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Michigan Corn Production Hybrids Compared

Michigan State University Extension Service

E.C. Rossman, Farm Crops; N.A. Smith, Plant Pathology; Bary M. Darling, Jerry Taylor,
Crop Science

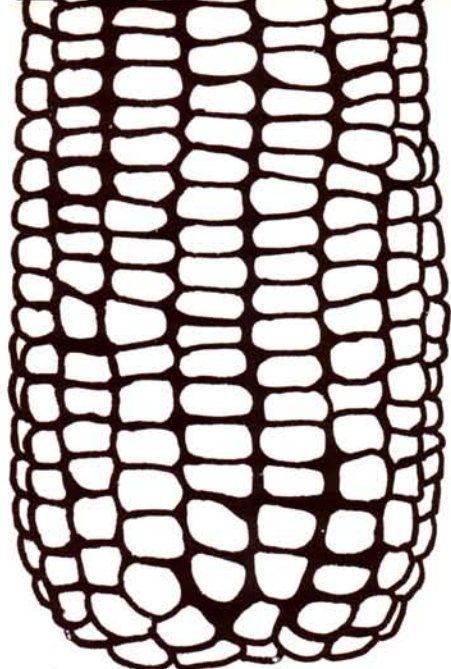
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Michigan Corn Production

HYBRIDS COMPARED 1965

COOPERATIVE EXTENSION SERVICE
MICHIGAN STATE UNIVERSITY

BY E. C. ROSSMAN, N. A. SMITH, BARY M. DARLING, AND JERRY TAYLOR
Authors are respectively Professor of Farm Crops, Extension Specialist in Plant Pathology and Crop Science Aides

HYBRID CORN TRIALS are conducted each year by the Michigan Experiment Station in cooperation with the Cooperative Extension Service, Michigan Crop Improvement Association, seed corn companies, and farmers.

Many different hybrids are offered for sale in Michigan. They differ in yield ability, maturity, lodging resistance, and other characteristics. Yield and maturity averages of all testing locations in 1964 are as follows:

(1) **Yield**—the highest yielding hybrids averaged 35 bushels more than the lowest yielding hybrids and 16 bushels more than the average of all hybrids tested.

(2) **Maturity**—the earliest maturing hybrids were 15 percent drier in moisture content at harvest than the latest maturing hybrids and 7 percent drier than the average of all hybrids tested.

These differences show that choosing the best corn hybrids is an important corn production practice. Higher yields and other improvements from planting the best hybrids are obtained with no increase in production costs. Seed of the best hybrids generally costs no more than seed of hybrids with lower performance.

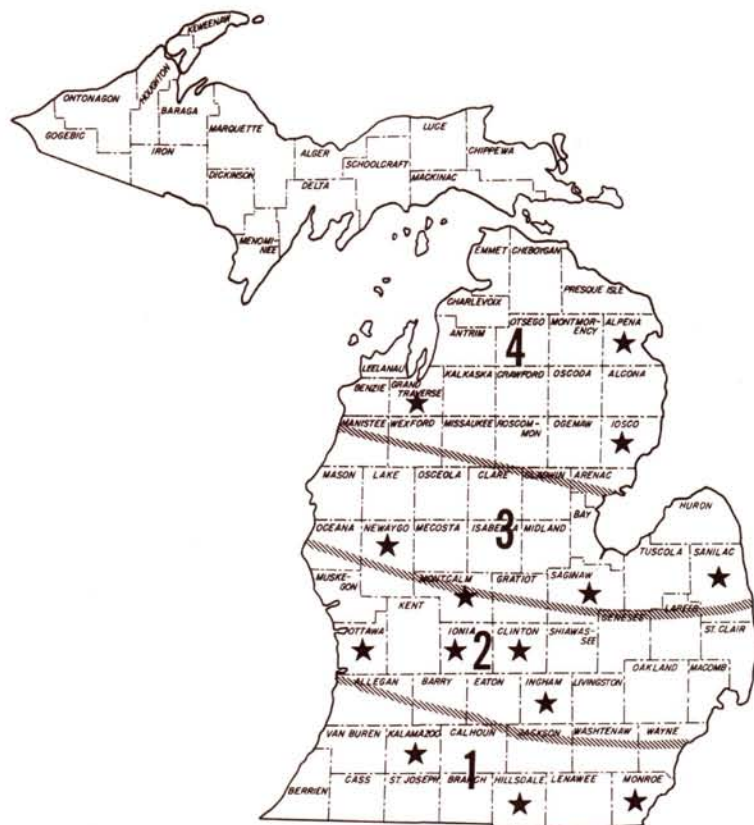
ENTRIES

Two groups of entries are included in the trials:

(1) **Voluntary entries.**—All seed companies are invited each year to enter their hybrids in the trials. A fee is charged to cover some of the direct expenses.

(2) **Extension entries.**—Some seed companies do not participate with voluntary fee-assessed entries and others do not include some of their hybrids that are planted in Michigan. Extension entries are in-

cluded to provide performance data on some of the hybrids not entered as voluntary entries. They are hybrids suggested by county extension personnel on the basis of extent of use in the various areas of the state.



Corn Maturity Zones and Locations (★) of Trials

No distinction between, or identification of, voluntary and extension entries is made in reporting the results. All hybrids were randomized and compared in the same field using the same procedure.

Single cross hybrids are indicated with (2X) and three-way hybrids with (3X) following the hybrid name and number in the tables. All others are double-cross hybrids.

Michigan experimental hybrids and some experimental hybrids from seed companies are not listed since seed is not yet available for farm use.

METHODS

Scientific procedures are followed in conducting these trials to give all hybrids equal opportunity to demonstrate their capabilities. The best way to compare a group of corn hybrids is to grow them in the same field with the same fertilizer, population, date of planting, etc., for all hybrids.

Seed for voluntary and extension entries was submitted by the seed companies. Equal numbers of seeds were counted for each plot of all hybrids. Each hybrid was replicated several times in the field. Plots were planted with a standard two-row or four-row corn planter adapted for small plots.

From seed packaging through harvest and data processing, each hybrid was identified only by a code number to reduce chance for any personal bias by anyone working in the field or with the data. The code was deciphered after the data had been processed.

Stands and lodging were counted before harvest. Plots were harvested with a one-row picker-sheller, except the Iosco County trial, which was hand harvested. Field data were processed with high speed IBM electronic computers.

Silage yields were taken on all hybrids in the Ingham, Grand Traverse, and Iosco County trials (Tables 7, 14, and 16).

All hybrids in the Monroe, Ingham, and Saginaw County trials were compared at two plant populations (Tables 1, 6, and 10).

HOW TO USE THIS BULLETIN

One and two-year averages are presented for all hybrids tested during 1963 and 1964. In previous editions, two and three-year averages were reported and one-year data were not included. One-year data are less reliable than two or three-year averages. There were only a few hybrids with three-year (1962-1964) averages. Therefore one-year data are included this year.

The tables tell you three things about the hybrids tested:

- (1) average moisture content at harvest,
- (2) average yield in bushels of shelled corn at 15.5 percent moisture, and

(3) average percentage of stalk lodging (plants broken below the ear at harvest).

Hybrids are recorded in the tables in order of their approximate maturity (early to late) based on moisture content at harvest. Moisture contents were determined from shelled grain samples at all locations except Tables 7, 14, 15, and 16, which report moisture content based on ear corn samples.

Stalk breakage is caused by corn borers and/or stalk rot diseases.

Two or more plots of the same hybrid in the same field may produce somewhat different results due to uncontrolled variability in the soil and other environmental factors. Replication and randomization of the entries are two methods used to reduce these errors. Since these methods do not eliminate all of these effects, **differences necessary for statistical significance** have been calculated for yield and moisture content and are reported at the bottom of each table as "L.S.D." value stated at the end of the table.

Agronomic information for each trial is given at the bottom of the table. Fertilizer amounts are total pounds per acre of nitrogen, P_2O_5 and K_2O applied during the season.

HOW TO CHOOSE A CORN HYBRID

Adaptation.—The map on the cover shows location of the trials and divides Michigan into four maturity zones. A map can show maturity zones only in a general way. Local variations in weather, soil type and fertility, time of planting, and other conditions all affect adaptation. Corn hybrids are often adapted to more than one zone.

Find the zone in which you plan to grow the corn, and refer to the table which gives results for the trial conducted nearest your farm. Also, refer to the other tables listed in your zone. A hybrid which has done well at two or more locations is more likely to be a good hybrid for your farm, too.

Rate of planting.—A population of 12,000 plants per acre is best for corn soils producing 50 bushels or less per acre. Populations of 16-17,000 are best for soils producing more than 50 bushels per acre. Higher populations, 20,000, should be considered only for soils consistently producing more than 100 bushels per acre. Rainfall deficiencies with high plant population usually result in no increase and frequently a decrease in yield compared to 16-17,000. Lodging and harvest losses are often greater at high populations.

