

# Mosaic® AgriFacts™

## RICE



## MicroEssentials® SZ™ Rice Zinc Study

### Objective

- Evaluate the yield response of MicroEssentials® SZ™ (12-40-0-10S-1Zn) compared to a blend of DAP (18-46-0) + AS (21-0-0-24S) + ZnSO<sub>4</sub> (0-0-0-16.5S-36Zn) applied at different zinc rates.

### Introduction

- Zinc (Zn) deficiency is the most widespread micronutrient disorder in rice (*Oryza sativa*). Zn deficiency causes multiple symptoms that usually appear two to three weeks after planting. Plants lacking zinc remain stunted and in severe cases may die. Plants that survive may show substantial delay in maturity and reduction in yield (Figure A and B).
- Rice is very responsive to Zn application; therefore, it is critical to evaluate the effect of Zn application rates on rice yield.
- DAP + AS + ZnSO<sub>4</sub> is often used as a fertilizer blend applied to rice.

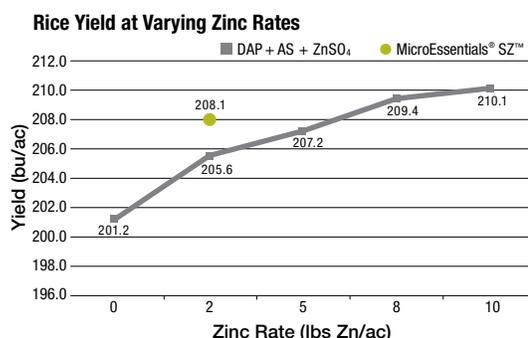


Figure A: Early-season response to zinc.



Figure B: Mid-season response to zinc.

### Yield



### Trial Details

#### Locations and Crop Management:

**CROP:** Rice (*Oryza sativa*)

**YEARS:** 2011–2012

**LOCATIONS:** 6 trials across rice-growing regions of the U.S. (AR, LA, MS).

**DATA SOURCE:** Field studies conducted by University of Arkansas, Louisiana State University and Mississippi State University.

**EXPERIMENTAL DESIGN:** Small-plot RCBD with 4 replications.

**CROPPING CONDITIONS:** All trials conformed to local cropping practices.

- P Rate:** 80 lbs P<sub>2</sub>O<sub>5</sub>/ac
- S Rate:** 20 lbs S/ac balanced across treatments
- Zn Rate:** MicroEssentials SZ was applied at 2 lbs Zn/ac; DAP + AS + ZnSO<sub>4</sub> was applied at 5 different Zn rates (0, 2, 5, 8, 10 lbs Zn/ac).
- Application Timing and Method:** Preplant broadcast

### Summary

- Rice yields increased with higher rates of zinc.
- MicroEssentials SZ at 2 lbs Zn/ac demonstrated a 0.9 bu/ac higher yield than a DAP blend at 5 lbs Zn/ac. This zinc rate was 2.5 times greater than MicroEssentials SZ.
- Rice yield for MicroEssentials SZ at 2 lbs/ac Zn is statistically similar to the DAP + AS + ZnSO<sub>4</sub> blends applied at 5, 8 and 10 lbs Zn/ac.
- MicroEssentials SZ contains N, P, S and Zn fused into one nutritionally balanced granule providing uniform nutrient distribution, increased nutrient uptake and season-long sulfur availability.

**MicroEssentials**

**2 lbs Zn/ac from  
MicroEssentials® SZ™  
yielded statistically  
similar to 5, 8, and  
10 lbs Zn/ac from  
DAP blend**

**Mosaic**

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Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

For more information, go to [MicroEssentials.com](http://MicroEssentials.com).