

Studies Favor Ammonium Sulfate For Corn Starter

UNIVERSITY PARK (Centre Co.) — Conventional wisdom says phosphorus is the key nutrient for corn starters. But two Penn State studies suggest growers can produce as good or better yields with ammonium sulfate (21-0-0-24S).

“Now that many of our fields are high in phosphorus, it looks like it’s time to turn our attention to other nutrients,” said Greg Roth, Penn State agronomist.

Every 100 pounds of ammonium sulfate supplies 21 pounds of nitrogen and 24 pounds of sulfur.

Last year, Roth included ammonium sulfate in corn starter trails in Hershey and Rocksprings. The soil type was a Hagerstown silt loam, which has traditionally been considered nonresponsive to sulfur.

“Ammonium sulfate improved early-season corn growth in both locations,” said Roth. “At Rocksprings ammonium sulfate also increased yields by 12 bushels per acre.”

Penn State agronomist Doug Beegle also looked at ammonium sulfate in corn starters last year. Working through county agents, he compared a farmer’s regular starter to ammonium sulfate. On high P-testing soils,

ammonium sulfate was as good or better than the complete NPK blend, Beegle reported.

“On high-P soils, there are environmental concerns about applying even more phosphate,” said Beegle. “By switching to ammonium sulfate, growers can give corn an early-season boost without putting on more phosphate.”

Low-phosphate blends made with ammonium sulfate also cost less than high-P formulations, noted Roth.

Corn seedlings still need phosphorus, said Beegle. But with ammonium sulfate in the starter, corn seedlings can get the P_2O_5 they need from the soil instead of from extra fertilizer.

“Sometimes when seedlings are in cold soil, the roots grow so slowly that they can’t reach residual phosphate,” Beegle explained. “By putting nitrogen in corn starter, you’re stimulating root growth so that roots can reach residual P_2O_5 easier and faster.” In addition, the ammonium form of nitrogen enhances root uptake of phosphorus.

Ammonium sulfate is safe for pop-up applications, as well as for two-by-two placement, as long as appropriate rate guidelines are followed.