Maturity.—Hybrids are listed in the tables in order of maturity, early to late. One percent more moisture at harvest means a delay in maturity of about two days. Corn is mature when moisture is down to 35 percent in the grain or 40 percent in the ear.

Ear corn is safe to crib when moisture content is below 25 percent.

For grain.—It is better to choose an early corn (below average moisture content) than a late corn for grain. The tables show that a good yield does not depend on later maturity. Advantages of early maturing hybrids are:

- (1) They usually mature before killing frosts.
- (2) Good yielding early hybrids generally yield as much or more corn than late hybrids in most areas in Michigan.
- (3) Lower moisture content at harvest permits safer storage. You will take more clean, sound, high-quality corn out of the crib.
- (4) Mature, dry corn makes better livestock feed.
- (5) You can harvest earlier in the fall when weather conditions are most favorable. Early harvest may reduce corn losses resulting from broken stalks and dropped ears in the field.
- (6) Early hybrids with lower moisture content at harvest reduces cost for drying and market discount for moisture is less.
- (7) Fall plowing of corn stubble may be possible with early hybrids on land not subject to erosion.

For silage.—The best silage contains a high percentage of grain. Hybrids that produce high yields of grain should be used for silage. High dry weight production per acre is a better basis for choosing hybrids for silage than tons of green weight.

Corn for silage should reach the early dent stage well before frost in an average year. The early dent stage, when most of the kernels have dented, is the best time to begin harvest for silage. Dry matter production continues to increase until maturity.

Other considerations.—Choose early hybrids for late plantings, low soil fertility, sandy soils, muck soils, and for corn which is to be followed by a winter grain or cover crop.

You can get some degree of "crop insurance" by choosing two or three hybrids which differ slightly in their maturity. If one hybrid runs into unfavorable weather at a critical stage of growth, another may be affected less and come through with a good crop.

Even though you have been growing a hybrid which has given good results, you may be able to improve your corn crop by trying one or more of the hybrids with better records in these trials. Well tested new hybrids are worth trying. You may want to try a new hybrid in a strip in the same field with your present hybrid.

VIRUS DISEASE OF CORN

A "new" virus disease of corn has been increasing in some of the nearby states the past three years. The

disease has not, as yet, been positively identified as occurring in Michigan. One strain of the virus was reported from all, except six, counties in Ohio during 1964. The disease is close and could be expected to appear in Michigan in the near future.

Research to develop resistant inbreds and hybrids and to provide basic information on the nature and transmission of the disease is now underway for Michigan.

There are at least two strains of this corn virus disease: (1) **corn stunt virus**, transmitted by leaf hoppers and not mechanically transmissible, and (2) **maize dwarf mosaic virus**, transmitted by aphids and mechanically transmissible.

DISTRIBUTION AND LOSSES

Corn stunt virus was first observed in California in 1942 and in Texas in 1945. In 1962, it was found in Yazoo County, Mississippi, and in one field in southern Ohio. The disease has spread rapidly since then.

Twenty-two states reported heavy to trace amounts of either the corn stunt virus or the maize dwarf mosaic virus in 1964—Mississippi, Louisiana, Alabama, Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Arkansas, Missouri, Ohio, Illinois, Indiana, Iowa, Kansas, Nebraska, Arizona, Texas, and California. The corn stunt strain has developed in the southern and southwestern states and the dwarf mosaic strain in the central and south-central states with possibly some overlapping of the two strains.

Several states have reported cases of complete loss in yield and instances where farmers have been forced to stop growing corn because of the virus disease. Ohio has conservatively estimated a total loss of five million bushels in yield in 1964 due to the dwarf mosaic virus.

Two states reported the disease in 1962, 10 states in 1963, and 22 states in 1964. In Ohio, the disease has spread from one field in 1962 to 12 counties in the southern part of the state in 1963, and to all except six counties in 1964.

SYMPTOMS

Plant symptoms of the two virus strains are very similar and cannot be used to distinguish between the two. Some of the symptoms can be confused with those caused by other factors, such as drought, nutritional deficiencies, etc. Critical evaluations of the presence of the virus requires a transmission test from infected to healthy plant. Farmers who observe plants with suspected symptoms should report them to their County Extension office.

Symptoms are not usually observed until 30-40 days after planting. Infected plants may not develop all symptoms of the disease. Plants infected early in the season show more of the symptoms and are more severely affected by the disease. The following symptoms have been observed:

(1) The first symptom appears as a faint yellowish striping of the leaves, particularly those in the whorl. Some of the streaking may disappear in older plants.

(2) Stunting or dwarfing of the plant occurs. Plant height may be only 1/3 to 1/2 that of healthy plants. Internodes above the ear node are shortened more than those below. Infected fields have a ragged appearance.

(3) Reddish purple color develops in the leaves, frequently on the tips and edges first with broad bands or irregular areas throughout the leaf.

(4) Several ear buds may occur at the ear node. Some plants show ear buds developing at several nodes. Silking may be completely lacking or delayed so that no pollen is available and no grain develops on the ears.

(5) There may be an increase in ear shank length and tillering of plants. "Flag" leaves, typical of many normal sweet corn hybrids, may develop at the ends of the husks.

(6) Some plants show an increase of brace roots at several nodes (as much as two feet) above the soil. Proliferation of underground roots has been observed on some plants.

(7) A soft, watery stalk rot usually develops in infected plants and the stalk breaks over.

HOST RANGE

These virus strains readily infect all types of corn, sorghum, sudangrass, sorghum-sudan hybrids, Johnson grass, sugarcane, and teosinte. The dwarf mosaic strain has also been transmitted to crabgrass, foxtails (green, yellow, and giant), barnyardgrass, goosegrass, quackgrass, pig weed, and panicum species. Perennial grasses or weeds may serve as an over-wintering

host from which insect carriers obtain the virus for infection of corn and other susceptible annuals the next year.

INSECT VECTORS

Corn stunt virus.—Two (*Dalbulus maidis* and *Dalbulus elimatus*) and possibly more species of leaf hoppers are known insect vectors. They become carriers two or three weeks after feeding on a diseased plant and remain capable of infecting healthy plants for several weeks. Symptoms of the disease develop about 30 days after the plant has been infected by a carrier. Corn stunt virus is not spread mechanically, by contact or by rubbing, from infected to healthy plants.

Maize dwarf mosaic virus is transmitted by the corn leaf aphid. Other species of aphids and other insects are suspected as possible vectors. This virus strain is not transmitted by the known leafhopper vectors of the stunt virus. Likewise, stunt virus has not been transmitted by aphids.

Incubation periods of the virus in the aphid and in the corn plant are much shorter than for stunt virus. Symptoms may appear 72 hours after infection. Aphids remain capable of transmitting the disease for a short period, possibly as short as 1-1/2 to 2 hours. Dwarf mosaic virus can be transmitted mechanically from infected to healthy plants.

RESISTANT HYBRIDS

Corn nurseries in Ohio, Mississippi, and Kentucky in 1964 showed some resistance in a few inbred lines and hybrids. Some were resistant to the dwarf mosaic virus but susceptible to the stunt virus and vice-versa.

Most of the material rated as resistant was too late in maturity for Michigan but the resistance is being added to early maturing material by appropriate breeding procedures. Plans are being made to evaluate the resistance of hybrids and inbreds adapted to Michigan in an infected nursery in Ohio in 1965.

