K-STATE Research and Extension | Meadowlark District

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Plant Analysis – Corn

While scouting for corn diseases, it's a good time to keep an eye out for other issues showing up as well. We're at that point in the growing season where fertility program differences might be showing up and for some secondary/micronutrients, plant analysis is a pretty good way to get information on how efficiently we're using applied nutrients.

Plant analysis can be split into two categories. Our window for diagnosing field problems is open all season whenever we see an issue and want to troubleshoot it, but we're often focused this time of year as we head into reproductive growth on nutrient monitoring.

When collecting, do so at random, avoiding areas with known issues (unless you want to diagnose the issue…) and collecting across the field or field area in question. If collecting prior to reproductive growth, collect the top fully developed leaves (those with leaf collars). If waiting until silk emergence (recommended), collect the ear leaves (below the uppermost developing ear). *Remember: if the crop is stressed, results might not tell the full story and sampling is not recommended.* Allow collected leaves to wilt overnight then place them in a paper bag or mailing envelope (avoid plastic bags or tightly sealed containers) and shipped for analysis. The K-State Soil Testing Lab as well as many other regional labs provide plant analysis services.

When choosing analyses, nitrogen (N), phosphorus (P), potassium (K), sulfur (S), zinc (Zn), chloride (Cl), and iron (Fe) are the ones most likely to be found deficient in our area. Questions about copper (Cu), manganese (Mn), and molybdenum (Mo) have arisen as well, and while widespread deficiencies of those micronutrients have not been found in the state, the K-State Soil Testing Labe *does* test for Cu and Mn as part of their plant analysis bundle.

Once you get a number, what do you do with it? Results are typically reported as a percentage or in parts per million (ppm) and are best utilized by comparing to sufficiency ranges. Even if results are at the end of the sufficiency range spectrum, it doesn't always mean the nutrient isn't available. Results can vary based on plant part sampled, weather stresses, hybrids, and even yield environment. The greatest concern is when a nutrient's reported value is *significantly* outside (below OR above…) sufficiency values. If results show these types of values, looking into the potential cause is warranted. Drop me a line for a list of sufficiency values or visit the KSU Agronomy eUpdate: https://eupdate.agronomy.ksu.edu/article/plant-analysis-for-testing-nutrient-levels-in-corn-597-5 for more information.