

# **PHOSPHORUS AND ORGANIC ACID BONDING ENHANCES UPTAKE EFFICIENCY IN CROP PLANTS**

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## **ABSTRACT**

Phosphorus (P) fertilizer is essential for crop production, but reductions are warranted to conserve resources and minimize environmental impacts. Several lab, glasshouse, growth chamber, and field studies have been performed over the past five years with a new P fertilizer (Carbond P; CBP; Land View Fertilizer, Rupert, ID, USA) in calcareous, low OM soil. This presentation will be a review of that data. Studies comparing CBP to ammonium polyphosphate (APP) applied to soil show season-long increases in P solubility for CBP in many soils. Glasshouse and field studies with maize, dry beans, potato, sugarbeet, alfalfa, wheat, and bluegrass resulted in enhanced yields and/or crop quality in 19 of the 41 studies. When examining only trials with low soil test P (<12 ppm Bicarbonate P for all crops except potato which was <20 ppm), greater responses occurred in nearly every trial for CBP over APP when comparing low rates of these materials—showing an increase in P use efficiency. The average yield increases were 11% and P uptake increases were 14%. Carbond P is an enhanced efficiency fertilizer that often increases yields and crop quality and almost always increases P uptake in plants compared to traditional fertilizers when applied at low rates on calcareous soils with relatively low soil test P.