

Sweet Corn Hybrids

Lexington, Lincoln and Lee

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FIGURE 1. First generation hybrid sweet corn Lee, in center, with the two inbred parents: P39, at left, and C27, at right.

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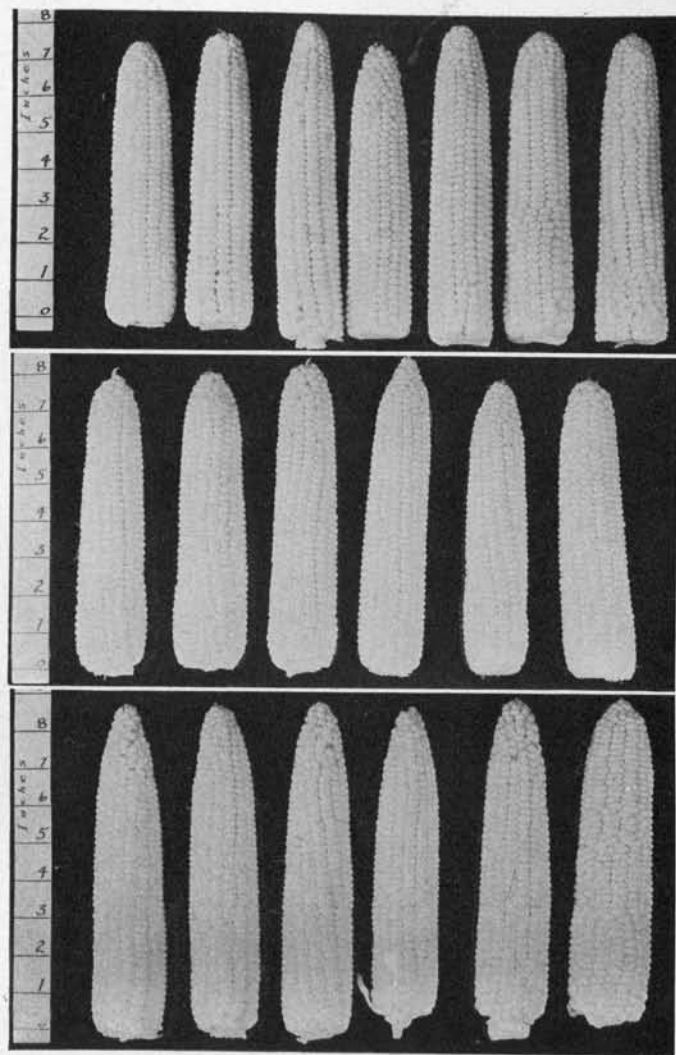


FIGURE 2. Representative ears of three sweet corn hybrids: above, Lexington, characterized by a slight tapering; center, Lincoln, cylindrical with narrow kernels; and bottom, Lee, slightly larger than Lincoln, and with broader kernels.

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LEXINGTON, Lincoln and Lee are three sweet corn hybrids produced at Connecticut Agricultural Station and ready for introduction in 1942. Lexington (C13×15) is an early hybrid maturing in the same season as Marcross (6×13). Lincoln (C23×P39) and Lee (C27×P39) are mid-season hybrids, maturing in the Whipcross P39 season, two or three days before Golden Cross Bantam.

Nomenclature for Sweet Corn Hybrids

Since we are making a radical departure from our previous naming system, a word of explanation seems advisable. According to that plan every hybrid had a name ending in "cross" to show its hybrid nature in contrast to the many open pollinated varieties then sold. At present nearly all varieties grown are hybrid and in the future probably all sweet corn will be hybrid. Hence there is no necessity for the word "cross" to be added to each varietal name.

We are adopting a system of names that will indicate the approximate maturity of a hybrid. Such a system is briefly outlined: Each different maturity season is represented by a corresponding period of American history. From the early periods of American history will be chosen names for the early varieties. Later varieties will have names from more recent periods. The following table gives the historical period corresponding to each of the different maturity seasons along with names appropriate for each period and maturity season.

