

## The reasons behind the use of talc and graphite in planters

In the midst of the frantic pressures of planting season, two niggling questions tug at farmers' minds every time they fill their planter.

How much graphite or talc should be added per planter-fill, and why the heck is graphite and/or talc necessary in the first place?

"Graphite is a dry lubricant used to decrease wear in mechanical seeding mechanisms," says Kelby Krueger, product specialist at John Deere. "Finger pickup units are a good example. Graphite reduces friction in those units and increases component life."

Talc that's recommended as a seed coating in "air" planters is also a dry lubricant, but its primary role is as a drying agent. The fans in air-based seed metering systems move tremendous volumes of air. Even low levels of humidity in the air are magnified by high air flow and cause problems related to pesticide coatings commonly applied to seeds.

Those insecticide and fungicide coatings are hygroscopic, meaning they readily absorb moisture from the high volumes of air moving through air planters. When they absorb moisture, their surfaces become sticky, leading to problems with seeds clumping and bridging in seed hoppers, and clinging to seed disks in seed meters.

"The coatings on seeds get rougher and stickier when they absorb moisture," says Krueger. "Talc fills the pores, smooths and dries the surfaces of the seeds, and improves flowability."

Weather systems that bring low humidity reduce problems with seed treatments, but increase another seed metering problem related to static electricity.

As plastic metering disks turn in seed meters, static electricity can develop on the surfaces of seeds jostling in the bottom of the hoppers, or as they rattle through plastic seed delivery tubes. The static electrical charges cause seeds to clump and bridge.

"Static electricity can be a big problem with some seeds," says Daryl Cress, service manager at Great Plains Manufacturing. "It varies between different types of seeds, seed coatings and conditions. Milo and canola seem to have the worst problems for some reason."

Fortunately, talc and graphite have anti-static characteristics. Talc is an insulator, minimizing the buildup and transfer of static electricity. Graphite is a conductor, easily transferring to "ground" within a planter's components any static electricity that develops. An 80/20 mix of talc and graphite has proven to provide air planters with optimum seed drying capabilities as well as adequate static electricity control.

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The key to applying proper amounts of graphite, talc or talc/graphite mix to seed in planter hoppers depends on the product.

Kenny Dill, tech support at Precision Planting, says the goal with graphite is to provide adequate lubricity to mechanical components without dirtying the seed tube sensor enough to reduce seed monitoring precision. In finger pickup seed meters, excess graphite can also increase “skips.”

“Too much graphite can make the seeds so slippery the fingers have trouble holding them,” says Dill.

Excess talc has no detrimental effects, except for on the farmer’s wallet.

“Excess talc generally gets blown into the atmosphere,” says Krueger, “so the issue is about wasting money. The key is to premix talc into the seed so that every seed is evenly coated. Just mixing talc into the top of seed hoppers generally doesn’t give a good, uniform coating, and you end up with extra, wasted talc accumulating in the bottoms of the hoppers or getting blown into the atmosphere.”

Graphite and talc application rates vary with the type of planter, weather conditions and the type of seed coating. Manufacturers of finger pickup seed meters recommend 1 to 2 tablespoons of graphite per bushel of corn. Air planter manufacturers suggest starting the season with ½ cup of talc per bushel, then increasing or decreasing rates as required by humidity and seed coatings to maintain seed flow.