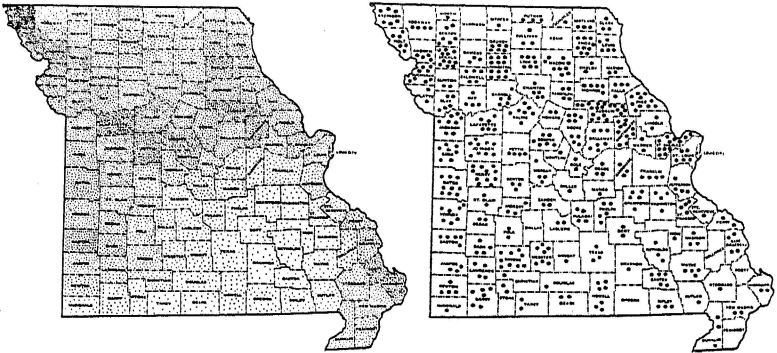


UNIVERSITY OF MISSOURI

COLLEGE OF AGRICULTURE

# Agricultural Experiment Station

BULLETIN 143



Each dot, 25,000 bushels

Each dot, one variety test

## Variety Tests of Corn

COLUMBIA, MISSOURI

July, 1916

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COLLEGE OF AGRICULTURE  
**Agricultural Experiment Station**

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<sup>1</sup>In the service of the U. S. Department of Agriculture

# Variety Tests of Corn<sup>1</sup>

C. B. HUTCHISON, A. R. EVANS, J. C. HACKLEMAN, AND  
E. M. McDONALD

The Missouri Agricultural Experiment Station in 1905 began a series of variety tests of corn at Columbia and in various sections of the State. The object of these experiments has been, first, to determine which of the standard varieties of corn are best adapted to the various sections and soils of the state; second, to emphasize the importance of these standard varieties; and third, to aid in the dissemination of seed of the best varieties thruout the state. From twenty-five to thirty varieties have been included in the tests at Columbia each year. The most promising of these have been tried on several outlying crop experiment fields maintained by the Station in different sections of the state, while still more extensive tests of six to eight of the best varieties have been made each year in cooperation with a number of Missouri farmers.

The work at Columbia has been preliminary in nature in that a number of varieties have been included with the idea of obtaining information as to their probable adaptation to the state. When this has been accomplished, the most promising varieties have been grown on the outlying crop experiment fields located in different sections of the state in reference to soil type and maintained as a part of the Station's work in studying the variety adaptations of various crops to the different soil areas of the state. The cooperative experiments have been located upon the farms of former students of the Missouri College of Agriculture, members of the Missouri Corn Growers' Association, and such other farmers as the Experiment Station has found interested in this work.

The first report of the results of these experiments was published

<sup>1</sup>These experiments were planned and inaugurated by M. F. Miller, now of the Department of Soils of this Station, in the spring of 1905, and have been conducted largely under his direction. H. D. Hughes, now of the Iowa Experiment Station, had charge of the project from 1907 to 1909, after which it was placed in the hands of the senior author. T. R. Douglass, now of the Iowa Agricultural College, has also assisted in the work. The authors are indebted to each of these gentlemen for criticisms, suggestions, and assistance.

in 1910.<sup>1</sup> The present bulletin reports the results for the ten-year period 1905-14.

### VARIETIES TESTED AT COLUMBIA

The tests at Columbia were begun in 1905 with six of the most common varieties of the state: Boone County White, St. Charles County White, Reid's Yellow Dent, Cartner, Leaming, and Iowa Silvermine. To this list others have been added from time to time, some of which have been continued, while others have been discarded after two or three years' trials has shown them to be inferior. Table 1 shows the yields of those varieties which have proved best.

To determine the average yields of these varieties, the corn from each plot was stored in crates over winter in a dry and well ventilated seed house and then shelled in late winter or early spring and the yields computed on the basis of air dried shelled corn. It will be seen from these data that there has not been a great deal of difference in yield between several of the leading varieties when the average yield for several years is considered. Since all varieties were not included each year, the average yields for several periods have been computed in order that more accurate comparisons may be made.

In the nine-year average it will be seen that the varieties rank in the following order: St. Charles Yellow, St. Charles White, Reid's Yellow Dent, Boone County White, Johnson County White, Leaming, Cartner, Hogue's Yellow Dent, and Iowa Silvermine. The greatest difference in yield between any two of the highest yielding five varieties is only a little over two bushels to the acre, while the yields of only two varieties, Hogue's Yellow Dent and Iowa Silvermine, are significantly lower than the others.

### COOPERATIVE EXPERIMENTS

The plan in this cooperative work has been to test on all of the important soil types of the state those varieties of corn which have given greatest promise of value for Missouri conditions. Each co-operator was supplied with seed of six to ten prominent varieties of corn in quantities sufficient for planting at least one-fourth acre of each. These were planted side by side on the average corn land of the community, care being taken to select a piece of land as uniform in fertility as possible. Where possible the varieties were planted in long rows rather than in blocks, the belief being that this would give more

<sup>1</sup>Miller, M. F. and Hughes, H. D. Cooperative Variety Tests of Corn. Mo. Agr. Exp. Sta. Bull. 87. 99-158. Illus. 1910.

TABLE 1.—YIELDS OF THE LEADING VARIETIES OF CORN AT COLUMBIA DURING THE TEN-YEAR PERIOD 1905-1914

	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1905-1914 <sup>1</sup>	1906-1914 <sup>1</sup>	1909-1914 <sup>1</sup>	1910-1914 <sup>1</sup>	1912-1914 <sup>1</sup>
Boone County White ..	53.80	62.50	81.20	42.70	50.08	66.02	36.35	78.60	26.73	18.62	52.26	52.08	47.06	45.26	41.31
St. Charles White ....	53.10	64.10	80.30	53.80	40.30	65.75	41.32	83.34	18.17	30.71	53.08	53.08	46.59	47.85	44.07
Reid's Yellow Dent ..	41.70	67.00	64.30	36.50	51.56	78.43	43.60	65.47	31.53	29.63	51.07	52.11	50.10	49.93	42.54
Cartner .....	49.20	44.80	68.30	33.30	55.70	62.77	43.86	81.29	33.87	28.76	50.18	50.29	51.04	50.11	47.97
Leaming .....	46.10	67.90	64.90	36.90	57.22	61.57	37.04	65.14	34.80	30.72	50.22	50.68	47.74	45.85	43.55
Iowa Silvermine .....	54.40	59.00	40.80	34.90	47.48	56.45	28.01	72.14	23.37	18.42	43.49	42.28	40.97	39.67	37.97
St. Charles Yellow .....	....	67.10	83.90	40.10	60.12	62.05	37.67	76.58	31.00	23.31	....	53.53	48.45	46.12	43.63
Johnson County White ..	....	67.10	74.90	42.80	59.10	55.48	41.30	73.15	28.41	21.10	....	51.48	46.42	43.88	40.88
Hogue's Yellow Dent ..	....	51.30	40.90	41.10	55.27	63.86	37.09	70.94	34.13	22.93	....	46.39	47.37	45.79	42.66
Commercial White .....	....	....	....	....	59.75	82.30	38.49	116.42	24.67	23.01	....	....	57.44	55.97	54.70
Cob Pipe .....	....	....	....	....	64.24	82.24	43.05	92.18	0.29	16.24	....	....	51.20	48.60	39.23
Hildreth's Yellow Dent..	....	....	....	....	55.50	91.23	41.96	79.96	19.26	14.08	....	....	50.33	49.29	37.76
Clay County White ...	....	....	....	....	51.39	62.80	37.95	70.32	24.76	26.43	....	....	45.60	44.45	40.50
Pride of the North ....	....	....	....	....	41.08	28.19	25.41	9.58	21.64	13.86	....	....	23.29	19.74	15.02
Bloody Butcher .....	....	....	....	....	....	84.25	33.13	66.97	26.85	13.14	....	....	....	45.86	37.32
Calico .....	....	....	....	....	....	65.46	35.00	69.96	25.29	24.33	....	....	....	44.00	39.56
Hoffmeister's White ...	....	....	....	....	....	....	....	119.39	16.11	19.67	....	....	....	....	51.72
Tucker's Special .....	....	....	....	....	....	....	....	58.10	22.05	21.62	....	....	....	....	33.92

<sup>1</sup> Average.

uniform soil conditions. In order to make the work as simple as possible for the cooperators, only one plot of each variety usually was planted, altho more accurate results undoubtedly would have been obtained if each variety could have been repeated and the average of the two or more plots taken as an estimate of the value of the variety. Each variety has been given the same care in each case so that all have had equal chances. As the season advanced each cooperator made careful observations and notes on the growth and development of the corn and when mature, harvested and weighed each plot separately. These observations and weights were forwarded to the Experiment Station on blanks furnished for the purpose, and the yield of each variety in each case has been calculated on the basis of 70 pounds of ear corn to the bushel.

The distribution of these experiments is shown in the accompanying map, each dot representing one trial and its approximate location.

#### VARIETIES TESTED IN THE COOPERATIVE EXPERIMENTS

In selecting varieties for the cooperative experiments preference has been given to those varieties most commonly grown in Missouri and especially to those which the variety tests at Columbia have shown to be most valuable. The varieties used have not been the same each year. The work was started in 1905 with seven varieties. The number was increased to 12 in 1906, 13 in 1907, 12 in 1908, and ten in 1909. From 1910 to 1914 inclusive only six varieties were included, these being the ones that had given best returns during the first five years the experiments were in progress. The varieties included in the experiments each year are indicated in Table 2.

TABLE 2.—VARIETIES INCLUDED IN TESTS: 1905-1914

Variety	1905	1906	1907	1908	1909	1910-1914
Boone County White .....	*	*	*	*	*	*
Cartner .....	*	.....	*	*	.....	.....
Champion White Pearl .....	.....	.....	.....	.....	*	.....
Commercial White .....	.....	.....	.....	*	*	*
Farmer's Interest .....	.....	*	.....	.....	.....	.....
Hildreth's Yellow Dent .....	.....	.....	*	*	*	.....
Hogue's Yellow Dent .....	.....	*	*	*	*	.....
Johnson County White .....	.....	*	*	*	*	.....
Leaming .....	*	*	*	*	*	*
Legal Tender .....	.....	*	*	*	.....	.....
Reid's Yellow Dent .....	*	*	*	*	*	*
Silvermine .....	*	*	*	*	*	.....
St. Charles White .....	*	*	*	*	*	*
St. Charles Yellow .....	*	*	*	*	*	*

SOURCES OF SEED

The seed of the various varieties has been obtained each year as nearly as possible from the same sources. Unfortunately, seed of all varieties could not be obtained from the same locality and it is probable that this has had some influence upon the relative yields. There is no means of obviating such variations as may result from changing seed in tests such as these, since it is manifestly impossible to secure seed of all varieties grown in the neighborhood of each test. Since the seed of most of the varieties used each year was Missouri grown, however, such differences as might occur from a change of location are probably of no great consequence.

The sources of the seed of the various varieties used each year are as follows:

Boone County White		Johnson County White	
1905	George M. Tucker, Blodgett	1906	E. L. Hughes, Glasgow
1906	J. E. Matheny, Miami	1907	E. L. Hughes, Glasgow
1907	J. E. Matheny, Miami	1908	E. L. Hughes, Glasgow
1908	J. E. Matheny, Miami	1909	E. L. Hughes, Glasgow
1909	J. E. Matheny, Miami	Farmer's Interest	
1909	J. G. Douglass, Shelbina	1906	E. T. Long, Fayette
1910	J. E. Matheny, Miami	1907	E. T. Long, Fayette
1911	Chris Ohlendorf, Boonville	Commercial White	
1912	J. E. Matheny, Miami	1907	P. E. Crabtree, Hannon
1913	Milton Uphaus, Concordia	1908	J. M. Thompson, Hume
1914	J. W. Fortney, Columbia	1909	J. M. Thompson, Hume
St. Charles White		1910	R. A. Thompson, Hume
1905	J. H. Plackemeier, St. Charles	1911	Claude Thompson, Hume
1906	J. H. Plackemeier, St. Charles	1912	Claude Thompson, Hume
1907	J. H. Plackemeier, St. Charles	1913	Claude Thompson, Hume
1908	J. H. Plackemeier, St. Charles	1914	E. M. Hall, Carthage
1909	H. F. Ohlms, St. Charles	Reid's Yellow Dent	
1910	H. F. Ohlms, St. Charles	1905	H. C. Crain, Elmo
1911	H. F. Ohlms, St. Charles	1906	H. C. Crain, Elmo
1912	H. F. Ohlms, St. Charles	1907	H. C. Crain, Elmo
1913	H. F. Ohlms, St. Charles	1908	Chris Ohlendorf, Boonville
1914	Louis H. Penne, St. Charles	1909	Chris Ohlendorf, Boonville
Silvermine		1909	J. G. Douglass, Shelbina
1905	Berry & Co., Clarinda, Ia.	1909	J. Lockwood, Columbia
1906	Berry & Co., Clarinda, Ia.	1910	J. H. Shirky, Norborne
1907	Berry & Co., Clarinda, Ia.	1911	J. G. Douglass, Shelbina
1908	J. E. Brown, Mitchellville, Ia.	1912	R. A. Hatfield, Trenton
1908	W. W. Noe, Sibley, Ill.	1913	J. G. Douglass, Shelbina
1900	W. W. Noe, Sibley, Ill.	1914	J. G. Douglass, Shelbina
		Leaming	
		1905	E. E. Chester, Champaign, Ill.
		1906	E. E. Chester, Champaign, Ill.

## Leaming (continued)

1907	E. E. Chester, Champaign, Ill.
1908	E. M. Miller, Mound City
1909	Ernest Huggard, Columbia
1910	H. C. Craig, Cyrene
1911	H. C. Craig, Cyrene
1912	W. T. Ainsworth & Son, Mason City, Ill.
1913	W. T. Ainsworth & Son, Mason City, Ill.
1914	W. T. Ainsworth & Son, Mason City, Ill.

## Cartner

1905	J. W. McFarland, Boonville
1907	Chris Ohlendorf, Boonville
1908	Chris Smith, Bunceton
1909	Chris Ohlendorf, Boonville

## St. Charles Yellow

1905	C. A. Griesnauer, O'Fallon
1906	C. A. Griesnauer, O'Fallon
1907	C. A. Griesnauer, O'Fallon
1908	C. A. Griesnauer, O'Fallon

## St. Charles Yellow (continued)

1909	C. A. Griesnauer, O'Fallon
1910	J. M. Keithley, O'Fallon
1911	J. M. Keithley, O'Fallon
1912	J. M. Keithley, O'Fallon
1913	J. M. Keithley, O'Fallon
1914	J. M. Keithley, O'Fallon
Hogue's Yellow Dent	
1906	R. Hogue, Crete, Nebr.
1907	R. Hogue, Crete, Nebr.
1908	R. Hogue, Crete, Nebr.
1909	R. Hogue, Crete, Nebr.

## Legal Tender

1906	H. R. Scott, Tarkio
1907	H. R. Scott, Tarkio
1908	H. R. Scott, Tarkio

## Hildreth's Yellow Dent

1907	C. E. Hildreth, Altamont, Kans.
1908	C. E. Hildreth, Altamont, Kans.
1909	C. E. Hildreth, Altamont, Kans.

## HISTORY AND DESCRIPTION OF THE LEADING VARIETIES

The history and description of the more common varieties included in these tests have been compiled, and are given in the pages which follow. The histories are as nearly authentic as it has been possible to make them and the descriptions and photographs are from characteristic ears of the various varieties.<sup>1</sup>

## BOONE COUNTY WHITE

**History.**—The Boone County White corn was originated by James Riley of Boone County, Indiana. He began this work in 1876 using as a basis, a large coarse late maturing variety of corn known as White Mastodon. The selections from the White Mastodon corn were planted in a separate field and from that time on were never allowed to mix with other corn. Mr. Riley selected a smaller, earlier maturing ear than was prevalent in the White Mastodon and as a result of persistent work he secured earlier maturity, deepened the grain and increased the proportion of corn to cob. The new variety was named after the originator's home county, Boone County White.

