

**Conservation Practice
Standard
Nutrient Management
Code 590**

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NUTRIENT MANAGEMENT

DEFINITION:

Managing the amount, source, placement, form and timing of the application of plant nutrients and soil amendments.

NUTRIENT MANAGEMENT

PURPOSE:

- ✓ To budget and supply nutrients for plant production.
- ✓ To properly utilize manure or organic by-products as a plant nutrient source.
- ✓ To minimize agricultural nonpoint source pollution of surface and ground water resources.
- ✓ To protect air quality by reducing nitrogen emissions (ammonia and NO_x compounds) and the formation of atmospheric particulates.
- ✓ To maintain or improve the physical, chemical and biological condition of soil.

NUTRIENT MANAGEMENT

CONDITIONS WHERE PRACTICE APPLIES:

- ✓ This practice applies to all lands where plant nutrients and soil amendments are applied.

Revision of Nutrient Management Practice Standard

- ✓ National Nutrient Mgt Practice Standard revised in May of 2006.
- ✓ State Practice Standards must be revised within one year, or the national standard must be adopted.
- ✓ MS-Nutrient Management Practice Standard was last revised in 2000.
- ✓ State standard must meet or exceed minimum criteria set at the national level.
- ✓ States can not relax any part of a national standard

Revision of Nutrient Management Practice Standard

- ✓ Draft standard was revised and sent out for review.
- ✓ Standard was reviewed by staff at:
- ✓ MS State University, Plant & Soil Science Dept.
- ✓ USDA – Agricultural Research Service, Animal Waste Mgt. Group
- ✓ USDA – Natural Resource Conservation Service, State, Area, and Field Staff

Revision of Nutrient Management Practice Standard

- ✓ Data from Mississippi based research has been gathered to support decisions and proposed changes to the Nutrient Mgt .Practice Standard
- ✓ Meetings with the MS – Department of Environmental Quality have been held to discuss nutrient management in MS.

CRITERIA

- ✓ A nutrient budget for N, P, and K shall be developed that considers all potential sources of nutrients.
- ✓ Realistic yield goals shall be established based on soil productivity information, historical yield data, level of management and/or local research on similar soil, cropping systems, and soil and manure/organic by-products tests.

Soil Testing

- √ Nutrient planning shall be based on current soil test results.
- √ Current soil tests are those that are no older than three years.

Nutrient Application Methods

- ✓ Application methods to reduce the risk of nutrient transport to surface and ground water, or into the atmosphere shall be employed.
- ✓ Nutrients shall be applied considering the plant growth habits, irrigation practices, and other conditions so as to maximize availability to the plant and minimize the risk of runoff, leaching, and volatilization losses.

Nutrient Application Methods

- ✓ When manure or organic by-products are used, the nitrogen availability of the planned application rates shall match plant uptake characteristics as closely as possible, taking into consideration the timing of nutrient application(s) in order to minimize leaching and atmospheric losses.

Conservation Management Unit (CMU) Risk Assessment.

- ✓ In areas with identified or designated nutrient related water quality impairment, a CMU specific risk assessment of the potential for nutrient transport from the area shall be completed.
- ✓ MS uses the Phosphorus Index (P-I) prescreening procedure to trigger CMU risk assessment

Phosphorus Index (PI) Rating

- √ Low or Medium Risk Sites:
 1. Nitrogen-based manure application plans
- √ High Risk Sites:
 1. Phosphorus-based application plans
- √ Very high Risk Sites:
 1. application rates of P do not exceed 50% of recommended P requirement for crop

Phosphorus Index (PI) Rating

- √ a record of the P index rating for each field and
- √ information about conservation practices and management activities that can reduce the potential for P movement from the site.

Manure Composition

- ✓ broiler litter in Mississippi has a nutrient value of 57 lbs./ton of N, 29 lbs./ton of P, and 59 lbs./ton of K with 19% moisture.

Additional Criteria Applicable to Manure Source (under consideration)

- ✓ Manure and Organic By-Products (excluding sewage sludge or biosolids) shall not be land applied after November 15 and not before February 15.
- ✓ Nov. 15 to Feb. 15 only 30 lbs/acre of N can be applied to cool season forages.
- ✓ Can define a growth curve for application window.

CONSIDERATIONS

- ✓ When animal manure is land applied, copper and zinc should be monitored in the soil. Heavy metals can accumulate in the soil where excessive land application of animal manures is allowed for extended periods of time

Manure Transfer

Manure Transfer Practice Standard 629:

- ✓ MS-USDA/NRCS cost sharing for transporting of broiler litter out of the MS poultry belt.
- ✓ Up 500 tons per farmer/farm under EQIP program
- ✓ Farm must follow Nutrient Mgt. guidelines under Practice Standard 590.

Thank You

