

Connecticut Agricultural Experiment Station

New Haven

SPANISH GOLD Early Yellow Sweet Corn

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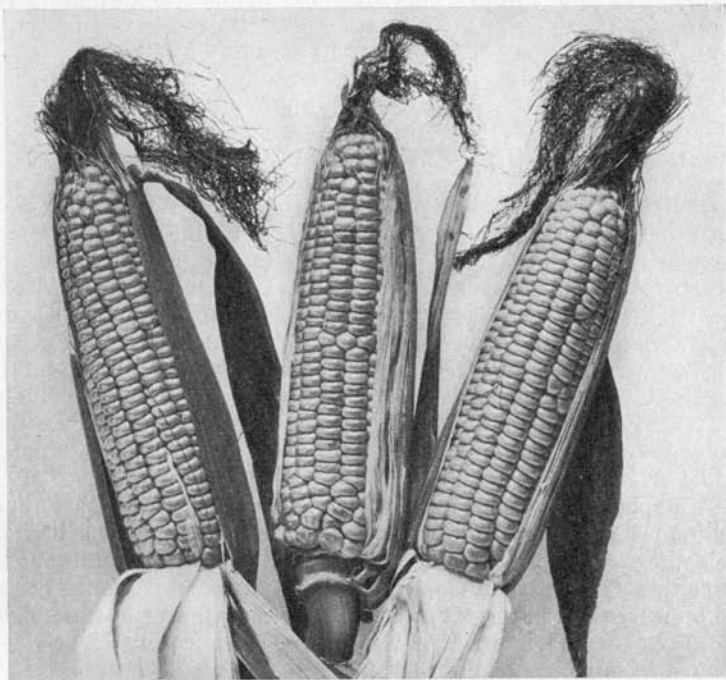


FIGURE 2. Spanish Gold sweet corn.

Spanish Gold is a new variety of sweet corn produced by the Experiment Station. It ripens early, produces many good-sized ears and has much of the tenderness and flavor of Golden Bantam. It is not always the first yellow corn to mature, but in the north-

eastern states it is among the first to give marketable ears. These are well filled to the tips with 10 to 12 straight rows of bright yellow kernels.

What the buyer expects today in sweet corn is due almost entirely to one variety introduced about 1900. At that time Golden Bantam had been grown by a gardener in Greenfield, Mass.; beyond this very little is known today about its origin. It is thought that this fine corn resulted from the crossing, in some way, of Sweet Orange and Black Mexican, although there is no direct evidence in support of this assumption. It is significant that Golden Bantam and Black Mexican are the only two of the older varieties of sweet corn that regularly have extra chromosomes, the microscopic structures that carry inheritance. In stalk growth, form of ear, and in tenderness of kernel Golden Bantam resembles Black Mexican more than any other variety except in color. The yellow grains undoubtedly came by crossing and Sweet Orange is the most likely source.

POPULARITY OF YELLOW CORN

Several years elapsed after the seed tradesmen introduced yellow corn before it made any headway. It came into its present popularity with consumers because of its exceptional tenderness, sweetness and fine flavor. To the growers there were drawbacks. Golden Bantam made its best development in the northern states, and even here the stalks were small. Farther south they were smaller yet, the ears were badly damaged by worms, and the kernels lacked the flavor and sweetness they had in cooler climates.

Consequently, after Golden Bantam became popular, the need grew for a larger and sturdier corn with a full-sized ear, but of a like yellow and if possible the same eating quality.

A number of varieties to take this place appeared: Golden Giant, Bantam Evergreen, Whipple's Yellow and others that had the golden color and an ear much larger. These ripened either at the same time or later than Golden Bantam. In most cases they made no improvement in taste, but because of their larger size they sold more readily. They practically supplanted the original eight-rowed corn for both the canners and those who wished corn on the cob. In the stores these varieties are still generally called Golden Bantam, but they are a disappointment to anyone who knows the flavor and deliciousness of the original when taken fresh from the garden.

An early yellow corn was next in demand. As a result Banting, Extra Early Bantam, Golden Sunshine, Burpee, Golden Early Market, Golden Age, Golden Hummer, July Yellow, Gold Coin, Golden Dawn, Golden Gem and others appeared in catalogs.