About three years after Mr. Riley put this variety out among the farmers, O. C. Block of Champaign County, Illinois, began breeding it. He is perhaps the best known breeder of this corn after its originator. By this work Mr. Block deepened the kernel materially,

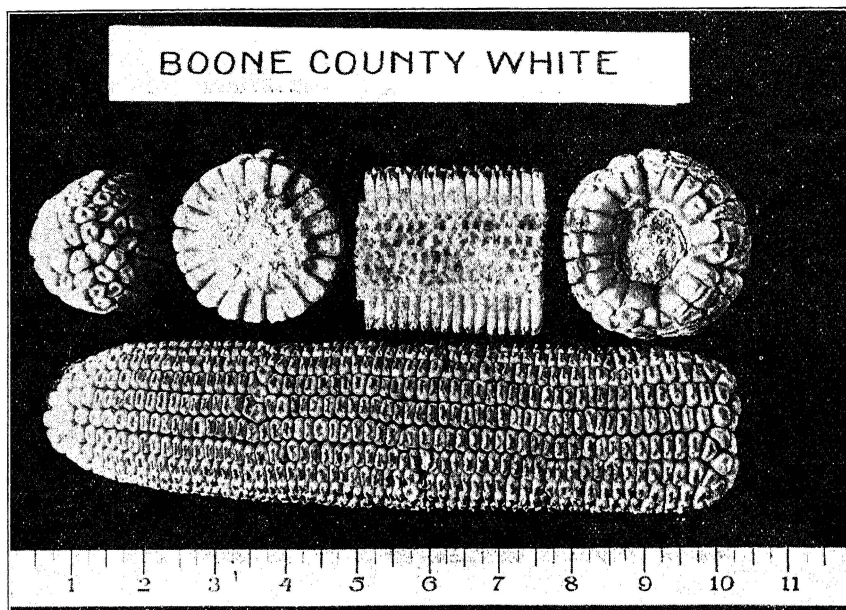
<sup>1</sup>Miller, M. F. and Hughes, H. D. Cooperative Variety Tests of Corn. Mo. Agr. Exp. Sta. Bull. 87. 99-158. Illus. 1910.



increased the roughness and also the circumference in proportion to the length.

This variety of corn is one of the most prominent in Missouri. It is grown very largely along the Missouri and Mississippi River bottoms and the better uplands of the state.

**Characteristics.**—The Missouri standard for this variety calls for ears  $10\frac{1}{2}$  to 11 inches long and  $7\frac{1}{2}$  to 8 inches in circumference.



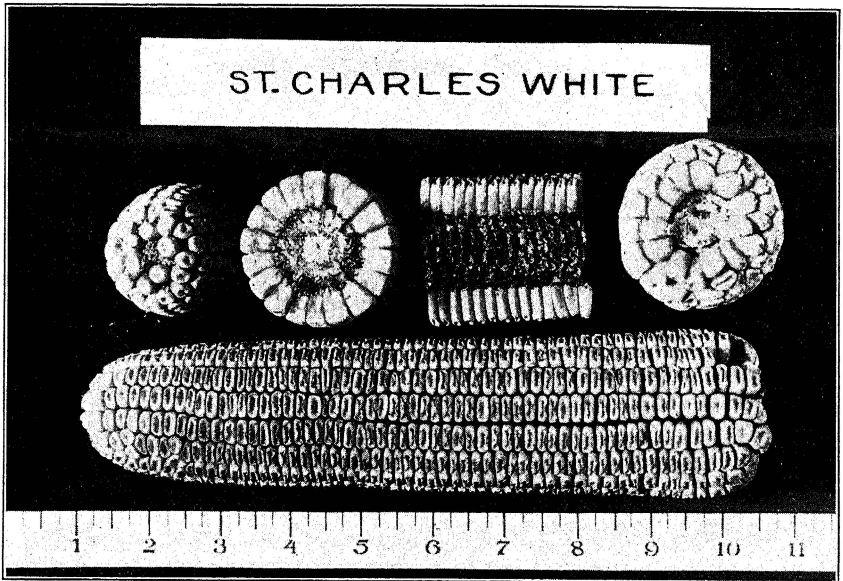
The ears are cylindrical, or nearly so, having straight rows which number from 16 to 20 on the average. The spacing between the rows is of medium width. The butts are fairly large at the shank and only moderately rounded. The tips are blunt, with a tendency towards good kernels extending well out to the end. The cob is rather large. The kernels are medium to wide, rather thick and of medium depth. They have slightly curved sides, a square shoulder at the tip and are pearly white in color. The germ is generally large and bright, extending well up into the kernel. The indentation varies according to the breeder from a smooth elongated dimple to a short beak.

Boone County White is a medium late maturing variety requiring from 120 to 125 days for complete ripening. The stalks are

strong and thick and grow to an average height of about 8½ feet for the state. They are leafy and make good silage and fodder. The corn matures well in the field with an exceptionally high per cent of marketable ears.

### ST. CHARLES WHITE

**History.**—The St. Charles White is a native of Missouri, having been developed in St. Charles County, where it has been grown



for a great many years. It is one of the most popular varieties in the southern half of the state and hundreds of bushels are shipped to the southern states each year, where it is widely grown. Much seed also is shipped east and north each year where it is used as a silage corn.

Two types of this corn are recognized—the small St. Charles and the large St. Charles, the former being slightly earlier and better adapted to thin lands. The variety is a hardy one with wide adaptations. It is a particularly valuable variety for south Missouri conditions, the small type on the uplands and larger type on the bottoms.

**Characteristics.**—The ears taper somewhat from butt to tip with rows straight and slightly paired. The butts are moderately rounded

and the tips tend to be well covered with fairly deep kernels. The cobs possess the striking peculiarity of being blood red in color. The ears should be  $9\frac{1}{2}$  to 10 inches in length and  $7\frac{1}{4}$  to  $7\frac{1}{2}$  inches in circumference to conform to the variety standard of this state.

The kernels are medium broad and of good depth. They are, however, only slightly wedge shaped, consequently not closely spaced at the top. They show a large per cent of horny starch, medium to large germs, and are deep creased to crumple creased in indentation. The kernels are pearly white in color.

St. Charles White is a late maturing variety averaging 125 to 130 days for complete maturity. The stalks make a rank growth and are somewhat taller than Boone County White. They range in height from  $8\frac{1}{2}$  to  $9\frac{1}{2}$  feet for the entire state: This variety has broader leaves than those of Boone County White and it is an excellent silage corn.

### COMMERCIAL WHITE

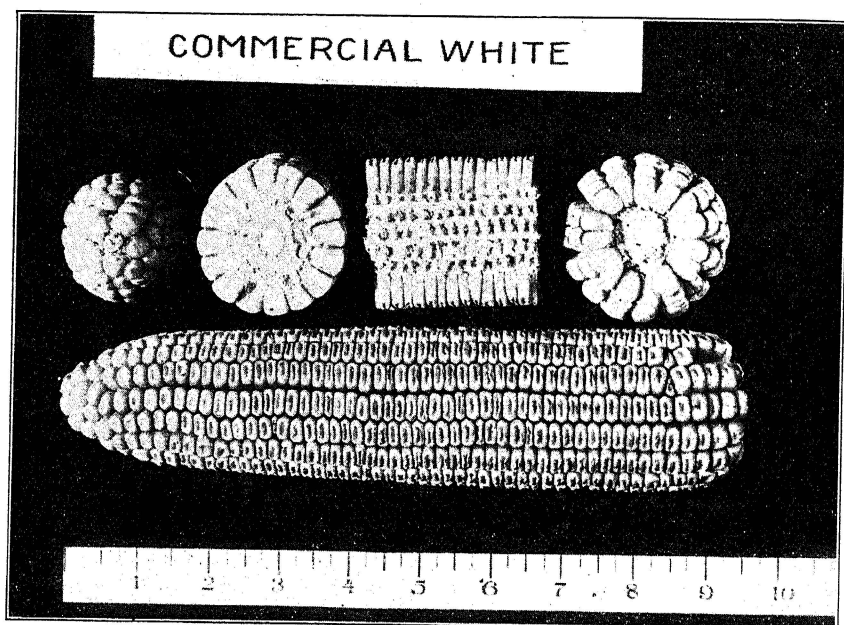
**History.**—The Commercial White corn is a native Missouri variety. It was originated by P. E. Crabtree of Hannon, Barton County, who developed the corn by a systematic selection of the white cobbled ears of the St. Charles White. The ideals which have been kept in mind in selection are uniform kernels of medium depth, with a low amount of crown starch and large germs.

The cooperative corn variety tests of the Missouri Experiment Station have shown this to be the highest yielding variety in the state. It is hardy and the strong sound kernels bring very thrifty stalks. The variety is especially adapted to the best uplands of Southwest Missouri.

**Characteristics.**—The ears are larger in circumference and more cylindrical than are those of the St. Charles White but often taper quite abruptly at the tip. The rows are straight and distinctly paired. The butts have a tendency to be flat and often have a large shank. The tips are fairly well covered with kernels of fair depth but becoming smooth. The length is 10 to  $10\frac{1}{2}$  inches, circumference  $7\frac{1}{2}$  to  $7\frac{3}{4}$  inches.

The kernels are broader than those of St. Charles White and are of only medium depth. They are thick and a trifle more wedge shaped than the St. Charles and more rounded at the top, giving a wider space. They possess a small amount of crown starch and are a pearly white in color. The indentation is a shallow crinkled crease. The germs are large and very strong.

Commercial White is a late maturing variety which requires 125 to 130 days for complete ripening. It is a tall growing corn, averaging about 9 feet for the state and very leafy. The stalks are very strong and stocky. The large cob which has a tendency to dry



slowly prevents as high a grade of market corn as either Boone County White or St. Charles White.

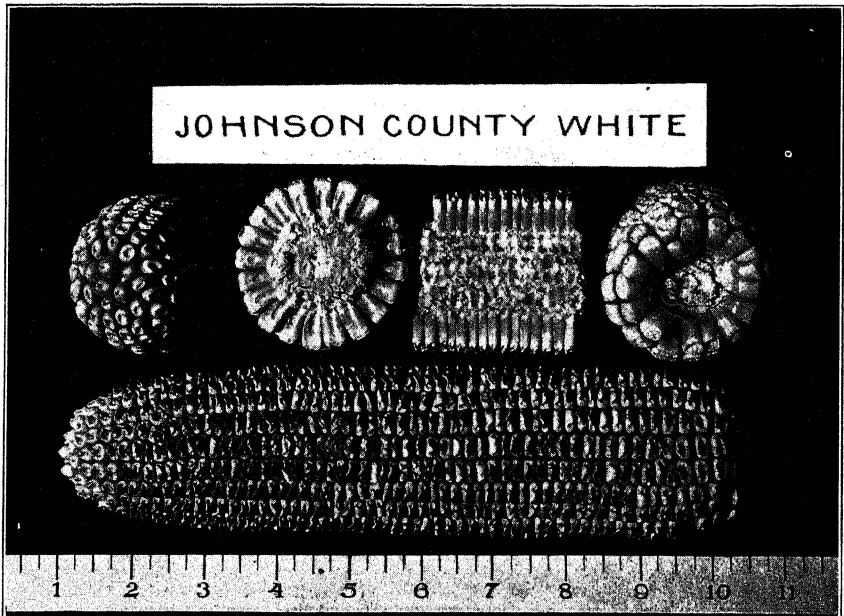
#### JOHNSON COUNTY WHITE

**History.**—Johnson County White was originated in Johnson County, Indiana, about 25 years ago. It is a cross between Boone County White and Forsythe's Favorite. The first cross was made by J. D. Whitesides between Forsythe's Favorite and a white variety he had been calling Dungan's White Prolific, but which afterward proved to be Boone County White. Somewhat later L. B. Clore, of the same county, made the cross between Boone County White and Forsythe's Favorite, independently of Mr. Whitesides. Also J. R. Overstreet began breeding the corn at about the same time from seed received from Mr. Whitesides. Each man gave a different name to the corn, Whitesides calling it Whitesides' Imperial White Dent, Clore calling it Farmer's Interest, and Overstreet naming it Overstreet's Peerless. 1899 the three men decided to combine and to

to call the corn Johnson County White Dent, by which name it is now generally known.

This variety of corn has been well bred by these and other men and it usually has won the highest prizes at state and national corn shows.

**Characteristics.**—This corn does not differ materially from Boone County White in size but it is rougher and the tips have a sharper

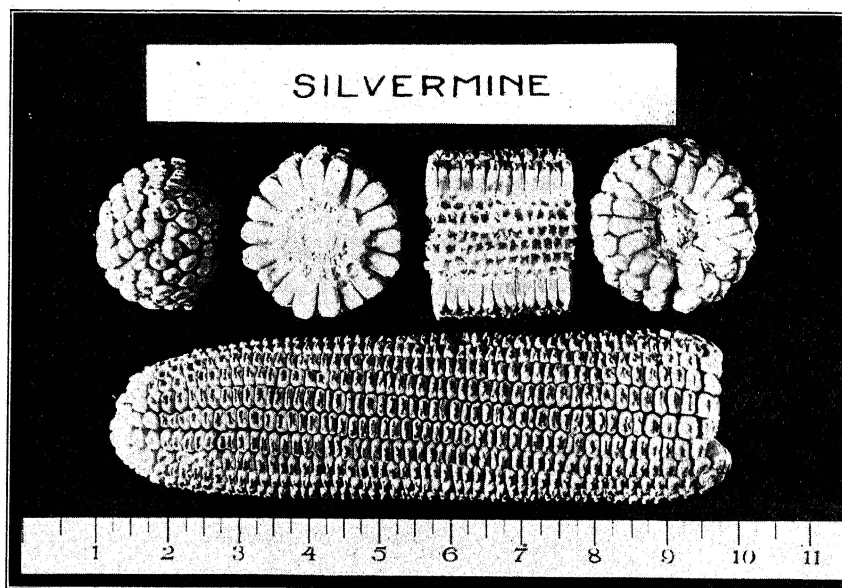


taper. The length is  $10\frac{1}{2}$  to 11 inches, and the circumference  $7\frac{1}{2}$  to  $7\frac{3}{4}$  inches. The kernels are somewhat narrower and are nearly square at the summit, having straight instead of curved sides. They also average deeper than do those of Boone County White and are more starchy in composition which gives them a rather starchy white color. The rows are straight and the kernels uniform in character. The indentation is properly a deep crinkled crease to a short pinch.

Johnson County White matures in 120 to 125 days. It does not differ materially in stalk character from Boone County White and is quite comparable to it in this respect.

## SILVERMINE

**History.**—Silvermine corn originated with J. A. Beagley of Sibley, Illinois, who used as a base some white corn which won a prize at the Ford County Farmer's Institute in 1890. His crop was bought in 1895 by the Iowa Seed Company of Des Moines, Iowa. They named the corn Iowa Silvermine. At the present time the corn is known as both Iowa and Illinois Silvermine.



