

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



**Enhancement Description**

At least 50% of the pre-emergent and early post emergent nitrogen fertilizer and/or phosphorus fertilizers used for crop production must include enhanced efficiency formulations.

**Land Use Applicability**

Cropland, Pastureland

**Benefits**

Nutrient management encompasses managing the amount, source, placement, and timing of the application of plant nutrients and soil amendments.

Nutrient management effectively utilizes available nutrient resources to supply crops with nutrients required to efficiently produce food, forage, fiber, and cover while minimizing environmental degradation.

The use of enhanced efficiency fertilizer products can make nitrogen or phosphorus available to plants over a longer portion of the growing season to match the plant uptake needs. This limits the loss of nitrogen to leaching and denitrification, and can help control soil emissions of the greenhouse gas nitrous oxide. Increased phosphorus availability improves phosphorus use efficiency and reduces the potential for loss by leaching (soluble P) and erosion (P bound to detached soil particles).

**Conditions Where Enhancement Applies**

This enhancement applies to all crop or pasture land use acres.

**Criteria**

Implementation of this enhancement requires:

1. Enhanced efficiency fertilizers, used in the State must be defined by the Association of American Plant Food Control Officials (AAPFCO) and be accepted for use by the State fertilizer control official, or similar authority, with responsibility for verification of product guarantees, ingredients (by AAPFCO definition) and label claims.
2. The use of one or more nitrogen or phosphorus fertilizer products defined as enhanced efficiency fertilizers that are recommended by the state Land Grant University (LGU) and concurred with by NRCS on all treatment acres to supply at least 50% of the LGU recommended nitrogen or phosphorus requirement for the crop(s) grown.
3. Application of nutrients within the LGU recommendations based on soil testing and established yield goals and considering all nutrient sources.



4. Minimize soil surface disturbance during fertilizer placement.

### **Adoption Requirements**

This enhancement is considered adopted when the enhanced efficiency product, for nitrogen or phosphorus enhancement, has been utilized as a fertilizer or fertilizer additive and applied to the land use acre.

### **Documentation Requirements**

1. A map showing where the activities are applied,
2. Enhanced efficiency product used,
3. Treatment acres,
4. Soil test results,
5. Crops grown and yields (both yield goals and measured yield),
6. Calibration of fertilizer application equipment, and
7. Nutrient application rates/amounts and application dates for each treatment area.

Note: In lieu of documenting each individual item listed in the Documentation Requirements, a Certified Crop Advisor plan that contains each of the items may be substituted.

### **References**

AAPFCO. 2011. Association of American Plant Food Control Officials, Official Publication No. 64. AAPFCO Inc., Little Rock, Arkansas.

## Michigan Supplement

### WQL 24

The Michigan Department of Agriculture & Rural Development (MDARD) inspects, tests, and issues licenses and registrations for fertilizer, soil conditioner, and liming materials distributed or manufactured in Michigan. All firms that have their names and address on the labeling or invoicing for an agricultural fertilizer manufactured or distributed in the State of Michigan are required to obtain a Facility License. A facility license is sufficient for mixes specifically requested by the consumer prior to blending and where the consumer is the end-user of the blend. All bagged fertilizers, including packaged custom mixed fertilizers, must be conspicuously labeled with the information found on the MDARD website. Michigan's Fertilizer Law, regulations and testing requirements are consistent with AAPFCO standards.

- Polymer Coated Urea products are eligible for this enhancement. See the following MSU Extension News articles about the use of polymer coated urea products:

Slow Release Nitrogen Fertilizers

[http://news.msue.msu.edu/news/article/slow\\_release\\_nitrogen\\_fertilizers](http://news.msue.msu.edu/news/article/slow_release_nitrogen_fertilizers)

Spring Nitrogen Management for Winter Wheat

[http://news.msue.msu.edu/news/article/spring\\_nitrogen\\_management\\_for\\_winter\\_wheat](http://news.msue.msu.edu/news/article/spring_nitrogen_management_for_winter_wheat)

Winter Wheat Response to Nitrogen

[http://news.msue.msu.edu/news/article/winter\\_wheat\\_response\\_to\\_nitrogen](http://news.msue.msu.edu/news/article/winter_wheat_response_to_nitrogen)

- There are currently no phosphorus products recommended for Michigan.

Written documentation shall include the fertilizer product label and method of application.