the absence of a host plant. Once root rot fungi are established in a field, control is difficult, even with crop rotation.

The most important and widespread root disease is Phytophthora root rot. New varieties with resistance to several races of the fungus have been developed, but no variety is resistant to all races. Disease resistance characteristics of varieties to Phytophthora root rot, where known, are given in Table 2. Growers who have experience losses due to this disease should increase their chance of success by using one of the multi-race resistant varieties. It often benefits growers to select a few good varieties for planting each year. Yield determination and careful field evaluation during the growing season will add to the grower's knowledge of varietal performance and allow better selection.

More information about variety selection and cultural practices can be found in Extension Bulletin E-1549, "Soybean Production in Michigan," and E-2080, "Producing Soybeans in Narrow Rows."

Using the Data

Table 2 presents multiple-environment averages from all tests in the Southern and Central Michigan regions since 1975. The column labeled (n) refers to the number of tests in which each variety was included. The column labeled Dev. refers to the difference (in bushels per acre) between the mean yield of the variety and the mean yield of all varieties in those tests. The maturity checks used for tests of Group I and Group II varieties were "Hodgson 78 (H78)" and "Corsoy 79" (C79), respectively. A positive relative maturity value means that the variety matured later than the check and a negative value means that the variety matured earlier than the check. The value is the actual number of days in either direction.

Data presented in Tables 3 and 4 are from both regional and site-specific performance trials. Both 1990 yields and multiple-year average yields from all tests since 1975 are given. Maturity, height (in inches), and lodging scores are the 1990 regional averages. Maturity is expressed as + or - days when compared with the check variety. For 1990 yield data, starred (*) entries designate yields not significantly different from the highest for that location. Multiple-environment and multiple-year averages comprised of a greater number of tests (greater n) should be considered more reliable.

The presentation of data for the entries tested does not suggest approval or endorsement of varieties by the authors or by those responsible for conducting the performance trials.

The MSU Cooperative Extension Service approves the reproduction of the information in this publication only if no portion is deleted, if the data are not rearranged or otherwise manipulated, and if appropriate credit is given.

TABLE 1. 1990 Michigan State University Soybean Variety Test, site information.

County	Lenawee	Hillsdale	St. Joseph	Ingham	Saginaw	St. Clair
CES Dir.	A. Knisel	M. Williams	R. King	M. Preston	J. Thews	P. Seitz
Ag. Agent	G. Wuethrich	R. Green	L. Kelley	L. Rhodes	S. Poindexter	L. Thompson
Cooperator City	D. Woods Britton	K. Blonde Litchfield	R. Gentz Colon	MSU Campus E. Lansing	D. Boyse Birch Run	R. Greenia Richmond
Soil Type	Brookston clay loam	Matherton loam	Hillsdale sandy loam	Capac loam	Wixom loamy sand	Parkhill loam
Soil Mgt. Group	2.5c	3b	3a	2.5b	4/1b	2.5c
Previous Crop	Corn	Fallow	Corn	Corn	Corn	Wheat
Fertilizer	250# 0-0-60	140# 0-0-60 85# 18-46-0 1# Mn	None	200# 6-24-24	250# 19-19-19	150# 0-0-60
Planting Date	5/9/90	5/24/90	5/30/90	5/23/90	5/15/90	5/29/90
Harvest Date	10/15/90	10/23/90	10/24/90	10/19/90	10/26/90	10/27/90

TABLE 2. Performance Summary for varieties entered in the Michigan trials in 1990.

(Data are averaged over all years that the variety was tested. Phytophthora resistance designations denote the following: Type 1a resistant to Races 1, 2, and 10; Type 1b resistant to Races 1 and 3-9; Type 1c resistant to 1-3 and 6-10; Type 1k resistant to Races 1-10; Type 3 resistant to Races 1-5, 8, and 9; Type 6 resistant to Races 1-4 and 10.)

Brand/Entry	MG	Type	Yield (bu/A) with deviation from mean				Maturity relative to checks						Lodging Score S. Central	
			Southern		Central		Southern			Central				
			Yield (n)	Dev.	Yield (n)	Dev.	Date	H78	C79	Date	H78	C79		
Public														
ARCHER	I	1a	55.0 (4)	-3.2 *	54.2 (3)	-0.9	9-30	.	-2	10-06	.	-1	1.5	2.3
BSR 101	I	1a	48.8 (27)	0.7	47.3 (31)	1.1	9-21	5	-2	10-02	8	0	1.6	1.9
BSR 201	II	1b	49.1 (30)	0.6 L	47.4 (26)	0.2	9-27	11	4	10-05	12	3	2.5	2.8
BURLISON	II	1b,3	54.0 (15)	2.2	59.1 (12)	3.1	9-30	19	9	10-05	17	7	2.1	2.4
CENTURY 84	II	1k	47.4 (25)	-0.3	48.3 (25)	0.5	9-29	12	5	10-07	13	5	1.6	1.8
CONRAD	II	None	52.5 (20)	2.5 *	53.8 (18)	3.0 *	9-27	13	3	10-04	14	3	2.2	2.4
CORSOY 79	II	1c	44.4 (40)	-0.9	45.1 (48)	0.1 L	9-24	7	0	10-03	7	0	2.5	2.4
ELGIN 87	II	1k	53.0 (24)	2.8 *	50.7 (25)	2.7 *	9-24	11	2	10-03	11	2	2.4	2.6
E86339	II	None	54.4 (17)	4.3 *	58.0 (15)	4.7 *	9-25	11	2	10-01	12	2	1.9	2.2
HACK	II	1a	49.1 (26)	1.1	48.9 (26)	1.4	9-27	11	3	10-04	11	3	1.6	1.6
HARDIN	I	1a	45.5 (33)	-0.5	47.0 (40)	1.2	9-22	5	-2	9-30	5	-2	2.4	2.3
HODGSON 78	I	1a	41.9 (42)	-2.9 *L	43.3 (51)	-1.5 *	9-17	0	-7	9-25	0	-7	1.9	1.8
HOYT	II	1a	51.1 (23)	2.0	47.0 (22)	-0.4	9-27	12	4	10-04	11	3	1.6	1.5
KATO	I		48.0 (11)	-4.5 *	48.1 (11)	-4.3 *	9-15	3	-6	9-25	7	-5	1.9	2.3
KENWOOD	II	None	55.0 (15)	3.2 *	59.8 (14)	4.1 *	9-23	12	2	10-02	13	2	2.4	3.2
MIAMI	II	1c,3	41.4 (24)	-6.0 *	.	(.)	9-22	6	-1	.	.	.	1.8	.
PELLA 86	III	1a	51.4 (13)	0.7	56.1 (6)	2.9	10-03	16	8	10-09	18	9	1.7	2.0
PRESTON	II	None	50.4 (21)	1.5	.	(.)	9-29	14	6	.	.	.	2.0	.
RESNIK	III	1k	52.8 (12)	2.4	.	(.)	10-10	.	8	.	.	.	2.0	.
SHERMAN	III	None	55.5 (12)	3.4	54.2 (3)	-0.7	10-06	25	13	10-08	22	11	2.7	3.6
SIBLEY	I	1a	47.6 (24)	-1.1	45.7 (28)	-1.3	9-17	2	-6	9-26	2	-6	2.1	1.9
STURDY	II	1a	49.7 (20)	0.8	51.0 (22)	2.3 *	10-23	8	0	10-03	10	1	1.7	2.0
ZANE	III	None	50.1 (23)	2.3 *	51.0 (19)	1.5	10-01	15	7	10-08	14	5	2.1	2.3
Asgrow Seed Company														
A1929	I	1k	49.0 (8)	-3.5 *	51.0 (8)	-3.3 *	9-21	4	-7	9-30	6	-5	1.2	1.4
A2234	II	1k	51.9 (16)	1.2	53.1 (13)	2.7 *	9-22	7	-1	9-30	9	1	1.4	1.4
A2396	II	1a	61.8 (4)	3.7	.	(.)	10-03	.	0	.	.	.	1.5	.
A2543	II	1k	56.7 (8)	4.2 *	.	(.)	10-03	15	6	.	.	.	1.1	.
A2872	II	1c,3	61.5 (4)	3.4 *	.	(.)	10-08	.	5	.	.	.	1.5	.
Callahan Seeds														
1170X	I	1c	.	(.)	54.9 (8)	0.6	.	.	.	9-30	7	-4	.	1.2
1195X	I	1a,1c	.	(.)	54.7 (3)	-0.4 H	.	.	.	10-04	.	-3	.	1.8
1200X	II	1a	.	(.)	54.8 (3)	-0.4	.	.	.	10-05	.	-1	.	1.6
1233X	II	None	.	(.)	57.6 (3)	2.4	.	.	.	10-02	.	-4	.	2.6
1288X	II	None	59.7 (4)	1.5 *	55.8 (3)	0.6	10-04	.	2	10-09	.	2	1.6	1.9

(Cont'd)

* Statistically significant deviation (P<0.05).