All tables contain latest information reported as of January 18, 1965

Table 1

Zone 1

SOUTHERN MICHIGAN
MONROE COUNTY TRIAL
One and Two Years—1963 and 1964

Hybrid	Mois- ture %		Bushels per acre				Stalk lodging %			
	1964	2 yrs.	1964		2 yrs.		1964		2 yrs.	
			15,700	20,600	16,000	20,400	15,700	20,600	16,000	20,400
Michigan 300	19	18	95	62	78	56	10	10	6	8
Michigan 270	20	19	73	63	72	66	11	7	7	5
Michigan 250	22	19	72	58	66	58	7	2	6	1
Michigan 400	23	21	93	69	83	68	3	0	2	0
Michigan 370	24	21	95	74	84	65	11	1	8	1
Michigan 430	24	22	97	73	85	68	8	7	6	4
Michigan 425	24	22	92	71	84	67	7	7	5	4
Supercroft X 1200	25	--	108	91	--	--	8	8	--	--
DeKalb 400	25	23	99	88	94	83	5	6	3	4
Michigan 570	26	23	108	79	96	75	16	8	11	6
P.A.G. SX 49	26	24	101	71	84	72	3	6	2	3
DeKalb 238	27	--	107	84	--	--	1	5	--	--
Pioneer 371	27	23	92	82	82	70	9	6	5	3
DeKalb 427	27	24	103	90	87	78	1	4	1	2
Kingscroft KT	27	25	78	61	72	54	3	1	2	1
Michigan 490	27	24	104	93	84	75	5	12	5	6
Kingscroft KM 579	27	24	96	73	86	73	2	1	1	1
Kingscroft PX 66	28	--	100	57	--	--	10	2	--	--
Pioneer 342 B	28	26	102	63	86	68	6	6	4	4
United Hagie UH X 130 J	28	--	115	95	--	--	6	4	--	--
Pioneer 352 A	28	--	94	63	--	--	5	4	--	--
DeKalb XL 45	29	--	100	93	--	--	1	2	--	--
P.A.G. Exp. 15406	29	--	117	86	--	--	10	6	--	--
Michigan 620	29	27	110	90	95	75	3	4	2	2
DeKalb 414	29	--	118	90	--	--	5	5	--	--
Hulting 260 SC	29	--	98	65	--	--	13	6	--	--
Funk Bros. G 70	30	--	96	65	--	--	4	5	--	--
Kingscroft KM 567	30	--	104	69	--	--	13	2	--	--
Supercroft S 5	30	--	97	78	--	--	8	4	--	--
Anderson's A 105	30	--	76	44	--	--	4	2	--	--
United Hagie UHX 135	30	--	84	66	--	--	6	4	--	--
DeKalb 441	30	28	102	84	90	76	4	1	3	1
United Hagie UH 146 H	30	--	110	66	--	--	4	9	--	--
P.A.G. SX 9	31	--	117	90	--	--	4	4	--	--
Supercroft S 7	31	30	77	49	82	53	1	1	2	2
Genetic Giant G 10	31	--	106	68	--	--	4	3	--	--
Supercroft X 3340	31	--	95	49	--	--	3	4	--	--
P.A.G. 305	31	--	73	42	--	--	8	4	--	--
Supercroft S 66	32	--	85	48	--	--	0	3	--	--
United Hagie UHX 146 C	33	--	106	56	--	--	5	11	--	--

Table 1 continued. Monroe County.

Hybrid	Mois- ture %		Bushels per acre				Stalk lodging %			
	1964	2 yrs.	1964		2 yrs.		1964		2 yrs.	
			15,700	20,600	16,000	20,400	15,700	20,600	16,000	20,400
Anderson's A 110	33	--	85	52	--	--	6	1	--	--
Supercroft X 5900	33	29	108	92	99	83	5	3	3	3
Kingscroft KM 589	33	29	82	44	83	52	3	2	2	2
Cargill S 412	33	--	104	70	--	--	8	5	--	--
Cargill 277	33	--	102	71	--	--	1	2	--	--
Gries 640	33	--	113	67	--	--	2	3	--	--
DeKalb XL 361	34	30	94	61	81	63	1	3	2	1
United Hagie UHX 138 B	34	--	103	57	--	--	6	5	--	--
Supercroft S 55	35	--	81	63	--	--	8	2	--	--
Average	29	24	97	70	84	68	6	4	4	3
Range	19	18	118	42	72	52	0	0	1	1
	35	30	72	95	99	83	16	12	11	8
L.S.D.*	2	1	13	11	6	5				

*Least significant differences.

	1963	1964
Planted	May 9	May 6-7
Harvested	Oct. 24	Oct. 13
Soil type	Brookston loam	Brookston loam
Previous crop	Corn	Corn
Population	16,200 and 20,100	15,700 and 20,600
Fertilizer	128-108-201	121-83-42
Soil test: pH	6.0	6.2
P ₂ O ₅	44 (high)	44 (high)
K ₂ O	138 (medium)	196 (high)

Farm Cooperator: Earl Creech, Dundee

County Extension Director: R. J. Laser, Monroe

Table 2

Zone 1

SOUTHERN MICHIGAN
HILLSDALE COUNTY TRIAL
One and Two Years—1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
Michigan 270	20	19	85	85	4	3
Michigan 250	20	19	83	79	4	3
Michigan 300	22	20	99	93	4	6
Wyckoff W 5X	26	--	104	--	5	--
Michigan 400	27	24	108	104	4	4

Table 2 continued. Hillsdale County.

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
Michigan 370	27	24	104	98	2	3
DeKalb 400 (2X)	28	26	114	109	2	3
Michigan 425	28	25	110	102	4	3
Wyckoff SX W7 (2X)	28	24	101	99	1	2
P.A.G. SX 49 (2X)	29	26	121	106	4	4
Todd 130 (3X)	29	--	96	--	1	-
Michigan 570	29	26	101	97	4	3
Wyckoff W 10 A	30	27	122	106	3	5
DeKalb 414	30	--	107	--	1	-
Kingscrot KT	30	27	98	95	3	3
Pioneer 373	30	28	105	98	8	9
Michigan 430	30	26	102	96	7	6
Funk Bros. B 32	30	--	119	--	0	-
DeKalb 409	30	--	103	--	4	-
Todd 505 A (2X)	30	--	112	--	1	-
Wyckoff W 9 X	31	27	124	112	1	1
Kingscrot KM 579	31	28	101	95	1	3
Funk Bros. G 34	31	28	103	92	1	3
DeKalb 427	31	28	121	110	3	3
DeKalb 238	31	29	104	104	5	5
P.A.G. 234	31	28	100	99	2	4
DeKalb XL 45 (2X)	31	28	115	110	1	3
Pioneer 371	31	27	109	102	1	2
Kingscrot KM 567	31	--	104	--	1	-
Michigan 490	31	28	94	94	4	4
Todd 303 (3X)	32	27	100	97	1	1
Kingscrot K 04	32	28	103	103	4	4
Michigan 620	32	30	117	109	5	3
Todd 360 (3X)	32	--	83	--	1	-
P.A.G. 285	32	28	103	101	1	1
Kingscrot KM 589	32	30	120	110	1	2
Kingscrot PX 66 (2X)	33	--	106	--	0	-
Supercrot X 5900	34	--	118	--	3	-
Cargill 912 (2X)	34	--	107	--	6	-
P.A.G. Exp. 15406 (2X)	35	--	106	--	1	-
DeKalb 441	35	32	106	98	1	2
Supercrot S 66 (2X)	36	--	102	--	1	-
Funk Bros. G 70	36	31	111	103	4	5
Pioneer 352 A	37	--	117	--	3	-
DeKalb XL 361 (3X)	38	33	125	111	1	1
Cargill S 412 (2X)	39	32	99	95	4	3
Average	31	27	106	101	3	3
Range	20 to 39	20 to 35	83 to 125	66 to 91	0 to 8	0 to 4
L.S.D.*	2	1	11	5		

*Least significant differences.

	1963	1964
Planted	May 2	May 15
Harvested	October 23	October 23
Soil type	Fox sandy loam	Fox loam

Table 2 continued. Hillsdale County.

Previous crop	Corn	Corn
Population	16,700	15,600
Fertilizer	119-75-75	132-66-33
Soil test: pH	6.5	6.8
P ₂ O ₅	71 (high)	33 (medium)
K ₂ O	164 (high)	72 (low)

Farm Cooperator: Keith Brown, Jonesville
 County Extension Director: A. T. Hall, Hillsdale

Table 3

Zone 1

SOUTHERN MICHIGAN KALAMAZOO COUNTY TRIAL One and Two Years—1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
Michigan 270	24	22	50	48	3	2
Michigan 300	25	24	51	50	4	3
Michigan 250	26	24	54	53	5	3
Funk Bros. G17A	30	--	66	--	0	-
Michigan 400	31	28	64	60	0	1
Michigan 370	31	28	53	53	1	1
Michigan 430	31	30	61	56	4	2
Funk Bros. G34	32	30	64	54	3	3
Wyckoff W5X	32	--	70	--	0	-
Wyckoff W9X	33	--	58	--	0	-
Michigan 425	33	30	62	57	3	2
Wyckoff SXW72X	33	29	49	51	4	2
Funk Bros. G32	33	31	53	54	0	1
Kingscrot K05	33	30	51	47	7	4
DeKalb 400 (2X)	34	--	73	--	1	-
DeKalb 238	34	--	72	--	5	-
P.A.G. 285	34	32	61	52	0	0
Kingscrot KT	34	32	52	48	1	2
Pioneer 368A	34	31	52	53	2	2
DeKalb 409	35	--	55	--	3	-
Cargill 458	35	--	58	--	0	-
Michigan 570	35	32	54	50	4	4
DeKalb 427	35	33	69	60	1	1
Kingscrot KM579	36	--	52	--	0	-
Michigan 490	36	32	72	63	3	3
P.A.G. SX49 (2X)	36	33	57	52	0	1
DeKalb XL361 (3X)	36	34	61	59	1	1
Michigan 620	37	34	62	54	3	2
Genetic Giant 4	37	36	58	53	1	1
Pioneer 368	37	32	64	59	2	2
P.A.G. Exp. 15406 (2X)	37	--	63	--	4	-
DeKalb XL45 (2X)	37	33	66	59	0	1
Kingscrot PX66 (2X)	37	--	61	--	0	-
Kingscrot KM567	37	--	54	--	2	-
DeKalb 414	37	--	50	--	2	-

Table 3 continued. Kalamazoo County.

