

Iowa Addendum: Water Quality Enhancement Activity – WQL04 – Plant tissue testing and analysis to improve nitrogen management

Iowa Criteria

1. Use Iowa State University's publication [PM 2026: Sensing Nitrogen Stress in Corn](#) for in-season leaf testing and nitrogen analysis.
2. Use Iowa State University's publication [PM 1584: Cornstalk Testing to Evaluate Nitrogen Management](#) for end-of-season corn stalk tests and interpretation. Choose sample sites to produce information that will be useful in making N application decisions for next year. For example avoid poor production areas of the field unless the area will be fertilized using variable-rate technologies. The producer may select samples to represent major soil types, landforms, or other field characteristics which impact production. Each composite example should represent no more than 20 acres. See sample lab forms at <http://www.agron.iastate.edu/soiltesting/CSN.pdf>. Additional interpretation guidance is available at: <http://www.extension.iastate.edu/CropNews/2010/0914sawyer.htm>.
3. Use Iowa State University nitrogen application recommendations. For corn use either:
 - a. ISU's [Corn Nitrogen Rate Calculator](#) (on-line) which is described in ISU publication [PM 2015: Concepts and rationale for regional nitrogen rate guidelines for corn](#), or
 - b. [PM 1714: Nitrogen Fertilizer Recommendations for Corn in Iowa](#).
 For other crops consult ISU publications.
4. Use Iowa State University's [PM 287: Take a Good Soil Sample](#) for soil sampling guidance and interpret based on [PM 1310: Interpretations of Soil Test Results](#).
5. It is inappropriate to adjust the nutrient application based on one year of end-of-season corn stalk tissue tests. Demonstrate that the data is part of a long-term decision making framework with a record-keeping system to record and maintain the results along with the agronomic documentation below and relevant growing season records. The use of on-farm field trials using replicated strips is encouraged as it provides the producer the opportunity to compare two or three management options. See [Agronomy Technical Note 6: Adaptive Nutrient Management](#) for details.

Documentation

1. Complete the fertilizer application information in attached table or provide equivalent documentation from existing records.
2. Attach
 - a. Field map
 - b. Test type and results including date
 - c. Soil test
 - d. Manure analysis if applicable
 - e. Weather records and other appropriate growing season records (required only for the end-of- season corn stalk tissue test.

Certification of Enhancement Completion:

Signature of Producer	Date	Fields	Acres or Number
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Field ID	Acres	Crop and place in rotation	Yield	Planned application N-P-K (lbs/ac)*	Fertilizer Product (include grade or analysis and form)	Rate (Specify Units)	Actual application N-P-K (lbs/ac)*	Date Applied	In-season reduction or discussion of how stalk test will change (or not) next year's plan
			Goal:						
			Actual:						
			Total						
			Goal:						
			Actual:						
			Total						
			Goal:						
			Actual:						
			Total						

* Example 120-40-0 would be 120 lbs N, 40 lbs P₂O₅ , and 0 lbs K₂O