H Variety exhibits higher than average response in a highly productive environment.

L Variety exhibits lower than average response in a highly productive environment.

TABLE 2. (Continued) Performance Summary.

Brand/Entry	MG	Type	Yield (bu/A) with deviation from mean						Maturity relative to checks						Lodging Score	
			Southern			Central			Southern			Central			S.	Central
			Yield (n)	Dev.	Yield (n)	Dev.	Date	H78	C79	Date	H78	C79				
Callahan Seeds (Cont'd)																
1290X	II	None	55.8 (8)	3.3	57.5 (6)	3.1	10-05	22	7	10-10	18	7	1.4	1.7		
1299X	II	1b,3	55.3 (4)	-2.8	.	(.)	10-07	.	4	.	.	.	1.6	.		
1330X	III	None	63.9 (4)	5.8 *	.	(.)	10-09	.	7	.	.	.	1.9	.		
6180	I	None	51.0 (6)	2.0	49.4 (26)	2.0 *	9-27	3	-6	9-27	3	-5	1.6	1.4		
7300	III	3	52.4 (8)	0.2	.	(.)	10-04	15	8	.	.	.	2.3	.		
8252	II	None	54.4 (16)	3.7 *	56.5 (16)	4.3 *	9-27	13	4	10-03	12	4	1.9	2.1		
9222X	II	None	55.2 (3)	2.7 *	50.9 (12)	0.7 H	10-01	9	0	10-02	9	1	1.8	1.8		
9270X	II	None	54.0 (12)	3.7 *	54.9 (12)	4.7 *	10-02	15	6	10-05	12	5	1.4	1.4		
9350	III	None	61.8 (4)	3.7	.	(.)	10-10	.	7	.	.	.	2.7	.		
Countrymark																
FFR 190	I	None	50.1 (3)	-2.4 *	47.8 (13)	-0.7 L	10-02	10	2	10-01	9	1	1.6	1.5		
FFR 218	II	1c	48.0 (8)	-4.5 *	49.2 (8)	-5.1 *	10-01	14	3	10-06	12	2	1.3	1.2		
FFR 253	II	1k	50.7 (8)	-1.8	54.3 (8)	0.0	10-02	14	4	10-07	12	3	1.9	2.1		
FFR 298	II	1c	55.3 (4)	-2.8	.	(.)	10-06	.	4	.	.	.	2.6	.		
Dairyland Seed Company																
DSR-170	I	None	.	(.)	54.9 (8)	0.6	.	.	.	9-29	6	-6	.	1.8		
DSR-196	I	None	53.8 (3)	1.3	50.4 (13)	2.0	9-29	9	-2	9-30	9	0	1.8	1.6		
DSR-206	II	None	53.4 (3)	0.9	48.9 (12)	-1.3	9-28	5	-2	9-28	5	-3	1.3	1.5		
DSR-208	II	None	.	(.)	51.2 (3)	-4.0	.	.	.	10-02	.	-4	.	1.3		
DSR-247	II	1c	52.9 (12)	0.9	53.8 (11)	2.4	9-24	11	1	9-29	11	1	2.0	2.2		
DSR-252	II	None	51.2 (16)	0.6	53.1 (16)	0.9	9-23	10	0	9-29	9	0	1.6	1.7		
DSR-262	II	None	56.3 (16)	5.6 *	57.0 (6)	3.8	9-29	16	7	10-07	16	6	2.4	2.6		
DSR-270	II	None	55.0 (16)	4.4 *	52.4 (9)	3.5 *	9-30	16	7	10-04	14	6	1.6	1.8		
DSR-290	II	None	53.9 (12)	3.5 *	55.4 (5)	2.3	10-02	16	7	10-09	16	6	1.7	2.4		
Dekalb Plant Genetics																
CX187	I	None	53.1 (4)	0.3	50.6 (18)	-0.6 H	9-22	4	-4	9-25	4	-4	1.2	1.3		
CX259	II	None	58.9 (4)	0.7	54.4 (3)	-0.8	10-04	.	2	10-08	.	1	2.1	2.5		
CX298	II	1k	51.9 (12)	1.5	51.0 (3)	-1.5	10-04	18	9	10-09	18	9	1.8	2.1		
Diehl Fields																
DF-101	I	None	49.7 (10)	1.2	49.1 (20)	1.1	9-19	4	-4	9-25	3	-5	1.5	1.4		
DF-231	II	None	.	(.)	59.5 (3)	4.3	.	.	.	10-09	.	3	.	1.7		
DF-241	II	None	.	(.)	52.7 (3)	-2.5	.	.	.	10-08	.	1	.	2.1		
DF-261	II	None	53.7 (8)	1.2	.	(.)	10-05	19	7	.	.	.	1.1	.		
Funk Seeds International																
G3185	I	None	.	(.)	55.0 (8)	0.6 L	.	.	.	10-01	7	-3	.	1.7		
G3258	II	None	56.4 (4)	-1.7	.	(.)	10-02	.	-1	.	.	.	1.9	.		
Golden Harvest																
H-1170	I	None	49.4 (16)	-1.3	51.0 (18)	-0.2	9-18	4	-5	9-25	4	-4	1.6	1.4		
H-1260	II	None	53.1 (8)	0.6	55.7 (8)	1.4	10-02	15	4	10-07	13	3	1.8	1.9		
H-1278	II	None	51.7 (12)	1.3	52.1 (12)	1.9	10-03	16	8	10-07	14	6	1.5	1.6		
H-1285	II	None	52.5 (21)	4.2 *	50.9 (23)	2.8 *	10-02	15	6	10-07	14	5	2.2	2.1		
H-1289	II	None	55.2 (8)	2.7	50.6 (8)	-3.7	10-08	22	10	10-11	17	7	2.1	2.3		
H-1303	II	None	56.9 (4)	-1.2	55.9 (3)	0.8	10-09	.	7	10-13	.	7	3.2	3.5		
Great Lakes Hybrids																
GL2291	II	None	58.7 (4)	0.6	61.0 (3)	5.8 L	10-07	.	4	10-12	.	6	2.8	3.2		
GL2616	II	None	52.4 (8)	-0.1 H	55.4 (8)	1.1	10-05	20	8	10-09	15	5	1.9	2.2		
GL2634	II	None	49.0 (32)	2.9 *	47.9 (23)	2.4 *	9-29	12	5	10-05	11	4	2.2	2.2		
Gries Seed Farm																
GSF-275	II	None	61.5 (4)	3.4 *	59.5 (3)	4.3	10-10	.	7	10-14	.	8	2.5	3.2		
GSF-318	III	1b	56.4 (4)	-1.8 L	55.3 (3)	0.2	10-09	.	7	10-13	.	6	2.4	2.9		
GSF-330	III	None	61.8 (4)	3.6	.	(.)	10-07	.	5	.	.	.	1.7	.		
Jacques Seed Company																
J-181	I	None	52.8 (3)	0.3	50.3 (13)	1.8	9-26	5	-5	9-26	3	-4	1.3	1.4		
J-245	II	None	.	(.)	56.0 (3)	0.8	.	.	.	10-04	.	-3	.	1.6		
J-285	II	None	58.9 (4)	0.7	.	(.)	10-06	.	4	.	.	.	1.6	.		
Kaiser/Estech																
KE 156	I	None	.	(.)	51.8 (18)	2.3	.	.	.	9-24	4	-4	.	1.4		
KE 266	II	None	.	(.)	49.7 (12)	-0.2 L	.	.	.	10-03	13	4	.	2.1		
KE 310	III	None	53.9 (15)	3.7 *	.	(.)	10-02	19	10	.	.	.	2.3	.		
KE 220	II	None	.	(.)	59.4 (3)	4.2 *	.	.	.	10-11	.	5	.	1.8		
King Grain																
GG2700	II	None	49.1 (5)	0.2	56.1 (8)	1.7	10-01	17	6	10-07	14	3	1.3	1.6		
GG2750	II	None	53.9 (8)	1.5	53.2 (6)	-1.2	10-06	21	8	10-09	16	6	2.1	2.3		
GG2800	II	None	52.0 (13)	3.1	51.9 (13)	1.5	9-27	15	7	10-04	13	5	2.2	2.0		
GG3200	III	None	60.6 (4)	2.5	.	(.)	10-10	.	8	.	.	.	2.2	.		
KG-120	III	None	61.3 (4)	3.2	.	(.)	10-10	.	7	.	.	.	3.0	.		
KG100	II	None	56.7 (3)	4.2	51.6 (12)	1.4	10-07	14	6	10-06	13	5	1.8	1.7		
KG81	I	1c	48.1 (5)	-1.4	47.3 (21)	-0.7	9-30	6	-2	9-29	7	-1	1.5	1.6		

* Statistically significant deviation (P<0.05).