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
	Kingscrost KM589	37	35	59	52	2
Wyckoff W10A	38	35	59	57	0	1
Pioneer 371	38	34	61	55	7	5
DeKalb 441	39	36	47	46	0	1
P.A.G. SX9 (2X)	39	36	62	56	2	2
Cargill S412 (2X)	41	37	57	58	0	0
Farmercraft 41	42	--	39	--	3	-
Average	35	31	58	54	2	2
Range	24 to 42	20 to 37	39 to 73	46 to 63		
L.S.D.*	2	1	7	4		

*Least significant differences.

	1963	1964
Planted	May 17	May 12
Harvested	October 19	October 11
Soil type	Fox loam	Fox loam
Previous crop	Corn	Wheat
Population	11,500	13,100
Fertilizer	95-60-60	Manure, 112-48-24
Soil test: pH	6.8	6.8
P ₂ O ₅	53 (high)	67 (high)
K ₂ O	168 (high)	324 (very high)

Farm Cooperators: Reese and Richard Van Vrancken, Climax
 County Extension Director: Vern Hinz, Kalamazoo

Table 4 Zone 2

SOUTH CENTRAL MICHIGAN**OTTAWA COUNTY TRIAL**

One and Two Years—1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
	Michigan 250	26	27	77	64	0
Michigan 270	27	27	86	67	0	0
Michigan 300	28	29	91	68	1	1
Kingscrost PX 487 (3X)	30	33	91	58	1	2
Michigan 400	30	31	97	69	1	1
Kingscrost KE 497	32	32	95	63	2	1
Kingscrost PX 530 (3X)	32	--	93	--	5	-
Michigan Exp. 61-1074	32	--	103	--	3	-
Funk Bros. G 17A	32	32	91	65	0	0
DeKalb 57	33	31	93	66	2	2

Table 4 continued. Ottawa County.

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
	Michigan Exp. 57-10	33	--	83	--	1
Michigan 370	33	32	94	64	2	2
Kingscrost PX 35 (2X)	33	--	101	--	3	-
Michigan Exp. 57-05	33	--	94	--	2	-
Michigan 430	33	34	94	62	6	3
P.A.G. 270	34	--	88	--	3	-
P.A.G. Exp. 15406 (2X)	34	--	109	--	3	-
P.A.G. SX 49 (2X)	34	35	106	72	3	2
Michigan 425	34	34	96	67	3	3
Kingscrost KO 5	35	35	85	53	1	0
Wolverine 66 A	35	--	77	--	1	-
DeKalb 238	35	34	101	65	4	3
Pioneer 373	35	34	91	64	1	1
DeKalb 400 (2X)	35	35	109	72	2	1
DeKalb 224	35	--	90	--	2	-
Michigan 490	35	35	98	70	1	1
Kingscrost KO 4	35	--	87	--	0	-
P.A.G. 234	36	35	92	59	2	1
P.A.G. Exp. 15136 (2X)	36	35	95	67	2	1
DeKalb 414	36	--	84	--	0	-
Michigan 570	36	35	90	59	2	1
P.A.G. 70	36	35	85	53	2	1
Pioneer 371	36	36	104	67	1	0
Kingscrost KM 555	36	--	82	--	2	-
P.A.G. 285	37	36	95	58	1	1
DeKalb XL 325 (3X)	37	35	88	67	5	1
Kingscrost KM 567	37	--	94	--	1	-
DeKalb 427	37	36	99	71	0	0
Michigan 620	38	37	97	63	1	1
DeKalb XL 45 (2X)	38	--	106	--	1	-
DeKalb 441	39	39	96	66	5	3
Pioneer 352 A	39	--	90	--	1	-
Average	34	34	93	64	2	1
Range	26 to 39	27 to 39	77 to 109	53 to 72	0 to 6	0 to 3
L.S.D.*	2	1	10	4		

*Least significant differences.

	1963	1964
Planted	May 16	May 21
Harvested	October 17	October 14
Previous crop	Corn	Corn
Population	16,500	16,100
Fertilizer	16-64-90	Manure, 111-104-21
Soil test: pH	6.1	7.0
P ₂ O ₅	46 (high)	86 (high)
K ₂ O	216 (high)	256 (high)

Farm Cooperators: Gerrit J. Buth & Sons, Coopersville (1963)
 and Marvin Patmos, Jamestown (1964)
 County Agricultural Agent: R. J. Van Klompenberg, Grand Haven

Table 5

Zone 2

SOUTH CENTRAL MICHIGAN**IONIA COUNTY TRIAL**

One and Two Years — 1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
	Michigan 270	25	25	81	86	1
Michigan 250	26	26	68	77	0	0
Michigan 300	27	27	73	80	2	5
P.A.G. G57	28	30	72	83	1	0
Pioneer 385	29	30	90	89	3	3
Kingscrot PX 481 (3X)	29	--	80	--	4	-
Michigan 400	29	29	90	92	1	1
Michigan 370	30	30	90	91	1	2
Cowbell 55	30	--	77	--	1	-
Michigan 430	30	31	77	82	0	-
Wolverine 66 A	30	30	92	88	2	1
DeKalb XL 325 (3X)	30	33	83	84	1	1
Cowbell SX 90 (2X)	31	--	83	--	2	-
DeKalb 409	31	32	80	82	1	1
Pioneer 3775 (2X)	31	32	83	84	0	1
Haapala H 145	32	--	79	--	0	-
Michigan 425	32	32	84	87	0	1
Kingscrot PX 487 (3X)	32	32	64	74	3	1
Funk Bros. G 17 A	32	32	73	83	1	6
DeKalb 224	32	--	67	--	1	-
Kingscrot KE 497	32	33	76	78	1	0
Pioneer 383	33	31	72	75	1	1
Kingscrot PX 530 (3X)	33	32	77	72	3	0
Supercrot X 1200	33	--	76	--	0	-
Kingscrot K 55	33	33	78	77	3	2
Pioneer 368A	33	--	81	--	0	-
DeKalb 414	33	--	67	--	0	-
Kingscrot PX 35 (2X)	33	--	89	--	1	-
DeKalb 400	33	--	77	--	1	-
DeKalb 427	34	35	90	84	2	2
Funk Bros. G 10 A	34	--	58	--	0	-
Kingscrot KM 555	34	--	78	--	0	-
P.A.G. SX 49 (2X)	35	36	93	84	1	2
P.A.G. Exp. 15406 (2X)	36	--	60	--	0	-
Michigan 490	36	34	83	79	2	1
Michigan 570	36	34	84	86	0	1
DeKalb 238	36	36	82	84	0	2
P.A.G. Exp. 15136 (2X)	37	37	75	78	0	2
Kingscrot KM 567	38	--	65	--	7	-
Cargill 180	40	--	59	--	1	-
Michigan 620	40	--	65	--	5	-
Average	33	32	77	82	1	1
Range	25 to 40	25 to 37	58 to 93	72 to 92	0 to 7	0 to 6
L.S.D.*	2	1	9	4		

*Least significant differences.

Table 5 continued. Ionia County.

	1963	1964
Planted	May 8	May 18
Harvested	October 11	October 17
Soil type	Brookston-Conover loam	Brookston-Conover loam
Previous crop	Corn	Corn
Population	16,400	16,400
Fertilizer	110-114-60	121-81-33
Soil test: pH	6.4	5.9
P ₂ O ₅	26 (medium)	28 (medium)
K ₂ O	172 (high)	136 (medium)

Farm Cooperator: Herb Crosby, Portland.

County Extension Director: William Pryer, Ionia.