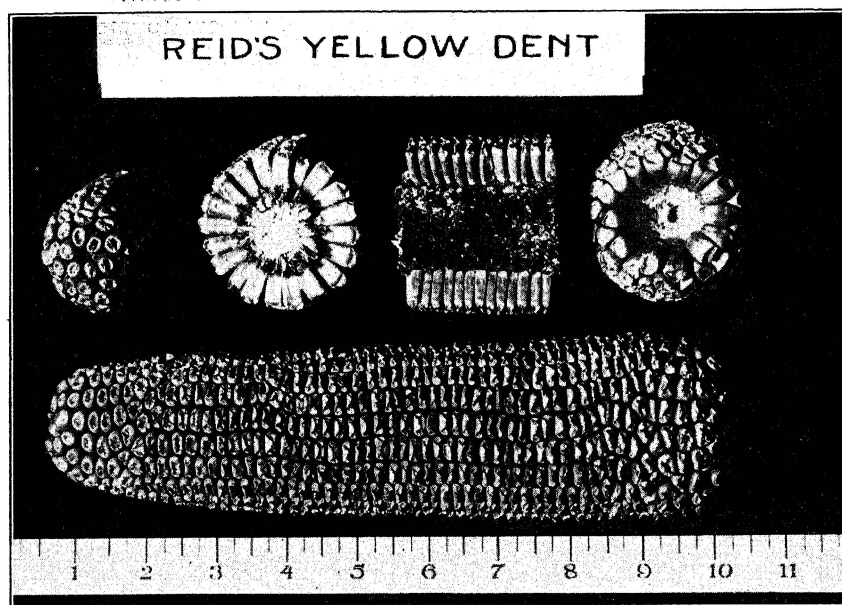
**Characteristics.**—The ears range from 9 to 9½ inches in length and 7 to 7¼ inches in circumference. They are partly cylindrical, with slowly tapering tips. The rows are straight or slightly wavy with a tendency to pair, tho not so distinctly as in some other varieties. The butts are moderately well rounded and the tips are generally blunt and well covered. The spacing of the rows is medium.

The kernels are medium to broad in width, slightly rounding at the summit, slightly wedged with a square shoulder at the tip. They are creamy white in color and only medium horny in composition, bearing good sized germs of strong vitality. The indentation is a pinched dent ranging to a full pinch and a beak, giving the corn a rough indentation.

This variety matures in 100 to 110 days, thus ranking as an early corn. It is not a tall grower, averaging about seven feet, and only fairly leafy.

### REID'S YELLOW DENT

**History.**—In 1846, Robert Reid brought from Brown county, Ohio, to Illinois, a variety of corn known at the time as the Gor-



don Hopkins corn. It was a reddish-colored corn, grown widely in the vicinity of Red Oak settlement, the home of Robert Reid. Seed was selected from this crop for the next season's planting. On account of its immaturity a poor stand was the result, so the missing hills were replanted with seed of a small yellow corn. The cross then, between the Gordon Hopkins and this small yellow corn was purely accidental. The result was the beginning of the Reid's Yellow Dent we know today.

James L. Reid, son of Robert Reid, was the first to recognize the real merits of the new corn and at once began to improve it by selection. Since the year 1847 the corn has not been crossed by Mr. Reid. Fifty years of continued careful selection has firmly fixed the characteristics of this corn.

**Characteristics.**—Standard ears of this variety are 10 to 10½ inches long and 7¼ to 7½ inches in circumference. They are cylindrical or partly so in shape, often tapering off at the tip. The rows are straight, sometimes paired, the most closely spaced of any variety and from 18 to 24 in number. The butts are deeply rounded and symmetrical and the shanks small—points strikingly characteristic of the variety. The tips are generally well covered tho often rather abruptly pointed and are sometimes covered with “shotty” pop-corn-like kernels. The cob is rather small and dark red in color.

The kernels are square at the summit, narrow to medium in width, medium in depth, slightly wedged, but with the tip often rounded to pointed. They are properly a lemon yellow in color and are medium starchy in composition. The germs are often small, owing to the narrow kernels. The indentation ranges from a creased dimple to a crumpled crease, according to the breeder.

Reid's Yellow Dent is a medium early maturing variety requiring 115 to 120 days for complete ripening. It averages about 8 feet in height for the state and is only medium leafy. It has a decided tendency to mature soundly and is best adapted to land above medium in fertility.

### LEAMING

**History.**—The Leaming variety of corn was originated by J. S. Leaming of Hamilton County, Ohio, who began his selection in 1826. He began his breeding work by selecting the earliest-ripened ears from a small yellow to flesh-colored corn called Little Yellow, then commonly grown on the bottom lands of the Little Miami River. He also selected ears from stalks that tapered slightly from the base to the tassel and that had a heavy foliage. The Little Yellow corn was very tapering, had large butts and pointed tips. From this start, after 56 years of continued selection, Mr. Leaming produced a corn having as variety characteristics, distinctly tapering ears, with fairly large butts, rather pointed but well-covered tips with kernels of a deep yellow color and with very irregular rows.

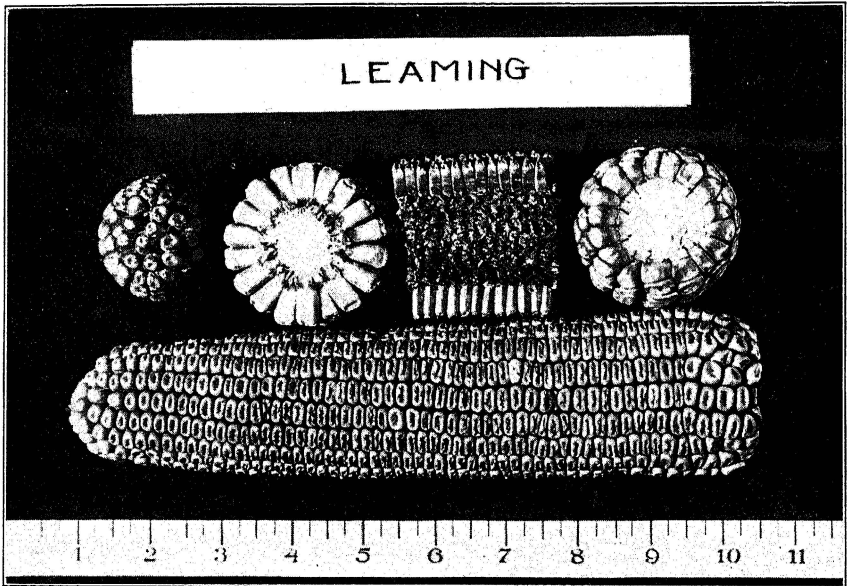
J. S. Leaming, Jr., continued the work of his father, but selected ears more cylindrical in shape with straighter rows but always of early maturity. Now a third J. S. Leaming is at work on the same variety of corn, intent upon its further improvement. He is located at Waynesville, Ohio.

Most noted among breeders of Leaming corn in the Middle west was the late E. E. Chester of Champaign, Illinois. He secured his



original seed from Mr. Leaming in 1885. He selected the early maturing ears and developed a more cylindrical, rougher type of corn than that grown by the Leamings.

**Characteristics.**—Standard ears of this variety in Missouri should average 10 to 10½ inches long and 7½ to 7¾ inches in circumference. They taper somewhat, having fairly straight rows which number from 16 to 24 with a tendency to drop one or two near the mid-

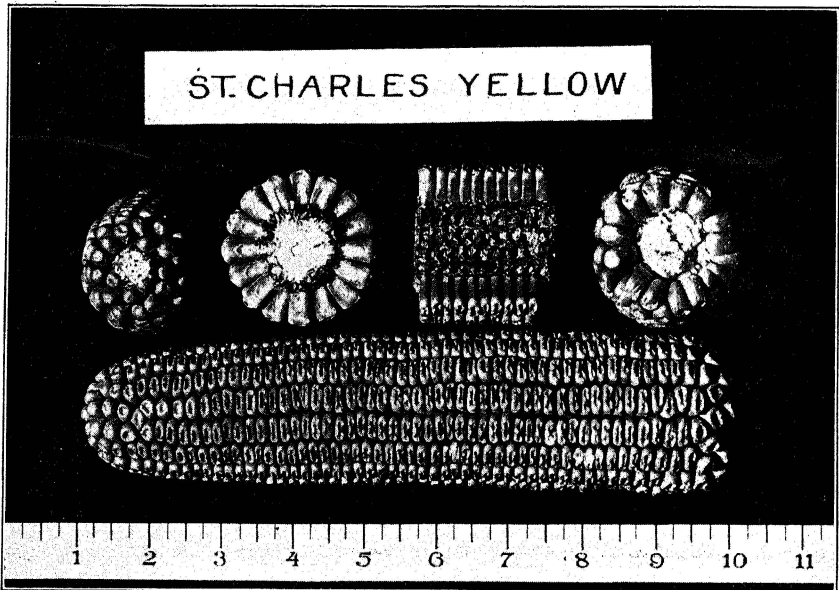


dle of the ear. The spacing is of medium width. The butts are medium large, sometimes enlarged and only moderately rounded. The tips are slightly pointed and well covered, tho the rows are often not well defined. The cob is medium to large in size and light red in color. The kernels are medium in width, square cut at the summit, wedge shaped, having nearly straight sides and are orange yellow in color. The indentation varies from a crumpled crease to a pinched dent.

Leaming is a medium late maturing corn requiring 120 to 125 days for complete maturity. It grows to about the same height as Reid's Yellow Dent, but has a decidedly tapering stalk, strong at the base, and tapering to the tassel. It matures soundly and is a good hardy variety with wide adaptations.

## ST. CHARLES YELLOW

**History.**—St. Charles Yellow is a native Missouri variety, developed by C. A. Griesenauer of O'Fallon, Missouri, thru persistent selection from a large Mexican corn which the originator brought from Old Mexico more than 35 years ago. This corn proved to be a very vigorous grower and produced larger ears than our native corn.

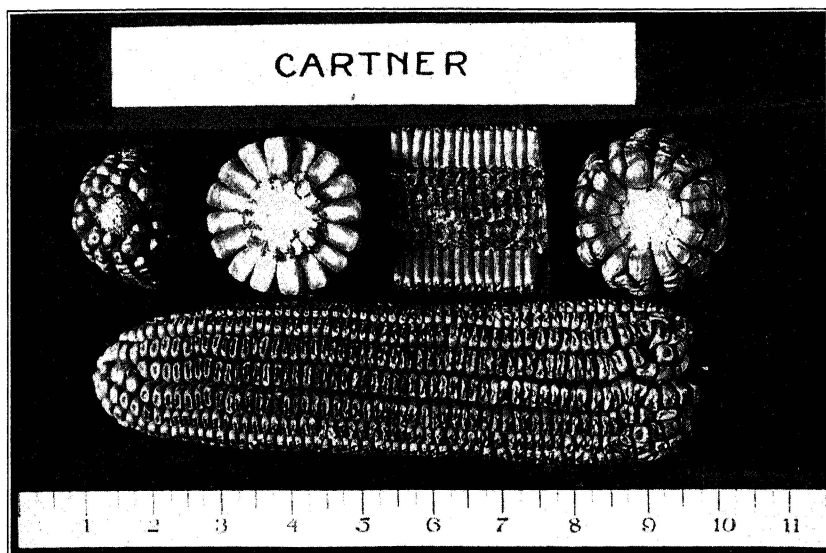


**Characteristics.**—The ears of this variety are fairly cylindrical, tapering only slowly from butt to tip. The rows are straight and distinctly paired. The butts are flat to moderately rounded, while the tips are abrupt and tend to be well covered with kernels of good depth and shape. The cob is medium in size and dark red in color. The variety standard calls for ears  $10\frac{1}{2}$  to 11 inches long and  $7\frac{1}{4}$  to  $7\frac{3}{4}$  inches in circumference.

The kernels are medium to wide and of medium depth. They are square at the top, possess a rather rounded shoulder at the tip, while the sides are nearly parallel, causing the spacing between rows to be fairly wide. They are of an orange yellow color and rather starchy in composition, bearing germs of good size but with a ten-

dency to wrinkle and blister, not having the vitality they should possess. The indentation is a long crinkled crease.

St. Charles Yellow is a late-maturing yellow variety which requires 125 to 130 days to ripen. It is a strong rank grower and is especially adapted to bottom and good upland soils. It is like the St. Charles White, a very leafy variety. The main objection to this variety is its soft, spongy cob, which prevents rapid drying. The market condition of the crop is often injured on this account.



### CARTNER

**History.**—Cartner corn was originated by John Cartner of Boonville, Missouri, about 1862. He planted together two unknown yellow varieties of corn, one having very deep kernels and an extremely small cob, the other large ears and a medium-sized cob. Thus a cross was effected, the progeny of which partook of the characteristics of both its parents. Mr. Cartner continued his work after the first cross by rigid selection, always picking a certain type. He sold much seed to his neighbors and it became known as Cartner corn.

The variety did not become widely known until quite recently. T. W. McFarland of Boonville, Missouri, recognizing the merits of the corn, took a sample to the World's Fair at St. Louis, where it had a larger shelling percentage than any other variety shown. Since

then the corn has been bred by Mr. McFarland and a number of other farmers in Cooper county and is now known over a wide territory.

**Characteristics.**—The ears of this variety should be from 9 to 9½ inches long and 7¼ to 7½ inches in circumference. They are cylindrical or partly so, often tapering to a rather pointed tip. The rows are straight and rather wide apart, ranging from 18 to 22 in number. The butts are only moderately rounded, often rather flat, and the shanks small. The tips tend to be well covered with kernels of fair depth. The cob is very small and blood red in color.

The kernels are medium in width, very deep and of a bright orange yellow color. They are rounded at the summit, sides somewhat rounded, making wide spacing, with tips rounding to pointed. The bodies of the kernels are horny and bear large, full germs which extend well up in the grain. The corn is noted for its high shelling quality. The indentation is very uniform, varying only from a crinkled crease to a short double pinch.

Cartner is one of the latest maturing varieties, requiring 130 to 135 days for complete maturity. The stalks grow rather tall and are fairly leafy.

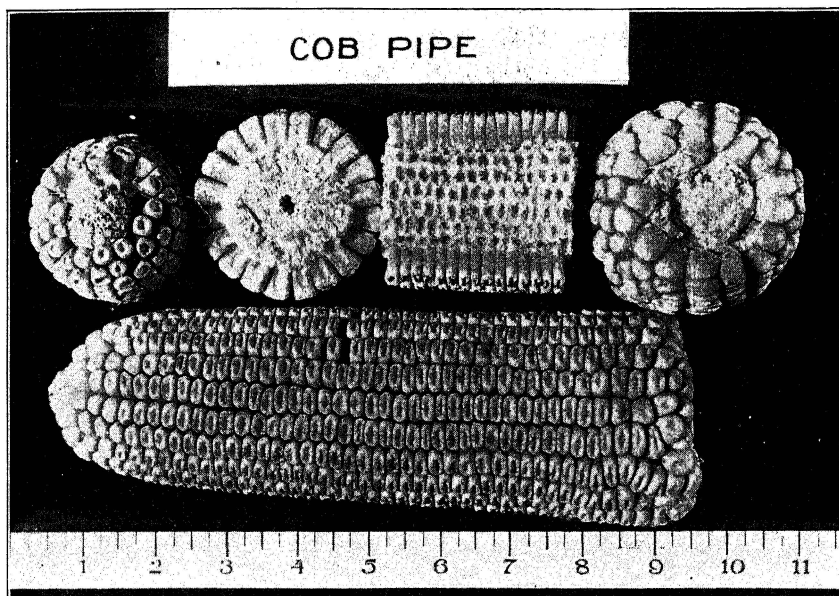
### COB PIPE OR COLLIER

**History.**—Cob Pipe corn is a native of Missouri having been produced thru years of selection, in the vicinity of Washington, Missouri, where a number of pipe factories are located. The variety is characterized by very large cobs which are specially suited to pipe making. These cobs sell at from 25 to 40 cents per hundred, which in addition to the grain shelled, makes the growing of this corn a very profitable industry. This variety is sometimes called the Collier from the man who has been most instrumental in developing it.

**Characteristics.**—The ears of this variety are 7 to 10 inches long and are frequently 9 to 11 inches in circumferences at the butt. They are generally tapering and have large, swollen butts and blunt tips. The cobs are typically white, although there is a strain of the corn having red cobs. The kernels are broad, shallow and smooth in indentation and will not as a rule shell out more than 70 per cent corn to the ear. The spacing between the rows is fairly wide.

