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# Short Season Sweet Corn Trials

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Sweet corn is a warm season vegetable. Many midseason to late varieties do not mature where summers are cool though there may be more than enough frost-free days in these areas. Maturity times listed in seed catalogs or on seed packets are for corn grown under hot summer conditions like those in the Midwest.

At warm temperatures (up to 86°F), the growth and ripening of corn is accelerated; on the other hand, corn grows slowly at low temperatures (65°F or lower), and growth ceases below 50°F.

The amount of heat which accumulates during the day is the greatest factor in corn development. A system has been developed which takes the heat requirement for corn ripening into account and which is usable under a range of climates. This is the growing degree day system.

The growing degree day system for corn uses a "base" of 50°F since the corn does not grow below this temperature. To calculate how many growing degree days (GDD) or heat units accumulate in a day, this formula is used:

$$GDD\ 50 = \frac{\text{max. temp.} + \text{min. temp.}}{2} - 50$$

If the low temperature for the day is below 50°F, 50 is substituted for that number. If the high temperature is above 86°F, a value of 86 is used. For example, a day in which the high temperature was 91°F and the low was 48°F would be calculated for heat units as follows:

$$\left(\frac{86 + 50}{2}\right) - 50 = 18$$

The values for each day of the growing season are added together to obtain the number of heat units accumulated for that season. This number will be about the same wherever a variety of corn is grown.

During the summer of 1981, 52 varieties of sweet corn and 10 varieties of super sweet corn were grown at Moscow and Sandpoint, Idaho. Most of the varieties tested were the earliest available; some were midseason types. Not all varieties matured under the cool summer conditions at these locations, but many varieties, both sweet and super sweet, produced good quality corn suitable for fresh use, canning and freezing.

## Super Sweet and Regular Sweet Corns

The super sweet corns are sweeter at harvest than regular sweet corns and convert their sugar to starch

more slowly after picking. This would be an especially good characteristic for corn sold at stands or farmers' markets which has to be held for a time after picking. However, super sweet corn should not be grown near sweet corn because if the two types cross-pollinate, the quality of both will be reduced. The minimum distance for the super sweets to be grown from sweet corn is 250 feet. In addition, super sweet corn requires a higher degree of soil fertility and has poorer germination than regular sweet corn.

Table 1 gives results of the 1981 trials of sweet and super sweet corn. Varieties which performed especially well under Moscow's cool summer weather are marked with an asterisk.

### Early, Very Early And Late Varieties

You may have to try several different varieties until you find one for your location that is satisfactory for maturity and quality. Gardeners in

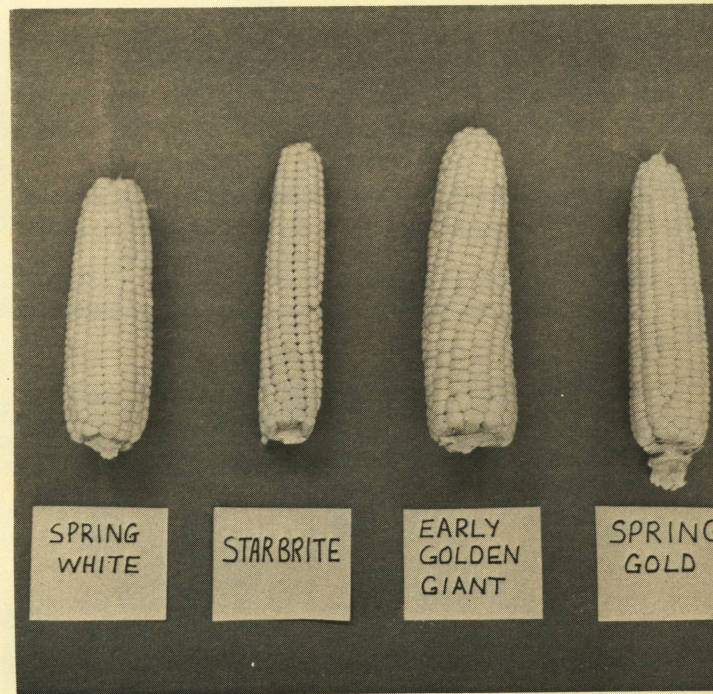


Table 1. Sweet corn variety trials, Moscow, 1981.