Table 6

Zone 2

SOUTH CENTRAL MICHIGAN**INGHAM COUNTY TRIAL**

Grain — One and Two Years — 1963 and 1964

Hybrid	Moisture %		Bushels per acre				Stalk lodging %			
	1964	2 years	1964		2 yrs.		1964		2 yrs.	
			17,000	21,800	17,000	21,400	17,000	21,400	17,000	21,400
Michigan 270	24	28	77	80	76	75	7	11	6	6
Michigan 300	25	29	74	77	79	82	6	5	4	3
Michigan 250	26	29	79	75	76	75	7	4	3	2
Kingscrot PX	29	--	80	73	--	--	6	2	--	--
Michigan 400	29	31	87	78	85	77	3	3	2	2
Kingscrot PX487	29	31	65	53	72	67	3	11	2	6
Michigan 370	30	31	88	84	83	79	5	4	4	2
Michigan 425	30	32	91	78	89	82	5	3	3	3
Funk Bros. G17A	30	32	100	75	87	78	1	3	1	2
Kingscrot PX530	30	32	77	59	81	70	7	4	4	3
Michigan 430	30	32	85	83	85	81	4	1	3	1
United Hagie UH1290	30	--	78	75	--	--	4	8	--	--
Wolverine 64	30	--	86	72	--	--	5	3	--	--
P.A.G. 62	30	--	78	59	--	--	4	2	--	--
United Hagie UHX129F	31	--	98	84	--	--	0	2	--	--
Wolverine 66A	31	--	77	83	--	--	2	1	--	--
Kingscrot KE497	31	31	72	70	74	71	1	5	1	3
Kingscrot KM555	31	--	63	59	--	--	2	6	--	--
Pioneer 373	32	33	82	63	80	67	1	2	2	2
Michigan 570	32	34	81	68	84	76	6	2	3	2
Pioneer 368	32	--	68	57	--	--	8	2	--	--
DeKalb 414	32	34	76	67	81	78	4	4	2	2
DeKalb 224	32	--	76	62	--	--	9	2	--	--
DeKalb XL325	32	33	89	87	84	84	4	3	2	2
Supercrot X2610	33	34	67	51	76	61	5	4	4	2
P.A.G. 234	33	35	78	58	83	68	4	2	2	1
Wisconsin 563	33	--	66	57	--	--	2	6	--	--
Supercrot X1200	33	34	68	57	78	69	4	7	2	4
DeKalb 427	33	34	89	65	81	69	5	2	2	1
Kingscrot KT	33	34	92	82	84	77	6	4	3	3

Table 6 continued. Ingham County.

Hybrid	Moisture %		Bushels per acre				Stalk lodging %			
			1964		2 yrs.		1964		2 yrs.	
	1964	2 years	17,000	21,800	17,000	21,400	17,000	21,400	17,000	21,400
Cargill 180	33	34	96	72	93	79	1	4	1	2
Todd 360	33	--	80	72	--	--	1	1	--	--
Pioneer 371	33	34	94	77	86	74	6	4	3	2
Kingscrosst 571	33	--	77	68	--	--	1	3	--	--
Supercrosst X2570	33	35	86	81	85	80	4	3	2	2
United Hagie UHX130J	33	--	76	68	--	--	6	9	--	--
Todd 303	34	--	61	55	--	--	2	1	--	--
Kingscrosst KM567	34	--	94	86	--	--	1	12	--	--
United Hagie UH3H30	34	--	84	85	--	--	1	2	--	--
DeKalb 400	34	35	79	62	82	68	2	0	1	0
Pioneer 352A	35	--	100	80	--	--	2	4	--	--
Michigan 490	35	36	83	57	78	66	3	4	2	2
Todd 505A	35	--	82	58	--	--	2	3	--	--
DeKalb 45	35	--	87	79	--	--	1	2	--	--
Todd 130	35	--	83	67	--	--	0	1	--	--
Supercrosst 214	35	--	56	54	--	--	1	9	--	--
Michigan 620	35	35	88	88	87	89	1	4	1	3
Kingscrosst KM589	37	--	77	57	--	--	2	3	--	--
Cargill 880	37	--	80	62	--	--	1	3	--	--
DeKalb 441	39	40	61	42	66	59	5	5	3	3
Average	32	33	80	69	81	74	3	4	3	2
Range	24 to 39	28 to 40	56 to 100	42 to 88	66 to 93	59 to 89	0 to 9	0 to 11	1 to 6	0 to 6
L.S.D.*	2	1	9	9	4	4				

*Least significant differences.

	1963	1964
Planted	May 3	May 5
Harvested	October 9	October 1
Soil type	Conover clay loam	Conover clay loam
Previous crop	Corn	Corn
Populations	17,000 and 21,000	17,000 and 21,800
Fertilizer	17,000 = 123-89-156 21,000 = 239-149-181	17,000 = 170-50-50 21,800 = 290-50-50
Soil test: pH	6.1	6.5
P ₂ O ₅	46 (high)	45 (high)
K ₂ O	236 (high)	156 (high)

Farm Cooperator: Michigan State University, East Lansing

Table 7

Zone 2

SOUTH CENTRAL MICHIGAN**INGHAM COUNTY TRIAL**

Silage—One and Two Years—1963 and 1964

Hybrid	% moisture in ears		Tons per acre				% ears in dry weight	
			Green wt.		Dry wt.			
	1964	2 years	1964	2 years	1964	2 years	1964	2 years
Michigan 250	36	40	13.0	13.0	5.3	4.8	40	44
Michigan 270	36	39	11.6	11.4	5.3	4.7	33	44
Michigan 300	39	42	11.7	12.1	4.8	4.7	46	50
Kingscrosst KE 497	40	45	12.4	12.1	5.4	4.5	40	47
Michigan 400	40	44	14.6	13.9	5.8	5.1	43	50
United Hagie UH 1290(3X)	41	--	13.9	--	5.9	--	34	--
Michigan 370	41	46	11.2	12.5	5.5	5.0	42	47
Funks Bros. G 17A	41	45	12.0	11.8	5.5	4.8	46	53
Kingscrosst PX 35 (2X)	41	--	9.9	--	5.1	--	34	--
Michigan 430	41	46	12.2	12.5	5.5	5.0	40	48
Kingscrosst PX 487 (3X)	42	45	14.0	11.6	5.4	4.4	45	55
P.A.G. 62	42	--	14.5	--	6.6	--	32	--
Kingscrosst PX 530 (3X)	42	46	10.8	12.3	4.9	4.6	37	49
DeKalb XL 325 (3X)	42	45	14.0	13.1	6.1	5.1	38	49
Cargill 180	43	47	13.6	13.4	4.8	4.5	44	51
Michigan 425	43	48	13.3	13.9	4.7	4.7	46	50
Pioneer 373	43	50	16.2	15.0	6.9	5.5	33	40
P.A.G. 234	43	47	14.6	15.2	6.1	5.6	33	43
Todd 130 (3X)	43	--	16.8	--	6.0	--	42	--
Wolverine 64	43	--	10.4	--	4.3	--	44	--
Wisconsin 563	43	--	16.5	--	6.5	--	42	--
Supercrosst X2570	43	47	14.9	14.1	5.7	5.2	39	47
United Hagie UHX129F(2X)	44	--	15.7	--	6.6	--	30	--
Todd 505A (3X)	44	--	14.0	--	5.3	--	34	--
Todd 360 (3X)	44	--	14.8	--	6.3	--	29	--
Kingscrosst KM 589	44	--	16.4	--	6.7	--	33	--
Supercrosst X2610	44	48	14.7	12.9	6.5	5.2	43	51
DeKalb 224	44	--	13.1	--	5.0	--	40	--
United Hagie UHX130J(2X)	44	--	13.6	--	6.6	--	41	--
Kingscrosst KM 555	45	--	11.6	--	4.3	--	34	--
Wolverine 66A	45	--	12.5	--	4.8	--	34	--
Todd 303 (3X)	45	--	13.0	--	5.6	--	36	--
Michigan 570	45	48	14.4	14.1	5.9	5.2	41	50
DeKalb 427	45	50	13.6	13.3	5.3	4.7	41	50
DeKalb XL45 (2X)	45	--	13.6	--	5.9	--	45	--

Table 7 continued. Ingham County.

Hybrid	Moisture %		Bushels per acre		Stalk lodging %			
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.		
	Kingscrot 571	45	--	13.5	--	6.3	--	31
Michigan 490	45	49	15.2	14.0	5.8	5.1	43	49
Supercrot X1200	45	50	13.1	13.1	4.7	4.3	40	46
Michigan 620	46	51	15.4	14.5	6.9	5.6	37	46
Pioneer 368	46	--	12.2	--	5.6	--	34	--
Kingscrot								
KM 567	46	--	15.6	--	6.7	--	34	--
Kingscrot KT	46	50	12.4	12.5	4.9	4.4	32	42
United Hagie								
UH 3H30 (3X)	47	--	12.7	--	5.1	--	29	--
Pioneer 371	48	52	13.2	12.9	5.3	4.8	35	45
Supercrot 214	48	--	15.8	--	6.3	--	38	--
Pioneer 352 A	48	--	15.3	--	5.3	--	32	--
DeKalb 414	48	53	15.6	14.9	6.6	5.4	34	42
DeKalb 400 (2X)	48	53	14.2	14.6	5.6	5.1	39	45
DeKalb 441	50	55	18.7	16.5	7.7	5.9	38	42
Cargill 880	52	--	16.4	--	6.8	--	30	--
Average	44	47	13.8	12.9	5.7	5.0	38	47
Range	36	39	9.9	11.4	4.3	4.3	29	40
	to	to	to	to	to	to	to	to
	52	55	18.7	16.5	7.7	5.9	46	55
L.S.D.*	2	2	1.2	.8	.5	.3		

*Least significant differences.

