

# Phosphorus (P)

*Phosphorus (P) is involved in photosynthesis, respiration, energy storage and transfer, and many other processes in the plant.*

*Phosphorus uptake is a continuous process during the active growth period of plants.*

*Since phosphorus is needed at all stages of plant growth, it is imperative that the nutrient be in a plant-available form throughout the growing season.*

*Common symptoms of phosphorus deficiency include:*

- *Plants are generally stunted and darker green*
- *Some plants may show purpling of leaves and stems*
- *Leaves may curl upward*
- *Delayed maturity*
- *Poor seed set and fruit quality*



## **Phosphorus Products**

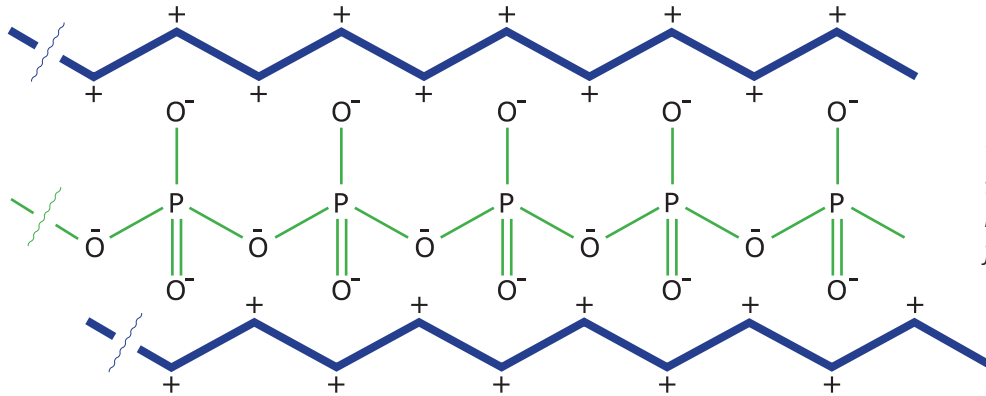
**ProGerminator<sup>®</sup>**





## The Phosphate Advantage

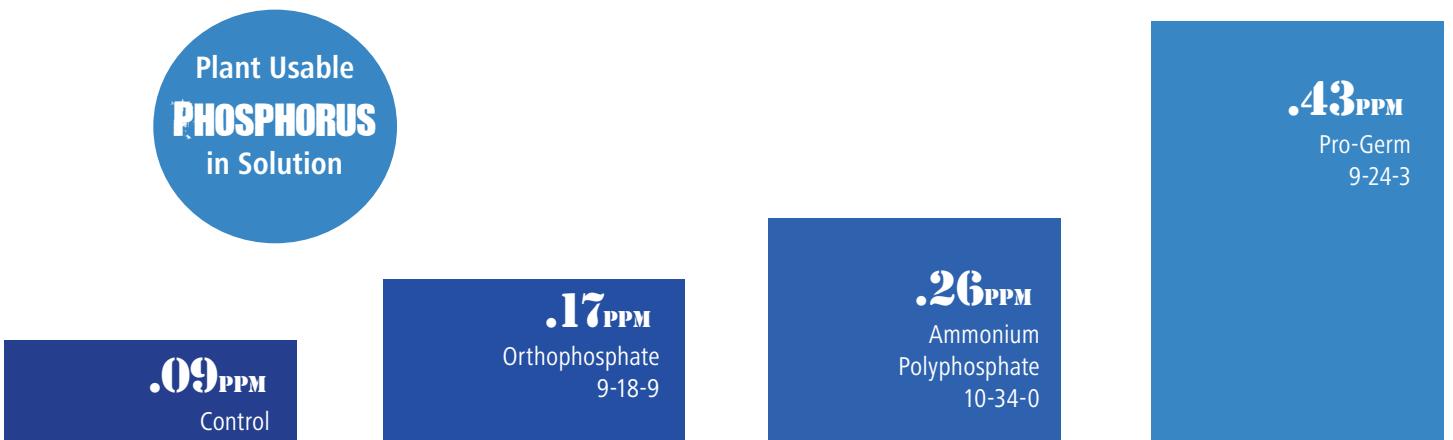
Phosphorus (P) is considered a primary crop nutrient, along with nitrogen and potassium. Most phosphate fertilizers combine, or complex, with other minerals in the soil to create compounds that are not usable to plants. This can happen in as little as 4 to 8 days. Pro-Germinator® contains both orthophosphate, which is immediately available to the plant, and long-chain polyphosphates that are protected by flavonol chelation technology resulting in season long phosphorus availability.



*The flavonol protects the polyphosphate in Pro-Germinator from fixation loss.*

The combination of ortho- and polyphosphates, along with its flavonol chelation technology allows Pro-Germinator to provide more nutritional performance per gallon than conventional fertilizers. That results in having excellent crop nutrition at lower application rates than other phosphate products. When applied at recommended rates, Pro-Germinator is cost effective, on a per acre basis. Pro-Germinator should be the backbone of all crop fertility programs, potentially providing the greatest return on phosphorus investment.

An experiment was conducted at the AgroLiquid *North Central Research Station* to determine phosphate availability of Pro-Germinator compared to other liquid phosphate fertilizers. Pro-Germinator, 9-18-9 orthophosphate, and 10-34-0 ammonium polyphosphate were applied at 20 lbs P<sub>2</sub>O<sub>5</sub> per acre. Plant usable phosphorus in soil solution was measured at various times throughout the growing season.



*Soil sampling depth was 4" and 20-60 days after planting.*

Average plant usable phosphorus in solution provided by Pro-Germinator was considerably higher than what was provided by conventional liquid fertilizers. The data shows that Pro-Germinator provides a steady, usable supply of phosphorus well in to the growing season when the crop demand for phosphorus is at its peak.

*(Source: AgroLiquid 2015 Research Report)*