H Variety exhibits higher than average response in a highly productive environment.

L Variety exhibits lower than average response in a highly productive environment.

TABLE 2. (Continued) Performance Summary.

Brand/Entry	MG Type	Yield (bu/A) with deviation from mean						Maturity relative to checks						Lodging Score S. Central			
		Southern			Central			Southern			Central						
		Yield (n)	Dev.		Yield (n)	Dev.		Date	H78	C79	Date	H78	C79				
Maumee Valley Seeds																	
COMMANDER	III None	52.6	(16)	2.0	54.2	(4)	1.4	10-07	24	14	10-10	23	14	2.5	2.5		
EAGLE	II None	51.7	(4)	-1.1	53.4	(16)	1.2	9-26	7	0	9-28	7	-1	2.2	2.0		
FORTRESS	III None	59.4	(4)	1.3	.	(.)	.	10-10	.	7	.	.	.	2.2	.		
MV-5097	I None	.	(.)	.	57.4	(3)	2.2	H	.	.	10-07	.	1	.	1.6		
MV-6091	II None	.	(.)	.	52.6	(3)	-2.6	.	.	.	10-05	.	-1	.	2.7		
MV-7095	III None	60.4	(4)	2.3	.	(.)	.	10-11	.	8	.	.	.	2.5	.		
MV-7097	III None	59.8	(4)	1.7	.	(.)	.	10-10	.	8	.	.	.	2.8	.		
SABRE	II None	53.8	(16)	3.1	56.3	(16)	4.2	*H	9-26	12	4	10-02	12	3	1.7	2.1	
SAVAGE	III None	53.5	(12)	3.1	55.1	(8)	0.6	10-05	18	9	10-10	16	7	1.7	2.1		
WARRIOR	II None	49.5	(23)	1.7	49.4	(18)	-1.6	10-01	14	7	10-07	15	6	2.3	2.4		
Northrup King																	
S19-90	I 1c	.	(.)	.	58.2	(8)	3.9	*	.	.	10-04	9	-1	.	1.1		
S20-26	II 1c	.	(.)	.	57.1	(8)	2.8	*	.	.	10-05	11	1	.	2.0		
S25-15	II None	56.5	(4)	-1.6	.	(.)	.	10-01	.	-2	.	.	.	1.7	.		
S28-18	II None	55.2	(4)	-2.9	*	(.)	.	10-07	.	5	.	.	.	1.9	.		
S29-39	II 1c	60.7	(4)	2.6	.	(.)	.	10-10	.	8	.	.	.	2.2	.		
X9020	II 1c	.	(.)	.	55.3	(3)	0.2	.	.	.	10-03	.	-3	.	1.9		
Pioneer Hi-Bred International																	
9161	I None	55.8	(3)	3.3	50.4	(13)	1.9	9-26	4	-4	9-26	4	-4	1.4	1.5		
9171	I None	.	(.)	.	52.5	(3)	-2.6	.	.	.	9-27	.	-9	.	1.1		
9272	II None	49.6	(12)	-0.8	51.2	(12)	1.0	9-23	8	-2	9-30	9	-1	1.3	1.4		
9273	II None	62.0	(4)	3.9	*	59.8	(3)	4.6	*	10-04	.	1	10-07	.	1.5	2.2	
9293	II None	52.6	(12)	2.3	52.5	(12)	2.4	10-02	16	7	10-06	14	5	1.8	2.0		
9301	III None	52.3	(12)	1.9	51.2	(3)	-1.3	10-03	16	7	10-07	17	7	2.3	2.7		
9303	III None	58.9	(4)	0.8	58.4	(3)	3.2	10-08	.	5	10-12	.	6	1.8	2.1		
9341	III None	57.7	(4)	-0.5	.	(.)	.	10-09	.	6	.	.	.	1.8	.		
9361	III None	53.1	(5)	-4.2	51.4	(7)	-4.4	*	10-09	19	7	10-12	19	7	2.7	2.6	
Pro-Seed (Prosoy)																	
PS215	II 1c	53.3	(12)	3.0	*	54.1	(12)	3.9	*	9-28	9	2	10-04	11	3	1.5	1.7
PS321	III 1c	62.1	(4)	4.0	.	(.)	.	10-11	.	8	.	.	.	2.5	.		
Rupp Seeds																	
RS2323	II 1c	48.4	(9)	0.7	50.0	(12)	-0.2	9-26	11	3	10-02	11	2	1.4	1.5		
RS2383	II 1k	.	(.)	.	54.5	(3)	-0.7	.	.	.	10-10	.	3	.	2.0		
RS2440	II None	60.6	(4)	2.5	.	(.)	.	10-05	.	3	.	.	.	2.1	.		
RS2444	II 1k	.	(.)	.	53.7	(3)	-1.5	.	.	.	10-07	.	0	.	1.5		
RS2490	II None	53.3	(4)	-4.8	53.0	(3)	-2.2	10-08	.	6	10-11	.	5	1.8	2.1		
RS3237B	III None	59.7	(4)	1.5	L	(.)	.	10-07	.	5	.	.	.	2.1	.		
Super Crost Diamond																	
D210	II None	56.1	(4)	-2.0	.	(.)	.	10-03	.	1	.	.	.	1.8	.		
SC291	II None	61.4	(4)	3.3	.	(.)	.	10-07	.	5	.	.	.	2.4	.		
Seedex																	
240	II None	.	(.)	.	54.3	(8)	0.0	.	.	.	10-09	14	5	.	1.7		
260	II None	56.5	(6)	1.1	L	51.5	(10)	2.1	10-08	14	7	10-05	13	6	2.3	1.9	
305	III None	65.8	(4)	7.7	*	(.)	.	10-11	.	8	.	.	.	2.5	.		
311	III None	59.7	(4)	1.6	.	(.)	.	10-10	.	8	.	.	.	2.4	.		
Stine Seed Farm																	
2170	II None	60.4	(4)	2.3	.	(.)	.	10-06	.	4	.	.	.	1.4	.		
2180	II None	65.3	(4)	7.2	*	(.)	.	10-11	.	9	.	.	.	3.1	.		
2770	II None	57.0	(9)	2.3	L	54.3	(7)	0.0	9-27	14	3	10-02	13	2	2.2	1.8	
2840	II None	56.0	(5)	-1.3	55.5	(6)	1.1	10-03	14	1	10-05	12	2	1.6	1.9		
2960	II None	.	(.)	.	48.8	(7)	1.2	.	.	.	10-03	11	4	.	1.5		
2980	II None	50.3	(5)	1.4	52.9	(4)	-2.0	10-08	23	13	10-13	19	8	1.9	2.8		
3000	III None	.	(.)	.	58.5	(3)	3.3	.	.	.	10-13	.	6	.	2.4		
3220	III None	.	(.)	.	58.6	(3)	3.4	.	.	.	10-11	.	5	.	1.7		
Saginaw Valley Seeds																	
SVS 183	I 1a	.	(.)	.	53.5	(3)	-1.7	.	.	.	9-29	.	-7	.	2.0		
SVS 273	II 1a	.	(.)	.	56.0	(3)	0.8	.	.	.	10-09	.	3	.	1.1		
Terra International																	
EXP 275	II None	54.3	(16)	3.7	*	53.1	(16)	0.9	10-02	19	10	10-06	16	7	2.1	2.4	
FLAG	I None	.	(.)	.	55.5	(8)	1.2	L	.	.	9-28	4	-7	.	1.5		
HURDLE	II 1a	49.2	(8)	-0.7	48.3	(20)	-0.8	9-26	10	1	10-02	10	1	1.7	1.6		
MEDALIST	II None	52.3	(12)	1.9	53.0	(12)	2.9	*	9-29	12	3	10-04	12	3	1.8	1.9	
RUNNER III	I None	56.1	(3)	3.6	49.5	(13)	1.1	9-25	4	-5	9-26	4	-4	1.2	1.4		
SPRINT	II None	52.1	(19)	3.1	*	52.7	(17)	1.5	9-30	16	7	10-05	14	5	2.0	2.2	
WINNER	II None	54.2	(8)	1.7	55.9	(8)	1.6	9-30	14	2	10-07	13	2	1.6	1.9		

* Statistically significant deviation (P<0.05).

H Variety exhibits higher than average response in a highly productive environment.

L Variety exhibits lower than average response in a highly productive environment.

TABLE 3. Southern Michigan.

