APRIL 2023

Mosaic® AgriFacts®

CORN

MicroEssentials® SZ® Phosphorus Uptake (Greenhouse Trial) vs MAP and MAP Blend in V6 Corn

Objective

- Quantify the increase of phosphorus uptake with MicroEssentials® SZ® (12-40-0-10S-1Zn) applied to corn compared to MAP (11-52-0) and MAP + Ammonium Sulfate (AS, 21-0-0-24S) + Zinc Sulfate ($ZnSO_4$,17.5-0-0-35.5Zn) blends in V6 corn.

Overview

- Balanced crop nutrition is critical for corn production.
- MicroEssentials SZ supplies nitrogen, phosphorus, sulfur, and zinc in one nutritionally balanced granule.
- The MicroEssentials Fusion® technology process creates a unique chemistry that results in increased nutrient uptake and crop yield compared to alternative sources.

Trial Details

CROP: Corn (*Zea mays*)

YEAR: 2023

LOCATION: Sabanci University, Turkey

DATA SOURCE: Dr. Ismail Cakmak

EXPERIMENTAL DESIGN: Pot trials conducted under greenhouse conditions and averaged across two soil types and two fertilizer rates:

- Loam (7.9 pH, 4 ppm P, 0.1 ppm Zn)
- Sandy Clay Loam (7.8 pH, 13 ppm P, 0.2 ppm Zn)
- Phosphorus fertilizer was applied representing a low and high P rate to each soil and balanced among fertilizer sources
- MAP + AS + $ZnSO_4$ blend was balanced to match phosphorus, sulfur, and zinc rates

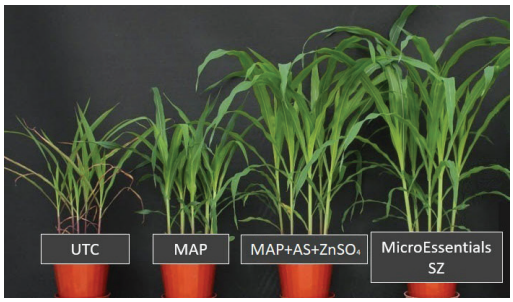
TREATMENTS:

- No phosphorus (UTC)
- MAP
- MAP + AS + $ZnSO_4$
- MicroEssentials SZ

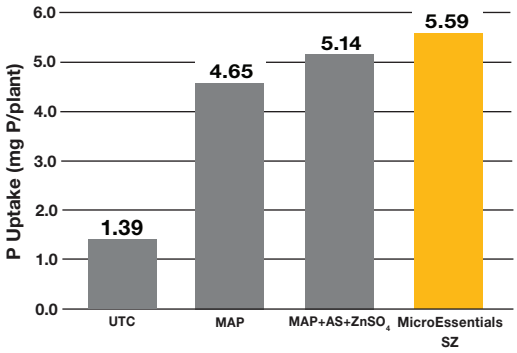
STUDY DETAILS:

- Fertilizers were homogeneously mixed with soil, simulating broadcast and incorporated applications.
- Above-ground dry matter and nutrient uptake was determined on 32-day-old/V6 corn.

Results



PHOSPHORUS UPTAKE BY FERTILIZER SOURCE



Summary

- Corn phosphorus uptake was greater with MicroEssentials SZ than any other treatment.
- MicroEssentials SZ treated plants had 20% greater phosphorus uptake at V6 growth stage than plants treated with MAP.
- MicroEssentials SZ treated plants had 9% greater phosphorus uptake at V6 growth stage than plants treated with the MAP + AS + $ZnSO_4$ blend.

MicroEssentials®

20%

Increased P uptake with MicroEssentials SZ compared to MAP at V6

9%

Increased P uptake with MicroEssentials SZ compared to a MAP+AS+$ZnSO_4$ blend at V6

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For more information, go to MicroEssentials.com.