EFFECT OF TRUESOLUM ON PHOSPHORUS DEFICIENCY OF PEPPERS AND CORN

OBJECTIVE

These trials assessed the effect of **TrueSolum®** on reducing phosphorus deficiency symptoms and improving overall plant health in replicated trials across two distinct locations: Mebane, NC, and Great Bend, KS.

TRIAL SPECIFICS

Design

- Two trials in both **corn** and **peppers** with 8 replicates in each trial. The trials focused on short-term effects and did not extend to harvest.
- Small plots containing 5-6 plants per plot, designed to function as assays rather than full-scale field trials.

Treatments

1. **Untreated Control**
2. **TrueSolum Application:** Applied to mimic a transplant drench for peppers, and for corn, to mimic an in furrow or a banded treatment at planting. A second application at 2 weeks after planting. TrueSolum applications to mimic a 2 qt/A rate.

Procedure Highlights

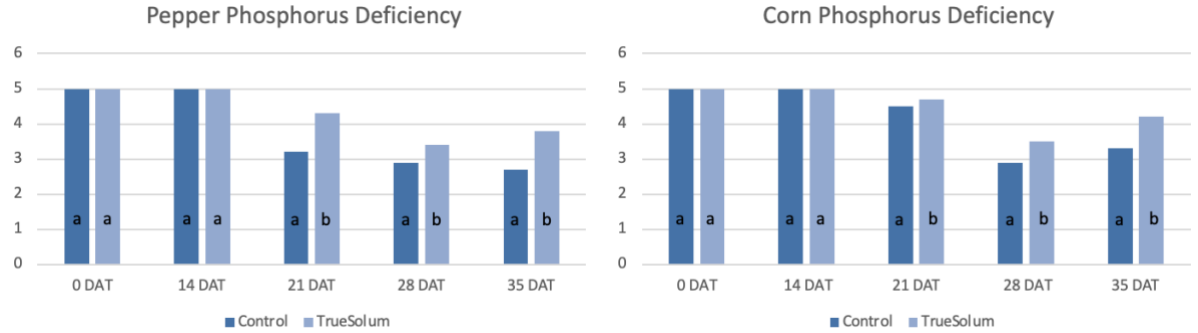
- Fields chosen with slightly acidic, wet soil (pH < 5.5).
- Pre-plant evaluations of soil and water.
- No phosphorus fertilization applied during the trials.

RESULTS

Across both trial locations, plants treated with TrueSolum **demonstrated significant reductions in phosphorus deficiency symptoms**, as well as improved overall **nutrient uptake** and plant health compared to untreated controls.

Phosphorus Deficiency

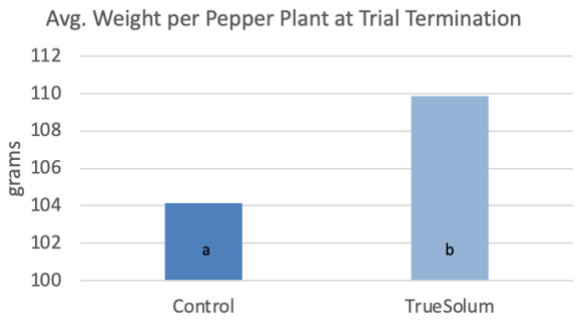
- By 21 days post-treatment, TrueSolum-treated plants showed statistically significant reduction in phosphorus deficiency symptoms in both corn and pepper crops across both locations.

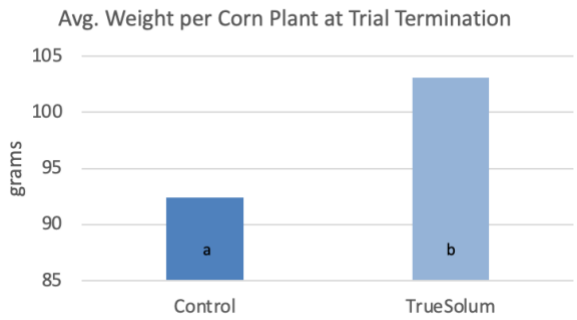


* Visual ratings for phosphorus deficiency symptoms were conducted using a 0-5 scale, where 0 represented a dead plant and 5 indicated no phosphorus deficiency symptoms.
** Means followed by the same letter are not different, LSD, P= 0.10

Plant Health and Growth

- **Phosphorus Levels**
  Treated pepper plants exhibited a 33% increase in phosphorus levels in their sap (KS) and a 31% increase (NC) compared to the control, contributing to better overall plant health. Corn treated with TrueSolum showed a 43% increase in phosphorus levels in NC and notable improvements in other key nutrients such as Fe, Zn, and Ca.
- **Plant Weight**
  TrueSolum-treated pepper plants exhibited a statistically significant 5.5% increase in plant weight compared to the control, reflecting a meaningful improvement in growth. Similarly, TrueSolum-treated corn plants exhibited a statistically significant 11.5% increase in plant weight compared to the untreated control.





*Means followed by the same letter are not different, LSD, P=.10

Soil Microbial Activity

- Significant increases in beneficial soil microbes (e.g., mycorrhizae, actinomycetes) were observed in TrueSolum-treated plots, promoting better nutrient availability and overall plant vitality.

CONCLUSIONS

TrueSolum treatments led to consistent improvements in plant phosphorus uptake and overall nutrient levels, reducing deficiency symptoms and enhancing plant growth in both corn and peppers. These findings support TrueSolum's role in improving plant health through soil and microbial interactions, making it a valuable tool for managing phosphorus deficiencies in low-pH, nutrient-stressed environments.