



**Alternative for Fertilizer Costs:  
Increased Cost Of Starter Fertilizer Has Farmers Seeking Alternatives**

Source: Purdue University news release

With the phosphorus-containing starter fertilizer 10-34-0 averaging nearly \$1,000 per ton, many farmers are asking, "Do I really need to include phosphorus in my starter fertilizer?" A Purdue University specialist said it depends on soil temperature and tillage, soil phosphorous level, irrigation and yield potential.

The starter fertilizer 10-34-0 is also known as APP or ammonium polyphosphate.

"Contrary to popular belief, more often than not the corn crop responds to the nitrogen component and not the phosphorous component of starter fertilizer," said Jim Camberato, Purdue Extension soil fertility specialist. "The crop actually benefits only 5 to 10 percent of the time from having the phosphorus banded with nitrogen and the rest of the time the nitrogen gives the full response.

"In most instances 28 percent urea ammonium nitrate is equivalent or better than APP as a starter fertilizer."

Camberato explains that including phosphorus in the starter fertilizer is most likely beneficial when:

- \* Planting into cold, wet soils
- \* No-till is practiced
- \* Soil testing shows low phosphorous levels
- \* Soils are irrigated or consistently high yielding

"When phosphorus in the starter fertilizer is beneficial, APP is a convenient source of it," he said. "A 3-to-1 ratio is recommended when mixing UAN and APP. After combining the two, the mixture should yield between 30 pounds and 40 pounds of nitrogen per acre and between 10 pounds and 20 pounds of P<sub>2</sub>O<sub>5</sub> per acre in a placement 2 inches to the side and 2 inches below the seed. This is optimal-if you apply less you don't get the full starter benefit and there is no benefit to applying more."

This rate of P<sub>2</sub>O<sub>5</sub>, although adequate as a starter fertilizer, is insufficient to replace crop removal, which is about 0.37 pound P<sub>2</sub>O<sub>5</sub> per bushel of corn or 60 pounds P<sub>2</sub>O<sub>5</sub> per acre at 160 bushels per acre, Camberato noted.

"With current prices, broadcast monoammonium phosphate (MAP) and diammonium phosphate (DAP) are more economical than APP as sources of phosphorus to replace crop removal," he said.

Phosphorus from MAP and DAP recently cost about 60 cents to 75 cents per pound of P<sub>2</sub>O<sub>5</sub> whereas phosphorus from APP has been more than \$1.25 per pound of P<sub>2</sub>O<sub>5</sub>.

"Unless convenience is an overriding factor, APP is currently a costly source of phosphorus," Camberato said. "There is only so much time to get the crop planted and if the soils don't dry out until late, it may be worth paying the additional fertilizer cost to avoid another trip across the field."