| Cultivar            | Seed source | No. of days to maturity | Maturity date at Moscow | Growing degree days | Plant height | Ear size (length x diameter) | Color  | # of rows of kernels |
|---------------------|-------------|-------------------------|-------------------------|---------------------|--------------|------------------------------|--------|----------------------|
| <b>Standard</b>     |             |                         |                         |                     |              |                              |        |                      |
| Ashworth            | 5           | 101                     | Sept. 9                 | 1345                | 4 ft.        | 6-8" x 1½"                   | yellow | 14                   |
| Aztec               | 1           | **                      |                         |                     |              |                              |        |                      |
| Beacon              | 12          | 89                      | Aug. 28                 | 1149                | 4½-5 ft.     | 7-8" x 2"                    | yellow | 12                   |
| Blitz               | 6           | 101                     | Sept. 9                 | 1314                | 4 ft.        | 6" x 1¼"                     | yellow | 8                    |
| Buttervee           | 14          | 89                      | Aug. 28                 | 1149                | 3 ft.        | 6-8" x 1¼"                   | yellow | 12                   |
| *Cr8024             | 3           | 101                     | Sept. 9                 | 1314                | 4½ ft.       | 8-10" x 1¼"                  | yellow | 16                   |
| Cr8028              | 3           | **                      |                         |                     |              |                              |        |                      |
| Dawn                | 15          | 101                     | Sept. 9                 | 1314                | 3½ ft.       | 7'8" x 1½"                   | yellow | 12                   |
| Debut               | 12          | **                      |                         |                     |              |                              |        |                      |
| Duet                | 5           | **                      |                         |                     |              |                              |        |                      |
| E8501               | 4           | **                      |                         |                     |              |                              |        |                      |
| *Earligem           | 13          | 101                     | Sept. 9                 | 1314                | 4 ft.        | 10" x 1¼"                    | yellow | 12-14                |
| *Earliking          | 15          | 89                      | Aug. 28                 | 1149                | 4 ft.        | 6-8" x 1¼"                   | yellow | 12                   |
| *Earlivee           | 5, 14       | 89                      | Aug. 28                 | 1149                | 4 ft.        | 6-8" x 2"                    | yellow | 10                   |
| *Early Golden Giant | 10          | 97                      | Sept. 5                 | 1241                | 4½ ft.       | 6-8" x 2"                    | yellow | 10                   |
| Early Star          | 3           | **                      |                         |                     |              |                              |        |                      |
| Early Sunglow       | 2, 16       | **                      |                         |                     |              |                              |        |                      |
| *Early Sunray       | 13          | 101                     | Sept. 9                 | 1314                | 5½ ft.       | 10" x 1¼"                    | yellow | 14-16                |
| Fanfare             | 12          | **                      |                         |                     |              |                              |        |                      |
| Golden Earlipak     | 12          | 89                      | Aug. 28                 | 1149                | 4½-5 ft.     | 8-10" x 1¼"                  | yellow | 14                   |
| Golden Miniature    | 14          | 97                      | Sept. 5                 | 1241                | 3 ft.        | 6-8" x 1½"                   | yellow | 12                   |
| Hybrid Borealis     | 8           | **                      |                         |                     |              |                              |        |                      |
| Hybrid Gold Rush    | 8           | 103                     | Sept. 11                | 1343                | 5 ft.        | 10" x 1¼"                    | yellow | 16                   |
| Intrepid            | 3           | **                      |                         |                     |              |                              |        |                      |
| Jubilee             | 12          | **                      |                         |                     |              |                              |        |                      |
| Mellow Yellow       | 4           | **                      |                         |                     |              |                              |        |                      |
| Morning Sun         | 15          | 101                     | Sept. 9                 | 1314                | 4½ ft.       | 8" x 1½"                     | yellow | 12                   |
| *NK75               | 15          | 89                      | Aug. 28                 | 1149                | 5 ft.        | 10" x 1¼"                    | yellow | 12                   |
| Northern Vee        | 14          | 89                      | Aug. 28                 | 1149                | 4 ft.        | 6" x 1½"                     | yellow | 12                   |
| Party Time          | 16          | **                      |                         |                     |              |                              |        |                      |
| Platinum Lady       | 3           | **                      |                         |                     |              |                              |        |                      |
| Polar Vee           | 14          | 89                      | Aug. 28                 | 1149                | 3½ ft.       | 6" x 1¼"                     | yellow | 12                   |
| Queen Anne          | 15          | 103                     | Sept. 11                | 1343                | 5½ ft.       | 10" x 1½"                    | yellow | 12                   |
| Reliance            | 15          | **                      |                         |                     |              |                              |        |                      |
| *Reward             | 12          | 101                     | Sept. 9                 | 1314                | 4½ ft.       | 10" x 1¼"                    | yellow | 16                   |
| Royal Crest         | 15          | **                      |                         |                     |              |                              |        |                      |