The Cob Pipe corn is very late in maturity, requiring from 135 to 140 days to ripen. The stalks are very tall and in the rich

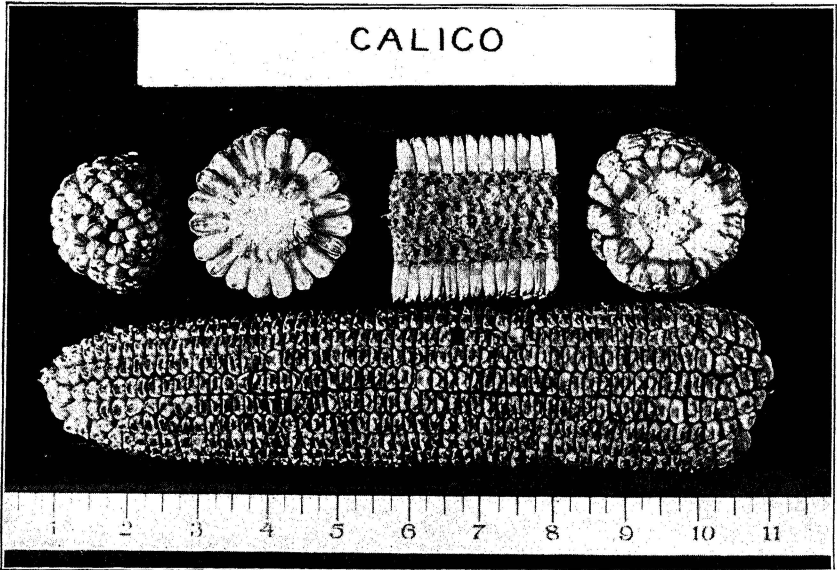
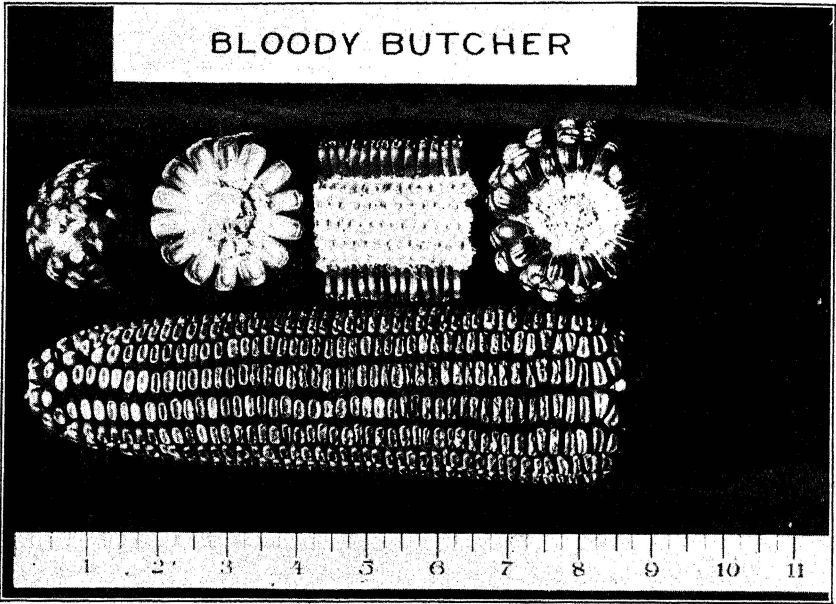
bottom lands where it is best adapted, grow to immense proportions as compared with other varieties.



### BLOODY BUTCHER

Several old varieties of unknown origin with seed coat color varying from pink striped to solid dark red, are grown under the name of Bloody Butcher. It has seemed most desirable at this Station to apply the name Red Dent to the varieties having solid red seed coats, Calico to the varieties having pink or red striped seed coats and Bloody Butcher to the varieties having seed coats of solid red except at the summits of the kernels, at which points white or yellow occurs.

The distinguishing characteristic of Bloody Butcher is of course, the seed coat color and the other points vary with the ideals of the various growers. The endosperm may be white or yellow and mixed colors do not ordinarily show thru the red seed coat. The ears are usually tapering with flat open butts and fairly well filled tips. The kernels are smooth to crinkled, dented, and often have wide space between rows. The cobs are white in color and of medium size. The character of stalk and length of growing season do not differ materially from those of Boone County White.



## CALICO

The variety here designated as Calico or Strawberry has a more or less striped seed coat varying in general appearance from red to pink depending upon the degree of predominance of red in the striping and also upon the color of the endosperm. Occasional kernels or groups of kernels of solid white, red or yellow, may appear. The cobs are of medium size and are pink to red and should conform in general to the kernel color. The butts are usually flat and the tips only fairly well covered.

This variety has been variously developed by different growers. Ears of the more common strains range from 9 to 11 inches in length and are almost cylindrical. The kernel shape, indentation, character of stalk and length of growing season, are about the same as those of Boone County White.

**SOIL AREAS CONCERNED IN THESE VARIETY TESTS<sup>1</sup>**

Missouri has a diversity of soils. The northern part of the state is covered with a soil of glacial origin, the materials of which it is made having been transported from the north by the ice sheet which covered this part of the state many thousands of years ago. The Ozark region is covered with a residual soil derived chiefly from hard limestone rocks. The prairie lands of the western part of the state are the product of the decomposition of soft rocks, mostly shale. In the valley of the Mississippi and Missouri rivers and their tributaries the soil is alluvial washed down from the uplands by the streams.

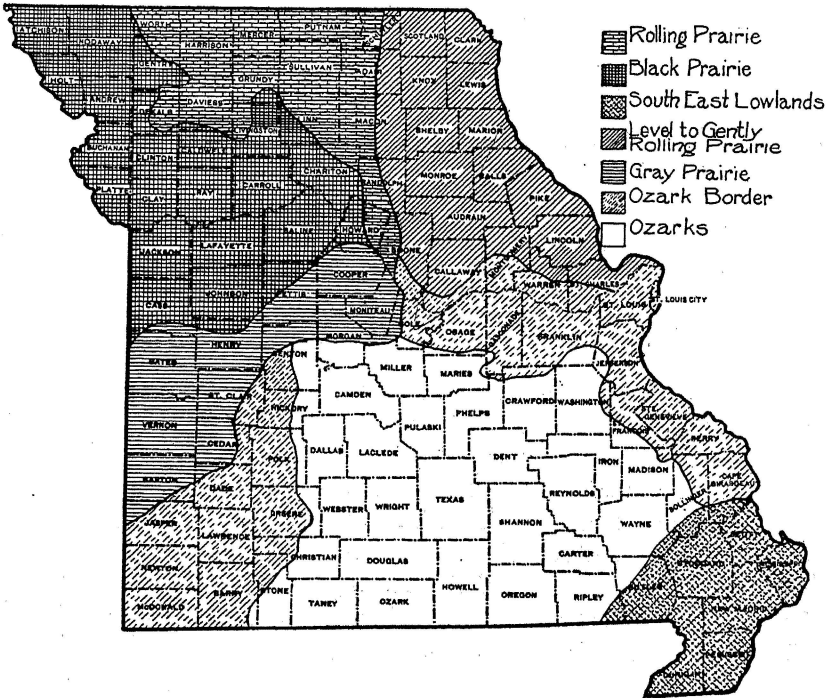
All of these soils vary in fertility, physical properties, topographic features, and crop adaptations. The difficulties of grouping them according to any one of these factors are apparent. For the purpose of studying the variety adaptations of corn in this report, however, an attempt has been made to classify the soils of the state so that each group represents as nearly as possible similar conditions as to fertility and physiographic features, since it is upon these factors that the crop adaptations and economic utilization of the soil primarily depend.

The soil groups established on which the results of the variety tests are summarized are (1) the black prairies of northwest Mis-

<sup>1</sup>Prepared by H. H. Krusekopf of the Department of Soils, to whom the authors acknowledge their indebtedness.

souri, (2) the rolling prairies of north central Missouri, (3) the level prairies of northeast Missouri, (4) the gray prairies of southwest Missouri, (5) the Ozark border, (6) the Ozark region, and (7) the Mississippi lowlands of southeast Missouri.

The distribution of these soil areas of the state is shown in the accompanying map.



*Soil areas on which the varieties were tested*

### BLACK PRAIRIE

(Mostly Marshal and Summit Soil)

The soils of the black prairie region are characterized by their dark color, mellow structure, and high content of organic matter. The surface soil is dominantly a black to dark brown, mellow, silt loam, varying in depth from 8 to 10 inches in the more rolling areas to 18 or 20 inches on the more level prairies. The subsoil is a dark brown, brown or drab silty clay loam, usually becoming lighter in color and heavier in texture with increase in depth. It is porous, retentive of moisture, and permits of the greatest root de-



velopment. The lighter colored and shallower soils are generally confined to the moderately hilly areas bordering the Missouri river, and are frequently known as "bluff land." Both surface soil and subsoil are stone free, and even sand is almost totally lacking. From a physical standpoint, the black prairie soils are almost ideal. They, in general, are well supplied with lime and all the essential plant food elements.

With the exception of the area south of Jackson and Saline counties, the soils of the black prairie region are derived from loess. The depth of this material varies from fifty or sixty feet along the bluffs of the Missouri river, to layers only five or six feet thick back from the river. In Cass, Johnson, and parts of the adjoining counties, the soils are largely derived from shales and limestones. They have black surface soils and heavy clay subsoils. In their agricultural value they are essentially the same as the loess soils.

Thruout its entire extent the black prairie region is marked by nearly level to gently rolling surface topography. It is only along the Missouri river that the surface is moderately hilly and where slopes are found that are somewhat difficult to cultivate. Surface and underdrainage everywhere is adequate. In general, the soils of the black prairie region represent the most valuable farming land in the state.

## ROLLING PRAIRIE

(Mostly Shelby loam and Lindley loam)

The rolling prairie region includes the north-central part of northern Missouri. As is indicated by the name, it has a rolling surface, due to the complete dissection by numerous large streams that flow thru this region. In fact, there is very little level land in this region, but nowhere is the surface sufficiently broken to preclude cultivation. In general, the western half is less rolling than the eastern half; the former consists of rounded ridges and gradual slopes; the latter consists of narrow ridges and short slopes, many of which are cultivated with difficulty.

The soils of the rolling prairie to a depth of 6 to 10 inches are black, dark gray to grayish brown, coarse silt loams, or loams. The lighter colored soils are found on the rolling areas or in positions exposed to erosion, while the darker soils occur on the more nearly level areas and on the lower slopes where organic matter has accumulated to a considerable extent. The subsoils are characteristically yellowish brown heavy loams or clay loams, which contain an ap-

preciable amount of coarse sand, fine gravel, and lime concretions, and are usually somewhat gritty. They grade downward into compact gritty clay, usually yellow or gray, or showing mottlings of these colors. The presence of sand and gravel in both soils and subsoils tends to give a distinct loamy texture, and permits the downward percolation of water thru the rather heavy soil material.

Practically all the rolling prairie soils are derived thru the weathering of deep glacial till which covers all of this region to depths ranging from 10 to 90 feet. In general, they are well supplied with potash and lime, but contain only a fair supply of phosphorus and nitrogen. Drainage is good and even excessive.

### LEVEL PRAIRIE

(Mostly Putnam silt loam and Lindley loam. Knox silt loam along Mississippi river.)

The level prairie region includes all of northeastern Missouri east of the Chariton river. The surface features of this region are that of a vast smooth plain with a gentle slope to the southeast. It is only along its eastern edge, bordering the Mississippi river, that the surface is rolling to moderately hilly.

The typical level prairie soil is a dark gray to gray, friable silt loam to a depth of from eight to twelve inches, below which is a light ashy gray layer, or stratum, of slightly loamy silt varying from two to nine inches in thickness, and commonly referred to as the "gray layer." The subsoil begins abruptly at a depth of from sixteen to twenty inches and consists of a tight, stiff, brown or drab silty clay or clay loam, locally known as "hardpan". It is not, however, a true hardpan, for water passes thru it, altho very slowly. The gray layer and the heavy subsoil are the distinguishing characteristics of the prairie land. In general, the soil in the northern part of the level prairie region in Knox and Scotland counties is darker in color, deeper and more productive than in the southern part of the region. On much of the level prairie soil both surface and underdrainage are inadequate, and in wet seasons, as well as in very dry seasons, crops suffer as a result of the poor moisture conditions.

The soils on the rolling lands in the eastern part of the level prairie region are quite variable and range from dark brown to gray silt loams or loams with reddish brown to yellowish gray clay loam or sandy clay subsoils. In general, the soils are shallow and contain a relatively small amount of organic matter. A small quantity of sand

and fine gravel is present in both soil and subsoil, and on some of the steeper slopes where the soil mantle is thin, limestone rock outcrops at the surface. Along the Mississippi river bluffs the soils material is mostly loess and averages more productive than the soil of the rolling land bordering the small streams.

### GRAY PRAIRIE

(Mostly Oswego and Cherokee silt loam and Bates loam)

The gray prairie region, with an average width of 40 to 50 miles, extends from the western part of Cole county to the Kansas state line along Bates, Vernon, and Barton counties. In its surface features it varies from level to gently rolling, the level areas being by far the most extensive. The rolling land is confined mostly to the eastern edge of this soil belt.

The soils of this region are of two general types—flat prairie and rolling prairie. The former consists of gray to dark gray or black silt loam from six to twelve inches in depth underlaid by a gray to dark drab, stiff, compact clay loam, mottled yellow, brown and gray. Between the soil and subsoil is a gray ashy layer containing iron concretions. The lower subsoil is distinctly lighter in color and more friable than the upper portion. In general, this gray prairie soil is very similar in physical characters to the level prairies of northeastern Missouri. In Bates, Henry, and Cooper counties it is somewhat more productive than in the counties to the south and in its agricultural importance approaches the black prairie soils.

The rolling land of the gray prairie region is dominantly a dark brown to grayish brown fine sandy loam, with brown, friable, sandy clay subsoil, highly mottled red and yellow. The amount of sand in both soil and subsoil varies with the topography and is greatest on the more rolling areas. The latter are frequently underlaid by sandstone rock and are droughty. Practically all the soils of the gray prairie are low in organic matter and lime. Where the surface soil is shallow, there is a tendency toward droughty conditions.

### OZARK BORDER

(Mostly Crawford and Clarksville gravelly loam and Hagerstown and Union silt loam)

The Ozark border soils form an almost unbroken belt around the main part of the Ozark region. They extend in a semicircle

from the southern part of Cape Girardeau county along the Mississippi and Missouri rivers to the southwestern corner of the state. The Ozark border, as a whole, has considerable variation in the character of the soils, but in its agricultural importance and development shows a rather close relation.

The soils of the Ozark border in the southwestern part of the state are almost uniformly gravelly loams, altho the occasional level areas are generally stone free. They vary in color from gray to brown with reddish brown subsoils. In texture they are silty with silty clay subsoils. The content of chert gravel varies from 10 to 50 per cent, the higher percentage prevailing on the rolling areas. As a rule, it is not present in sufficient quantity to make cultivation impossible, but in some cases it is rather difficult. In general, the red soils are not as gravelly and are more productive than the gray soils.

The soils of the Ozark border along the Missouri river are dominantly yellow and gray silt loams with yellowish gray compact silty clay subsoils. Along the Mississippi river are extensive areas of red limestone soils. They are stone free, contain a fair supply of organic matter and lime, and represent the most productive land in this region. The rough, hilly land bordering the larger streams is stony and much of it is of little agricultural value. In general, the more productive land lies nearest the Missouri and Mississippi rivers. Away from the rivers the surface becomes more hilly and the soils are more stony and less productive.