The names given above are only a few of the many possibilities available. With such a system, the names for each season can be expanded as new hybrids are produced. Also it is possible within each maturity season to designate slight differences in maturity by selecting earlier names for slightly earlier varieties. In the case of the late and very late varieties the late ones can be given names

taken from the period at the beginning of the twentieth century, while for the very late varieties, more recent names can be chosen.

TABLE 1. SUGGESTED HISTORICAL NAMES FOR SWEET CORN IN THE DIFFERENT MATURITY SEASONS

Sweet Corn Season	Historical Period	Possible Names	
Extra Early	Discovery through Colonial 1492-1775	Columbus Standish	Plymouth Jamestown
Early	Revolutionary 1776-1788	Lexington Washington	Bunker Hill Concord
Early Mid-season	Beginning of the Republic 1789-1860	Madison Jefferson Hamilton Marshall	Jackson Fulton Thoreau Pony Express
Mid-season	Civil War 1861-1865	Lincoln Lee Grant	Homestead Monitor Merrimac
Late Mid-season	Reconstruction and Industrial Expansion 1866-1900	Golden Spike Klondike Buffalo Bill	Cleveland Great Northern
Late and Very Late	Twentieth Century 1900 to Present	McKinley Bryan Taft Wilson Edison	Ford Hoover Coolidge Roosevelt,

Lexington, C13 × 15, is an early hybrid maturing in the same season as Marcross. The plant is 5 to 6 feet tall, erect and uniform. The ears are somewhat more slender than those of Marcross, but, with a rather tight husk, giving them a neater appearance. There are usually twelve to fourteen rows of rather narrow kernels on the slightly tapering ears.

The plants of Lexington are quite similar to, but slightly taller, than those of Marcross. Lexington has one parent (C13) in common with Marcross. The other parent (C15) is an inbred secured from a cross of Black Mexican and Spanish Gold. C15 is tall (usually 6 feet or more) and erect. It has an excellent root system and resists lodging. The stalk is resistant to fusarium and other fungi that attack sweet corn plants. Hence the plants of C15 remain erect and green to a comparatively late date in the season. The ear is rather long and somewhat slender, having twelve to sixteen rows of narrow kernels. The kernels of C15 are quite pseudo-starchy. C15 possesses considerable hardiness to cold, and either the inbred or its hybrids can be planted very early in the spring. The tallness of

C15 is dominant in nearly all crosses except in the hybrid Lexington. In this case the stocky short growth of C13 is dominant and hence the hybrid is very little taller than Marcross. The inbred C15 makes many tillers and is an excellent pollen parent. In making the hybrid, Lexington, both inbreds can be planted at the same time using C13 as the seed parent and C15 as the pollen parent. C15 is 3 or 4 days later than C13.

Lincoln, C23 × P39, is a single cross designed primarily to replace the old topcross Whipcross P39. It is a mid-season hybrid maturing 2 or 3 days before Golden Cross Bantam. The ear is rather large, cylindrical, and has twelve to sixteen rows of narrow kernels. The ear is borne rather high on an erect stalk that is resistant to lodging. The plants are 7 to 8 feet tall. The quality of Lincoln is very good, though not as good as Golden Cross Bantam. Both crosses have one parent in common, Purdue 39.

The other parent of Lincoln, C23, is a Whipple inbred having a large ear on a single stalk with few tillers. The ear is cylindrical and has twelve to eighteen rows of narrow kernels. The stalks are inclined to lodge late in the season. For this reason we recommend using C23 as the pollen parent. It has given satisfactory pollination when planted at the rate of one pollen row to four seed rows of Purdue 39. Both parents can be planted at the same time. Lincoln is somewhat drought hardy and does well under adverse growing conditions. It has been tried mainly in the Northeastern States and should be tried in small quantities in other places until its adaptation is determined.

Lee, P39 × C27, is also a mid-season hybrid. It has an ear slightly larger than that of Lincoln, with twelve to fourteen rows of rather broad kernels. The ear is almost cylindrical. The quality is very good to excellent, being a little better than Lincoln. It matures in the same season as Lincoln, about 2 or 3 days before Golden Cross. Trials over 2 or 3 years in Connecticut indicate that under favorable growing conditions Lee will give a bigger ear than Lincoln but that Lincoln does better over a wide range of conditions. Hence Lee is recommended for the New England States, whereas Lincoln can probably be taken farther south and west.