	1963	1964
Planted	May 3	May 5
Harvested	September 13	September 12
Soil type	Conover clay loam	Conover clay loam
Previous crop	Corn	Corn
Population	17,000	16,600
Fertilizer	123-89-156	170-50-50
Soil test: pH	6.1	6.5
P ₂ O ₅	46 (high)	45 (high)
K ₂ O	236 (high)	156 (high)

Table 8

Zone 2

SOUTH CENTRAL MICHIGAN
(MUCK SOIL) CLINTON COUNTY TRIAL
One and Two Years — 1962 and 1964

Hybrid	Moisture		Bushels		Stalk	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
	A.E.S. 202	22	26	50	44	9
Michigan 270	23	25	55	48	8	7
Michigan 300	24	28	51	42	13	8
P.A.G. 45	26	--	40	--	7	-
Supercrot X 2610	26	--	57	--	3	-
Michigan 250	26	29	47	44	6	5
Michigan 370	27	31	52	48	7	7
Michigan 400	27	31	61	54	2	3
Funk Bros. G 10 A	28	--	52	--	9	-
DeKalb XL 15 (2X)	28	--	59	--	4	-
P.A.G. 57	28	--	42	--	7	-
Michigan 430	29	35	47	41	4	4
Kingscrot PX 530 (3X)	30	--	53	--	2	-
Funk Bros. G 11 A	30	--	41	--	9	-
Kingscrot KE 497	30	--	51	--	0	-
Kingscrot PX 481 (3X)	30	--	45	--	6	-
DeKalb 57	30	34	45	46	0	1
DeKalb 224	30	--	54	--	3	-
Kingscrot KM 555	30	--	45	--	3	-
Michigan 425	31	35	50	45	1	2
Pioneer 388	31	--	40	--	8	-
DeKalb XL 325 (#X)	32	--	45	--	1	-
Pioneer 383	32	--	53	--	5	-
Michigan 490	32	38	39	37	5	6
DeKalb 59	33	--	38	--	4	-
Funk Bros. G 17 A	33	--	48	--	1	-
P.A.G. 70	33	--	42	--	4	-
P.A.G. Exp. 15136	34	--	37	--	9	-
Kingscrot KS 5	34	--	35	--	12	-
Cargill 220	34	--	34	--	3	-
Pioneer 371	34	--	40	--	0	-
DeKalb 414	35	--	40	--	1	-
DeKalb 400 (2X)	37	41	36	38	3	2
Average	31	32	46	44	5	5
Range	22	25	34	37	0	1
	to	to	to	to	to	to
	37	41	61	54	13	8
L.S.D.*	2	1	6	3		

*Least significant differences.

	1962	1964
Planted	May 22	May 19
Harvested	October 3	October 30
Previous crop	Corn	Corn
Population	17,100	16,300
Fertilizer	20-40-80	19-38-76

Farm Cooperator: MSU Muck Farm

Table 9

Zone 3

NORTH CENTRAL MICHIGAN
SANILAC COUNTY TRIAL
One and Two Years — 1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	2		2		2	
	1964	yrs.	1964	yrs.	1964	yrs.
A.E.S. 202	23	25	75	69	5	2
Michigan 270	24	27	94	95	8	5
Kingscrosst KC 3	26	27	80	71	10	5
Michigan 250	26	27	85	84	5	3
Jacques 900 J	26	--	93	--	5	-
Pioneer 388	26	30	92	91	5	2
Michigan 300	26	29	95	88	7	3
Kingscrosst KE 449	26	28	99	88	5	3
Kingscrosst KE 475	27	28	93	88	7	3
DeKalb 57	27	33	103	95	6	3
Funk Bros. G. 11 A	28	31	98	93	4	2
Kingscrosst KE 471	28	30	83	86	6	3
Michigan 370	28	31	99	92	7	4
DeKalb 58	29	--	89	--	12	-
Pioneer 381 A	29	--	91	--	7	-
Wolverine 46 A	29	30	84	84	3	2
Funk Bros. G 10 A	29	32	98	92	4	2
Michigan 400	30	32	99	93	5	2
Kingscrosst PX 487 (3X)	30	33	98	93	8	4
Kingscrosst PX 481 (3X)	30	32	90	81	7	3
DeKalb XL 15 (2X)	30	--	108	--	5	-
Michigan 425	30	33	98	94	8	4
P.A.G. 45	31	33	105	96	3	2
Supercrosst X 2610	32	--	98	--	1	-
Michigan 430	32	34	88	85	7	4
DeKalb 59	32	--	84	--	6	-
P.A.G. 62	32	--	96	--	5	-
Funk Bros. G 17 A	33	--	108	--	6	-
P.A.G. Exp. 15136 (2X)	33	37	96	85	3	1
Cargill 644	33	--	85	--	3	-
Pioneer 383	33	--	94	--	7	-
Kingscrosst KE 497	33	36	87	88	2	1
Kingscrosst PX 530 (3X)	33	--	92	--	5	-
DeKalb 224	34	--	90	--	3	-
DeKalb XL 325 (3X)	34	37	103	95	2	1
Michigan 570	35	37	86	85	7	4
Pioneer 373	36	--	88	--	7	-
Michigan 490	36	37	95	87	6	4
DeKalb 400 (2X)	36	39	93	88	3	1
DeKalb 238	38	38	90	85	7	3
Averages	30	32	93	88	6	3
Range	23	25	75	69	1	1
	to	to	to	to	to	to
	38	39	108	96	12	5
L.S.D.*	2	1	10	4		

*Least significant differences

Table 9 continued. Sanilac County.

	1963	1964
Planted	May 14	May 11
Harvested	October 21	October 25
Soil type	Brookston clay loam	Brookston clay loam
Previous crop	Corn	Corn
Population	17,000	17,000
Fertilizer	110-80-80	98-94-47
Soil test: pH	7.2	6.5
P ₂ O ₅	8 (low)	33 (medium)
K ₂ O	60 (low)	172 (high)

Farm Cooperator: Orville Orchard, Applegate
County Extension Director: Keith Sowerby, Sandusky

Table 10

Zone 3

NORTH CENTRAL MICHIGAN
SAGINAW COUNTY TRIAL
One and Two Years — 1963 and 1964

Hybrid	Moisture %		Bushels per acre				Stalk lodging %			
	2		1964		2 yrs.		1964		2 yrs.	
	1964	2 years	15,500	20,300	15,800	20,300	15,500	20,300	15,800	20,300
Michigan 270	21	22	58	51	71	65	14	11	7	6
Michigan 250	22	23	56	53	66	69	12	16	6	8
Michigan 300	23	26	50	45	69	67	9	5	4	2
United Hagie										
UHX124 (2X)	23	--	56	55	--	--	14	15	--	--
Wolverine W135 (2X)	24	--	61	68	--	--	7	11	--	--
DeKalb 57	25	27	62	49	84	74	13	18	6	10
United Hagie										
UHX125 (2X)	26	--	64	55	--	--	19	18	--	--
Michigan 400	26	28	61	57	75	76	7	4	3	4
Kingscrosst KE497(3X)	26	28	59	47	78	66	5	4	2	3
Michigan 370	26	29	62	53	81	78	3	3	2	2
Wolverine 52	26	--	44	44	--	--	2	2	--	--
Kingscrosst PX35(2X)	26	--	66	43	--	--	23	14	--	--
Kingscrosst KS5	26	--	52	48	--	--	11	7	--	--
Kingscrosst PX487(3X)	26	30	49	40	68	65	5	15	3	12
DeKalb XL15(2X)	26	28	44	52	71	76	6	9	4	7
United Hagie										
UHX126(2X)	27	--	56	54	--	--	3	2	--	--
P.A.G. 55	27	29	53	35	71	66	5	7	3	5
United Hagie										
UHX123 (2X)	27	--	49	33	--	--	3	3	--	--
Kingscrosst PX530(3X)	27	--	49	51	--	--	9	2	--	--
DeKalb 59	28	--	42	32	--	--	8	8	--	--
Michigan 430	28	28	52	46	73	67	17	6	9	4
Supercrosst X2610	28	--	61	48	--	--	6	3	--	--
DeKalb XL325 (3X)	28	--	68	51	--	--	2	3	--	--
DeKalb 409	28	--	62	60	--	--	11	12	--	--
Kingscrosst 547	28	30	43	34	65	62	10	10	7	6

Table 10 continued. Saginaw County.