These new varieties differ in number of kernel rows from eight to sixteen. In length of ear, with husks removed, they are from five to ten inches, and in depth of color they vary from light lemon to deep orange; but they are yellow and all are earlier than Golden Bantam. Some of the earliest are too small for satisfactory market corn but they have a place in the home garden. They are

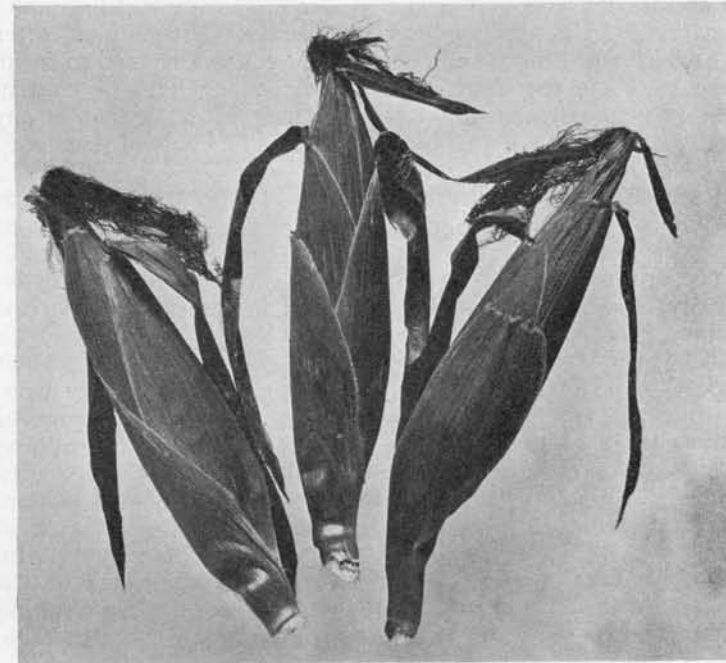


FIGURE 3. The ears, with the husks on, are from eight to nine inches long. With husks removed the ears are from six to seven inches long.

variable and many of the ears are poorly filled at the base and tips of the ears. In some varieties, the kernel rows are widely separated, and most of them are noticeably poorer in quality than the true Bantam.

The need exists for an extra early, yellow sweet corn that produces an ear of marketable size, well filled to the tips with kernels having the rich quality of the original Bantam. Spanish Gold has been developed to meet this.

ORIGIN OF SPANISH GOLD

Shortly after the war we received from Europe a small package of an amber-colored flint corn grown in the Pyrenees Mountains of northeastern Spain. In Connecticut it proved to be remarkable for its vigorous, dark green stalks and its short broad ears with brightly colored grains. Most noticeable of all was its early maturity. Planted at the usual time the husks on the corn were dry and brown long before any of our local corn was beginning to mature. In Spain this corn was called "Cinquantino," after the Spanish word for fiftieth, on which day it was reputed to ripen. Seven weeks is too short a time to ripen any kind of corn in Connecticut, but Cinquantino came as near to doing that as any variety we had grown. At the same time it had a good-sized stalk and a well-filled ear.

However, the kernels were not sweet. It was a field grain and to obtain a sweet corn we undertook a cross. The ear shoots on a number of plants were bagged before the silks appeared and at the proper time pollen was collected from several different varieties of native sweet corn. This was applied to the silks so that the resulting kernels were all cross-fertilized.

Each variety used for crossing was chosen for a particular purpose. The first was the early Maine Crosby, for many years the principal canning corn in the Northeast. This had the number of rows and the fine kernels that are needed for good appearance. To give the necessary size we used Whipple's Yellow and Golden Giant. But most of the plants were crossed with Golden Bantam and Black Mexican to insure the tenderness and rich flavor so pronounced in these varieties. Other crosses were made with Alpha, the earliest of the white sweet varieties. Some of the earliest flint varieties from Canada were also used but the resulting plants and ears were so small and poor in appearance that these crosses were later discarded and have had no part in the construction of Spanish Gold.

In every case the immediate results of the cross-pollination were hard flinty kernels showing none of the wrinkled texture of the dry sweet kernel. The next year after crossing the hybrid nature of the plants was revealed in the mixture of smooth and wrinkled kernels on every ear and in those crosses where the parents differed in color a mixture of yellow and white kernels appeared on every ear. Only yellow and wrinkled kernels were selected for planting. These seeds all bred true for the sweet corn type of kernel, but they would have continued indefinitely to be mixed in color if the plants were not self-pollinated. This was done for several generations until they all bred true for yellow kernels. Then the several hybrid lots were mixed together and planted in an isolated field. Several years of natural cross-pollination, accompanied by selec-

tion of early-maturing, stocky plants having at least one good ear of desirable shape, brought the new corn to a fairly uniform type. The final result is the corn called Spanish Gold shown in the accompanying illustrations.



FIGURE 4. Spanish Gold grows from five to six feet high and produces one or more good-sized ears on each stalk.

