Monitoring Micronutrients: The When and How

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It's the start of February, and the temperatures are in the mid to upper 30's and even a few 40's. It sure feels like spring to me. This is a nice reprieve from winter, but it is surely not the end of the cold, blowing white stuff. As we watched our beloved Packers end their season with a huge disappointing loss to the Giants, we turn our attention to spring. Pitchers and Catchers for the Brewers report to sunny Arizona on February 19th. As the cold winter turns to spring, we can focus on making those tough management decisions that go a long way in protecting yield and profitability.

One of those decisions is whether or not to add a micronutrient to our fertilizer program. In the eight years that I have been a crop consultant it seems that we all have become pretty good at managing N, P and K. One thing that may have taken a back seat is micronutrients. Along with a good soil sampling program, tissue sampling of plant material can be the best way to monitor and treat any micronutrient deficiency. I have implemented an intensive sampling program with my clients, and we are seeing results. Corn, soybeans, wheat and alfalfa all have a different set of critical micronutrients; it is important to know what these critical micronutrients are to each crop to make sure we are making correct applications if they are needed. The key for these plant samples is using the appropriate techniques for sampling and sampling at the correct stage of plant development.

There are many different uses for plant tissue sampling. If abnormal growth is present it can be used as a diagnostic tool for crop recovery. For normal looking crops they can be used to try and manage for that extra yield we all strive to attain. It is also very important to know what plant parts to be taking and how many of them to take.

Corn for example has a high demand for Zinc and to a lesser extent Manganese and Sulfur. It is important to know when a dairy harvests corn for silage, Sulfur then becomes a high priority. Prior to corn tasseling, we need to take the leaf directly below the whorl. If we are from tassel to silk, it is best to take the leaf that is attached to the ear. In both cases taking approximately 15 to 20 plant samples is sufficient.

With soybeans we should focus on Manganese and to a lesser extent Zinc. But, much like corn silage, if soybean straw is chopped or baled off the field, Sulfur goes from a small concern to a big one. Proper sampling for soybeans is sampling prior to or during initial flowering. Make sure that the upper most fully open trifoliate are the leaves that are sampled (20 to 25 leaflets should be sufficient).

Small grains have some need for Copper, Manganese and again if straw is harvested don't forget that Sulfur. When sampling small grains, make sure sampling is done prior to heading by taking the upper most leaves and 30 to 40 leaves should make up the sample.

Finally alfalfa, the "Queen of Forages" can be highly managed with tissue sampling. Every year I do a lot of tissue sampling on alfalfa. Fertilizer can be very expensive for this crop and many times manure is in the rotation, top dressed on these alfalfa fields. By taking a tissue sample we can determine how well the manure applications are working, or if any specific micronutrients should be added with our normal potash applications. The main ones as most of you already know would be Boron and Sulfur. These two micronutrients are easily added to any fertilizer application. The nice part about alfalfa is you have multiple times per year to sample because of the many crops we harvest each year. When sampling, make sure the top 6 inches of the plant are sampled just prior to flowering.

What I have found is the best bet for efficient and useful sampling is to have a plan in place before the spring craziness ensues to ensure the sampling can get taken to the lab and back in time to make the proper management decision. One thing is for certain, there are many different products out for sale claiming big things. Make sure you consult your certified crop advisor when it comes time for picking the correct plan of action. In this climate of very good commodity prices we should all do our best to monitor micronutrient levels in all our crops. That being said, I can certainly answer the question, "Who's looking out for you?" On behalf of my WAPAC colleagues, we certainly are. For more information about WAPAC or to find a consultant near you, visit our website at **www.wapac.info** or contact Carla Hargrave at 920-361-0439.