Hybrid	Moisture %		Bushels per acre				Stalk lodging %			
			1964		2 yrs.		1964		2 yrs.	
	1964	2 yrs.	15,500	20,300	15,800	20,300	15,500	20,300	15,800	20,300
DeKalb 400 (2X)	29	31	69	57	85	70	3	3	2	2
Michigan 425	29	28	68	52	83	77	10	9	5	5
Michigan 570	29	30	68	47	82	69	12	13	7	8
Kingscrot KM555	29	--	52	34	--	--	7	7	--	--
Supercrot X2570	29	--	59	62	--	--	11	7	--	--
P.A.G. 70	30	--	56	56	--	--	7	8	--	--
DeKalb XL45 (2X)	30	--	73	64	--	--	1	3	--	--
Kingscrot 571	30	--	58	43	--	--	4	4	--	--
Pioneer 381A	30	29	56	54	74	74	13	7	7	5
Kingscrot K04	30	--	56	53	--	--	7	8	--	--
P.A.G. SX49 (2X)	31	--	60	48	--	--	3	2	--	--
Kingscrot 581	31	32	54	42	72	67	3	5	3	7
Kingscrot KM567	31	--	54	49	--	--	8	5	--	--
Funk Bros. G32	31	32	66	43	81	66	11	12	5	6
Michigan 490	31	33	73	59	82	71	7	4	4	3
Pioneer 371	32	31	56	62	77	73	8	4	4	2
Michigan 620	32	34	56	47	74	67	8	10	4	6
DeKalb 224	32	--	44	35	--	--	2	6	--	--
P.A.G. Exp. 15136 (2X)	33	31	50	47	71	64	1	2	1	1
Cargill 880	34	--	76	56	--	--	3	0	--	--
Average	28	29	57	49	75	70	8	7	4	5
Range	21 to 34	22 to 34	42 to 76	32 to 68	65 to 85	62 to 78	1 to 23	2 to 18	2 to 9	2 to 12
L.S.D.*	2	1	8	8	4	4				

*Least significant differences.

	1963	1964
Planted	May 4	May 4
Harvested	October 15	October 20
Soil type	Brookston clay loam	Brookston clay loam
Previous crop	Beans	Corn
Populations	16,100 and 20,200	15,500 and 20,300
Fertilizer	76-79-40	213-262-72
Soil test: pH	6.9	7.2
P ₂ O ₅	24 (medium)	medium
K ₂ O	192 (high)	medium high

Farm Cooperators: Walter Reinbold & Sons, Reese County Agricultural Agent: Ray Vasold, Saginaw

Table 11

NORTH CENTRAL MICHIGAN
MONTCALM COUNTY TRIAL
 One and Two Years - 1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
Michigan 300	18	24	79	79	1	2
DeKalb XL 304 (3X)	19	--	81	--	2	--
Michigan 270	19	24	76	79	2	2
Michigan 250	20	25	80	79	3	2
Tomco 143	21	--	72	--	5	--
Funk Bros. G 10 A	21	27	73	78	3	2
Michigan 370	21	27	82	83	1	2
Pioneer 3775 (2X)	21	29	66	70	2	1
DeKalb 57	21	29	71	72	3	2
Pioneer 385	21	--	58	--	3	--
Kingscrot PX 481 (3X)	22	--	71	--	2	--
Michigan 430	22	28	67	70	10	5
Michigan 400	22	28	85	81	4	2
Funk Bros. G 18 A	22	--	85	--	1	--
Kingscrot PX 487 (3X)	22	28	67	75	5	3
Funk Bros. G 17 A	22	30	58	72	6	3
Kingscrot PX 35 (2X)	22	--	77	--	8	--
Kingscrot KS 5	22	28	82	77	0	1
Michigan 425	22	28	72	72	2	2
Tomco TGG 180	22	--	82	--	1	--
DeKalb XL 15 (2X)	22	--	80	--	3	--
P.A.G. 57	23	29	62	68	0	0
Pioneer 385 A	23	--	57	--	3	--
Cowbell 90 (2X)	23	--	81	--	1	--
DeKalb XL 308 (3X)	23	--	56	--	3	--
DeKalb 59	23	28	65	66	3	3
DeKalb XL 325 (3X)	23	30	69	76	1	1
Kingscrot KE 497	23	30	68	71	1	1
Kingscrot KM 555	24	--	70	--	2	--
Kingscrot PX 530 (3X)	24	29	76	71	2	4
DeKalb 224	24	--	72	--	6	--
Michigan 570	25	31	64	68	5	3
Michigan 490	25	30	73	73	1	1
Kingscrot KM 558	26	30	82	79	2	1
DeKalb 400 (2X)	26	--	66	--	2	--
Average	22	28	72	74	3	2
Range	18 to 26	24 to 31	56 to 85	66 to 83	0 to 10	0 to 5
L.S.D.*	1	1	8	4		

*Least significant differences.

	1963	1964
Planted	May 6	May 5
Harvested	October 14	November 1
Soil type	Montcalm-McBride sandy loam	Montcalm-McBride sandy loam
Previous crop	Beans	Corn
Population	16,700	15,200

Table 11 continued. Montcalm County.

Fertilizer	118-70-70	94-47-26
Soil test: pH	6.7	7.0
P ₂ O ₅	165 (high)	186 (very high)
K ₂ O	204 (high)	232 (high)

Farm Cooperators: Kenneth and Henry McDaniels, McBride
County Extension Director: James Crosby, Stanton

Table 12 continued. Newaygo County.

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
Averages	33	30	46	56	4	3
Range	25 to 45	24 to 40	28 to 61	43 to 64	0 to 11	0 to 6
L.S.D.*	2	2	6	4		

*Least significant differences.

Table 12 Zone 3

NORTH CENTRAL MICHIGAN

NEWAYGO COUNTY TRIAL
One and Two Years — 1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
A.E.S. 202	25	24	52	55	7	6
Michigan 300	27	27	51	59	0	0
Michigan 270	27	26	56	64	2	2
Funk Bros. G 31 A	28	--	50	--	7	-
Michigan 250	28	26	47	57	2	2
DeKalb 58	28	29	52	53	7	5
DeKalb 57	29	29	61	62	2	1
Kingscrost KE 449	29	29	51	53	4	4
DeKalb 59	29	--	47	--	0	-
Haapala 366 A	30	28	53	58	9	5
P.A.G. 55	30	30	38	52	3	2
Kingscrost KE 475	30	28	59	57	8	4
Kingscrost PX 481 (3X)	31	29	45	58	4	3
DeKalb 400 (2X)	31	--	52	--	3	-
Funk Bros. G 11 A	31	--	49	--	0	-
DeKalb XL 15 (2X)	31	--	55	--	4	-
Funk Bros. G 10 A	32	30	42	52	7	4
Kingscrost KE 471	32	30	55	64	7	5
Michigan 370	32	30	61	64	5	3
Michigan 400	32	31	57	65	1	0
Funk Bros. G 17 A	32	31	38	53	3	1
DeKalb XL 325 (3X)	33	32	45	60	6	3
Michigan 430	33	32	44	55	6	6
Pioneer 385	33	30	45	57	3	1
P.A.G. 45	33	32	32	53	10	5
Michigan 425	34	32	49	62	1	0
Funk Bros. G 4390 (2X)	34	28	48	57	0	0
Funk Bros. G 4350 (2X)	34	--	59	--	4	-
P.A.G. SX 49 (2X)	35	33	40	54	1	0
DeKalb 224	35	29	28	59	6	1
P.A.G. 70	37	33	29	43	3	2
Michigan 490	37	35	32	59	9	5
Pioneer 3583	37	34	32	47	8	4
P.A.G. Exp. 15136 (2X)	38	36	30	49	0	0
Michigan 570	39	--	31	--	1	-
Funk Bros. G 32	42	--	35	--	11	-
DeKalb 238	45	40	48	56	6	3

	1963	1964
Planted	May 7	May 20
Harvested	October 26	October 30
Previous crop	Wheat seeded to clover	Corn
Population	14,400	17,100
Fertilizer	110-150-108	Manure, 18-70-35
Soil test: pH	6.8	6.6
P ₂ O ₅	41 (high)	47 (medium high)
K ₂ O	140 (medium)	360 (very high)

Farm Cooperators: Merrill Eady, Grant (1963 and Colln Gray-
bill, Grant (1964)

County Extension Director: Lane Rushmore, Fremont

Table 13

Zone 4

NORTHERN MICHIGAN
GRAND TRAVERSE COUNTY TRIAL
Grain—One and Two Years—1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
	A.E.S. 202	28	23	55	49	1
Michigan 160	28	23	43	39	3	3
DeKalb 29	29	23	57	52	0	1
DeKalb 36	31	24	61	51	1	2
Michigan 270	31	25	65	59	1	1
Michigan 300	31	27	52	48	0	0
Funk Bros. G188	31	25	49	46	0	1
Michigan 250	34	26	52	50	3	2
Kingscrost KC3	32	26	57	43	4	5
DeKalb XL304 (3X)	33	--	62	--	2	-
Funk Bros. G31A	34	--	58	--	2	-
DeKalb 45	34	27	52	48	3	2
Michigan 370	35	29	62	55	1	1
Funk Bros. G11A	35	28	56	49	2	2
Kingscrost KE435	35	27	58	45	2	2
Kingscrost KE449	36	--	57	--	2	-
Kingscrost KE497	36	--	51	--	1	-
Funk Bros. G10A	37	--	39	--	0	-
DeKalb XL308 (3X)	38	--	47	--	4	-
Kingscrost KE471	39	--	44	--	0	-
DeKalb XL15 (2X)	40	33	63	53	0	0
Averages	34	26	54	49	2	2
Range	28 to 40	23 to 33	39 to 65	39 to 59	0 to 4	0 to 5
L.S.D.*	2	1	7	3		

*Least significant differences.

