United States Department of Agriculture
Natural Resources Conservation Service

Water Quality Enhancement Activity – WQL09 – Apply Phosphorus Fertilizer Below the Soil Surface

Enhancement Name
Apply all phosphorus fertilizer at least 3 inches deep, including manure, or as a 2X2 row starter

Land Use Applicability
This enhancement is applicable on cropland.

Benefits
Nutrient Management
Nutrient management encompasses managing the amount, source, placement, form, 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.

Nutrient management enhancement activities help agricultural production and the environment. Increased management activities will protect and enhance water quality and the biotic community that depends upon clean lakes and rivers.

Nutrient application placement is critical in order for nutrients to be available during critical crop growth stages and to meet crop yield goals. By applying phosphorus either 3 inches deep or as a 2x2 row starter, it is less vulnerable to loss in surface runoff, both in solution and attached to soil particles, therefore reducing the potential loss of nutrients to the environment

Criteria for Applying all Phosphorus fertilizer at least 3 inches deep and/or as a 2x2 row starter

Implementation of this enhancement requires:

1) All phosphorus fertilizer, regardless of form, will be injected at least 3 inches deep below the soil surface, and/or phosphorus applied as a starter fertilizer during the planting operation will be placed in a band 2 inches to the side and 2 inches below the crop seed (commonly referred to as”2x2” placement).
2) Producer must have a current soil test (no more than 3 years old)
3) The amount of phosphorus fertilizer applied as a starter in the 2x2 placement shall not exceed the rate recommended by the Land Grant University (LGU).

4) The total amount of phosphorus applied shall not exceed the rate recommended by the "Land Grant University" (LGU) based on soil testing and established yield goals.
5) Soil surface disturbance must be minimized during phosphorous injection.

Documentation Requirements

1) Documentation for each Treatment area (field) and year of this enhancement describing these items:
   - Treatment acres
   - Target (planned) crop
   - Soil test results
   - Crop yields (both yield goals and measured yield)
   - Phosphorus application rates/amounts and application dates for each treatment area
2) A map showing where the activities are applied.

TENNESSEE SUPPLEMENTAL INFORMATION FOR THIS ENHANCEMENT

WQL09 - Apply Phosphorus Fertilizer Below the Soil Surface

Documentation Form

Producer Name:			**Date:**	
Tract Number(s):			**County:**	
Field Number(s):				
Planned Crop:				
Yield Goal:				
Acres:				
Phosphorus Fertilizer Applied for each treatment area:				
Application Rate of P_2O_5:				
Application Dates:				
Application Method: (at least 3 inches deep or 2X2 row starter)				
Measured Yield:				

UT Soil Testing and Fertilizer Recommendations:

http://soilplantandpest.utk.edu/publications/soilfertilizerpubs.htm