The pollen parent of Lee, C27, is also a Whipple inbred secured at the same time as C23. The plant color of C27 is sun red but this particular character is recessive and does not appear in the hybrid. The silks of C27 are wine colored, and this color, being dominant, is expressed in the hybrid. The ear of C27 has twelve to fourteen rows of rather broad kernels. C27 can be used as either a seed or pollen parent. We recommend using it as a pollen parent until its seed yield has been thoroughly tested. If more productive than P39, then C27 might be used as a seed parent. Both inbreds can be planted at the same time in producing the hybrid.

Performance of Lexington, Lincoln and Lee

These three hybrids were grown in randomized latin squares in 1940 and 1941. In 1940 six replications of each were grown; in 1941 eight replications were used. Table 2 gives a summary of the results for 1940 and 1941.

TABLE 2. SUMMARY OF RESULTS OF YIELD TRIALS OF LEXINGTON, LINCOLN AND LEE FOR 1940 AND 1941

	1940 Planting Date (May 15)		1941 Planting Date (May 13)				
	Date Picked		Marketable Ears No.	Av. Wt.	Wt.	Average Best 10 Dia.	Length
Lexington	1940	Aug 5	18	.36	.40	1.75	7.4
	1941	July 31	15	.44	.46	1.75	7.9
Marcross	1940	Aug 5	17	.39	.42	1.75	7.4
	1941	July 31	14	.47	.49	1.75	8.1
Lincoln	1940	Aug. 15	15	.40	.43	1.7	7.7
	1941	Aug. 9	19	.42	.45	1.7	8.0
Lee	1940	Aug. 14	15	.45	.48	1.8	8.1
	1941	Aug. 9	18	.48	.52	1.8	8.6
G. C. Bantam	1940	Aug. 18	15	.35	.40	1.55	7.6
	1941	Aug. 12	18	.42	.46	1.7	8.3

In general this table shows that the ears produced in 1941 were larger than those produced in 1940. This is to be expected since 1940 was such a poor year for growing corn. It was too wet and too cool for corn to make its best growth or mature rapidly. This can be noticed in the date the ears were picked. Although planted practically at the same time as in 1941, the 1940 crop required 5 to 6 days longer to reach the edible stage for all varieties listed here. Also the 1941 crop that matured in the shorter time had larger ears. In all hybrids except Golden Cross Bantam the diameter of the ears harvested in two years was the same. The greater weight of the 1941 ears was due to increase in length. In the case of Golden Cross the ears were more slender in 1940. Although the 1941 crop has not yet been completely analyzed statistically, it is almost certain the differences are real since they are all in the same direction.

Table 2 shows there is essentially no difference between Lexington and Marcross in any of the characters studied. Possibly Marcross has a little heavier ear although the comparative weights are not great enough to be significant statistically. Lexington has a narrower kernel and a lighter husk than Marcross, giving Lexington a little smaller and neater appearance. Lexington is not recommended to replace Marcross. In sections where Marcross does well it is probably not advisable to grow Lexington except on a trial basis. According to our observations Lexington is

a little more tolerant than Marcross of unfavorable conditions, such as limited moisture and fertility. It needs extensive trial to determine its regions of adaptations.

The table also shows that Lee and Lincoln were picked on the same date in both years and that Lee has a slightly longer and heavier ear. In the drier sections of the field Lincoln made a larger ear than Lee. Both of these hybrids matured for eating purposes three days earlier than Golden Cross Bantam and produced ears as large or larger than Golden Cross. Under favorable growing conditions Lee will make appreciably larger ears than Golden Cross.

All three hybrid varieties described here were developed primarily for the market gardener who wants a rather large ear as early as possible. The table quality of all three is very good.

Seed of these hybrids will be available for planting in 1942. We shall be glad to give information on reliable sources of supply, and also a source of supply of the seed of the inbreds for those interested in producing seed of the hybrids. The Experiment Station has no seed for sale or for general distribution.