Brand	Entry	Yield (bu/A)												Maturity (days)	Lodging Height (in)	Ingr Score
		Entire Southern Region		Southeast (Lenawee Co.)		S. Central (Hillsdale)		Southwest (St Joseph Co.)		South Central (Ingham Co.)						
		1990	Avg. (n)	1990	Avg. (n)	1990	(n)	1990	Avg. (n)	1990	Avg. (n)					
Public	ARCHER	55.0	54.9 (4)	59.2	59.2 (1)	51.5	(1)	52.7	52.7 (1)	56.4	56.4 (1)	-2	35	1.5		
Public	BSR 101	55.6	48.8 (27)	65.3*	53.1 (8)	52.5	(1)	53.0	45.3 (6)	51.5	49.6 (6)	-2	35	1.9		
Public	BSR 201	52.5	49.1 (30)	57.6	51.9 (10)	49.2	(1)	50.8	45.6 (6)	52.3	50.9 (6)	3	35	3.2		
Public	BURLISON	56.4	54.0 (15)	58.7	56.7 (6)	50.1	(1)	56.9	47.5 (3)	59.9*	57.6 (3)	6	37	2.4		
Public	CENTURY 84	55.3	47.4 (25)	63.5	53.2 (6)	54.2	(1)	52.5	43.3 (6)	50.9	48.1 (6)	6	39	1.9		
Public	CONRAD	56.5	52.5 (20)	59.7	57.2 (8)	55.6	(1)	58.5*	48.5 (4)	52.0	52.0 (4)	-2	32	1.4		
Public	CORSOY 79†	54.1	44.4 (40)	61.2	50.9 (10)	49.7	(1)	49.0	35.0 (10)	56.6	46.8 (8)	0	38	2.2		
Public	ELGIN 87	57.3	53.0 (24)	69.8*	56.4 (10)	58.7*(1)		52.3	48.9 (5)	48.2	47.8 (5)	-3	32	2.3		
Public	E86339	58.9	54.4 (17)	57.5	51.2 (5)	55.6	(1)	59.9*	50.3 (4)	62.4*	60.8 (4)	-1	31	1.5		
Public	HACK	52.4	49.1 (26)	58.0	52.5 (7)	55.9	(1)	50.4	45.8 (6)	45.4	49.3 (6)	3	35	1.8		
Public	HARDIN	56.7	45.5 (33)	62.4	52.3 (9)	55.1	(1)	54.4	38.9 (8)	54.9	46.9 (7)	-1	38	2.4		
Public	HODGSON 78	50.7	41.9 (42)	55.7	46.5 (11)	49.6	(2)	49.9	34.6 (11)	47.7	43.9 (9)	-9	37	2.0		
Public	HOYT	57.2	51.1 (23)	61.9	53.8 (7)	51.1	(1)	56.4	49.6 (5)	59.5*	46.9 (5)	3	24	1.6		
Public	KATO	49.4	48.0 (11)	53.9	47.1 (5)	51.5	(1)	49.2	45.2 (2)	42.9	41.3 (2)	-8	34	1.4		
Public	KENWOOD	55.7	55.0 (15)	65.2*	57.5 (6)	50.1	(1)	56.8	49.1 (3)	50.6	59.3 (3)	-2	36	2.2		
Public	MIAMI	49.3	41.4 (24)	53.3	45.8 (6)	45.6	(1)	48.9	36.5 (6)	.	(.)	-1	34	1.4		
Public	PELLA 86	57.4	51.4 (13)	61.4	53.8 (3)	53.3	(1)	56.1	46.3 (3)	58.7*	57.0 (4)	6	36	1.8		
Public	PRESTON	54.7	50.4 (21)	54.9	51.6 (6)	55.9	(1)	53.3	47.6 (5)	.	(.)	3	37	2.0		
Public	RESNIK	61.4	52.7 (12)	72.4*	58.8 (3)	58.7*(1)		56.9	50.3 (3)	57.6	52.4 (3)	8	36	2.0		
Public	SHERMAN	56.0	55.5 (12)	61.9	60.7 (3)	57.8*(1)		49.4	53.0 (3)	54.9	54.2 (3)	7	33	2.8		
Public	SIBLEY	53.2	47.6 (24)	59.0	50.5 (8)	50.2	(1)	49.4	39.3 (5)	54.2	50.0 (5)	-8	34	2.2		
Public	STURDY	58.8	49.6 (20)	65.2*	52.7 (9)	52.5	(1)	56.3	46.7 (4)	61.1*	52.0 (4)	1	35	1.7		
Public	ZANE	61.8*	50.1 (23)	64.3	54.7 (6)	58.5*(1)		61.9*	47.6 (6)	62.6*	48.7 (6)	5	39	2.4		
Asgrow	A1929	52.5	49.0 (8)	58.0	58.9 (2)	51.1	(1)	47.3	40.8 (2)	53.7	55.0 (2)	-8	33	1.3		
Asgrow	A2234	59.1	51.8 (16)	59.3	54.5 (4)	58.0*(1)		55.6	46.9 (4)	63.5*	56.6 (4)	-1	33	1.7		
Asgrow	A2396	61.8*	61.8 (4)	67.7*	67.7 (1)	53.9	(1)	61.4*	61.4 (1)	64.3*	64.3 (1)	0	33	1.5		
Asgrow	A2543	61.2	56.7 (8)	71.5*	68.7 (2)	56.9	(1)	58.7*	51.6 (2)	57.5	60.7 (2)	6	30	1.2		
Asgrow	A2872	61.5*	61.5 (4)	66.9*	66.9 (1)	59.7*(1)		59.0*	59.0 (1)	60.5*	60.5 (1)	5	36	1.5		
Callahan	1288X	59.7	59.6 (4)	64.8*	64.8 (1)	56.8	(1)	57.3	57.3 (1)	59.7*	59.7 (1)	2	31	1.6		
Callahan	1290X	60.3	55.8 (8)	68.3*	61.9 (2)	59.3*(1)		57.8	54.8 (2)	55.9	58.6 (2)	2	35	1.6		
Callahan	1299X	55.3	55.3 (4)	60.0	60.0 (1)	49.7	(1)	54.9	54.9 (1)	56.6	56.6 (1)	4	37	1.6		
Callahan	1330X	63.9*	63.9 (4)	68.4*	68.4 (1)	64.1*(1)		61.9*	61.9 (1)	61.2*	61.2 (1)	7	37	1.9		
Callahan	7300	58.3	52.3 (8)	60.0	48.3 (2)	57.6*(1)		56.9	52.0 (2)	58.8*	55.3 (2)	6	37	2.5		
Callahan	8252	58.2	54.4 (16)	64.1	56.3 (4)	53.3	(1)	55.4	49.7 (4)	60.0*	59.4 (4)	1	35	1.9		
Callahan	9270X	60.9	54.0 (12)	69.5*	60.5 (3)	56.8	(1)	56.9	50.6 (3)	60.2*	57.2 (3)	4	32	1.5		
Callahan	9350	61.8*	61.8 (4)	63.1	63.1 (1)	59.0*(1)		62.9*	62.9 (1)	62.1*	62.1 (1)	7	37	2.7		
Countrymark	FFR 218	52.1	48.0 (8)	57.3	58.9 (2)	50.4	(1)	53.5	43.9 (2)	47.3	48.0 (2)	1	33	1.6		
Countrymark	FFR 253	58.0	50.7 (8)	60.2	60.4 (2)	58.0*(1)		58.5*	45.7 (2)	55.2	52.3 (2)	4	38	2.3		
Countrymark	FFR 298	55.3	55.3 (4)	63.1	63.1 (1)	50.6	(1)	50.1	50.1 (1)	57.5	57.5 (1)	4	40	2.6		
DeKalb P. G.	CX259	58.9	58.8 (4)	67.2*	67.2 (1)	56.8	(1)	56.3	56.3 (1)	55.1	55.1 (1)	2	34	2.1		
DeKalb P. G.	CX298	60.6	51.8 (12)	67.7*	58.5 (3)	56.1	(1)	59.0*	50.3 (3)	59.7*	51.0 (3)	6	35	2.0		
Diehl Fields	DF-261	57.4	53.7 (8)	61.4	60.0 (2)	54.2	(1)	61.6*	55.5 (2)	52.3	54.9 (2)	4	34	1.1		
Dairyland	DSR-247	55.0	52.9 (12)	60.2	51.1 (3)	52.1	(1)	54.2	52.4 (3)	53.5	54.7 (3)	-4	35	2.1		
Dairyland	DSR-252	55.1	51.2 (16)	57.5	53.1 (4)	56.6	(1)	54.2	46.8 (4)	52.1	53.1 (4)	-5	32	1.5		
Dairyland	DSR-262	59.9	56.3 (16)	65.2*	58.5 (4)	55.9	(1)	58.8*	52.8 (4)	59.7*	58.0 (4)	3	36	2.4		
Dairyland	DSR-270	59.2	55.0 (16)	64.8*	58.1 (4)	56.6	(1)	58.3	50.5 (4)	56.9	57.4 (4)	5	31	1.6		
Dairyland	DSR-290	59.3	53.9 (12)	62.3	57.6 (3)	53.2	(1)	59.3*	53.9 (3)	62.3*	56.4 (3)	4	33	2.2		
Funk	G3258	56.4	56.4 (4)	58.5	58.5 (1)	56.4	(1)	56.3	56.3 (1)	54.5	54.5 (1)	-1	35	1.9		
G. Harvest	H-1170	57.0	49.4 (16)	66.0*	52.9 (4)	53.9	(1)	56.3	45.1 (4)	51.8	53.2 (4)	-5	36	1.7		
G. Harvest	H-1260	57.5	53.1 (8)	60.2	59.2 (2)	54.5	(1)	54.0	48.0 (2)	61.2*	60.7 (2)	2	36	2.2		
G. Harvest	H-1278	59.4	51.7 (12)	59.3	50.8 (3)	61.1*(1)		55.2	49.1 (3)	62.1*	55.9 (3)	7	32	1.8		
G. Harvest	H-1285	58.8	52.5 (21)	63.3	55.8 (5)	57.8*(1)		55.7	49.9 (5)	58.3*	51.0 (6)	3	36	2.0		
G. Harvest	H-1289	62.8*	55.2 (8)	69.3*	67.7 (2)	58.0*(1)		58.8*	52.5 (2)	65.2*	56.3 (2)	7	40	3.0		
G. Harvest	H-1303	56.9	56.9 (4)	61.6	61.6 (1)	57.1	(1)	58.7*	58.7 (1)	50.2	50.2 (1)	7	40	3.2		
GLH	GL2291	58.7	58.7 (4)	63.8	63.8 (1)	53.3	(1)	56.4	56.4 (1)	61.2*	61.2 (1)	4	39	2.8		
GLH	GL2616	59.8	52.4 (8)	66.2*	64.3 (2)	58.0*(1)		58.8*	46.9 (2)	56.3	53.9 (2)	5	37	2.5		
GLH	GL2634	55.5	49.0 (32)	56.9	54.6 (8)	56.8	(1)	52.0	42.2 (8)	56.4	50.8 (7)	3	36	2.0		
Gries	GSF275	61.5*	61.5 (4)	66.5*	66.5 (1)	58.7*(1)		60.7*	60.7 (1)	60.0*	60.0 (1)	7	37	2.5		
Gries	GSF318	56.4	56.4 (4)	57.8	57.8 (1)	56.3	(1)	55.7	55.7 (1)	55.7	55.7 (1)	7	39	2.4		
Gries	GSF330	61.8*	61.7 (4)	70.3*	70.3 (1)	57.8*(1)		56.3	56.3 (1)	62.6*	62.6 (1)	5	36	1.7		
Jacques	J-285	58.9	58.8 (4)	62.9	62.9 (1)	53.7	(1)	58.3	58.3 (1)	60.5*	60.5 (1)	4	32	1.6		
Kaiser/Estech	KE 310	61.9*	53.9 (15)	64.0	55.4 (4)	61.6*(1)		60.2*	54.3 (4)	49.7	49.7 (1)	8	41	2.6		
King Grain	GG2750	59.6	53.9 (8)	67.6*	66.2 (2)	52.3	(1)	55.9	52.0 (2)	62.6*	55.5 (2)	4	37	2.6		
King Grain	GG3200	60.6	60.6 (4)	66.5*	66.5 (1)	61.7*(1)		58.0	58.0 (1)	56.3	56.3 (1)	8	36	2.2		
King Grain	KG-120	61.3	61.3 (4)	66.7*	66.7 (1)	59.9*(1)		62.9*	62.9 (1)	55.6	55.6 (1)	7	41	3.0		