## OZARKS

(Mostly Clarksville gravelly and stony loams)

The soils of the Ozark region, with a few minor exceptions, are all derived from cherty limestones, and are, therefore, mostly gravelly and stony loams. They are usually gray in color and are low in organic matter and lime. The lack of organic matter gives rise to undue compactness in the surface soil and renders its tillage difficult unless the mechanical handling of the soil is undertaken when the moisture content is neither too great nor too small.

Thruout the Ozark region are found rather extensive areas of relatively smooth and stone free soil. These areas occupy the highest parts and represent the plateaus and broad interstream divides. The soil is a dark gray or gray silt loam or moderately

gravelly loam underlaid by yellowish gray, stiff, clay subsoil. Altho it is fairly easily cultivated, it is generally considered not as productive as the gravelly land.

Probably more than fifty per cent of the soils of the Ozark region are stony loams, and practically all of these are of little or no agricultural value. The most extensive areas of rough stony land are found in the eastern part of the region—in Reynolds and all the surrounding counties. Areas of similar character occur along the White river and to a lesser extent along the Gasconade and Osage rivers and their main tributaries. In these rough and stony areas the narrow bottoms along the streams form the only important agricultural land.

On most of the moderately rolling areas the soil is a gray or brown gravelly loam with gravelly subsoil. Land of this character, altho somewhat difficult to handle, is of fair productivity. With good treatment and the liberal use of manure, clover, grasses, and the small grains are grown successfully.

### SOUTHEAST MISSOURI LOWLANDS

(Mostly Sarpy, Sharkey, Waverly, and Lintonia soils)

With the exception of a few narrow upland ridges, the soils of the southeast lowlands are alluvial in origin. They represent, therefore, a mixture of material derived from various sources, which has formed soils of great diversity in physical properties and in productivity. In texture they vary from sands to heavy clays, and in color from light gray to deep black.

In general, the soils bordering the Mississippi river, including Mississippi and Scott counties and the eastern half of New Madrid and Pemiscot counties, are dark brown loams and fine sandy loams, with yellowish gray fine sandy loam subsoils. Except in the most sandy areas, these soils contain a high percentage of organic matter and are very productive. They are well drained and represent the most highly improved portion of the lowland region.

The soils in the central part of the lowland region are dominantly clay loams or sandy clays with black, heavy clay subsoils. They form a continuous belt extending from the southern part of Cape Girardeau county to the southern part of Pemiscot and Dunklin counties. Large areas of these very productive soils have not yet been brought under cultivation and are covered with a dense growth of timber. Drainage is necessary before crops can be successfully grown.









TABLE 3.—CORN VARIETY TESTS ON THE BLACK PRAIRIES (CONTINUED)  
(UPLAND)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Carter	Midreth Yellow Dent	Farmer's Interest	Legal Tender
E. Murray .....	1912	67.6	79.6	68.5	.....	.....	68.5	74.0	74.5	.....	.....	.....	.....	.....
Ludlow, Livingston														
John Noah .....	1912	51.8	47.4	52.0	.....	.....	55.6	49.2	49.1	.....	.....	.....	.....	.....
Chillicothe, Livingston														
E. W. Smith .....	1912	30.6	30.6	28.2	.....	.....	30.6	28.2	28.2	.....	.....	.....	.....	.....
Maitland, Holt														
G. B. Teater .....	1912	64.9	69.0	53.7	.....	.....	60.6	51.1	53.5	.....	.....	.....	.....	.....
Blairstown, Johnson														
Homer J. Briet .....	1913	17.5	20.6	17.1	.....	.....	23.9	27.0	21.7	.....	.....	.....	.....	.....
St. Joseph, Buchanan														
L. L. Cleveland .....	1913	8.5	8.5	7.1	.....	.....	10.1	8.8	8.5	.....	.....	.....	.....	.....
Cameron, DeKalb														
Earl Keener .....	1913	20.9	14.7	18.4	.....	.....	29.6	36.4	15.5	.....	.....	.....	.....	.....
Maysville, DeKalb														
M. Magee .....	1913	6.0	0.8	1.0	.....	.....	3.5	3.0	1.3	.....	.....	.....	.....	.....
Hickman Mills, Jackson														
J. V. Minor .....	1913	34.6	34.2	27.7	.....	.....	35.8	38.5	33.5	.....	.....	.....	.....	.....
Easton, Buchanan														
John Noah .....	1913	34.7	32.7	33.3	.....	.....	45.8	36.4	31.6	.....	.....	.....	.....	.....
Chillicothe, Livingston														
H. A. Quaintance .....	1913	23.4	24.9	25.3	.....	.....	31.9	27.3	28.0	.....	.....	.....	.....	.....
Lee's Summit, Jackson														
Cecil Shue .....	1913	21.2	29.0	22.1	.....	.....	22.8	22.8	19.1	.....	.....	.....	.....	.....
Braymer, Carroll														
J. B. Ray .....	1913	20.0	20.6	17.9	.....	.....	25.4	25.0	23.6	.....	.....	.....	.....	.....
Dearborn, Buchanan														
E. T. Johnston .....	1913	16.6	20.3	16.6	.....	.....	17.1	27.1	13.3	.....	.....	.....	.....	.....
Lathrop, Clinton														
A. Burkhart .....	1914	17.9	19.7	16.1	.....	.....	20.9	19.1	16.1	.....	.....	.....	.....	.....
Albany, Gentry														
L. L. Cleveland .....	1914	30.8	30.4	29.3	.....	.....	30.0	30.4	29.7	.....	.....	.....	.....	.....
Cameron, DeKalb														
C. L. Gouldsmith .....	1914	28.8	38.5	35.5	.....	.....	33.2	41.6	42.4	.....	.....	.....	.....	.....
Grain Valley, Jackson														
L. Lauman .....	1914	47.0	44.0	43.0	.....	.....	40.1	46.0	39.1	.....	.....	.....	.....	.....
Tarkio, Atchison														
J. V. Minor .....	1914	31.2	31.2	35.1	.....	.....	34.1	35.6	34.1	.....	.....	.....	.....	.....
Easton, Buchanan														
M. E. Neher .....	1914	32.9	38.4	39.0	.....	.....	40.7	40.7	46.8	.....	.....	.....	.....	.....
Leeton, Johnson														
R. B. Rairdon .....	1914	27.7	38.4	29.9	.....	.....	31.7	32.6	41.3	.....	.....	.....	.....	.....
Braymer, Carroll														
Ben W. Stuart .....	1914	39.8	35.5	41.6	.....	.....	34.1	37.5	39.4	.....	.....	.....	.....	.....
Rushville, Buchanan														

BLACK PRAIRIE UPLANDS

One hundred and ten tests have been made on the black prairie soil during the ten-year period, 1905-1914. In 89 of these trials, Boone County White, Commercial White, St. Charles White, Reid's Yellow Dent, Leaming, and St. Charles Yellow have been included. In these trials the varieties have ranked as follows in average yield per acre: (1) Commercial White, 43.07; (2) Reid's Yellow Dent, 41.76; (3) Leaming, 41.04; (4) Boone County White, 40.96; (5) St. Charles Yellow, 40.11; and (6) St. Charles White, 39.58 bushels.

It will be noted that Commercial White leads with a margin

of 1.3 bushels over Reid's Yellow Dent, which ranks second. It will also be noted that the other varieties are very close together in average yield, there being less than two bushels difference between Reid's Yellow Dent and St. Charles White, the two extremes of the list.

Several other varieties have been included in the tests on this soil type, but they have usually been planted only a few years. It has, therefore, been necessary to compare each of these with one or more of the six main varieties during the period in which the less common variety was under trial.

Johnson County White has been included in forty-two trials during the years of 1906, 1907, 1908, and 1909. Comparing its yields with those of Boone County White and St. Charles White, we find that both have given slightly larger yields,—Boone County White averaging 42.82 bushels, St. Charles White 41.84 bushels, and Johnson County White 41.36 bushels.

Likewise Silvermine has been compared with Boone County White in fifty-three trials during the seasons of 1905, 1906, 1907, 1908, and 1909. The average yield of Boone County White during this period has been 45.13 bushels to the acre, while in the same tests Silvermine has yielded but 39.66 bushels on the average.

Farmer's Interest, another variety of white corn, was included in the list of varieties tested during 1906 and 1907. In 17 trials on this soil type during these seasons, Farmer's Interest made an average yield of 58.67 bushels, while Boone County White made an average yield of 57.35, a difference of 1.32 bushels in favor of Farmer's Interest. Since there were only 17 trials in this comparison, covering but two seasons, we are not justified in concluding that Farmer's Interest is a better variety than Boone County White. The data indicate, however, that it probably will yield as well as Boone County White on this soil type. It is a somewhat coarser corn and of poorer quality than Boone County White and is not nearly so commonly grown.

Comparing some of the less common varieties of yellow corn with Reid's Yellow Dent, we find that in 47 trials in 1906, 1907, 1908, and 1909, Hogue's Yellow Dent has made an average yield of 44.15 bushels, while Reid's Yellow Dent has made 46.48 bushels to the acre. Likewise, in 36 trials in 1906, 1907, and 1908, Legal Tender made an average yield of 47.75 bushels to the acre, while Reid's Yellow Dent made 51 bushels to the acre. Again, in 29 trials in 1907 and 1908, Cartner made 44.07 bushels, Hildredth's Yellow Dent 48.39, and Reid's Yellow Dent 49.88 bushels to the acre.

From these data it may be concluded that the leading varieties of white corn for the black prairies are Commercial White and Boone County White. St. Charles White and Johnson County White are also good varieties, altho they probably will not yield quite so well on the average. Reid's Yellow Dent and Leaming are the two leading varieties of yellow corn. They may be expected to yield better on this soil type than Hogue's Yellow Dent, Hildreth's Yellow Dent, Legal Tender, and Cartner.

TABLE 3.—CORN VARIETY TESTS ON THE BLACK PRAIRIES (CONTINUED)  
(UPLAND)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Cartner	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
S. Warren Cairo, Randolph	1905	75.0	....	41.6	....	33.3	....	66.6	....	....	50.0	....	....	....
Arthur S. Young Memphis, Scotland	1905	71.4	....	53.5	....	53.5	89.2	85.7	....	....	66.3	....	....	....
R. C. Webb Wellsville, Montgomery	1906	62.4	....	66.0	....	60.0	64.0	62.0	....	63.0	....	....	....	63.0
A. E. Martin Farmington, Iowa, Clark	1906	43.5	....	44.5	....	34.3	37.0	36.0	....	....	....	....	43.7	35.7
S. O. Craig Cyrene, Pike	1906	80.4	....	80.4	....	51.5	63.1	66.2	....	....	....	....	78.5	44.6
Alfred Hook Wellsville, Montgomery	1906	44.7	....	43.0	17.3	43.0	35.3	....	....	36.0	....	....	....	35.3
Chas. Gentry Oakwood, Marion	1906	55.9	....	51.7	....	40.6	40.5	47.4	....	....	....	....	65.6	65.6
Wm. Cottey Knox City, Knox	1906	49.5	....	53.7	....	43.7	53.3	52.7	....	....	....	....	50.7	44.5
G. R. Pulliam Gorin, Scotland	1906	13.1	....	12.6	....	12.3	17.7	13.9	....	8.2	....	....	32.3	....
C. O. Raine Canton, Lewis	1906	39.5	....	37.8	....	30.8	40.0	36.0	....	....	....	....	....	37.3
John Sandfort St. Charles, St. Charles	1907	68.4	86.4	75.1	67.6	57.8	55.6	72.1	63.1	57.8	64.6	60.1	70.6	66.9
J. E. Smoot Centralia, Audrain	1907	68.1	75.7	75.7	68.1	56.8	39.7	41.1	42.4	26.5	36.5	46.6	82.6	42.2
S. J. Moxley Ashley, Pike	1907	71.7	....	....	76.4	30.0	46.0	46.4	43.2	....	43.1	65.3	79.6	46.2
C. D. Keithley Bowling Green, Pike	1907	39.8	....	....	37.2	33.6	47.6	47.6	28.2	....	34.1	46.7	44.0	34.4
S. F. Huntsman Cairo, Randolph	1907	39.0	....	....	41.4	40.6	55.5	52.9	43.8	....	43.6	44.0	49.6	....
S. O. Craig Cyrene, Pike	1907	31.1	32.4	21.1	18.1	17.9	29.5	28.3	23.5	25.8	28.7	26.1	31.8	25.7
W. T. Wasel Auxvasse, Callaway	1907	49.6	56.2	40.9	43.8	....	34.9	36.6	32.4	33.7	34.8	41.5	37.3	34.8
Marvin Miller Montgomery City, Montgomery	1908	43.0	45.0	41.0	45.0	38.0	37.0	38.0	39.0	40.0	30.0	17.0	....	46.0
Chas. Weisbar Edina, Knox	1908	25.3	23.5	26.8	27.0	25.3	25.6	23.5	26.7	25.0	25.3	25.9	....	26.5
O. L. Carpenter Molino, Audrain	1908	45.0	32.8	34.2	24.7	21.6	27.0	23.0	25.2	19.8	23.4	21.2	....	31.9
T. L. Beazly Columbia, Boone	1908	43.2	48.8	42.6	45.6	35.4	39.6	36.0	42.0	34.8	36.0	36.0	....	35.4
Wm. Melike Baring, Knox	1908	31.3	34.2	41.3	38.4	34.2	39.9	34.6	46.0	51.3	22.8	37.0	....	38.6
S. O. Craig Cyrene, Pike	1908	37.0	39.7	....	36.8	27.0	34.0	31.0	39.0	31.0	34.0	42.0	....	34.0
G. E. Morris New London, Ralls	1908	69.7	65.2	60.7	65.2	65.2	58.5	63.0	63.0	63.0	54.0	69.7	....	67.5
W. J. Suhre High Hill, Montgomery	1908	42.0	48.0	53.0	43.0	43.0	44.0	48.0	48.0	47.0	49.0	45.0	....	47.0



TABLE 4.—CORN VARIETIES ON THE LEVEL PRAIRIES (CONTINUED)  
(UPLAND)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Cartner	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
P. T. Bruce Thompson, Audrain	1911	28.5	27.3	27.5	....	....	28.7	28.9	27.1	....	....	....	....	....
R. T. Baker Thompson, Audrain	1911	26.8	25.5	25.1	....	....	26.9	26.7	25.4	....	....	....	....	....
C. H. Davis Paris, Monroe	1911	20.1	28.9	27.2	....	....	23.8	27.2	....	....	....	....	....	....
Herman Ludy Jonesburg, Warren	1911	35.4	28.2	42.5	....	....	34.4	25.2	29.3	....	....	....	....	....
H. F. Libbey Centralia, Boone	1911	23.3	20.4	22.3	....	....	23.3	26.2	22.3	....	....	....	....	....
F. M. Luttrell Paris, Monroe	1911	36.4	44.8	38.0	....	....	46.5	54.3	58.4	....	....	....	....	....
Arthur McCluer O'Fallon, St. Charles	1911	43.5	47.5	47.4	....	....	38.2	37.3	38.0	....	....	....	....	....
John O'Brien Thompson, Audrain	1911	18.0	19.2	17.3	....	....	12.6	12.2	12.8	....	....	....	....	....
S. P. Stephenson Canton, Lewis	1911	54.6	71.6	51.3	....	....	59.0	52.9	57.3	....	....	....	....	....
Hugh E. Smith Memphis, Scotland	1911	63.0	65.1	54.6	....	....	58.8	44.1	54.6	....	....	....	....	....
Chas. Weishar Edina, Knox	1911	53.0	51.4	51.2	....	....	52.7	50.7	49.3	....	....	....	....	....
B. M. Yates Auxvasse, Callaway	1911	27.5	23.7	16.8	....	....	26.0	26.7	22.3	....	....	....	....	....
I. R. Clithero Gazette, Pike	1912	27.4	34.3	27.8	....	....	27.6	33.4	26.6	....	....	....	....	....
J. Ketcham Atlanta, Macon	1912	45.1	44.0	47.0	....	....	46.3	40.8	41.4	....	....	....	....	....
F. M. Luttrell Paris, Monroe	1912	58.8	76.7	58.4	....	....	67.4	84.1	66.3	....	....	....	....	....
G. H. Morthland Molino, Audrain	1912	33.4	40.0	30.4	....	....	36.3	33.4	34.5	....	....	....	....	....
J. O'Brien Thompson, Audrain	1912	38.3	38.4	30.1	....	....	35.1	34.3	29.4	....	....	....	....	....
R. K. Watson O'Fallon, St. Charles	1912	38.7	50.8	28.1	....	....	33.7	33.0	31.2	....	....	....	....	....
Chas. Weishar Edina, Knox	1913	24.7	21.6	24.1	....	....	27.6	27.0	19.8	....	....	....	....	....
E. K. Beckett Shelbina, Shelby	1914	8.1	26.1	15.4	....	....	17.7	29.5	23.4	....	....	....	....	....
J. E. Bell Mexico, Audrain	1914	17.6	25.0	15.9	....	....	20.1	18.7	19.1	....	....	....	....	....
O. L. Carpenter Molino, Audrain	1914	18.8	26.2	20.2	....	....	26.6	22.9	22.4	....	....	....	....	....
E. D. Clark Ewing, Lewis	1914	19.3	21.1	10.3	....	....	10.3	15.7	18.0	....	....	....	....	....
O. F. Hotner Rush Hill, Audrain	1914	15.3	16.3	15.9	....	....	13.9	13.7	14.6	....	....	....	....	....
Ogle Helm Gazette, Pike	1914	14.0	14.2	14.4	....	....	14.0	15.8	14.0	....	....	....	....	....
F. H. Hupe Bellflower, Montgomery	1914	16.0	18.2	17.6	....	....	20.3	19.0	18.5	....	....	....	....	....
J. H. Smoot Centralia, Audrain	1914	28.0	32.1	31.3	....	....	32.1	31.4	31.8	....	....	....	....	....

