Mosaic®

AgriFacts®

WINTER WHEAT

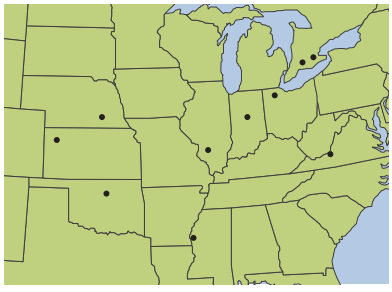
MicroEssentials® SZ™ Nutrient Efficiency in Winter Wheat

Objectives

- Evaluate the yield response of winter wheat to MicroEssentials® SZ™ (12-40-0-10S-1Zn), MAP (11-52-0) and a MAP + AS (21-0-0-24S) + $ZnSO_4$ (0-0-0-16.5S-36Zn) blend at three different phosphorus (P) rates.
- Compare the grain concentration of phosphorus (P), sulfur (S) and zinc (Zn) across treatments of MAP, MAP + AS + $ZnSO_4$ and MicroEssentials® SZ™ at a rate of 60 lbs P_2O_5/ac.

Overview

- Monoammonium phosphate (MAP) is commonly used as a P fertilizer applied to winter wheat.
- In addition to nitrogen (N) and P, other nutrients like S and Zn are beneficial to achieve maximum yield and better nutritional quality.
- MicroEssentials SZ contains N, P, S and Zn in one nutritionally balanced granule, providing the uniform nutrient distribution, improved nutrient uptake and season-long sulfur availability required for higher yields and profitability.



LOCATIONS: 17 trials across the U.S. and Canada

United States – IL, IN, KS, MS, NE, OH, OK, VA

Canada – ON

Trial Details

Crop Management:

CROP: Winter Wheat (*Triticum aestivum*, winter)

YEARS: 2012–2014

CROPPING CONDITIONS:

- **P Sources:** MAP, MAP + AS + $ZnSO_4$ and MicroEssentials SZ
- **P Rate:** MAP and MicroEssentials SZ: 0, 30 and 60 lbs P_2O_5/ac MAP + AS + $ZnSO_4$: 60 lbs P_2O_5/ac
- **K Rate:** As required by soil test, applied to entire trial
- **Application Timing:** Preplant
- **Application Method:** Broadcast

PARAMETERS MEASURED:

- Grain yield
- Grain nutrient concentration P, S, Zn (12 of 17 locations)

Results

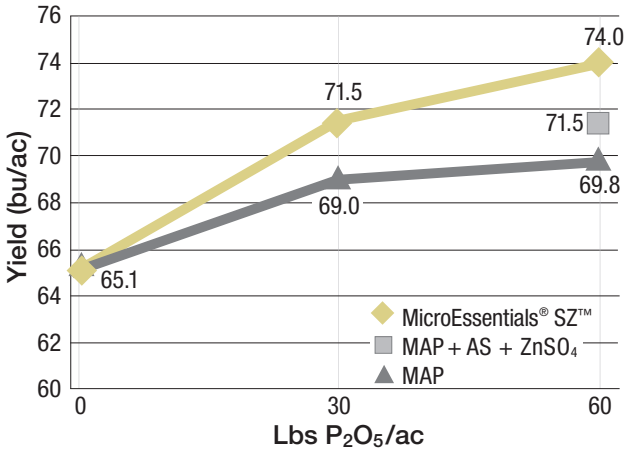


Fig. 1 Wheat yield response to different P sources and rates. Note: MAP + AS + $ZnSO_4$ was only tested at 60 lbs P_2O_5/ac.

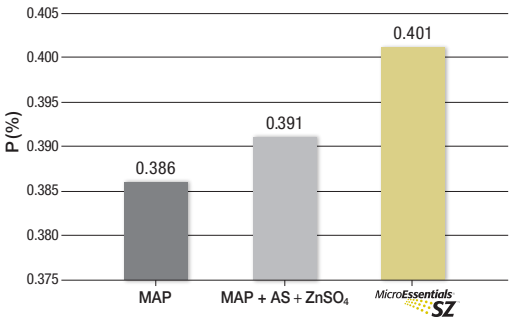
MicroEssentials

4.2 bu/ac

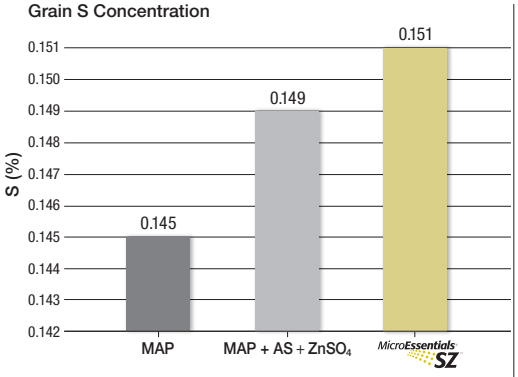
Higher yield with MicroEssentials SZ over MAP (60 lbs P_2O_5/ac)

MicroEssentials SZ provides higher grain quality over MAP: 3.8% for P; 4.1% for S; 2.4% for Zn

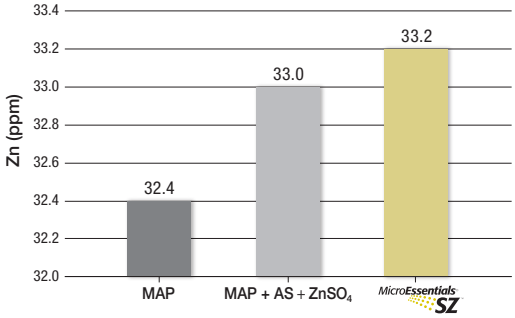
Grain P Concentration



Grain S Concentration



Grain Zn Concentration



Summary

- At 60 lbs P_2O_5/ac, MicroEssentials® SZ™ had a 4.2 bu/ac (6.0%) higher yield than MAP and 2.5 bu/ac (3.5%) higher yield than the MAP blend.
- The 30 lbs P_2O_5/ac of MicroEssentials SZ outperformed the 60 lbs P_2O_5/ac rate of MAP and the MAP blend. This demonstrates the increased P efficiency of MicroEssentials SZ compared to MAP.
- Grain nutrient concentrations were higher in MicroEssentials SZ treatments than MAP or MAP blend treatments. Compared to MAP, MicroEssentials SZ demonstrated the following increases: 3.8% for P, 4.1% for S and 2.4% for Zn.
- MicroEssentials SZ demonstrated higher yield and grain nutrient concentration compared to MAP or a MAP blend. Applying MicroEssentials SZ results in maximum yield and increased nutrient efficiency.

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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.**