(Cont'd)

Test mean	58.0	63.2	55.7	56.4	57.3	+5	36	2.0
LSD(.05)	4.4	9.0	6.8	6.4	11.7	2	2	0.6

† Check variety used to calculate deviation from standard maturity (10/3/90).

* Not significantly different from the highest yield with that column.

TABLE 3. (Continued) Southern Michigan.

Brand	Entry	Yield (bu/A)												Matur- ity (days)	Height (in)	Lodg- ing Score	
		Entire		Southeast		S. Central		Southwest		South Central		Matur- ity (days)	Height (in)				Lodg- ing Score
		Southern Region	Avg. (n)	(Lenawee Co.)	Avg. (n)	(Hillsdale)	Avg. (n)	(St Joseph Co.)	Avg. (n)	(Ingham Co.)	Avg. (n)						
Maumee Valley	COMMANDER	59.4	52.6 (16)	64.3	56.9 (4)	56.4 (1)	54.4	51.1 (4)	62.4*	54.1 (4)	8	41	3.1				
Maumee Valley	FORTRESS	59.4	59.4 (4)	65.5*	65.5 (1)	55.2 (1)	59.3*	59.3 (1)	57.5	57.5 (1)	7	39	2.2				
Maumee Valley	MV-7095	60.4	60.4 (4)	64.7*	64.7 (1)	59.7*(1)	61.4*	61.4 (1)	55.9	55.9 (1)	8	38	2.5				
Maumee Valley	MV-7097	59.8	59.8 (4)	69.8*	69.8 (1)	57.8*(1)	62.3*	62.3 (1)	49.2	49.2 (1)	8	39	2.8				
Maumee Valley	SABRE	56.1	53.8 (16)	60.0	54.4 (4)	52.0 (1)	53.7	51.6 (4)	58.5*	57.3 (4)	1	34	1.9				
Maumee Valley	SAVAGE	58.3	53.5 (12)	62.3	58.2 (3)	55.9 (1)	59.7*	53.8 (3)	55.2	51.8 (3)	7	32	1.8				
Maumee Valley	WARRIOR	58.6	49.5 (23)	66.0*	55.8 (6)	54.7 (1)	57.6	45.5 (6)	56.1	49.0 (6)	6	39	2.6				
Northrup King	S25-15	56.5	56.5 (4)	64.0	64.0 (1)	58.3*(1)	50.8	50.8 (1)	53.0	53.0 (1)	-2	34	1.7				
Northrup King	S28-18	55.2	55.2 (4)	61.4	61.4 (1)	52.5 (1)	52.3	52.3 (1)	54.7	54.7 (1)	5	36	1.9				
Northrup King	S29-39	60.7	60.7 (4)	65.5*	65.5 (1)	59.3*(1)	61.7*	61.7 (1)	56.3	56.3 (1)	8	34	2.2				
Pioneer	9272	57.0	49.5 (12)	62.1	51.0 (3)	50.6 (1)	53.2	47.6 (3)	62.1*	53.8 (3)	-9	30	1.3				
Pioneer	9273	62.0*	62.0 (4)	66.2*	66.2 (1)	61.9*(1)	59.0*	59.0 (1)	60.9*	60.9 (1)	1	31	1.5				
Pioneer	9293	57.8	52.6 (12)	64.0	56.6 (3)	59.0*(1)	56.1	50.1 (3)	52.0	52.3 (3)	3	31	1.9				
Pioneer	9301	59.7	52.3 (12)	68.6*	57.9 (3)	59.2*(1)	51.8	49.4 (3)	59.3*	51.2 (3)	4	40	2.2				
Pioneer	9303	58.9	58.9 (4)	64.8*	64.8 (1)	57.6*(1)	58.7*	58.7 (1)	54.5	54.5 (1)	5	32	1.8				
Pioneer	9341	57.7	57.7 (4)	65.7*	65.7 (1)	56.1 (1)	55.2	55.2 (1)	53.7	53.7 (1)	6	36	1.8				
Pioneer	9361	55.8	53.1 (5)	61.6	61.6 (1)	56.6 (1)	53.0	53.0 (1)	52.0	47.2 (2)	7	40	2.7				
Pro-Seed	PS215	62.0*	53.3 (12)	67.1*	56.5 (3)	58.1*(1)	59.0*	50.6 (3)	63.8*	58.5 (3)	3	36	1.5				
Pro-Seed	PS321	62.1*	62.1 (4)	67.4*	67.4 (1)	60.4*(1)	62.9*	62.9 (1)	57.6	57.6 (1)	8	37	2.5				
Rupp	RS2440	60.6	60.6 (4)	63.5	63.5 (1)	57.8*(1)	62.4*	62.4 (1)	58.8*	58.8 (1)	3	36	2.1				
Rupp	RS2490	53.3	53.3 (4)	60.4	60.4 (1)	53.5 (1)	54.2	54.2 (1)	45.1	45.1 (1)	6	37	1.8				
Rupp	RS3237B	59.7	59.6 (4)	62.3	62.3 (1)	58.8*(1)	59.0*	59.0 (1)	58.5*	58.5 (1)	5	34	2.1				
S. Crost Dia.	D210	56.1	56.1 (4)	56.4	56.4 (1)	55.6 (1)	53.2	53.2 (1)	59.3*	59.3 (1)	1	35	1.8				
S. Crost Dia.	SC291	61.4	61.4 (4)	64.3	64.3 (1)	53.2 (1)	59.9*	59.9 (1)	68.3*	68.3 (1)	5	36	2.4				
Seedex	260	56.7	56.5 (6)	60.7	60.7 (1)	55.6 (1)	52.3	52.3 (1)	58.0*	56.9 (3)	8	39	2.5				
Seedex	305	65.8*	65.8 (4)	73.4*	73.4 (1)	62.3*(1)	64.8*	64.8 (1)	62.6*	62.6 (1)	8	38	2.5				
Seedex	311	59.7	59.7 (4)	63.6	63.6 (1)	56.8 (1)	61.7*	61.7 (1)	56.6	56.6 (1)	8	40	2.4				
Stine	2170	60.4	60.4 (4)	72.4*	72.4 (1)	53.0 (1)	54.0	54.0 (1)	62.1*	62.1 (1)	4	34	1.4				
Stine	2180	65.3*	65.3 (4)	70.3*	70.3 (1)	64.1*(1)	60.9*	60.9 (1)	65.9*	65.9 (1)	9	41	3.1				
Stine	2770	54.9	57.0 (9)	52.7	55.7 (2)	57.1 (1)	55.4	57.1 (2)	54.5	54.4 (3)	1	35	2.2				
Stine	2840	56.7	56.0 (5)	56.6	56.6 (1)	57.8*(1)	56.4	56.4 (1)	56.1	54.6 (2)	0	34	1.6				
Terra	EXP 275	58.1	54.3 (16)	64.5*	59.0 (4)	55.6 (1)	56.6	52.7 (4)	55.7	53.3 (4)	7	38	2.1				
Terra	MEDALIST	58.1	52.3 (12)	65.5*	55.7 (3)	53.7 (1)	58.0	49.8 (3)	55.2	55.7 (3)	1	37	2.2				
Terra	SPRINT	57.8	52.1 (19)	60.5	55.6 (5)	54.7 (1)	53.3	46.9 (5)	62.8*	54.5 (5)	3	36	1.5				
Terra	WINNER	58.8	54.2 (8)	60.7	61.2 (2)	55.6 (1)	56.8	51.1 (2)	61.9*	58.3 (2)	0	35	1.7				
Test mean		58.0		63.2		55.7	56.4		57.3		+5	36	2.0				
Minimum		49.3		52.7		45.6	47.3		42.9		-9	24	1.1				
Maximum		65.8		73.4		64.2	64.8		68.3		+9	41	3.2				
CV		5.5%		8.8%		7.6%	7.0%		10.4%		5%	5%	22%				
LSD(.05)		4.4		9.0		6.8	6.4		11.7		2	2	0.6				

