

# Avail: Good theory, no results

Results in the lab don't always translate to the field. A three-year trail of Avail phosphorus fertilizer aid falls into this category

BY LYNDESEY SMITH

**T**here's a very important reason plot and field-scale trails are done: not all lab results transfer to the field. Such is the case, it would seem, with Simplot's Avail product. Avail, a polymer, is mixed with phosphorus fertilizer with the idea that when placed in the soil it keeps more phosphorus in soil solution and more available to the plant. It's a good theory, but so far Avail has not shown results in the field.

Avail is a neat polymer, says Rigas Karamanos, agronomy manager with Viterra. He says that Avail's cation exchange capacity (CEC) is through the roof, making it, in theory, a great tool for tying up calcium, iron or other minerals in the soil that usually bind with phosphorus, rendering it unavailable to the plant.

The proof, however, is usually in the pudding. Karamanos and a few other researchers recently compiled three years of data from two Western Canadian and three Montana sites comparing Avail-treated phosphorus vs. non-treat-

ed phosphorus application. The research suggests that Avail has no positive or negative impact on yield, he says.

Karamanos notes, however, that there have been positive responses in isolated cases, such as in Kentucky, and so he's not quite ready to close the door on the product's effectiveness just yet.



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"We'll be running field-scale trials with the product this summer. We want to see under what conditions the product works. The theory is sound," he says.

R. Jay Goos, professor of soil science at North Dakota State University, isn't very hopeful of Avail's effectiveness at the rec-

ommended rate. "The makers of Avail claim that the product reacts with cations, such as calcium, thus allowing phosphate to remain more soluble, or available in the soil. My concern with the product is that the rate is too small to have a meaningful effect," he says.

Goos calculates that one ton (2,000 pounds) of diammonium phosphate can initially react with over 5,000 moles of calcium in the soil. "A half gallon of Avail — the recommended rate applied to a ton of fertilizer — has, according to my calculations, the ability to tie up less than 15 moles of calcium. It's hard to see how this can have a meaningful effect on the reaction of phosphate with calcium in our soils."

To put that in Western Canadian terms, many soils on the Prairies contain 3,000 pounds of calcium per acre. Even with Avail's fantastic CEC at the recommended application rate of a half gallon per ton, the product will tie up just 26 grams of calcium per acre, according to Karamanos.

*Lyndsey Smith is a field editor with Grainews in Lumsden, Sask. Email her at [lyndsey@fbcpublishing.com](mailto:lyndsey@fbcpublishing.com).*