2011 Statewide Nutrient Management Benchmarking Project:
Micronutrient and Sulfur Status of Fields That Received vs Those That Did Not Receive Micronutrient and Sulfur Applications

Problem addressed

Some growers often apply micronutrients (usually at planting or as foliar applications) as an insurance for avoiding micronutrient deficiencies of corn and soybean.

The common question is how effective are these applications for increasing yields, changing crop nutrient status or increasing micronutrient tissue concentrations?

While we did not collect yield response data in this project, growers provided us with information which fields had some micronutrient and S applications.

What was done

Across the state, 110 corn fields (293 samples) and 41 soybean fields (87 samples) had some micronutrient (Cu, Zn, B) and S applications. Because the number of soybean fields with micronutrient applications was relatively small, we focused our analysis only corn. Although we did not know which specific micronutrients were applied in each field, we looked at statewide differences in crop tissue status for Zn, Cu, B, and S between corn fields that had and did not have micronutrient and S applications.

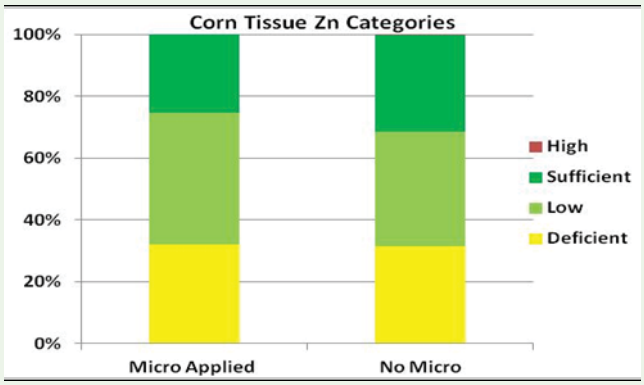

Fig. 1. Corn tissue Zn status of 110 fields that received vs 395 fields that did not receive micronutrients and S (based on University of Minnesota interpretations).

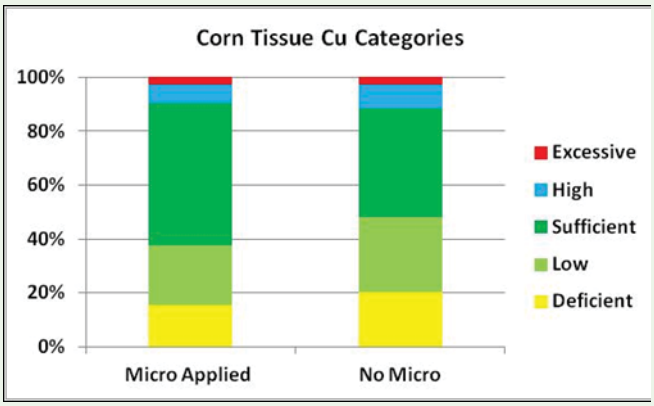

Fig. 2. Corn tissue Cu status of 110 fields that received vs 395 fields that did not receive micronutrients and S (based on Midwest Labs interpretations).

Corn tissue Zn status

Tissue Zn status did not differ significantly between corn fields that received and that did not receive micronutrient and S applications (Fig. 1).

Corn tissue Cu status

Across Iowa, tissue Cu status slightly differed between corn fields that received and that did not receive micronutrient and S applications. The fields in the first category had a slightly larger percentage of Sufficient samples (Fig. 2).

Corn tissue S status

Tissue S status slightly differed between corn fields that received and not received micronutrient and S applications. The fields that received micronutrient and S applications had a slightly larger percentage of Sufficient and a smaller percentage of Deficient samples (Fig. 3).

Corn tissue B status

Across Iowa, tissue B status did not differ between corn fields that received and did not receive micronutrient and S applications (Fig. 4).

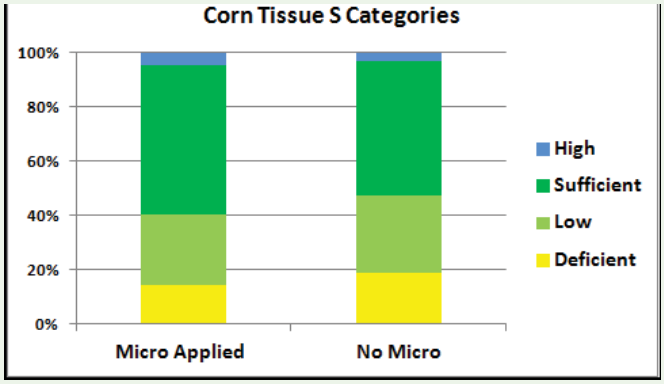

Fig. 3. Corn tissue S status of 110 fields that received vs 395 fields that did not receive micronutrients and S (based on Midwest Labs interpretations).

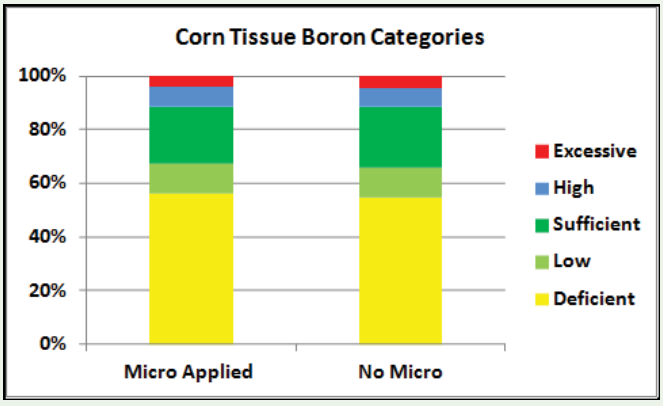

Fig. 4. Corn tissue B status of 110 fields that received vs 395 fields that did not receive micronutrients and S (based on Midwest Labs interpretations).

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