† Check variety used to calculate deviation from standard maturity (10/3/90).

* Not significantly different from the highest yield with that column.

TABLE 4. Central Michigan.

Brand	Entry	Yield (bu/A)										
		Entire Central Region		South Central (Ingham Co.)		Central (Saginaw Co.)		East Central (St. Clair Co.)		Maturity (days)	Height (In)	Lodging Score
		1990	Avg. (n)	1990	Avg. (n)	1990	Avg. (n)	1990	Avg. (n)			
Public	ARCHER	54.2	54.2 (3)	56.4	56.4 (1)	49.0	49.0 (1)	57.3	57.3 (1)	-1	37	2.3
Public	BSR 101	51.2	47.3 (31)	51.5	49.6 (6)	47.5	50.5 (9)	54.7	55.8 (4)	0	35	2.2
Public	CENTURY 84	50.6	48.3 (25)	50.9	48.1 (6)	48.7	49.5 (9)	52.1	57.2 (4)	6	38	2.0
Public	CONRAD	54.4	53.8 (18)	52.0	52.0 (4)	56.4*	49.1 (7)	54.7	67.0 (3)	-2	33	2.3
Public	CORSOY 79†	55.0*	45.1 (48)	56.6	46.8 (8)	49.0	44.8 (12)	59.3	47.3 (6)	0	39	2.6
Public	ELGIN 87	50.4	50.7 (25)	48.2	47.8 (5)	54.0*	52.0 (9)	49.0	60.3 (4)	-1	33	2.8
Public	E86339	58.1*	58.0 (15)	62.4*	60.8 (4)	55.4*	56.9 (4)	56.6	64.0 (3)	-1	33	2.0
Public	HACK	51.8	48.9 (26)	45.4	49.3 (6)	53.0*	50.2 (9)	56.9	59.7 (4)	2	35	1.9
Public	HARDIN	54.0	47.0 (40)	54.9	46.9 (7)	51.6	49.3 (10)	55.4	52.0 (5)	-2	39	2.7
Public	HODGSON 78	48.0	43.3 (51)	47.7	43.9 (9)	42.9	41.5 (13)	53.3	44.6 (7)	-8	36	2.3
Public	KATO	48.3	48.1 (11)	42.9	41.3 (2)	47.2	45.5 (6)	54.9	59.4 (2)	-8	35	1.9
Public	KENWOOD	52.5	59.7 (14)	50.6	59.3 (3)	49.7	57.3 (5)	57.1	63.7 (3)	0	37	3.0
Public	PELLA 86	55.6*	56.1 (6)	58.7	57.0 (4)	49.7	49.7 (1)	58.5	58.5 (1)	7	37	2.1
Public	SIBLEY	52.2	45.7 (28)	54.2	50.0 (5)	47.3	46.1 (9)	55.1	53.2 (4)	-6	35	2.0
Public	STURDY	56.4*	51.0 (22)	61.1*	52.0 (4)	49.9	52.6 (10)	58.1	56.8 (3)	1	35	2.1
Public	ZANE	57.5*	51.0 (19)	62.6*	48.7 (6)	51.5	49.7 (6)	58.3	59.1 (4)	4	39	2.5
Asgrow	A1929	50.1	51.0 (8)	53.7	55.0 (2)	48.0	47.9 (2)	48.7	56.0 (2)	-7	34	1.7
Asgrow	A2234	59.4*	53.1 (13)	63.5*	56.6 (4)	51.3	57.5 (3)	63.5*	63.3 (2)	0	32	1.5
Callahan	1170X	53.9	54.9 (8)	56.8	58.6 (2)	46.1	49.9 (2)	58.7	59.8 (2)	-6	31	1.6
Callahan	1195X	54.7	54.7 (3)	58.0	58.0 (1)	48.2	48.2 (1)	58.0	58.0 (1)	-3	33	1.8
Callahan	1200X	54.8*	54.8 (3)	59.7	59.7 (1)	46.6	46.6 (1)	58.1	58.1 (1)	-1	32	1.6
Callahan	1233X	57.6*	57.6 (3)	63.8*	63.8 (1)	52.1*	52.1 (1)	56.8	56.8 (1)	-4	36	2.6
Callahan	1288X	55.8*	55.8 (3)	59.7	59.7 (1)	51.6	51.6 (1)	56.1	56.1 (1)	2	33	1.9
Callahan	6180	56.0*	49.4 (26)	58.0	51.0 (6)	48.2	56.2 (7)	61.7	61.9 (4)	-3	33	1.8
Callahan	8252	56.1*	56.5 (16)	60.0	59.4 (4)	55.4*	60.7 (5)	53.0	65.2 (3)	1	35	2.8
Callahan	9222X	55.9*	50.9 (12)	60.5*	55.2 (3)	51.3	54.0 (3)	55.9	62.1 (2)	1	34	1.8
Callahan	9270X	57.9*	54.9 (12)	60.2	57.2 (3)	54.9*	58.9 (3)	58.5	65.5 (2)	5	34	2.0
Country Mark	FFR 190	53.7	47.8 (13)	54.5	50.1 (3)	49.6	53.0 (3)	56.9	59.1 (2)	0	40	1.7
Country Mark	FFR 218	49.5	49.2 (8)	47.3	48.0 (2)	48.5	44.7 (2)	52.8	57.6 (2)	1	34	1.6
Country Mark	FFR 253	55.3*	54.3 (8)	55.2	52.3 (2)	50.6	48.9 (2)	60.0	64.0 (2)	4	39	2.7
Dekalb	CX187	55.3*	50.5 (18)	55.7	53.1 (4)	51.5	58.1 (5)	58.7	66.4 (3)	-3	36	1.9
Dekalb	CX259	54.4	54.4 (3)	55.1	55.1 (1)	52.7*	52.7 (1)	55.4	55.4 (1)	1	36	2.5
