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VEGETABLE DEPARTMENT - Mark Willis



A Quick Lesson on Sweet Corn Genetics

Every year I talk with growers wondering about the different genetic types of [sweet corn](#) we offer. To give you some background - and help you select the varieties right for your operation - here is a quick lesson in sweet corn genetics. There are five basic genetic types of sweet corn in our offering: normal sugary (su), sugary enhanced (se), synergistic se (sy), supersweet (sh) and augmented supersweet (shA).

Normal Sugary (su) is the standard sweet corn that you've known for many years. These varieties have a good corn flavor, and their quality is best if picked and eaten the same day. When picked at full maturity, the eating quality is good, but it soon depreciates after full maturity has been reached. Most normal sugary varieties germinate quite well at soil temperatures of 55° F and above, and they grow with good vigor. The only (su) variety we still offer is Silver Queen.

Isolation note*: Normal sugary varieties should be isolated from supersweet varieties (sh and shA), field corn, popcorn and ornamental corn. They may be planted beside sugary enhanced (se and sy) varieties.

Sugary Enhanced (se) varieties have elevated sugar levels, better tenderness, and higher kernel moisture levels than (su) varieties. The result is a sweeter, tenderer kernel with good corn flavor that retains its eating quality longer than a normal sugary variety. Most (se) types prefer slightly warmer soils (above 60° F). **Synergistic se (sy)** types are very similar to (se) types, except that breeders have incorporated some supersweet kernels onto the ears, giving these varieties an extra punch of sweetness. As a whole, synergistic types tend to have a tenderer kernel and hold slightly longer at full maturity than (se) types.

Isolation note*: Sugary enhanced (se and sy) varieties should be isolated from supersweet varieties (sh and shA), field corn, popcorn and ornamental corn. They may be planted beside each other and normal sugary (su) varieties.

Supersweet (sh) varieties have a shrunken gene, which is named for the lightweight, wrinkled seed of this type. This gene raises the original levels of complex sugars and extends their flavor by slowing the conversion to simple sugars and finally to starch. Supersweet varieties retain kernel moisture longer than sugary enhanced varieties, and they hold much longer after they reach full maturity, both on the plant and after harvest. The earlier introductions of this type had a kernel texture that was noticeably crunchier and firmer than other genetic types. However, with the introduction of **augmented supersweet (shA) varieties**, breeders have improved the tenderness considerably. For the most part, supersweets do not germinate well under less than ideal conditions. Wait for ideal growing conditions (soil temperatures of at least 60-65° F and moderate soil moisture) before planting supersweets.

Isolation note*: Supersweet varieties (sh and shA) may be planted beside each other but need to be isolated from all other genetic types of corn, including (su), (se) and (sy) sweet corn, field corn, popcorn and ornamental corn.

* Because corn is wind pollinated, isolation can be achieved by planting varieties 250 feet apart, separating them by an effective wind break, or timing plantings to allow 12-14 days difference in maturity.

