Tony the Tiger—the cartoon mascot for Kellogg’s Frosted Flakes—says sugar-coated flakes of corn are GREAT. Meanwhile, some real-life corn growers are finding that sugar-coated corn is also a good idea long before it becomes a breakfast cereal on the grocery shelf.

Over the past four years, several growers in the Nebraska On-Farm Research Network have been testing a foliar application of sugar made at the V-6 to V-8 growth stage of corn. “Generally, the application of sugar has not always shown increased yields, but in nearly all the studies the treated corn has shown increased stalk strength, which often leads to reduced lodging,” says University of Nebraska Extension educator Jenny Rees.

Fairfield, Neb., farmers Dennis and Rod Valentine saw a minimal 1.6 bushel per acre yield increase in 2010, the first year they tested sugar application. “The surprise was the in-

![Below: A foliar application of sugar leaves a glaze on corn leaves, but it also appears to improve crop health.](image)

**Above right: On-farm research has given a sweet tooth to several Nebraska corn and soybean growers who have made sugar a regular part of their crop inputs.**
proved stalk strength. With the sugar, 3-5% of the plants had stalk rot while without it 24% were infected. We had to use the corn reel to harvest the untreated corn when it lodged, but not [on the corn that] received the sugar application,” says Dennis.

In their initial studies, the Valentines used three pounds of granulated sugar dissolved in 10 gallons of water per acre. “The sugar cost less that $2 per acre so even a small improvement in yield or harvestability made it pay off,” says Rod of their results.

**Plenty Sweet.** More recently, the brothers are using a high fructose corn syrup product, Plenty Sweet. “It’s a liquid so it’s easier to use, and although it’s more expensive—at $2 per pound of sugar—it’s still an economical input. We’ve expanded our tests to more of the farm and are applying three to five pounds of sugar per acre in multiple applications, including with our starter fertilizer, with postemerge herbicide, and by itself in a separate spray operation,” explains Dennis.

Much of the interest in applying sugar has come from national soybean champion Kip Cullers of Purdy, Mo. While many of his practices are proprietary, Cullers admits to applying 2-3 pounds of sugar per acre on his soybeans, where he’s produced yields of up to 160 bushels per acre.

Cullers’ success was one reason Brandon Hunnicutt decided to try sugar on his Gilmer, Neb., farm. “We experimented with it a few years, and though yield increases were small they were consistent, so we’ve made it a part of our regular crop production program,” says Hunnicutt.

Hunnicutt also now uses high fructose corn syrup as his source of sugar after starting with granular cane sugar. “We were buying 25-pound bags of table sugar from the local warehouse grocery store. A pallet of those in the pickup draws some attention. We asked the local coop to find the corn syrup product, which is nice because it’s a by-product of corn processed in the ethanol industry. We apply one quart per acre—which contains one pound of sugar—in each of two or three applications per season. We don’t know why it works, but we’re convinced that it does,” he adds.

Steve McManaman, agronomist with the Aurora Coop in Aurora, Neb., is also convinced sugar works and believes he knows why. “Applying sugar is like drinking Mountain Dew—it provides an energy boost. It enhances the nutrient uptake of plants and also increases microbial activity when applied to the soil. This speeds residue decomposition and the mineralization of soil organic matter,” he says.

Sugar not only improves nutrient uptake, it also increases the amount of herbicide taken in by plants, according to McManaman. “This results in improved weed control from post-emerge herbicide applications. We see a big benefit in the weed control performance of glyphosate when it’s applied with sugar,” he says.

McManaman says he’s also seen an application of sugar increase nodulation of soybeans. “We recommend growers add high fructose corn syrup as a source of sugar to the tank every time they spray. It’s inexpensive, and our tests have always shown a positive yield response. Of course, it won’t take the place of good agronomics, but sugar will help growers continue to move yields a bit higher.”

**Baiting good bugs.** Rees and her associates at the University of Nebraska admit research on the use of sugar is limited. “We suspect that sugar attracts beneficial insects, and there’s some proof of that. Entomologists in South Dakota found that lady beetles regularly consume the sugar-like nectar produced by soybean plants. When they applied sugar to add to this food supply the number of lady beetles increased,” she says.

“We also can’t yet explain the improved standability we see when an application of sugar is made to growing corn. Our hypothesis is that an early-season treatment increases the population of beneficial microbes in the soil, and that may help to keep the exposed brace roots and stalks of corn plants healthy,” she adds.