LEVEL PRAIRIES

Complete reports have been received from 83 trials on the level prairies of northeast Missouri during the ten-year period of 1905-14. As on the Black Prairies, the varieties planted have varied somewhat from year to year. In 67 trials, however, data have been se-

cured on six varieties. According to these data, these varieties rank as follows: (1) Commercial White, 41.18; (2) Boone County White, 39.08; (3) Reid's Yellow Dent, 38.04; (4) St. Charles White, 37.40; (5) St. Charles Yellow, 36.69; and (6) Leaming, 36.02 bushels an acre.

Again Commercial White leads with a margin of 2.1 bushels an acre over Boone County White, which stands second in the list. Boone County White has likewise made about one bushel more on the average than Reid's Yellow Dent. St. Charles White has made 1.68 bushels less than Boone County White and 3.78 bushels less than Commercial White. St. Charles Yellow and Leaming both have given lower yields than Reid's Yellow Dent by 1.39 bushels and 2.02 bushels to the acre respectively.

Johnson County White was included in the tests in 1906, 1907, 1908, and 1909. In 36 trials where both Boone County White and Johnson County White were grown, Boone County made an average yield of 40.23 bushels to the acre and Johnson County 38.70 bushels.

Silvermine was included in the tests from 1905 to 1909. In forty tests during this period, Boone County White made 42.54 bushels to the acre, St. Charles White 40.97 bushels, and Silvermine 36.57 bushels.

In 35 trials in 1906, 1907, 1908, and 1909, Hogue's Yellow Dent made an average acre yield of 36.06 bushels, while Reid's Yellow Dent in the same trials averaged 37.75 bushels to the acre.

Legal Tender was included in the tests in 1906, 1907, and 1908. The average yield in 23 tests during this period was 42.64 bushels to the acre, while Reid's Yellow Dent made 42.27 bushels and Leaming 42.20 bushels to the acre in the same tests.

During the seasons of 1907 and 1908 17 tests were made on this soil type, in which Hildreth's Yellow Dent and Cartner may be compared with Reid's Yellow Dent. The average yield of these varieties during this period were, Hildreth's Yellow Dent 41.14, Reid's Yellow Dent 40.85, and Cartner 36.22 bushels to the acre.

From these data it may be concluded that Johnson County White, St. Charles White, and Silvermine are inferior in yield to Commercial White and Boone County White on this soil type, and that Hogue's Yellow Dent and Cartner are not likely to give as good yields as Reid's Yellow Dent. Legal Tender in these trials has given as high yields as Reid's Yellow Dent and Leaming, while Hildreth's has compared very favorable with Reid's altho these particular tests have been few in number and have covered but three years in the case of Legal Tender and only two years in the case of Hildreth's Yellow Dent.

VARIETY TESTS OF CORN

TABLE 5.—CORN VARIETIES ON THE ROLLING PRAIRIES (UPLAND)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Carther	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
N. E. Stevenson Trenton, Grundy	1906	31.7	....	....	....	50.2	49.3	....	27.2	27.6	....	....	....	27.9
O. F. Rader Trenton, Grundy	1906	41.4	....	....	....	49.7	58.0	....	26.9	31.1	....	....	....	33.1
G. M. Thomas Spickards, Grundy	1906	33.5	....	....	....	26.0	36.3	45.5	....	30.0	....	....	....	....
Paul J. Purdy Harris, Sullivan	1906	53.5	....	46.3	....	59.7	50.9	54.3	....	....	....	....	....	54.2
N. E. Stevenson Trenton, Grundy	1907	48.5	43.5	41.7	42.1	43.8	47.8	48.3	46.5	45.3	43.7	52.2	42.9	43.8
J. G. Harvey Browning, Linn	1907	70.0	....	....	62.8	38.8	66.9	57.0	61.1	73.3	68.7	66.3	60.9	60.3
Paul J. Purdy Harris, Sullivan	1907	70.7	85.5	63.2	64.6	53.9	59.4	67.3	55.2	64.5	61.7	73.7	70.0	69.7
W. D. Cook Callao, Macon	1907	55.9	....	....	53.4	39.5	58.9	60.7	62.5	51.0	45.4	53.5	63.1	42.4
C. D. Axtell Dunlap, Grundy	1907	52.8	52.8	39.6	44.0	35.2	44.0	44.0	48.4	39.6	26.2	48.4	44.0	44.0
C. D. Axtell Dunlap, Grundy	1900	43.0	38.7	38.9	34.4	43.0	34.4	34.4	34.4	38.7	30.1	38.7	....	38.7
W. P. Brinkley Linneus, Linn	1908	29.0	29.0	26.5	27.0	26.1	25.6	26.5	25.6	30.0	24.8	29.0	....	25.6
George Armi Queen City, Schuyler	1908	37.9	....	44.8	45.1	....	45.1	38.8	46.8	37.7	33.7	46.8	....	44.2
Paul Purdy Harris, Sullivan	1908	30.8	49.8	55.8	49.1	31.5	56.2	55.3	55.7	50.2	50.3	51.3	....	43.9
W. R. Stewart Hamilton, Daviess	1908	41.0	56.0	57.0	47.0	31.5	47.6	48.0	60.3	47.6	50.4	49.0	....	60.1
W. A. Pollock Powersville, Putnam	1908	45.3	43.8	37.8	37.1	28.9	44.5	44.5	30.2	31.9	31.2	33.4	....	37.1
G. J. Betson Linneus, Linn	1908	48.1	58.9	45.8	45.4	40.1	53.5	50.0	51.2	52.8	45.2	39.6	....	54.9
John Rus New Cambria, Macon	1909	66.5	72.8	67.3	68.8	59.2	63.2	64.5	67.5	66.5	....	....	....	....
Gran Goodson New Cambria, Macon	1909	42.8	27.2	35.2	35.6	44.0	40.8	39.2	41.6	41.6	....	....	....	....
H. G. Anthony Bucklin, Linn	1909	....	25.6	16.2	....	16.1	16.2	....	....	14.6	....	....	....	....
L. D. Baker St. Catherine, Linn	1910	5.7	5.7	5.5	....	....	5.4	5.3	5.5	....	....	....	....	....
J. C. Chinn New Cambria, Macon	1910	61.7	72.1	64.0	....	....	77.1	69.2	73.2	....	....	....	....	....
H. C. Simpson Grant City, Worth	1910	28.0	36.4	27.7	....	....	33.8	26.0	36.4	....	....	....	....	....
D. D. Yocum Bynumville, Chariton	1910	38.0	40.3	35.7	....	....	41.9	33.5	39.3	....	....	....	....	....
L. O. Clarkson Callao, Macon	1911	21.3	18.0	23.5	....	....	20.8	22.1	19.9	....	....	....	....	....
W. Warford Pattonsburg, Daviess	1912	44.9	41.6	44.2	....	....	37.2	46.2	34.8	....	....	....	....	....
Chas. Weishar Edina, Knox	1912	54.6	50.5	51.0	....	....	51.3	50.9	51.7	....	....	....	....	....
C. C. Reno Pattonsburg, Daviess	1913	15.1	13.8	14.8	....	....	17.4	17.4	15.4	....	....	....	....	....
E. Potter Macon, Macon	1913	17.6	25.5	18.9	....	....	24.0	22.0	24.6	....	....	....	....	....

ROLLING PRAIRIES

Complete data have been obtained from only 29 tests on the rolling prairies of north central Missouri covering the eight year period of 1906-13. Of these, 20 report data on the six leading varieties in

these trials. In the 20 trials, these six varieties ranked as follows in yield to the acre: (1) Commercial White, 43.09; (2) Reid's Yellow Dent, 41.29; (3) St. Charles Yellow, 41.17; (4) Leaming, 40.73; (5) Boone County White, 40.27; and (6) St. Charles White, 39.70 bushels.

It will be noted that Commercial White leads with a margin of 1.8 bushels to the acre over Reid's Yellow Dent, 2.82 bushels over Boone County White, and 3.39 bushels over St. Charles White. It will be noted also that the differences in yield between Reid's Yellow Dent, St. Charles Yellow, Leaming, and Boone County White are with one exception less than a bushel an acre. These varieties may be said to be of practically equal value so far as yield is concerned on this particular soil type.

Comparing Silvermine with Boone County White, we find that in 18 trials in 1906, 1907, 1908, and 1909, in which both of these varieties were included, Boone County White made an average yield of 47.39 bushels, while Silvermine made but 32.08 bushels to the acre.

Likewise in 1907, 1908, and 1909, in 14 trials Boone County White made 49.50 bushels and Johnson County White 47.93 bushels to the acre.

In 18 trials in 1906, 1907, 1908, and 1909, Hogue's Yellow Dent made 43.48 bushels, while Reid's Yellow Dent made 47.09 bushels to the acre.

Legal tender was included in 1906, 1907, and 1908. Its average yield during these three years was 45.32 bushels to the acre, while Reid's Yellow Dent in the same tests made an average acre yield of 49.54 bushels.

Hildreth's Yellow Dent and Cartner may be compared with Reid's Yellow Dent in twelve trials in 1907 and 1908. In these tests Reid's Yellow Dent led with a yield of 48.65 bushels, Hildreth's Yellow Dent made 48.49 bushels, and Cartner 42.61 bushels to the acre.

In no case has any of the less common varieties given better yields than the best of the six leading ones. Silvermine and Johnson County White have given smaller yields than Boone County White while Cartner, Legal Tender, and Hogue's Yellow Dent yielded less than Reid's Yellow Dent. Hildreth's Yellow Dent has been equal in yield to Reid's Yellow Dent in a small number of trials covering but two years.

The leading varieties of white corn for the rolling prairies are Commercial and Boone County White, while Reid's Yellow Dent, Leaming and St. Charles Yellow are the best yellow varieties.





TABLE 6.—CORN VARIETY TESTS ON THE GRAY PRAIRIES (CONTINUED)  
(UPLAND)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Cartner	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
W. P. Hockenberry .....	1913	4.5	7.4	5.6	.....	.....	9.0	11.2	7.7	.....	.....	.....	.....	.....
Bunceton, Cooper														
R. K. Veale .....	1913	4.9	10.5	7.1	.....	.....	3.5	2.5	4.9	.....	.....	.....	.....	.....
Iantha, Barton														
T. H. Eken .....	1914	40.5	45.5	41.8	.....	.....	42.2	40.5	37.1	.....	.....	.....	.....	.....
Windsor, Benton														
C. D. Hull .....	1914	6.3	6.3	6.3	.....	.....	5.9	2.6	6.3	.....	.....	.....	.....	.....
Clinton, Henry														
Nick Alt .....	1914	14.1	19.7	20.3	.....	.....	18.6	21.8	13.3	.....	.....	.....	.....	.....
Sedalia, Pettis														

## GRAY PRAIRIES

Thirty-seven tests during the ten-year period, 1905-14, have been made on the gray prairies of southwest Missouri. Thirty of these, made during the eight years 1907-14, report complete data on the six leading varieties which ranked in acre yields as follows: (1) Commercial White, 30.06; (2) Boone County White, 25.95; (3) St. Charles White, 25.71; (4) Reid's Yellow Dent, 25.09; (5) Leaming, 25.01; (6) St. Charles Yellow, 24.39 bushels an acre.

Commercial White stands first with 4.11 bushels more than Boone County White. Boone County White, St. Charles White, Reid's Yellow Dent, and Leaming have yielded practically the same, the difference in yield between these varieties being less than one bushel in every case. St. Charles Yellow has given the lowest average acre yield of all six varieties.

A few trials of other less common varieties have been made on this soil type. In 14 trials during 1906, 1907, 1908, and 1909, Johnson County White made a little higher average yield than Boone County White and St. Charles White, the yields being Johnson County White 33.30 bushels, Boone County White 31.95 bushels, and St. Charles White 30.40 bushels to the acre. Likewise in 12 trials made in 1906, 1907, 1908, and 1909, Boone County White made 35.56 bushels, while in the same trials Silvermine made but 30.48 bushels to the acre.

