

## **Revision of the NRCS (590) Nutrient Management Standard**

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The process of revision and updating of the NRCS Nutrient Management Standard (590) began in September of 2000. The current standard was developed in the early 1990's and was completed in 1993. Throughout the mid to late 1990's, multiple local, state and federal agencies have entered the nutrient management arena, and with their entrance have presented unique agendas. Advances in the process of nutrient management as well as within the agricultural community have occurred and continue to proceed. The Wisconsin Department of Natural Resources and Department of Ag, Trade and Consumer Protection are also in the process of developing non-point pollution controls that will impact most if not all croplands of the state. The convergence of these factors provided the motivation to review and update the standard to reflect the changes of the past and to meet the intent of the nutrient management policy in the state.

The Standards Over-site Committee directs the process of review and revision. This committee is charged with developing and updating standards developed by the NRCS. Participants in the process of revising the NRCS 590 were selected from a pool of individuals expressing interest in participation from various state, federal and local agencies, as well as private sector individuals.

The revised standard has retained many of the components of the previous version while adding language to clarify and enhance the process of nutrient management and resource protection. The standard retains the three areas of consideration outlined in the original version: General criteria applicable to all fields; Criteria to minimize nutrient entry to groundwater; Criteria to minimize entry of nutrients to surface water. The following provides a brief description of major revisions within each of the above criteria.

### **General Cases Applicable to all Fields**

- The opportunity to define similar nutrient management units. These units may be similar fields grouped and treated the same for planning purposes.
- All fields will be farmed in a manner that the tolerable (T) soil loss is not exceeded. The previous version only required T where manure was applied.
- Nutrient requirements of P & K for a rotation may be combined into a single application.
- First year manure and legume credits are required, second year credits recommended and encouraged.
- Specific language addressing spills and off site movement of manure and other nutrient sources.

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### Criteria to Minimize Entry to Groudwater

- Specific nitrogen management requirements for high permeability soils or soils with less than 20" to the water table: No fall nitrogen fertilizer; Manure applications will require specific management practices, timing and/or rate limitations dependent on soil temperature and period between application and crop uptake.
- Injection or incorporation of manure required where direct conduits to groundwater exist.

### Criteria to Minimize Entry to Surface Water

This section emphasizes phosphorus management issues related to runoff. The nutrient management planner is provided the option of utilizing the new Phosphorus Index or soil test P limitations and associated management criteria.

#### Phosphorus Index (PI) Components

The PI is a tool that provides a measure of the relative potential of a given field to deliver P to surface water. The primary components of this tool include:

- Soil erosion (likely to be determined by RUSLE II)
- Soil test P (to provide total and soluble P)
- Delivery of P from field to concentrated flow (combined effects of sediment delivery, enrichment, buffer effectiveness, etc.)
- Nutrient source characteristics and management (P solubility in manure, methods of nutrient placement and timing, etc.)

These components are to be utilized to develop a numeric rating of each field within the farm or tract, which can be utilized to prioritize nutrient application sites or to evaluate the impacts of different management scenarios.

#### Soil Test P and Location/timing Criterion

This management option provides parameters of soil test P and location/timing considerations for nutrient application from all nutrient sources.

- Soil test P < 50 ppm: Applications up to the N needs of the crop or N removal of legume crops.
- Soil test P 50 – 100 ppm: P applications are limited to the P removal of the crop or crops grown in the rotation.

- Soil test P > 100 ppm: eliminate all P applications if possible unless required by the highest demanding crop in the rotation (typically potatoes). If P application is necessary it shall be less than annual crop removal.
- No manure shall be applied to frozen ground within 300' of surface water or slopes > 9% unless conservation practices are implemented or the area is internally drained.
- Non-frozen grounds may receive nutrients within 300' of surface waters with implementation of management practices appropriate for the site. Those practices include the use of buffers, incorporation, residue management, etc.

The Wisconsin Technical Note associated with the nutrient management standard is also undergoing a major revision and update. Changes to this document are ongoing and will continue into 2002. The standard will site the tech note for specific guidelines and serve as a placeholder for components of nutrient management planning that tend to change as criteria for management practices are refined. The new 590 standard will require a planner to utilize and integrate the tech note to a higher degree in the planning process than the previous version.

As of this writing the new version of the NRCS 590 standard is in the final draft form and will likely be available for implementation for the 2003 growing season. The information provided in this article is based on the current working draft of the standard and is subject to change.