

Small-Scale Ag Alternative: Specialty Corns

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Five hundred years ago, Columbus was one of the first Europeans to set eyes on maize — the foundation of most great Western Hemisphere civilizations, including those of the Incas, Mayans, and Aztecs.

In the April 1992 Organic Gardening magazine, Shepherd Ogden said, "sweet corn is the most American of vegetables." His article has tips for growers.

In 1540, Coronado noted maize or corn growing under irrigation among native Americans of the southwestern part of what is now the United States. Corn largely kept the Pilgrims alive during the harsh winter of 1620 on the East Coast. The oldest known remains of corn cobs may be in Tehuacan, Mexico, dating back 7,000 years. Most corn historians consider a wild grass called Teosinte one of modern corn's primary

ancestors.

Corn is one of the most diverse grain crops. Nature by itself and man working with it have produced many types of corn. Corn is generally classed as to kernel endosperm characteristics. Endosperm refers to a seed's nutritive tissue, surrounding and absorbed by the embryo.

The six most common corn types include flint, flour, dent, pop, waxy, and sweet. A seventh is called pod or tunicate corn, which may have endosperms like the other six. Pod corns differ from the others in that each individual kernel is enclosed in a glume or husk.

Popcorns are basically small-kemeled flint types. Waxy corn carries a gene which results in the production of 100 percent amylopectin, that is, starchy pectin.

Sweet Corn

Standard sweet corn at the immature, milky stage contains about 10 percent sucrose, while field corn in the same stage has about 4 percent. After harvest or if left on the stalk too long, sucrose in standard sweet corn is rapidly converted to starch.

Unlike dent corn, sweet corn is not grown for feed or flour, although USDA researchers have developed a technique to produce a high-fiber, no-calorie

flour from pericarps that surround kernels, holding them on the cob.

Sweet corn kernels often have a wrinkled, glassy appearance resulting from a sugary gene which retards the normal conversion of sugar to starch during endosperm development. Kernel colors vary, sometimes being mixed both white and yellow.

William "Bill" Watson, president and owner of the Liberty Seed Company in New Philadelphia, Ohio is doing a write-up of the many sweetcorn developments of the past decade. He says there has been more change in the past decade than in the preceding 25 years.

To compete and find a near-by niche (like a restaurant or roadside stand) for their sweet corn, entrepreneurs should explore the potentials for moving high-sugar varieties of corn to consumers within a day after harvest. The need for speed is because kernels at room temperature can lose as much as 50 percent of their sucrose by 24 hours after harvest.

Development of sweeter varieties of standard sweet corn was done by selections within homozygous "SU1" genotypes. One selection — Silver Queen — became the standard against which other standard sweet corn varieties were compared.



CORN TALK NEWS

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Later supersweet SH2 varieties, i.e., "sugary enhanced (SE)" or supersweet "shnunken (SH2)," have 2 to 3 times as much sucrose as standard sweet corn at harvest! What's more, sucrose levels stay relatively high 48 hours after harvest.

Growers of the SH2 gene sweet corn must be careful not to plant it within 250 feet or more — depending on prevailing winds — of any other kinds of corn because pollen may be picked up from neighboring corn, which will dilute the sweetness, making kernels undesirably tough and starchy.

One exception to the distant planting rule is Kandy Korn, whose sugar-enhanced SE gene produces a variety for farmers that, like other SE varieties, requires no isolation.

Growers for the roadside trade usually sell high-sugar corn of the SE variety because it's easier to grow; those who ship to the more distant markets lean toward the supersweet varieties to meet the competition.

The seed count is about 2,500 to 3,500 a pound for regular sweet corn. The count of the shrunken gene types is considerably higher.

Andy and Tannie Daniels are successful sweet corn growers in Columbus, Neb. Their story is reported in the Successful Farming magazine's publication, ADAPT 3,1991.

The Daniels note that roadside stand work is hard, the season is not long, and the returns may grow slowly. To pick corn at the peak time, they usually pay high schoolers or others the minimum wage.

Roadside prices for sweet corn vary widely. Discounts for

quantity are urged. The freshness increases the value (price) over grocery store pricing. Don't undercut grocery stores. The Daniels also advise adding other vegetables, such as tomatoes and cantaloupe, after establishing a customer base.

They recommend SE varieties over the others for reasons noted above, plus disease control. The sweeter the variety, the more susceptible it is to disease, usually. The Daniels say plant early, with not too many varieties so as to avoid confusing customers.

Growers should check with the county agriculture extension agent to learn the best planting dates, varieties recommended locally, and disease and pest control methods that reduce or eliminate chemicals.

The supersweets are just as good for freezing as the others. There are many varieties. Every catalog will have some.

Other marketing details have been emphasized in previous factsheets and are in the ADAPT books and not repeated here. It needs repeating, however, that entrepreneurs not wishing to waste money should determine an exact and committed market before they buy or plant any seed.

Popcorn

Popcorns are generally either pearl or rice types. Pearls have smooth, rounded crowns, while rice types are pointed.

Color varies. Heating the kernel turns the moisture inside the soft starch in the center into explosive steam that can turn the kernel inside out. The great-

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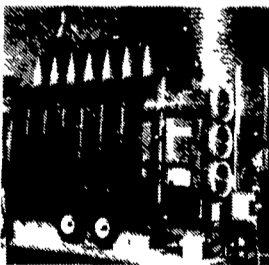
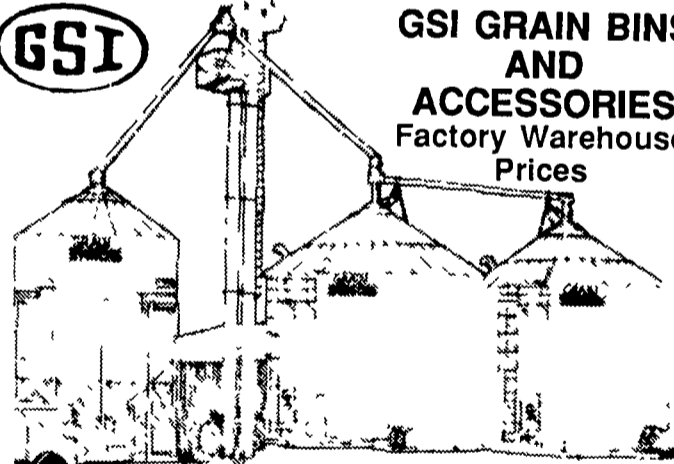
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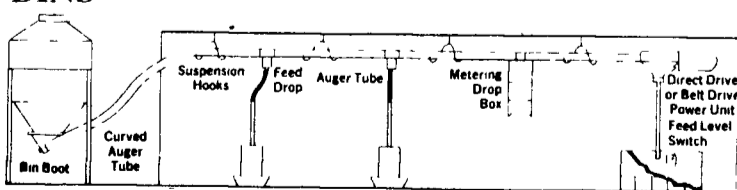


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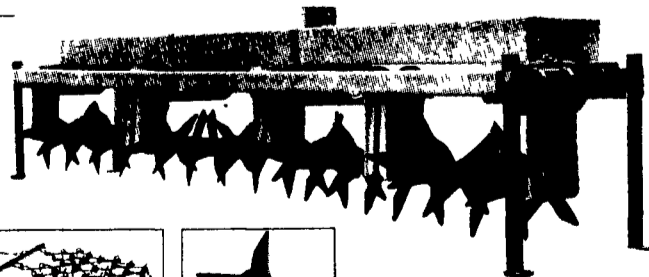
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