In comparing the less important yellow varieties with Leaming and Reid's Yellow Dent, it should be noted that in 12 trials in 1907, 1908, and 1909, Leaming made 31.20 bushels, Reid's Yellow Dent 29.59 bushels, and Hogue's Yellow Dent 28.09 bushels to the acre. In 11 trials in 1906, 1907, and 1908, Legal Tender made 31.82 bushels and Leaming





TABLE 7.—CORN VARIETIES ON THE OZARK BORDER (CONTINUED)  
(UPLAND)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Cartner	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
J. E. Womack .....	1912	29.5	38.7	28.1	.....	.....	41.0	33.4	31.3	.....	.....	.....	.....	.....
Strafford, Greene														
L. E. Winters .....	1912	29.0	27.6	22.4	.....	.....	23.0	30.2	27.4	.....	.....	.....	.....	.....
Neosho, Newton														
W. D. Ashburn .....	1913	39.8	43.7	44.0	.....	.....	33.3	35.6	40.7	.....	.....	.....	.....	.....
Farmington, St. Francois														
Wm. Kingery .....	1913	9.1	8.6	5.8	.....	.....	8.3	9.0	7.3	.....	.....	.....	.....	.....
Anderson, McDonald														
Herbert Howald .....	1913	29.3	32.1	33.0	.....	.....	30.6	32.1	32.4	.....	.....	.....	.....	.....
Eureka, St. Louis														
Elsworth Linebarger .....	1913	31.4	27.9	26.2	.....	.....	30.6	18.9	34.2	.....	.....	.....	.....	.....
Purdy, Barry														
A. G. Land .....	1913	13.9	13.6	18.8	.....	.....	17.6	20.9	18.6	.....	.....	.....	.....	.....
Cassville, Barry														
C. P. Mathews .....	1913	26.8	30.0	27.2	.....	.....	28.4	27.3	27.4	.....	.....	.....	.....	.....
Jackson, Cape Girardeau														
J. E. Womack .....	1913	16.6	17.1	25.9	.....	.....	17.8	23.1	16.8	.....	.....	.....	.....	.....
Strafford, Greene														
Jasper Jesse .....	1913	37.3	37.0	16.4	.....	.....	35.2	24.9	27.9	.....	.....	.....	.....	.....
Webster Groves, St. Louis														
F. D. Bacon .....	1914	25.1	37.9	33.1	.....	.....	21.1	29.0	40.6	.....	.....	.....	.....	.....
Mt. Vernon, Lawrence														
J. F. Hendricks .....	1914	41.7	31.7	40.6	.....	.....	60.5	34.1	52.2	.....	.....	.....	.....	.....
Henley, Cole														
J. P. Jesse .....	1914	42.8	40.3	39.0	.....	.....	37.7	31.2	33.8	.....	.....	.....	.....	.....
Webster Groves, St. Louis														
Elsworth Linebarger .....	1914	59.1	55.4	51.8	.....	.....	53.0	53.4	49.9	.....	.....	.....	.....	.....
Purdy, Barry														
C. P. Mathews .....	1914	15.3	15.9	15.9	.....	.....	21.9	17.5	19.9	.....	.....	.....	.....	.....
Jackson, Cape Girardeau														
E. Maxwell .....	1914	23.4	23.7	18.8	.....	.....	22.5	17.8	20.1	.....	.....	.....	.....	.....
Greenfield, Dade														
E. Nothdurft .....	1914	16.0	16.7	14.5	.....	.....	15.4	14.9	14.7	.....	.....	.....	.....	.....
Jackson, Cape Girardeau														
W. A. Vinton .....	1914	10.8	12.1	9.7	.....	.....	11.6	13.9	14.6	.....	.....	.....	.....	.....
Strafford, Greene														
E. H. Watson .....	1914	32.1	45.8	36.4	.....	.....	34.1	36.8	33.9	.....	.....	.....	.....	.....
Pierce City, Lawrence														

OZARK BORDER

Data from nine years' work (1906-1914) with corn varieties on the border Ozark soils are available. Complete reports have been returned by 66 cooperators on this soil type. In 59 of these, the six leading varieties have been included. Their rank and average acre yields have been: (1) Commercial White, 40.02; (2) Boone County White, 37.70; (3) St. Charles Yellow, 36.70; (4) Reid's Yellow Dent, 36.26; (5) St. Charles White, 35.90; and (6) Leaming, 35.27 bushels to the acre.

Again Commercial White stands first with a significant margin of 2.32 bushels over Boone County White and 4.12 bushels over St. Charles White. St. Charles Yellow and Reid's Yellow Dent with prac-



TABLE 8.—CORN VARIETY TESTS IN THE OZARK CENTER (CONTINUED)  
(UPLAND)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogne's Yellow Dent	Carter	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
D. P. Leonard Houston, Texas	1906	48.2	....	46.3	43.3	....	23.7	33.3	34.0	....	....	....	....	....
G. P. Spraggs Van Cleve, Maries	1906	14.3	....	14.2	16.3	....	12.7	14.5	13.5	....	....	....	....	11.2
J. B. Atchley Lebanon, Laclede	1906	49.5	....	....	54.5	....	40.7	50.0	41.0	....	....	....	....	43.0
Orlando Regnau Monteer, Shannon	1906	8.5	....	....	16.5	....	10.3	13.0	14.0	....	....	....	....	9.7
Wm. Woods Patterson, Wayne	1907	11.1	16.8	10.4	18.5	5.7	12.9	11.0	15.5	9.0	13.1	10.2	....	10.3
Wm. O. Huff Sabula, Iron	1907	71.7	....	....	71.1	42.0	53.3	71.8	68.1	....	77.0	59.2	83.4	....
A. B. Deaton Bloodland, Pulaski	1907	12.1	15.9	12.1	14.6	....	10.9	12.2	15.0	11.8	11.1	17.9	17.1	11.2
John Dowell Hutton Valley, Howell	1907	14.2	13.5	17.8	18.7	....	20.2	16.6	18.7	19.3	17.4	14.2	12.5	20.0
A. L. Clayton Lowndes, Wayne	1907	45.4	46.0	46.3	....	....	45.0	47.6	46.0	44.7	44.4	43.8	47.6	42.8
Henry Collins Hulsey, Washington	1908	53.0	41.1	43.7	30.8	30.5	37.3	39.2	44.0	50.1	41.7	34.7	....	30.1
S. Y. Yeater Laconia, Dent	1908	41.0	....	45.0	40.0	30.0	....	41.0	....	....	38.0	....	....	....
D. L. Massie Fremont, Carter	1908	29.1	30.0	28.8	28.8	17.3	21.4	21.8	29.4	21.8	19.4	24.4	....	23.0
A. B. Deaton Bloodland, Pulaski	1908	17.1	25.8	18.8	24.3	14.0	26.4	20.8	20.1	21.2	20.2	21.7	....	20.2
J. J. Schwarz Doniphan, Ripley	1909	39.1	47.3	41.8	39.1	24.3	35.4	37.7	51.5	35.4	....	....	....	....
C. A. Stucks Jacobston, Crawford	1909	34.6	33.2	32.8	33.2	34.0	33.6	....	34.8	33.0	....	....	....	....
C. D. Parkin Mineral Point, Washington	1909	20.8	21.1	20.5	22.4	21.1	24.9	18.8	25.6	20.8	....	....	....	....
Guy Mitchell Caledonia, Washington	1909	25.7	29.9	25.2	26.9	25.8	26.4	....	24.5	25.7	....	....	....	....
D. L. Massie Fremont, Carter	1909	33.8	39.3	33.4	40.5	37.3	34.6	....	39.3	23.9	....	....	....	....
Rich Lucas Mountain View, Howell	1909	18.0	16.3	17.8	17.3	15.5	19.1	13.2	19.2	19.8	....	....	....	....
John Cologna Marshfield, Webster	1909	25.3	22.4	22.2	29.7	21.3	19.2	34.0	20.6	29.0	....	....	....	....
Henry Collins Hulsey, Washington	1909	33.0	35.1	31.7	31.7	27.2	28.5	....	31.7	29.4	....	....	....	....
C. S. Clayton Kirbyville, Taney	1909	....	....	....	....	....	10.6	10.6	10.6	10.9	....	....	....	....
T. F. Coyne Ponce de Leon, Stone	1910	64.1	66.0	64.1	....	....	58.4	62.2	66.0	....	....	....	....	....
C. S. Clayton Kirbyville, Taney	1910	41.0	45.4	43.3	....	....	34.6	29.4	38.0	....	....	....	....	....
R. D. Calkins Knob View, Phelps	1910	13.1	13.8	11.2	....	....	9.5	8.0	9.8	....	....	....	....	....
John Cologna Marshfield, Webster	1910	43.1	75.0	63.7	....	....	56.1	45.0	65.5	....	....	....	....	....
Rich Lucas Mountain View, Howell	1910	30.9	37.4	29.8	....	....	30.7	20.4	29.9	....	....	....	....	....
D. L. Massie Fremont, Carter	1910	109.7	133.7	106.2	....	....	130.2	68.5	106.2	....	....	....	....	....
C. A. Stucke Cuba, Crawford	1910	54.8	41.1	38.8	....	....	43.4	32.0	52.5	....	....	....	....	....
J. A. Bray Fredericktown, Madison	1911	44.0	45.2	42.1	....	....	25.1	22.6	24.5	....	....	....	....	....
T. F. Coyne Ponce de Leon, Stone	1911	65.1	68.5	66.2	....	....	64.0	64.0	65.8	....	....	....	....	....
Jonathan Emery Phlegeton, Douglas	1911	38.5	50.7	40.5	....	....	38.5	24.3	42.6	....	....	....	....	....
G. A. Gutsche Mansfield, Wright	1911	28.0	25.2	32.5	....	....	22.0	19.6	8.1	....	....	....	....	....

TABLE 8.—CORN VARIETY TESTS IN THE OZARK CENTER (CONTINUED)  
(UPLAND)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Cartner	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
John A. Johnson Preston, Hickory	1911	21.1	21.0	15.6	.....	.....	28.4	25.5	19.8	.....	.....	.....	.....	.....
Rich Lucas Mountain View, Howell	1911	18.1	26.2	16.5	.....	.....	13.6	19.0	11.3	.....	.....	.....	.....	.....
D. L. Massie Fremont, Carter	1911	10.6	11.9	10.4	.....	.....	8.8	9.7	10.1	.....	.....	.....	.....	.....
Evans Porter Laquey, Pulaski	1911	19.3	17.1	17.2	.....	.....	20.5	20.7	20.1	.....	.....	.....	.....	.....
W. A. Smiley Simmons, Texas	1911	15.2	23.3	19.5	.....	.....	14.0	15.7	20.3	.....	.....	.....	.....	.....
W. H. Spencer Bakersfield, Ozark	1911	20.8	21.0	15.8	.....	.....	13.7	11.5	13.7	.....	.....	.....	.....	.....
John Cologna Marshfield, Webster	1912	35.0	41.0	36.0	.....	.....	21.0	20.0	38.0	.....	.....	.....	.....	.....
L. Genetti Marshfield, Webster	1912	24.6	24.3	22.1	.....	.....	18.6	18.2	21.5	.....	.....	.....	.....	.....
J. A. Johnson Preston, Hickory	1912	17.7	22.1	17.8	.....	.....	12.1	15.5	16.2	.....	.....	.....	.....	.....
B. Jester Seymour, Webster	1912	21.7	18.4	15.6	.....	.....	15.0	16.8	10.7	.....	.....	.....	.....	.....
W. H. Spencer Bakersfield, Ozark	1912	18.6	23.6	14.6	.....	.....	12.4	12.3	20.9	.....	.....	.....	.....	.....
Karma Black Fordland, Webster	1913	15.8	18.1	13.1	.....	.....	22.8	19.3	25.0	.....	.....	.....	.....	.....
Ivan C. Snyder Pomona, Howell	1913	6.8	7.3	7.5	.....	.....	5.2	7.4	6.3	.....	.....	.....	.....	.....
Oscar White Fordland, Webster	1913	9.2	7.2	7.2	.....	.....	9.4	15.2	9.9	.....	.....	.....	.....	.....
Carl F. Wendt Bado, Texas	1913	3.3	1.9	2.8	.....	.....	3.4	3.5	2.7	.....	.....	.....	.....	.....

## OZARK UPLANDS

The experiments on the Ozark uplands have extended over the eight years 1906—1913. Complete reports have been obtained from 53 cooperators 37 of whom report the six leading varieties. The rank and average yields of these varieties have been: (1) Commercial White, 30.53; (2) St. Charles White, 29.81; (3) Boone County White, 28.91; (4) St. Charles Yellow, 28.48; (5) Reid's Yellow Dent, 27.13; and (6) Leaming 24.74 bushels to the acre.

It will be seen that Commercial White again leads in yield, but St. Charles White is a very close second. Boone County White stands third with but a slight decrease from St. Charles White. It is interesting to note that all three of the white varieties have given higher yields than the yellow varieties on this soil type and that Leaming stands at the bottom of the list.

Johnson County White also has proved to be a good variety in the Ozark region, as will be seen from the fact that in twenty trials in 1906, 1907, 1908, and 1909, it has made an average yield of 30.61



bushels, while the average yield of Boone County White in the same tests has been 30 bushels to the acre. Silvermine has been included in 18 tests covering the seasons of 1906, 1907, 1908, and 1909. During this period it averaged 26.91 bushels to the acre, while Boone County White in the same tests made 35.06 bushels. In 18 trials in 1906, 1907, 1908, and 1909, Hogue's Yellow Dent stood above Reid's Yellow Dent with an average yield of 29.07 bushels as compared with 27.73 bushels for Reid's. In 18 tests where St. Charles Yellow and Hogue's Yellow Dent have been included, St. Charles Yellow averaged 29.18, while Hogue's made only 26.40 bushels to the acre.

In eight trials made in 1907 and 1908, Cartner and Hildreth's Yellow Dent gave smaller yields than St. Charles Yellow, the yields being Cartner 30.53, Hildreth's 28.26, and St. Charles Yellow 32.10 bushels to the acre.

Summarizing these data, it may be concluded that Commercial White, St. Charles White, and Boone County White are practically equivalent in average yield on this soil type. St. Charles Yellow is the best variety of yellow corn, with Reid's a second choice so far as yield is concerned. Hogue's Yellow Dent appears to be fully as good as Reid's, if not better, but inferior to St. Charles Yellow. Hildreth's Yellow Dent and Cartner may be expected to give lower average yields than St. Charles Yellow.

### EXPERIMENTS ON BOTTOM LANDS

Most of these cooperative corn variety tests have been located on upland soil, the idea being to place them on the average corn soil of the community. Each year, however, a few experiments have been placed on bottom lands in the various sections of the state. Since there is not a sufficient number to summarize the results of these experiments by the same soil types as those made on uplands, and since there is no apparent reason for making such a grouping of these data, they have been divided into three groups, one for north Missouri, one for south Missouri, and one for the southeast Missouri lowlands. In the first of these, all tests made on bottom lands within the areas of the black prairies, rolling prairies, and level prairies have been placed in one group, which shall be referred to as north Missouri bottom lands. In the second group have been placed all tests made on bottom lands within the areas of the gray prairies, border Ozark, and Ozark soils. Reference to this group will be made as South Missouri bottom lands. The southeast Missouri lowlands constitute the third group. The complete data for the trials included in these three groups are given in Tables 9, 10, and 11.