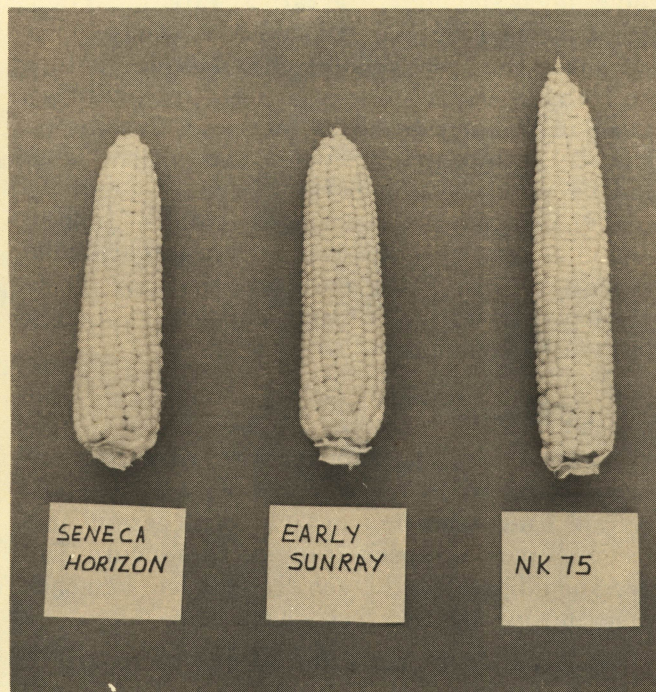


Table 1. Cont'd.

| Cultivar           | Seed <sup>1</sup> source | No. of days to maturity | Maturity date at Moscow | Growing degree days | Plant height | Ear size (length × diameter) | Color  | # of rows of kernels |
|--------------------|--------------------------|-------------------------|-------------------------|---------------------|--------------|------------------------------|--------|----------------------|
| <b>Standard</b>    |                          |                         |                         |                     |              |                              |        |                      |
| *Seneca Horizon    | 11                       | 101                     | Sept. 9                 | 1314                | 4½-5 ft.     | 10" × 2"                     | yellow | 14                   |
| Seneca Pathfinder  | 11,16                    | 101                     | Sept. 9                 | 1314                | 3½-4 ft.     | 6-8" × 1½"                   | yellow | 12                   |
| *Seneca Star       | 11,16                    | 101                     | Sept. 9                 | 1314                | 5½ ft.       | 6-8" × 1¾"                   | yellow | 12-14                |
| Seneca 60          | 9                        | 97                      | Sept. 5                 | 1241                | 4 ft.        | 6" × 1½"                     | yellow | 12                   |
| *Spring Gold       | 6                        | 101                     | Sept. 9                 | 1314                | 4½ ft.       | 6-8" × 1½"                   | yellow | 16                   |
| *Spring White      | 6                        | 97                      | Sept. 5                 | 1241                | 4 ft.        | 8" × 2"                      | white  | 14                   |
| *Starbrite         | 3                        | 101                     | Sept. 9                 | 1314                | 4 ft.        | 6" × 1½"                     | yellow | 10                   |
| Sugar Daddy        | 4                        | **                      |                         |                     |              |                              |        |                      |
| Sugar Dots         | 4                        | **                      |                         |                     |              |                              |        |                      |
| Sunburst Improved  | 15                       | 101                     | Sept. 9                 | 1314                | 5½ ft.       | 10-12" × 1¾"                 | yellow | 12-14                |
| Sunny Vee          | 14                       | 101                     | Sept. 9                 | 1314                | 3 ft.        | 6" × 1¾"                     | yellow | 12                   |
| Target A           | 4                        | **                      |                         |                     |              |                              |        |                      |
| Tokay Sugar        | 3                        | 101                     | Sept. 9                 | 1314                | 4½-5 ft.     | 6-8" × 1¾"                   | white  | 10                   |
| White Sunglow      | 2                        | **                      |                         |                     |              |                              |        |                      |
| 81-9               | 1                        | 101                     | Sept. 9                 | 1314                | 4½ ft.       | 8" × 1½"                     | yellow | 12                   |
| 79-H146            | 13                       | **                      |                         |                     |              |                              |        |                      |
| <b>Super Sweet</b> |                          |                         |                         |                     |              |                              |        |                      |
| *CrSh 8004         | 3                        | 101                     | Sept. 9                 | 1314                | 5-5½ ft.     | 10" × 2"                     | yellow | 16                   |
| CrSh 8005          | 3                        | **                      |                         |                     |              |                              |        |                      |
| CrSh 8006          | 3                        | 103                     | Sept. 11                | 1343                | 6 ft.        | 7-8" × 1¾"                   | yellow | 12                   |
| Candy Bar          | 4                        | 101                     | Sept. 9                 | 1314                | 4½ ft.       | 6" × 1¾"                     | yellow | 14-16                |
| *Early Xtra-Sweet  | 7                        | 97                      | Sept. 5                 | 1241                | 4-4½ ft.     | 8" × 2"                      | yellow | 12                   |
| Honeycomb          | 15                       | 103                     | Sept. 11                | 1343                | 5½ ft.       | 8-9" × 1¾"                   | yellow | 16                   |
| *Northern Sweet    | 3, 7                     | 101                     | Sept. 5                 | 1241                | 3½-4 ft.     | 7" × 2"                      | yellow | 12                   |
| Wondersweet        | 6                        | 103                     | Sept. 11                | 1343                | 4-4½ ft.     | 8-9" × 1¾"                   | yellow | 12                   |
| *SX1009            | 6                        | 103                     | Sept. 11                | 1343                | 5-5½ ft.     | 9-10" × 2"                   | yellow | 16                   |
| 3-3                | 7                        | 103                     | Sept. 11                | 1343                | 5½ ft.       | 9-10" × 2"                   | yellow | 14                   |