	1963	1964
Planted	May 18	May 22
Harvested	October 29	October 28
Soil type	Emmett sandy loam	Emmett sandy loam
Previous crop	Alfalfa	Alfalfa
Population	16,100	14,800
Fertilizer	10-40-40	120-37-217
Soil test: pH	6.0	7.1
P ₂ O ₅	30 (medium)	24 (medium)
K ₂ O	88 (low)	68 (low)

Farm Cooperators: Herb and Karl Wagner, Grawn
County Extension Director: A. W. Glidden, Traverse City

Table 14

Zone 4

NORTHERN MICHIGAN
GRAND TRAVERSE COUNTY TRIAL
Silage—One and Two Years—1963 and 1964

Hybrid	% moisture in ears		Tons per acre				% ears in dry weight	
			Green wt.		Dry wt.			
	1964	2 years	1964	2 years	1964	2 years	1964	2 years
A.E.S. 202	46	46	8.8	8.9	3.1	3.3	62	60
DeKalb 29	48	46	8.0	7.7	3.1	2.9	55	57
Michigan 160	49	45	8.1	8.1	3.0	3.0	61	58
Kingscrost KC3	49	47	10.5	8.8	3.4	3.0	63	63
Funk Bros. G188	50	47	10.7	9.4	3.2	3.4	60	52
DeKalb XL304 (3X)51	51	--	13.3	--	4.0	--	59	--
Kingscrost KE 435	52	48	10.2	9.4	3.2	3.3	61	57
Michigan 270	52	51	12.1	11.0	3.6	3.4	58	57
DeKalb 36	52	48	9.6	8.1	3.2	2.9	52	56
Michigan 250	53	51	12.6	11.2	3.6	3.5	53	54
Kingscrost KE 449	53	--	11.2	--	3.3	--	54	--
Funk Bros. G31A	54	--	8.7	--	2.6	--	60	--
Michigan 300	55	54	11.9	11.5	3.8	3.6	53	48
Funk Bros. G11A	55	53	12.7	11.3	3.5	3.3	60	55
DeKalb 45	55	52	12.0	10.3	3.4	3.1	54	54
Michigan 370	55	54	12.8	10.9	3.6	3.2	49	50
Funk Bros. G10A	58	--	13.5	--	3.6	--	46	--
Kingscrost KE471	60	--	13.5	--	3.7	--	51	--
DeKalb XL308 (3X)	60	--	12.5	--	3.6	--	50	--
DeKalb XL15 (2X)	61	59	14.4	12.8	3.8	3.5	57	52
Kingscrost KE 497	64	--	14.0	--	3.9	--	43	--
Average	54	50	11.5	10.0	3.4	3.2	55	55
Range	46 to 64	45 to 59	8.0 to 14.4	7.7 to 12.8	2.6 to 4.0	2.9 to 3.5	43 to 63	48 to 63
L.S.D.*	3	2	1.2	0.7	.4	.2		

*Least significant differences.

	1963	1964
Planted	May 18	May 22
Harvested	September 17	September 15
Soil type	Emmett sandy loam	Emmett sandy loam
Previous crop	Alfalfa	Alfalfa
Population	16,100	14,800
Fertilizer	10-40-40	120-37-217
Soil test: pH	6.0	7.1
P ₂ O ₅	30 (medium)	24 (medium)
K ₂ O	88 (low)	68 (low)

Farm Cooperators: Herb and Karl Wagner, Grawn
County Extension Director: A. W. Glidden, Traverse City

Table 15

Zone 4

NORTHERN MICHIGAN
IOSCO COUNTY TRIAL
Grain—One and Two Years—1963 and 1964

Hybrid	Moisture %		Bushels per acre		Stalk lodging %	
	1964	2 yrs.	1964	2 yrs.	1964	2 yrs.
	DeKalb 29	25	29	77	75	-
Michigan 160	25	28	67	64	-	2
Pride 11	27	--	83	--	-	-
A.E.S. 202	27	30	81	78	-	5
DeKalb XL304 (3X)	28	--	95	--	-	-
Kingscrost KC3	28	--	80	--	-	-
Michigan 270	28	31	99	93	-	3
Kingscrost KE 449	29	--	90	--	-	3
Kingscrost KE 471	29	--	96	--	-	-
Michigan 250	29	32	85	81	-	3
DeKalb 45	30	33	69	73	-	2
Kingscrost KE 435	30	34	96	88	-	4
Michigan 300	31	34	77	81	-	1
Wolverine 39	32	--	84	--	-	-
Wolverine 52	34	--	87	--	-	-
DeKalb XL15 (2X)	34	38	88	87	-	4
Wolverine 46A	35	--	72	--	-	-
Kingscrost KE 497	36	--	86	--	-	-
DeKalb XL308 (3X)	38	--	78	--	-	-
Wolverine 66A	40	--	81	--	-	-
Average	31	32	84	80	-	3
Range	25 to 40	28 to 38	67 to 99	64 to 93	- to -	1 to 5
L.S.D.*	2	1	9	4		

*Least significant differences

	1963	1964
Planted	May 20	May 21
Harvested	October 8	October
Soil type	Kawkawlin-Nestor clay loam	Nestor-Selkirk loam
Previous crop	Alfalfa	Corn
Population	14,300	13,100
Fertilizer	24-43-28	66-40-20
Soil test: pH	7.5	--
P ₂ O ₅	240 (high)	--
K ₂ O	220 (high)	--

Farm Cooperator: Brian Bellville, Whittemore
County Extension Director: Marvin Davenport, East Tawas

Table 16

Zone 4

NORTHERN MICHIGAN
IOSCO COUNTY TRIAL
Silage—One and Two Years—1963 and 1964

Hybrid	% moisture in ears		Tons per acre				% ears in dry weight	
			Green wt.		Dry wt.			
	1964	2 years	1964	2 years	1964	2 years	1964	2 years
DeKalb 29	61	56	13.2	10.9	3.3	3.1	43	51
Michigan 160	61	55	11.9	11.0	2.7	3.0	41	53
Pride 11	66	--	15.9	--	3.8	--	41	--
A.E.S. 202	60	57	13.4	11.6	3.4	3.2	45	49
DeKalb XL304 (3X)	70	--	15.3	--	3.5	--	37	--
Kingscrost KC3	63	--	16.3	--	4.0	--	41	--
Michigan 270	65	60	14.9	13.8	3.2	3.3	44	49
Kingscrost KE 449	68	--	19.3	--	4.4	--	33	--
Kingscrost KE 471	77	--	17.8	--	3.7	--	26	--
Michigan 250	69	63	17.6	15.0	3.7	3.5	38	45
DeKalb 45	76	66	11.3	11.5	2.4	3.0	25	40
Kingscrost KE 435	64	61	14.1	12.3	3.5	3.3	41	50
Michigan 300	74	68	16.2	14.9	3.4	3.6	24	35
Wolverine 39	71	--	18.9	--	4.2	--	32	--
Wolverine 52	70	--	17.5	--	4.0	--	35	--
DeKalb XL15 (2X)	75	69	19.6	17.0	4.2	4.1	31	42
Wolverine 46A	71	--	15.6	--	3.5	--	34	--
Kingscrost KE 497	71	--	17.0	--	3.7	--	29	--
DeKalb XL308 (3X)	76	--	14.2	--	3.0	--	27	--
Wolverine 66A	84	--	19.1	--	1.9	--	18	--
Average	70	62	16.0	13.1	3.5	3.3	34	46
Range	61 to 84	55 to 69	11.3 to 19.6	10.9 to 17.0	1.9 to 4.4	3.0 to 4.1	18 to 45	35 to 53
L.S.D.*	3	2	1.6	0.9	.3	.2		

*Least significant differences.

	1963	1964
Planted	May 20	May 21
Harvested	September 11	September 2
Soil type	Kawkawlin-Nestor clay loam	Nestor-Sellsirk loam
Previous crop	Alfalfa	Corn
Population	14,300	13,100
Fertilizer	24-43-28	66-40-20
Soil test: pH	7.5	--
P ₂ O ₅	240 (high)	--
K ₂ O	220 (high)	--

Farm Cooperator: Brian Bellville, Whittemore
County Extension Director: Marvin Davenport, East Tawas

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