TABLE 9.—CORN VARIETY TESTS ON NORTH MISSOURI BOTTOMLANDS

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Cartner	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
R. E. L. Black Sampson, Livingston	1905	28.5	.....	16.1	.....	24.1	31.6	34.6	.....	.....	23.1	.....	.....	.....
Wm. Wallace Vandalia, Audrain	1905	30.0	.....	.....	.....	.....	30.0	30.0	42.8	.....	30.0	.....	.....	.....
Geo. K. Thrasher Lewistown, Lewis	1905	61.6	.....	.....	.....	42.5	55.7	38.5	.....	42.0	.....	.....	.....	50.0
Walter Kom Gentry, Gentry	1905	13.6	.....	12.0	.....	12.9	13.7	12.3	.....	.....	12.0	.....	.....	.....
J. S. Hill Brookfield, Linn	1906	119.0	.....	112.0	.....	115.0	117.0	115.0	.....	116.0	.....	.....	.....	.....
Sidney Frost Mirabile, Caldwell	1906	43.5	.....	56.0	.....	40.7	71.0	28.0	.....	.....	.....	.....	.....	.....
Geo. S. Homan Baston, Buchanan	1906	43.1	.....	40.0	.....	33.1	18.3	44.7	.....	.....	.....	.....	.....	.....
Wm. Wallace Vandalia, Audrain	1906	13.7	.....	12.8	.....	12.5	10.7	.....	.....	.....	.....	.....	10.5	.....
Frank Norwald Troy, Lincoln	1906	23.3	.....	20.0	16.5	23.5	23.8	17.0	17.0	.....	.....	.....	.....	.....
A. E. Whitehead Wellsville, Montgomery	1906	62.0	.....	73.0	.....	60.0	60.0	59.0	.....	.....	.....	.....	65.0	63.0
Jas W. Megee Livonia, Putnam	1906	106.5	.....	28.7	.....	91.4	68.2	109.9	.....	98.1	.....	.....	.....	99.4
R. E. Owens Millgrove, Mercer	1906	34.2	.....	.....	.....	27.5	20.0	.....	20.1	20.0	.....	.....	.....	22.7
C. C. Lockwood Columbia, Boone	1907	38.9	48.0	.....	.....	35.7	.....	48.6	44.8	28.7	51.2	48.3	.....	80.1
C. T. Shafer Malta Bend, Saline	1907	104.5	114.5	114.5	118.3	.....	98.9	.....	98.9	93.7	.....	104.1	104.1	93.7
H. F. Leary Warrensburg, Johnson	1907	93.2	101.9	75.2	82.6	64.8	88.0	106.5	88.0	82.6	106.5	125.2	74.2	68.2
George Boone Liberty, Clay	1907	43.5	56.8	29.5	29.5	31.9	22.2	23.8	19.4	26.8	22.0	21.5	38.4	20.2
H. F. Leary Warrensburg, Johnson	1908	37.5	35.2	29.3	36.4	28.2	36.0	36.4	37.7	34.0	36.9	34.1	.....	35.6
R. W. Jones Dawn, Livingston	1909	10.8	.....	11.2	10.1	11.4	11.7	10.8	.....	11.5	.....	.....	.....	.....
Herman Metzner Chillicothe, Livingston	1909	17.3	18.4	18.5	.....	20.5	.....	.....	.....	.....	.....	.....	.....	.....
C. L. Buoy Fayette, Howard	1909	39.9	38.9	40.9	39.5	40.9	42.8	41.0	37.1	39.9	.....	.....	.....	.....
Emory Sheely Unionville, Putnam	1910	56.3	48.9	57.6	.....	.....	48.9	44.6	20.1	.....	.....	.....	.....	.....
A. E. Martin Farmington, Ia., Clarke	1910	82.0	81.4	83.7	.....	.....	79.0	80.2	82.8	.....	.....	.....	.....	.....
George Salfen Hamburg, St. Charles	1910	48.3	45.9	47.9	.....	.....	40.5	36.6	45.7	.....	.....	.....	.....	.....
A. C. Rice Hamburg, Iowa, Atchison	1911	52.4	50.7	52.9	.....	.....	53.8	49.5	47.6	.....	.....	.....	.....	.....
Earl Murray Ludlow, Livingston	1913	11.6	11.7	12.3	.....	.....	11.8	12.8	13.0	.....	.....	.....	.....	.....
J. H. Breit St. Joseph, Buchanan	1914	36.9	42.9	44.8	.....	.....	29.9	38.1	40.5	.....	.....	.....	.....	.....
John Noah Chillicothe, Livingston	1914	41.0	38.2	38.4	.....	.....	46.6	35.8	39.9	.....	.....	.....	.....	.....
A. M. Snider Martin City, Jackson	1914	68.1	55.3	71.1	.....	.....	50.3	60.2	55.7	.....	.....	.....	.....	.....
J. A. Weidlein E. Leavenworth, Platte	1914	24.6	61.2	68.8	.....	.....	51.0	51.0	46.9	.....	.....	.....	.....	.....

NORTH MISSOURI BOTTOM LANDS

Twenty-nine tests have been made on the bottom lands of north Missouri. Of these, only 13 have included all six of the leading vari-

eties. In these 13 trials these varieties have stood as follows: (1) Commercial White, 51.92; (2) St. Charles White, 50.18; (3) Boone County White, 48.93; (4) Leaming, 47.42; (5) Reid's Yellow Dent, 46.21; and (6) St. Charles Yellow, 44.18 bushels to the acre.

Four of these varieties have been included in a total of 22 tests on the north Missouri bottom lands, the average acre yield being: (1) Boone County White, 49.38; (2) Leaming, 47.62; (3) St. Charles White, 46.42; and (4) Reid's Yellow Dent, 45.93 bushels to the acre.

It will be noted that no single variety excels in yield to any marked extent, altho the difference in yield between the best and poorest varieties is of importance. As usual, Commercial White stands first with St. Charles White and Boone County White second and third in the first list. In the second list, however, Boone County White excels St. Charles White by nearly three bushels. Since this is an average of almost three times as many tests as the first list, it probably more nearly expresses the true value of these varieties for these soils. In both lists Leaming excels Reid's Yellow Dent, but the difference is less than two bushels to the acre. St. Charles Yellow has generally yielded less than Leaming and Reid's Yellow Dent and is probably inferior to these varieties, altho only to a slight extent. In 17 trials where both Reid's Yellow Dent and St. Charles Yellow have been grown, Reid's has averaged 45.47 bushels and St. Charles Yellow 44.30 bushels to the acre.

Hogue's Yellow Dent has been included in ten trials where Reid's Yellow Dent has been grown. In these it compares very favorably with Reid's, making an average acre yield of 56.46 bushels, while Reid's Yellow Dent made 55.55 bushels.

Silvermine has been grown in fifteen tests in which Boone County White was also included. In these the average acre yield of Silvermine was 40.66 bushels, while Boone County White made 46.36 bushels. Johnson County White has been included in only seven trials in which Boone County White also has been included. In these seven trials Johnson has averaged 47.55 bushels, while Boone County has made 50.38 bushels to the acre. It would seem from these data that the best varieties of yellow corn for the bottom lands of North Missouri are Leaming and Reid's Yellow Dent, while Commercial White, St. Charles White and Boone County White are the leading varieties of white corn.



TABLE 10.—CORN VARIETY TESTS ON SOUTH MISSOURI BOTTOMLANDS (CONTINUED)

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow Dent	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Cartner	Hildreth Yellow Dent	Farmer's Interest	Legal Tender
R. C. Hendrick ..... Haltown, Lawrence	1910	....	95.1	83.3	....	....	89.8	71.5	72.2	....	....	....	....	....
A. W. Kuhlman ..... Bay, Gasconade	1910	....	72.6	....	....	....	72.0	60.6	70.9	....	....	....	....	....
G. M. Meier ..... Cedar City, Callaway	1911	44.9	42.1	47.5	....	....	43.6	41.4	40.1	....	....	....	....	....
C. H. Morrison ..... Aurora, Lawrence	1911	41.5	58.8	42.6	....	....	38.0	37.5	38.0	....	....	....	....	....
Warren Houser ..... Gladstone, Morgan	1911	27.2	19.9	24.0	....	....	17.9	22.3	20.3	....	....	....	....	....
George Geiger ..... Speed, Cooper	1911	51.0	45.0	47.7	....	....	32.6	38.9	39.9	....	....	....	....	....
Jas. A. Bray ..... Fredericktown, Madison	1912	34.1	45.9	31.1	....	....	34.8	36.3	31.6	....	....	....	....	....
Mac Carter ..... Piedmont, Wayne	1912	55.7	48.3	67.1	....	....	46.3	49.0	53.0	....	....	....	....	....
E. B. Linebarger ..... Purdy, Barry	1912	25.4	26.2	27.0	....	....	24.7	23.9	25.7	....	....	....	....	....
G. M. Meier ..... Cedar City, Callaway	1912	96.9	101.5	84.0	....	....	89.6	87.5	87.5	....	....	....	....	....
R. L. Duncan ..... Piedmont, Wayne	1912	76.3	95.1	90.4	....	....	95.1	93.6	92.0	....	....	....	....	....
Alger Williams ..... Cassville, Barry	1913	33.5	32.2	33.2	....	....	32.7	32.2	32.8	....	....	....	....	....
W. F. Beaman ..... Wise, Barton	1913	28.6	32.3	26.6	....	....	24.1	25.5	29.9	....	....	....	....	....
H. F. Carroll ..... Bourbon, Crawford	1913	22.1	19.3	16.8	....	....	22.3	28.0	20.8	....	....	....	....	....
D. E. Smallwood ..... Steelville, Crawford	1914	36.7	37.1	19.0	....	....	29.0	32.3	11.7	....	....	....	....	....

SOUTH MISSOURI BOTTOM LANDS

Data are available from 48 tests made on the bottom lands of southern Missouri. The six leading varieties used in these experiments have been included in 26 of these tests. The average rank and acre yields of these six varieties in those tests in which all were included were: (1) Commercial White, 46.32; (2) Boone County White, 45.33; (3) St. Charles White, 43.23; (4) Leaming, 42.00; (5) Reid's Yellow Dent, 41.73; and (6) St. Charles Yellow, 41.47 bushels to the acre.

Again it will be noted that Commercial White leads with an increase of one bushel over Boone County White and more than three bushels better than St. Charles White. Boone County White has done better than St. Charles White by more than two bushels to the acre.

The yellow varieties have proved of similar value, the average acre yields being practically the same. It will also be noted that all of the white varieties have outyielded all of the yellow varieties on the average.

Comparing some of the less common varieties, it is noted that in 20 tests in which both Boone County White and Johnson County White have been grown, Boone County White has made an average acre yield

of 46.81 bushels, while Johnson County White has made 45.05 bushels. Similarly, in 13 tests in which Silvermine and Boone County White have been grown, Boone County has made an average yield of 48.95 bushels to the acre, while Silvermine has averaged but 37.21 bushels.

Of the yellow varieties Cartner and Hogue's Yellow Dent yielded less than Reid's Yellow Dent and Leaming. In 13 trials Reid's made 55.15, Leaming 53.35 and Cartner 53.01 bushels to the acre. In ten trials Reid's averaged 45.38 and Hogue's 41.14 and in nine trials Leaming made 45.74 and Hogue's, 40.87 bushels to the acre.

TABLE 11.—CORN VARIETY TESTS ON SOUTHEAST MISSOURI LOWLANDS

Cooperator, Town and County	Date	Boone County White	Commercial White	St. Charles White	Johnson County White	Silvermine	Reid's Yellow	Leaming	St. Charles Yellow	Hogue's Yellow Dent	Cartner
A. J. Rushing .....	1906	62.7	.....	66.2	67.6	.....	61.7	59.7	61.2	.....	.....
Bertrand, Mississippi											
Robert McGill .....	1908	74.8	85.8	70.7	69.1	40.3	54.2	68.8	74.4	56.7	67.1
Bertrand, Mississippi											
L. W. Rose .....	1910	47.5	37.4	49.8	.....	.....	32.9	29.9	43.2	.....	.....
Byrds, Dunklin											
E. H. Holderness .....	1911	67.5	66.1	97.2	.....	.....	31.2	43.2	54.0	.....	.....
Bloomfield, Stoddard											
John Hess .....	1911	60.4	66.1	65.4	.....	.....	41.6	50.3	44.3	.....	.....
Marston, New Madrid											
V. P. Post .....	1912	40.5	32.4	34.2	.....	.....	34.2	34.2	31.5	.....	.....
Parma, New Madrid											
L. W. Rose .....	1912	52.6	51.2	46.2	.....	.....	52.4	52.5	55.8	.....	.....
Byrds, Dunklin											
A. R. Cannell .....	1913	40.4	31.7	42.9	.....	.....	43.5	40.4	43.5	.....	.....
Poplar Bluff, Butler											
Jas. E. King .....	1915	31.4	29.1	27.0	28.3	27.0	28.8	30.1	29.3	32.3	27.3
Kennett, Dunklin											

## SOUTHEAST MISSOURI LOWLANDS

Only nine variety tests have been made on the Mississippi lowlands of southeast Missouri. In eight of these all six of the leading varieties have been included. Their rank and average yields have been: (1) St. Charles White, 54.18; (2) Boone County White, 51.90; (3) Commercial White, 49.61; (4) St. Charles Yellow 46.63; (5) Leaming, 43.30; and (6) Reid's Yellow Dent, 39.85 bushels to the acre.

St. Charles White has proved the highest yielding variety on this soil. It has averaged 2.28 bushels above Boone County White and 4.57 above Commercial White, an increase which is of some significance. These data confirm the general observations of farmers in this region that St. Charles White is the best variety for that section. Of the yellow varieties, St. Charles Yellow stands first, Leaming second, and Reid's Yellow Dent third. It should be noted also that all of the white varieties have yielded above all of the yellow varieties, the three

white varieties averaging 51.89 bushels, while the three yellow varieties have made but 43.26 bushels to the acre. t

A few other varieties have been included, but in so few trials as not to warrant any conclusions as to their value. In three trials Johnson County White has given about the same yield as Boone County White and St. Charles White, but it will be necessary to grow it longer before its true value can be determined.

Commercial White has stood first in every section of the state save in the southeast Missouri lowlands. It is a rather late-maturing variety, however, and the large yields credited to it in these tests may be due to the fact that they have been computed on the basis of 70 pounds of ear corn to the bushel at harvest time. It is probable that had it been possible to compute the yields on the basis of air-dried shelled corn its rank would have been lower. At the same time its high standing has been so consistent that it must be considered one of the highest if not the highest-yielding variety for the state. It is grown only to a limited extent in the state, however, and little good seed is available.

Boone County White has likewise been very consistent in yield. It is perhaps the leading and most popular variety of white corn in Missouri and is grown extensively thruout the state.

Johnson County White has given very good results in most sections of the state, but except on the gray prairies and the Ozark center soils has yielded somewhat less than Boone County White. It seems to possess no particular advantage over Boone County White.

Silvermine has uniformly given low yields thruout the state. At the present time it is grown to a considerable extent in the northern part of the state, but in the light of these experiments it should be discarded for some of the higher-yielding varieties.

St. Charles White has given very good results, especially on the bottom lands of north Missouri and on all of the soils of south Missouri. It is especially well adapted to the southeast Missouri lowlands.

None of the less common varieties, such as Hogue's Yellow Dent, Hildreth's Yellow Dent, or Cartner, tested in these experiments are of sufficient value to warrant their recommendation for any region in preference to Commercial White, Boone County White, Johnson County White, St. Charles White, Reid's Yellow Dent, or Leaming. Of these varieties, Boone County White and Reid's Yellow Dent are the most popular and large quantities of good seed are available each year.

### SUMMARY

1. The variety tests made at Columbia during the ten-year period 1905-1914, have shown that the leading varieties of white corn are Com-

mercial White, Boone County White, Johnson County White, and St. Charles White. The leading varieties of yellow corn are Reid's Yellow Dent, Leaming, Cartner, and St. Charles Yellow.

2. On the black prairies of northwest Missouri the highest yielding varieties of white corn have been Commercial White and Boone County White, and the best varieties of yellow corn Reid's Yellow Dent and Leaming. Commercial White stands first in these tests and Reid's Yellow Dent second.

3. Commercial White and Boone County White stand first and second respectively on the level prairies of northeast Missouri. Reid's Yellow Dent is the leading variety of yellow corn, but stands somewhat lower than Commercial White and Boone County White in the general average.

4. Commercial White and Reid's Yellow Dent stand first and second respectively in the general averages for the rolling prairies of north central Missouri. St. Charles Yellow and Leaming have given nearly as high average yields as Reid's Yellow Dent, while Boone County White stands fifth in the list.

5. On the gray prairies of southwest Missouri Commercial White leads the list of varieties with Boone County White standing second. St. Charles White has given practically the same yield as has Boone County White. Reid's Yellow Dent and Leaming have yielded practically the same, but both stand below all three varieties of white corn.

6. Commercial White and Boone County White are the two leading varieties of white corn for the border Ozark region. St. Charles Yellow and Reid's Yellow Dent are the leading varieties of yellow corn, but stand below the two white varieties in the general average.

7. On the Ozark center all three of the white varieties have given higher average yields than any of the three yellow varieties. Commercial White and St. Charles White are the two leading varieties in this region. St. Charles Yellow and Reid's Yellow Dent are the best yellow varieties.

8. Commercial White and Boone County White have led on the bottom lands of north Missouri. Leaming has yielded better than Reid's Yellow Dent.

9. Commercial White and Boone County White have given the highest average yields of all varieties on the south Missouri bottom lands. Leaming, Reid's Yellow Dent and St. Charles Yellow have given nearly the same yields, but rank in the order named.

10. St. Charles White stands first in the list on the southeast Missouri lowlands with a good margin. Boone County White stands second. St. Charles Yellow has given best results of all of the yellow varieties, while Reid's Yellow Dent stands last in the list.