\*These varieties produced superior corn under Moscow, Idaho, conditions.

\*\*These varieties did not mature at Moscow, Idaho, during the 1981 growing season.

<sup>1</sup>Seeds for trial were received from 1. Asgrow, 2. Burpee, 3. Crooklam Company, 4. Ferry-Morse, 5. Johnny's Selected Seeds, 6. Harris Seeds, 7. Illinois Foundation Seeds, 8. Keystone Seeds, 9. Lily-Miller, 10. Mountain Seed, 11. Robson Seeds, 12. Rogers Brothers Seeds Co., 13. Seedway, 14. Stokes, 15. Sun Seeds and 16. Twilley Seed Co.

cooler areas should try the earliest varieties. 'Polar Vee,' 'Northern Vee' and 'Early Vee' were developed in Canada and do especially well and usually mature well ahead of the next early group including 'Earliking,' 'Early Golden Giant' and 'Seneca 60.' The very early varieties usually have smaller plants and ears but have generally been of adequate quality. Late varieties such as 'Golden Jubilee' should be used only where enough heat is available to mature them. Sweet corn breeders have in the past few years introduced many good early varieties, and you are encouraged to try them.

## Corn Culture

Corn should not be planted until the soil temperature is above 50°F. When seed is planted into cold, wet soil, fungi often destroys it before it germinates. Seed treatment is especially important for corn. The seed should be planted 1 inch deep and 8 to 12 inches apart in rows 2½ to 3 feet apart.

Chemical fertilizers should not be in direct contact with the seed. They can be applied broadcast or in a band 2 inches deep and 2 inches away from the seed. About a pound of 16-20-0 fertilizer per 100 feet of row should be sufficient. An additional side dressing when the plants have produced 6 to 8 leaves is desirable.

For the best pollination, the corn should be planted in blocks of short rows instead of one or two long rows since the wind-carried pollen has a better chance of falling on nearby plants. When the corn is in tassel, it should have plenty of soil moisture or pollination will be less than optimum. In general, corn needs about 1 inch of water per week.

Corn is ripe when the silk at the top of the ear turns brown and dry and the ear appears plump. The juice from the kernels should be milky; if the juice is watery, the corn is underripe. If the kernel is tough and doughy, the corn is past its prime. One advantage of growing corn where summers are cool is that it will hold longer on the plant at the ripe stage before becoming starchy.

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## The Authors

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