

3. Adequate soil moisture should be present at planting time. Irrigating with cold water causes seed cell damage as mentioned earlier.
4. A loose, well-drained seed bed promotes germination as long as it's not overworked and dry. Try to discourage soil compaction and crusting.
5. A balanced fertility rate of 2-1-1 (N-P-K) and pH of 6.5 is best for corn.
6. Plant supersweets on south-sloping fields that tend to be warmer.
7. Plant as shallow as moisture will allow (1-1.5" deep is best).
8. Lower planting speeds of 3-4 MPH produce better singulation of these light weight seeds.
9. Insecticides are more effective when applied at planting time to control wire-worms, seed corn maggot, army worm, cut worm, flea beetle, etc.
10. Birds are attracted to germinating supersweets. Legal bird abatement procedures should be used at this time.
11. Watch for mouse and rat damage at this time as well.
12. Keep handling and storage of supersweets to a minimum. Handle seed with care to avoid breakage and store it in a cool, dry spot to maintain maximum viability. They age slowly and safely if stored properly.

IN CONCLUSION...

The general public has developed an enthusiastic taste for supersweet corns. This demand is the result of their extended shelf life and more consistent eating quality from season to season. If growers of supersweet corns observe and follow these general suggestions, they should have as much success as with other corns. Once you understand the reasons for these special considerations, it all makes common sense. Harris Seeds provides this information at no charge with our compliments. It is our hope that it will help you become more successful in growing supersweet corns.

- The Folks at Harris Seeds

A special "Thank you" goes out to Dr. Tom Natti,
for his help in developing this bulletin.

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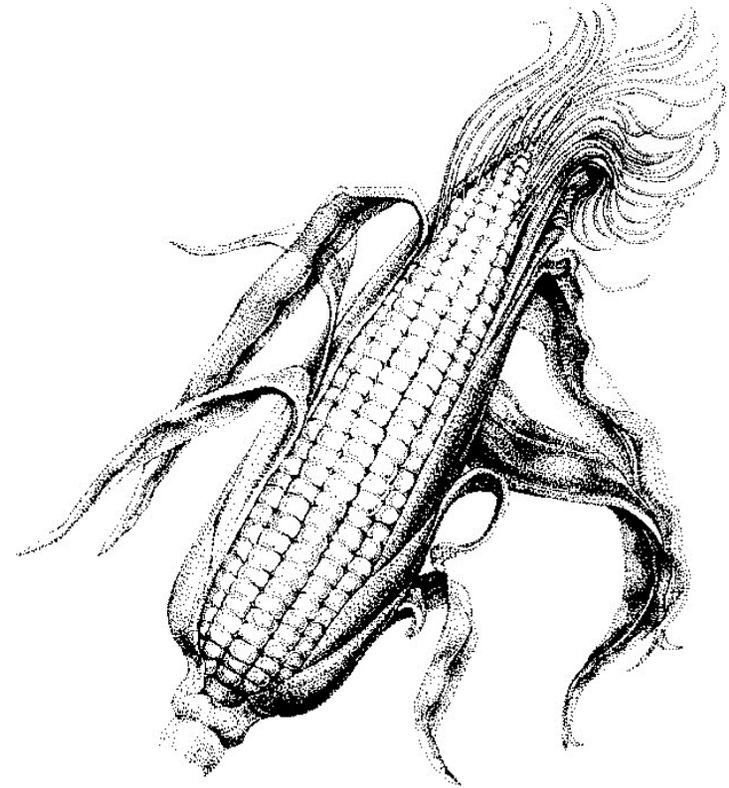
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GROWING SUPERSWEET CORN

CONSUMER ACCEPTANCE...

Because of the use of supersweet varieties by grower-shippers, the almost constant year-round supply of sweet corn and improvements in kernel tenderness, consumers have become thoroughly exposed to and accepting of supersweet sweet corn. Therefore, when the sweet corn season in the Northeast and Midwest rolls around, customers look for the same eating quality at local roadside stands and farmers' markets. Growing supersweet corn varieties requires paying a little more attention to seedbed preparation, soil moisture and soil temperature but it's not as difficult as some make it out to be. Below we suggest some helpful growing tips.

