



By Dean Houghton

EARLY START

*In-furrow cocktails
boost corn's early growth*

A dose of phosphorus (P) starter fertilizer has long been recommended for corn planted into cold, wet soils. But innovative growers now add several additional letters of the alphabet to their in-furrow applications, mixing complex cocktails that may range from macronutrients to micros, fungicides to soil amendments, for jump-starting emergence and early growth.

In North Dakota, a growing number of corn farmers are delivering an in-furrow mix. The typical pro-

gram would feature a low rate, such as 3 gallons per acre, of 10-34-0 (ammonium polyphosphate solution, or APP); some growers base their nutrient package on a seed-friendly 6-24-6 solution, designed to minimize any toxicity to seedlings. They often add

►**Large photo:** Young corn seedlings planted into cold, wet soils often benefit from nutrients placed in-furrow. ►**Right:** Research plots at Garden City, Mo., show an early advantage in growth and development for corn receiving an in-furrow treatment (in rows at left in this photograph).





►**Above:** Jim Davies says in-furrow applications often get corn off to a faster start, not only in additional height but increased root mass as well.

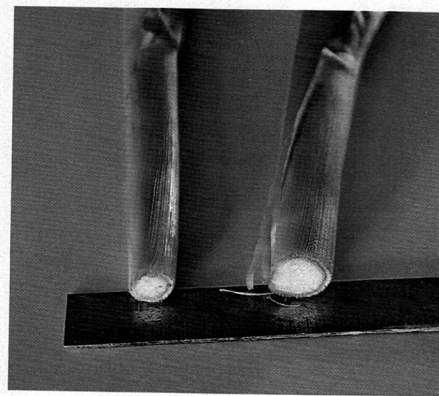
to this mix a micronutrient package with ingredients such as zinc, manganese, copper, and iron. In recent years, some corn growers also add a 6-ounce rate of a strobilurin (Headline) fungicide to help protect seedlings as they sit in cold soils waiting to emerge.

This type of in-furrow cocktail has found success in the area's sugarbeet industry. "It not only gets the crop off to a faster start," says Ryan Rademacher, a Wheatland, N.D., farmer. "It also helps us get ahead of some of the typical beet diseases that we see."

In split-field corn plots, the in-furrow treatment not only jump-started early season growth, but effects often could be measured at the combine. In several demonstrations, there was an increase of around 10 bushels per acre as compared to rows that did not receive an in-furrow application.

Bio boost. At Garden City, Mo., Jim Davies is an agronomist and general manager for Country Road Distributors. He coordinates research plots in collaboration with organizations such as Ag Team Professionals and Missouri Feed & Fiber, a farmer-owned cooperative that specializes in growing identity preserved grain.

"We think an in-furrow treatment



►**Above:** Compared with the control (left) that received no in-furrow application, the treated plants typically develop larger, healthy stalks.

is a critical part of a management program for high-yield corn," he says.

He recommends a full package of components, starting with a high-quality nutrient package, such as a 6-24-6 or a 3-18-18 solution; a micro-nutrient package, based on a review of soil test results; and a biological fungicide, as well as a carbon catalyst.

The biofungicide (Ballad Plus) contains a specific strain (QST 2808) of *Bacillus pumilus*, a bacteria that helps prevent the development of fungal spores, and also stimulates the plant's own resistance system. The carbon catalyst is a liquid soil amendment that helps make P and K more available in the root zone, boosting germination and seedling development.

Environmental stewardship and economic efficiency drive the interest in the in-furrow approach, Davies explains. The in-furrow boost does get corn off to an early start. One month after emergence, corn plants often show a two-leaf advantage in height compared to their untreated counterparts.

But it's only part of the bigger picture. "Growers are interested in spoon-feeding nutrients to the corn crop," he says. "Sequential applications starting with preplant, then going with in-furrow, sidedress, and foliar applications, allows growers to put on the right amount of nutrients at the right time—and produce the most corn for the least cost per bushel, while minimizing nutrient losses." ■