



**Iowa Addendum: Water Quality Enhancement Activity – WQL24 – Apply enhanced efficiency fertilizer products**

**Iowa Criteria**

1. Only products that have been adequately tested under agronomic conditions and their efficacy has been concurred with by ISU can be used for this enhancement. Use an agronomically appropriate nitrification inhibitor product containing nitrapyrin or Dicyandiamide (DCD), urease inhibitor product containing N-(n-butyl) thiophosphoric triamide (NBPT), or a polymer coated urea. “Nitrification inhibitors are most useful with preplant nitrogen application on sandy (excessively drained) soils prone to leaching or with fall nitrogen application on poorly drained soils subject to denitrification.” Urease inhibitors may reduce volatilization of urea fertilizers “surface applied to high residue or high pH soils, and when a substantial rainfall or irrigation event is unlikely for several days after application.” (Source: [Agricultural Nitrogen Management for Water Quality Management in the Midwest](#), 2006). Polymer coated urea (ESN was the product tested) has shown some promise with corn.
2. Soil sampling will be done according to Iowa State University’s guide [PM 287 Take a Good Soil Sample](#) and interpreted by guide [PM 1310 Interpretations of Soil Test Results](#).
3. Use Iowa State University nitrogen application recommendations, either:
  - a. the [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](#).
  - c. For other crops consult ISU publications.
4. Calibrate fertilizer application equipment within the last year. For custom applicators or rented equipment, record verbal verification of calibration from the operator or owner. Use this opportunity to discuss how they verify that the fertilizer is uniformly applied. For anhydrous ammonia, calibration will consist of verifying that the applicator equipment is properly plumbed. See [PM 1875: Improving the uniformity of anhydrous ammonia application](#) for guidance. Note that other effective manifolds are now available. At application, be sure anhydrous ammonia is injecting to the proper depth and good soil coverage is provided. See John Sawyer article [Anhydrous application and dry soils](#) for more information.

**Documentation:**

1. Document the calibration of the fertilizer application equipment.

Type of Equipment	Who Calibrated or Did Plumbing Check	Date

2. Complete the fertilizer application information in attached table or provide equivalent documentation from existing records.
3. Attach
  - a. Field map
  - b. Soil test results

**Certification of Enhancement Completion:**

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Signature of Producer                      Date                      Fields                      Acres or Number



Field ID	Acres	Crop and place in rotation	Yield Goal	Yield Actual	Planned application N-P <sub>2</sub> O <sub>5</sub> -K <sub>2</sub> O (lbs/ac)*	Fertilizer Product	Rate (Specify Units)	Actual application N-P <sub>2</sub> O <sub>5</sub> -K <sub>2</sub> O (lbs/ac)*	Date Applied

\* Example 120-40-0 would be 120 lbs N, 40 lbs P<sub>2</sub>O<sub>5</sub> , and 0 lbs K<sub>2</sub>O