HARRIS TRADITION...

Harris has maintained a long tradition of offering superior sweet corns for Eastern and Midwestern growing conditions. Corn growers have known that they could depend on Harris varieties to perform well for them. The tradition continues as research is conducted in the United States in the summer and Chile in winter to speed the work along. New hybrids are tested for their reaction to several sweet corn diseases each year to insure intermediate resistance or resistance. The most promising experimentals are grown in trials throughout the country to test their adaptability before they are named and offered for sale. Throughout the breeding and testing period, constant attention remains on the most desirable characteristics featured in Harris' sweet corns; seed vigor in the cold soils, disease resistance levels, dark green flag leaves, husk and ear appearance and eating quality.

RESEARCH AND DEVELOPMENT...

Discovery and development of new genes for eating quality in sweet corn are ongoing. The supersweet gene is the drastic mutation of field corn known by breeders as "shrunk" or shortened to "sh2". This recessive gene results in the production and retention of unusually high natural sugars and is commonly called "supersweet" or "extrasweet" corn in the trade. As you probably know, these varieties are very sweet and unusually crisp textured to eat. However, recent developments have yielded varieties with a much more tender texture. These varieties are known as augmented supersweets. The high sugars that are produced tend to accumulate in the kernels because the sh2 gene blocks their conversion to starch. The retention of sugars and the lack of starch continues and prevails in the dried seeds used for planting. It is this lack of starch that makes the seeds so light weight, wrinkled and shrunken. And it is the physical stresses of shrinking that lead to more cracks and splits in the seed coats of supersweets than with other corns.

THE PROBLEMS...

So, although the sh2 gene provides a very nice kernel for people to eat, it also produces a rather difficult seed for the seedsmen and corn growers to deal with. For instance, cold water absorbed during germination damages cell membranes of supersweet types more than other corns. Their seed has less food reserve than others as well, thus storing less energy for germination, emergence, root and shoot growth. As mentioned earlier, the sh2 seed is brittle and prone to cracking and splitting. When the seed coat breaks, it allows nutrients to leak out, attracting and supporting the growth of micro organisms. Some of the organisms are pathogenic fungi that can cause disease by penetrating cracked coats of seeds still maturing on the seed field ears. Soil-borne fungi will also be attracted to and grow rapidly in the leachate from planted seeds. If growing conditions for the planted seeds are not favorable, the result can be seed rot, damping off, die back, whip-like plants and plants that do not yield. To combat these organisms and for maximum seed protection, a broad-spectrum seed treatment is recommended, combining several fungicides approved for this purpose. There is no single material available that will control the many pathogens to which supersweets are vulnerable.

THE SOLUTIONS...

Now with all that said (and because you now know the worst), it is still possible to have good yielding, near-perfect stands of supersweet corn. As your seedsmen, we will do everything possible to provide you with high quality seed of strong, vigorous varieties. From breeding through trialing and testing; from growing through harvesting, drying and shelling; from cleaning and grading, treating and bagging, we will test and ship you our very best. The rest is up to you and the conditions you provide the seed you receive. Having the best seed quality and vigor cannot make up for poor environmental conditions at planting time. Providing the best possible conditions for germination, emergence and growth makes all the difference because the seed expends less energy to achieve success. Also, the uniformity of planting conditions is critical to consistent stand establishment. Therefore, the following points are most important to remember when growing supersweet corns:

1. Cross pollination between supersweets and all other genetic classes of corn will turn the kernels tough and starchy. This pollen effect works in both directions. Since all corn is wind pollinated, the supersweets should be isolated from all other non-sh2 corn (field, su, se, sb, sy, pop, ornamental etc.). "Isolation" can mean at least 250 ft. away from other corns, intervening natural wind barriers and/or 10-14 days maturity difference between varieties. There is no cross pollination effect between two supersweet varieties unless they have different colored kernels.
2. Most of them prefer soil temperatures of 60° F. or higher. Choose a cold tolerant variety for early planting or cover the planted seed with clear plastic to warm the soil.

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