

You Can't Manage... What You Haven't Measured



Advantages of CSNT Testing

- The cornstalk nitrate test (CSNT) can be used as required documentation for the **NRCS CSP** (Conservation Stewardship Program) Water Quality Enhancement Activity - WQL04 (plant tissue tests & analysis to improve nitrogen management). (2014 Ranking Period 1 - dated 11/1/13)
- The CSNT can be a very useful tool to help identify late season nitrogen uptake and utilization.
- The CSNT's ability to document current nitrate levels may not always reveal a need for changes in the nitrogen management plan for the future year's nitrogen applications rates, but will help verify overall crop uptake as excessive, optimal or deficient.

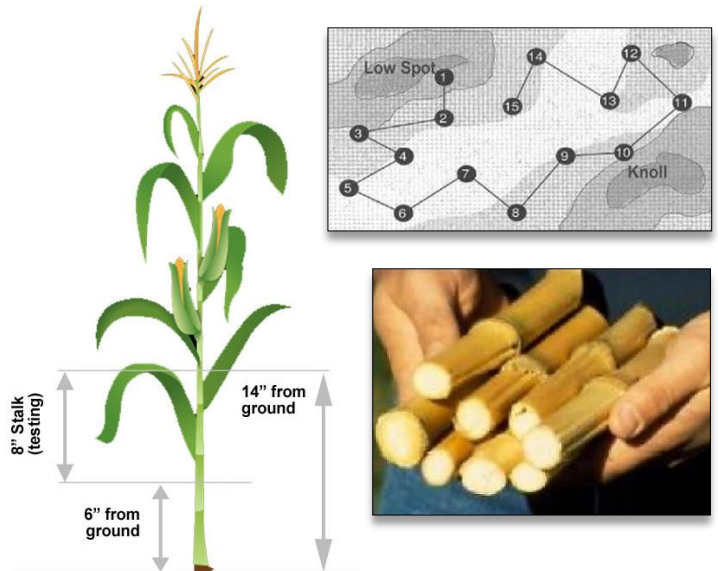
CSNT Sampling Procedures

- CSNT samples should be collected when **80%** of the corn kernels reach **black layer**. Each sample submitted for analysis should consist of **12-15 eight in. corn stalk** sections collected from and representative of the entire sample area.
- These 8 inch sample segments should be removed from the stalk 6-14 inches above the soil surface. Discard the leaf sheathes and damaged materials because they will contaminate the samples.
- Make sure that the stalk samples do not drop on the ground and get dirty because soil contamination will ruin the test results. Discard any samples that get contaminated. Collect new samples.
- Place the 8 inch stalk samples in ventilated paper sacks marked to identify the field location sampled. These samples should be air-dried if it will take more than 5 hours to reach the USI lab. If you have questions, please call USI for further instructions or clarification.



CSNT Sampling Procedures continued...

- Each stalk sample should represent no more than 10 acres and be representative of each different management zone within the field (different hybrids, different nitrogen rates, different manure rates, etc.) and be taken in a random zig-zag pattern around the sample area (below).
- While a nitrogen concentration of 1200 ppm may be nearly optimal, the following nitrogen concentrations should give some indication as to whether nitrogen application rates were low, about right, or excessively high if the growing season was not excessively challenged by weather extremes:
 - **Low (0-250) ppm**
 - **Marginal (250-750) ppm**
 - **Optimum (700-2000) ppm**
 - **Excessive (>2000) ppm**
- A pair of sharp bypass hand-pruning shears are probably the best tool for taking stalk samples. Bypass lopping shears can be used (especially for extra thick stalks), but usually aren't as convenient to carry around a field. A machete or corn knife will also work, but not as nicely or safely as shears.



USI Sample Collection Option

- USI collects tissue samples. \$ 30 per / hour for field service tech travel / labor / vehicle costs. (Does not include plant analysis. Separate analysis charges will apply).
- Optional: USI can take a soil sample at the CSNT sample location to compare with tissue results. Sample type (standard or nitrate) & sample depth dependent on soil test type. Analysis charges apply.
- Optional: USI can geo-reference the sample locations. Customer to advise USI of request.