CHARACTERISTICS OF SPANISH GOLD

Spanish Gold grows from five to six feet high. The stalks are strong and erect with a tendency to produce side branches from the base, but these tillers are not detrimental to the plant and should not be removed. Where the growing conditions are favor-

able each stalk produces one good ear, usually two, and sometimes three or four. This heavy earing prevents the development of large ears. When so many are set none can be large, ripening as early as these do. Further selection is directed toward the reduction of this prolific tendency. One good ear on a stalk is all that should be expected from the first corn to ripen.

Spanish Gold ears with the husks on are from eight to nine inches long. As they are brought to the table they average between six and seven inches in length. The ears set from eight to twelve rows, mostly ten. The size of the ears is a little small to sell in the general markets in competition with corn shipped in from farther south, but for a retail trade that appreciates the quality of the freshly-picked product, Spanish Gold has proved to be well adapted. It has sold well in roadside stands at that time of the year when home-grown sweet corn brings the best price.

RESULTS OF TRIALS

Spanish Gold has been tested three years in comparison with practically all of the early yellow varieties at the Experiment Station farm in Mount Carmel. In 1930 it was grown at the vege-

TABLE 1. EARLY SWEET CORN VARIETY TRIALS

Variety	Spanish Gold	Burpee	Eberle's Extra Early Bantam
Harvested days after planting	73 76 78	79 80	79 80 85
Dozen ears harvested at Windsor	15 17 3	19 9	25 9 8
Yield per acre, Number of Ears,			
Windsor	10,600	8,484	12,720
Mount Carmel	5,772	5,772	8,436
Number of rows of grain on the ear	8-12	10-12	8-10

table field station in Windsor and by many farmers over the state. One of the important characteristics of Spanish Gold is its earliness. How does it compare with the many other new kinds that ripen about the same time? At Mount Carmel it was planted on May 2, 1930, in comparison with two other varieties. The number of plants having dry silks was counted on July 7. Extra Early Bantam had 10 per cent of the plants almost ready to pick as indicated by the condition of the silks, Burpee showed 12.5 per cent of the plants in the same condition and Spanish Gold had 42.5 per cent with dry silks.

A later planting on May 28 was examined on July 21 and the percentage of plants showing silks was noted. This date was the first that any variety had all of its plants in silk. The results for the early varieties are as follows:

Varieties planted May 28, 1930	Percentage of plants showing silks July 21
Spanish Gold (1929 seed)	100
Alpha White Sweet	100
Golden Gem	82
Golden Hummer	70
Spanish Gold (1928 seed)	70
Extra Early Golden	67
Golden Early Market	57
Extra Early Bantam	50
Golden Sunshine	48
Burpee	36
July Yellow	32
Golden Age	24
Gold Standard	12
Gold Coin	0
Golden Wedding	0
Whipple's Yellow	0
Golden Bantam	0

Time of silking is not a perfect indication of the order of ripening but it is fairly reliable. It shows a definite stage of growth that can be measured more accurately than maturity itself. Results of other tests reveal that corn ripens in about the same relative order as the silks appear.

IN WINDSOR AND MOUNT CARMEL, CONN., 1930

E. E. Golden	Golden Early Market	Golden Age	Gold Standard	Harris' Extra Early Bantam	Golden Hummer	Golden Sunshine
79 80 85	80	80 85	80 84	80 84 85	80	80 84
31 4 5	29	31 9	19 6	36 7 5	25	30 4
12,120	8,784	12,120	7,572	14,544	7,572	10,296
6,660	4,440	8,436	5,328	8,436	4,884	7,104
8-12	8-14	10-12	12-14	8-12	8-16	12-16

In the trials at Windsor, seed of 10 varieties was planted May 13, and the first ears were harvested 73 days later on July 25. Spanish Gold was all ready to pick before any of the other varieties. It yielded at the rate of 10,600 marketable ears per acre. Four varieties produced more ears and three of these averaged somewhat larger in size of ear. The detailed results are given in Table 1.

These are the results actually obtained in size, number of ears, and earliness. But these figures do not give the complete picture. Certain intangible characters are fully as important. As shown in the illustrations, Spanish Gold ears fill out to the tips with plump bright kernels. The color is a rich golden yellow. Finally, there is the matter of quality. This is peculiarly difficult to evaluate in sweet corn. The conditions under which the crop is grown have

much to do with the flavor, tenderness and sweetness of the product.

Furthermore, sweet corn, more than any other crop, must be served soon after picking. In midsummer, when these first early varieties ripen, corn passes prime eating condition very quickly, and an ear that may be just right today can easily be too old tomorrow. This is more apt to be true of the quickly maturing kinds of corn than of later varieties that mature more slowly and, usually, in cooler weather.

SEED OF SPANISH GOLD

Seed in trial packages is available at the Station and the names of growers who have seed for sale will be given on request. Information may be obtained from the Department of Plant Breeding.