Diehl Fields	DF-101	55.0*	49.6 (22)	55.9	50.9 (5)	49.0	49.0 (1)	60.0	60.0 (1)	3	38	1.7
Diehl Fields	DF-231	59.5*	59.5 (3)	61.9*	61.9 (1)	58.3*	58.3 (1)	58.3	58.3 (1)	1	35	2.1
Diehl Fields	DF-241	52.7	52.7 (3)	59.2	59.2 (1)	43.9	43.9 (1)	54.9	54.9 (1)	-5	33	2.0
Dairyland	DSR-170	54.2	54.9 (8)	61.1*	60.4 (2)	42.9	49.8 (2)	58.5	58.6 (2)	-8	37	2.2
Dairyland	DSR-196	53.5	50.4 (13)	57.1	53.8 (3)	49.4	55.1 (3)	53.9	59.3 (2)	-3	32	2.2
Dairyland	DSR-206	52.0	48.9 (12)	53.9	53.4 (3)	48.5	50.9 (3)	53.5	55.8 (2)	-5	33	2.0
Dairyland	DSR-208	51.2	51.2 (3)	48.7	48.7 (1)	48.7	48.7 (1)	56.1	56.1 (1)	-4	33	1.3
Dairyland	DSR-247	53.5	53.8 (11)	53.5	54.7 (3)	49.4	59.4 (4)	57.5	65.9 (2)	-4	35	2.2
Dairyland	DSR-252	52.5	53.1 (16)	52.1	53.1 (4)	48.4	57.4 (5)	57.1	65.3 (3)	-4	32	1.9
Dairyland	DSR-262	56.6*	57.0 (6)	59.7	58.0 (4)	56.3*	56.3 (1)	53.9	53.9 (1)	4	38	2.6
Dairyland	DSR-270	56.8*	52.4 (9)	56.9	57.4 (4)	53.0*	58.9 (2)	60.4	60.4 (1)	4	32	2.1
Dairyland	DSR-290	56.7*	55.4 (5)	62.3*	56.4 (3)	55.1*	55.1 (1)	52.8	52.8 (1)	5	35	2.8
Funk	G3185	52.9	55.0 (8)	52.8	53.2 (2)	50.6	54.2 (2)	55.4	58.8 (2)	-3	37	2.3
G. Harvest	H-1170	54.9*	51.0 (18)	51.8	53.2 (4)	48.7	57.4 (5)	64.1*	67.9 (3)	-4	34	1.8
G. Harvest	H-1260	56.4*	55.7 (8)	61.2*	60.7 (2)	53.7*	51.7 (2)	54.2	58.2 (2)	2	34	2.2
G. Harvest	H-1278	61.0*	52.1 (12)	62.1*	55.9 (3)	59.9*	55.9 (3)	60.9	64.2 (2)	7	35	2.6
G. Harvest	H-1285	55.6*	50.9 (23)	58.3	51.0 (6)	47.2	52.1 (7)	61.2	66.4 (4)	3	36	2.6
G. Harvest	H-1289	56.8*	50.6 (8)	65.2*	56.3 (2)	51.6	40.7 (2)	53.5	59.5 (2)	7	41	3.0
G. Harvest	H-1303	55.9*	55.9 (3)	50.2	50.2 (1)	57.1*	57.1 (1)	60.5	60.5 (1)	7	40	3.5
GLH	GL2291	61.0*	61.0 (3)	61.2*	61.2 (1)	60.4*	60.4 (1)	61.4	61.4 (1)	6	41	3.2
GLH	GL2616	56.8*	55.4 (8)	56.3	53.9 (2)	53.9*	48.8 (2)	60.2	65.4 (2)	5	38	3.0
Gries	GSF275	59.5*	59.5 (3)	60.0	60.0 (1)	59.9*	59.9 (1)	58.5	58.5 (1)	8	39	3.2
Gries	GSF300	55.3*	55.3 (3)	55.7	55.7 (1)	56.4*	53.9 (1)	56.6	56.4 (1)	6	39	2.9
Gries	GSF318	58.5*	58.3 (3)	62.6*	62.6 (1)	53.9*	56.4 (1)	56.4	56.6 (1)	7	37	2.0
Jacques	J-181	56.3*	50.3 (13)	55.6	52.8 (3)	50.4	58.0 (3)	62.9*	63.6 (2)	-4	35	2.1
Jacques	J-245	56.0*	56.0 (3)	60.5*	60.5 (1)	50.9	50.9 (1)	56.6	56.6 (1)	-3	34	1.6
Kaiser/Estech	KE 156	56.7*	51.8 (18)	61.4*	61.4 (1)	49.7	60.6 (5)	63.6*	67.7 (3)	-4	33	2.1
Kaiser/Estech	KE 266	50.8	49.7 (12)	49.7	49.7 (1)	44.2	47.2 (3)	57.3	60.4 (2)	3	36	2.8
Kaiser/Estech	KE220	59.4*	59.4 (3)	60.9*	60.9 (1)	55.6*	55.6 (1)	61.7	61.7 (1)	5	37	1.8
King Grain	GG2700	53.1	56.0 (8)	52.3	53.0 (2)	49.7	50.0 (2)	57.3	64.8 (2)	1	35	1.9
King Grain	GG2800	54.1	51.9 (13)	51.6	52.2 (4)	52.8*	55.3 (3)	58.0	64.6 (2)	4	36	2.3
King Grain	KG100	55.2*	51.6 (12)	64.1*	56.7 (3)	46.5	49.7 (3)	54.9	58.4 (2)	5	40	2.4

(Cont'd)

Test mean	55.4	57.3	51.1	57.2	+1	36	2.2
LSD (.05)	6.3	11.7	8.5	5.9	4.3	3	0.3

† Check variety used to calculate deviation from standard maturity (10/6/90).

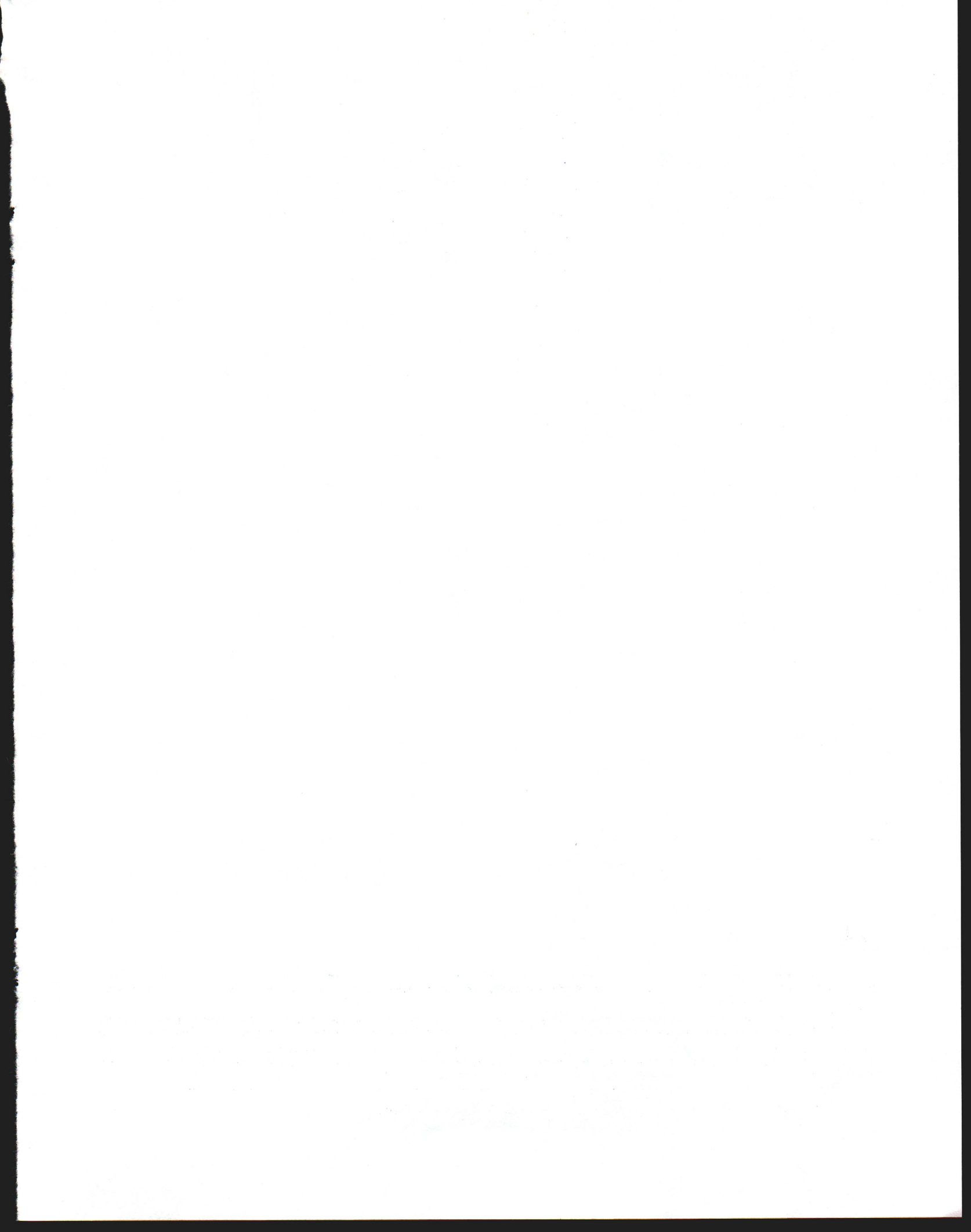
* Not significantly different from the highest yield with that column.

TABLE 4. (Continued) Central Michigan.

Brand	Entry	Yield (bu/A)										Maturity (days)	Height (In)	Lodging Score
		Entire Central Region		South Central (Ingham Co.)		Central (Saginaw Co.)		East Central (St. Clair Co.)		Matu-				
		1990	Avg. (n)	1990	Avg. (n)	1990	Avg. (n)	1990	Avg. (n)					
King Grain	KG81	52.9	47.3 (21)	58.7	48.1 (5)	47.8	53.6 (6)	52.1	58.1 (4)	0	38	1.7		
Maumee Valley	EAGLE	55.1*	53.4 (16)	56.3	51.7 (4)	54.4*	60.8 (5)	54.5	62.7 (3)	0	37	2.5		
Maumee Valley	MV-5097	57.4*	57.4 (3)	63.6*	63.6 (1)	46.3	46.3 (1)	62.3*	62.3 (1)	1	36	1.6		
Maumee Valley	MV-6091	52.6	52.6 (3)	49.4	49.4 (1)	55.4*	55.4 (1)	53.0	53.0 (1)	-1	37	2.7		
Maumee Valley	SABRE	56.7*	56.3 (16)	58.5	57.3 (4)	55.6*	63.5 (5)	56.1	69.3 (3)	2	37	2.7		
Maumee Valley	SAVAGE	54.4	55.1 (8)	55.2	51.8 (3)	49.4	46.7 (2)	58.7	64.4 (2)	8	32	2.2		
Maumee Valley	WARRIOR	50.6	49.4 (18)	56.1	49.0 (6)	43.7	56.8 (5)	52.0	63.6 (3)	6	37	2.9		
Northrup King	S19-90	60.4*	58.2 (8)	60.9*	60.7 (2)	52.5*	51.6 (2)	67.9*	66.0 (2)	0	36	1.3		
Northrup King	S20-26	56.0*	57.1 (8)	58.3	60.6 (2)	52.7*	52.1 (2)	56.9	63.7 (2)	1	39	2.6		
Northrup King	X9020	55.3*	55.3 (3)	62.3*	62.3 (1)	45.6	45.6 (1)	58.1	58.1 (1)	-3	38	1.9		
Pioneer	9161	56.6*	50.4 (13)	60.5*	55.8 (3)	51.8	58.1 (3)	57.6	60.1 (2)	-5	35	1.7		
Pioneer	9171	52.5	52.5 (3)	59.3	59.3 (1)	42.2	42.2 (1)	56.1	56.1 (1)	-9	30	1.1		
Pioneer	9272	53.3	51.1 (12)	62.1*	53.8 (3)	47.5	57.1 (3)	50.4	58.8 (2)	-7	30	1.6		
Pioneer	9273	59.8*	59.8 (3)	60.9*	60.9 (1)	56.6*	56.6 (1)	61.9	61.9 (1)	1	33	2.2		
Pioneer	9293	54.8*	52.5 (12)	52.0	52.3 (3)	51.8	55.0 (3)	60.5	66.7 (2)	3	34	2.8		
Pioneer	9303	58.4*	58.4 (3)	54.5	54.5 (1)	58.0*	58.0 (1)	62.6*	62.6 (1)	6	33	2.1		
Pioneer	9361	52.5	51.4 (7)	52.0	47.2 (2)	53.0*	46.6 (2)	52.5	58.1 (2)	6	41	2.9		
Pro-Seed	PS215	58.5*	54.1 (12)	63.8*	58.5 (3)	51.8	56.5 (3)	59.9	62.9 (2)	4	37	1.6		
Rupp	RS2323	54.0	50.0 (12)	56.6	51.8 (3)	49.0	52.7 (3)	56.4	61.0 (2)	-1	34	1.4		
Rupp	RS2383	54.5	54.5 (3)	58.8	58.8 (1)	52.1*	52.1 (1)	52.5	52.5 (1)	3	34	2.0		
Rupp	RS2444	53.7	53.7 (3)	53.5	53.5 (1)	51.3	51.3 (1)	56.3	56.3 (1)	0	34	1.5		
Rupp	RS2490	53.0	53.0 (3)	45.1	45.1 (1)	57.5*	57.5 (1)	56.4	56.4 (1)	5	38	2.1		
Seedex	240	58.0*	54.3 (8)	72.0*	61.8 (2)	46.8	46.9 (2)	55.2	58.9 (2)	5	33	2.0		
Stine	2960	56.6*	48.8 (7)	63.1*	55.1 (2)	49.7	57.3 (2)	56.9	56.9 (1)	4	33	1.7		
Stine	2980	54.5	52.9 (4)	58.5	53.3 (2)	47.0	47.0 (1)	58.0	58.0 (1)	8	37	3.2		
Stine	3000	58.5*	58.5 (3)	56.3	56.3 (1)	56.8*	56.8 (1)	62.4*	62.4 (1)	6	37	2.4		
Stine	3220	58.6*	58.6 (3)	58.5	58.5 (1)	57.3*	57.3 (1)	59.9	59.9 (1)	5	35	1.7		
Saginaw Valley	SVS 183	53.5	53.5 (3)	56.1	56.1 (1)	45.1	45.1 (1)	59.2	59.2 (1)	-7	36	2.0		
Saginaw Valley	SVS 273	56.0*	56.0 (3)	62.8*	62.8 (1)	51.6	51.6 (1)	53.5	53.5 (1)	3	30	1.1		
Terra	EXP 275	55.1*	53.1 (16)	55.7	53.3 (4)	53.9*	57.0 (5)	55.6	67.1 (3)	7	40	2.7		
Terra	FLAG	53.6	55.5 (8)	52.3	55.1 (2)	51.6	54.6 (2)	56.8	58.6 (2)	-8	34	1.8		
Terra	HURDLE	55.2*	48.3 (20)	55.4	48.3 (5)	50.9	52.5 (6)	59.2	55.6 (4)	1	37	1.6		
Terra	MEDALIST	56.5*	53.0 (12)	55.2	55.7 (3)	53.0*	55.4 (3)	61.4	64.0 (2)	1	37	2.7		
Terra	RUNNER III	55.0*	49.5 (13)	56.9	56.1 (3)	50.1	55.0 (3)	58.1	61.4 (2)	-4	34	1.9		
Terra	SPRINT	58.3*	52.7 (17)	62.8*	54.5 (5)	53.2*	54.4 (5)	58.8	63.4 (3)	2	36	2.1		
Terra	WINNER	54.0	55.9 (8)	61.9*	58.3 (2)	46.8	49.5 (2)	53.3	60.3 (2)	1	34	2.2		
Test mean		55.4		57.3		51.1		57.2		+1	36	2.2		
Minimum		48.0		42.9		42.2		48.7		-9	30	1.1		
Maximum		61.0		72.0		60.4		67.9		+8	41	3.2		
CV		7.1%		10.4%		10.4%		6.4%		7%	5%	23%		
LSD(.05)		6.3		11.7		8.5		5.9		4.3	3	0.3		

† Check variety used to calculate deviation from standard maturity (10/6/90).

* Not significantly different from the highest yield with that column.





MSU is an Affirmative-Action Equal-Opportunity Institution. Cooperative Extension Service programs are open to all without regard to race, color, national origin, sex or handicap.

Issued in furtherance of Cooperative Extension work in agriculture and home economics, acts of May 8, and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Michael J. Tate, interim director, Cooperative Extension Service. Michigan State University, E. Lansing, MI 48824.

This information is for educational purposes only. Reference to commercial products or trade names does not imply endorsement by the Cooperative Extension Service or bias against those not mentioned. This bulletin becomes public property upon publication and may be reprinted verbatim as a separate or within another publication with credit to MSU. Reprinting cannot be used to endorse or advertise a commercial product or company.
