Wisconsin Fertilizer, Aglime & Pest Management Conference

CNMP and DRAFT Revisions to 590

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Nitrogen Based 590 Standard

- Released October 1993
- Combined the manure management components of Waste Utilization (633) to protect surface water with the Nitrogen management requirements to protect groundwater. P limited to 75 lb/acre. $P_2 0_5$ unless incorporated within 72 hours.
- Minor revision March 1999 to emphasize the role of a Nutrient Management Plan.

Limitations of N based 590

- Crop uptake of Nitrogen generally occurs at 2 times the rate of P uptake. N based plans result in a long term build up of soil test P levels.
- EPA clarified that the storm water exemption for land applied manure would be based on “appropriate agricultural utilization of the nutrients” (Revised CAFO permitting rules 12/16/02).

P Based 590

- NRCS 590 national practice standard revised in 2000 to include a requirement for addressing P utilization by crops.
- Wisconsin undertook a 18-month revision of the N based 590 and released the current 590 practice standard in June 2002.
- Minor revision process of the current 590 practice standard started in March 2004.

2004 590 Practice Standard Minor Revision

- Revision of the 06/02 590 was undertaken to:
  - Address minor technical issues identified in the current practice standard.
  - Attempt to coordinate the nutrient management requirements of NRCS cost sharing programs, Livestock Siting Regulations and NR-243 permit conditions.
  - Update the June 2002 Wisconsin 590 practice standard to meet the current NRCS national practice standard.

590 Revision Comment Period

- The revised 590 practice standard has been released as Final Draft dated 11/04.
- Comments will be received by the Standards Oversight Council (SOC) and through the hearing process for ATCP-50 and the Livestock Siting Regulations.
- Anticipate reconvening the SOC 590 team to review the comments by June 1, 2004.

Proposed 2004 Nutrient Management Std. 590

Do not apply nutrients on:

- fields with soil loss > Tolerable (T)
- surface water, concentrated flow
- non-farmed wetlands
- sinkholes
- nonmetallic mines
- within 50 ft. of potable water wells
- non-harvested vegetative buffers
- other lands where vegetation is not removed (except for establishment and maintenance)

Nutrients shall not runoff the field during or immediately after application.

Proposed 2004 Std. 590
Application Restrictions on frozen or snow covered ground

- Do not apply within 1000 ft of lakes & 300 ft of perennial streams (SWMQA) or other areas contributing runoff to surface or groundwater conduits as identified in an approved conservation plan.
- Do not apply in excess of P removal or 7000 gallons/acre.
- Do not apply within 200 ft upslope of wells, sinkholes, gravel pits, surface fractured bedrock (must incorporate in 72 hours).
- Do not apply to slopes >9%, limit raised 12% if contoured or contour stripped.
- No N & P commercial fertilizer applications to frozen soils (except for grass pastures & on winter grains).

Non-Frozen soil within 1000' of lakes & 300' of perennial streams

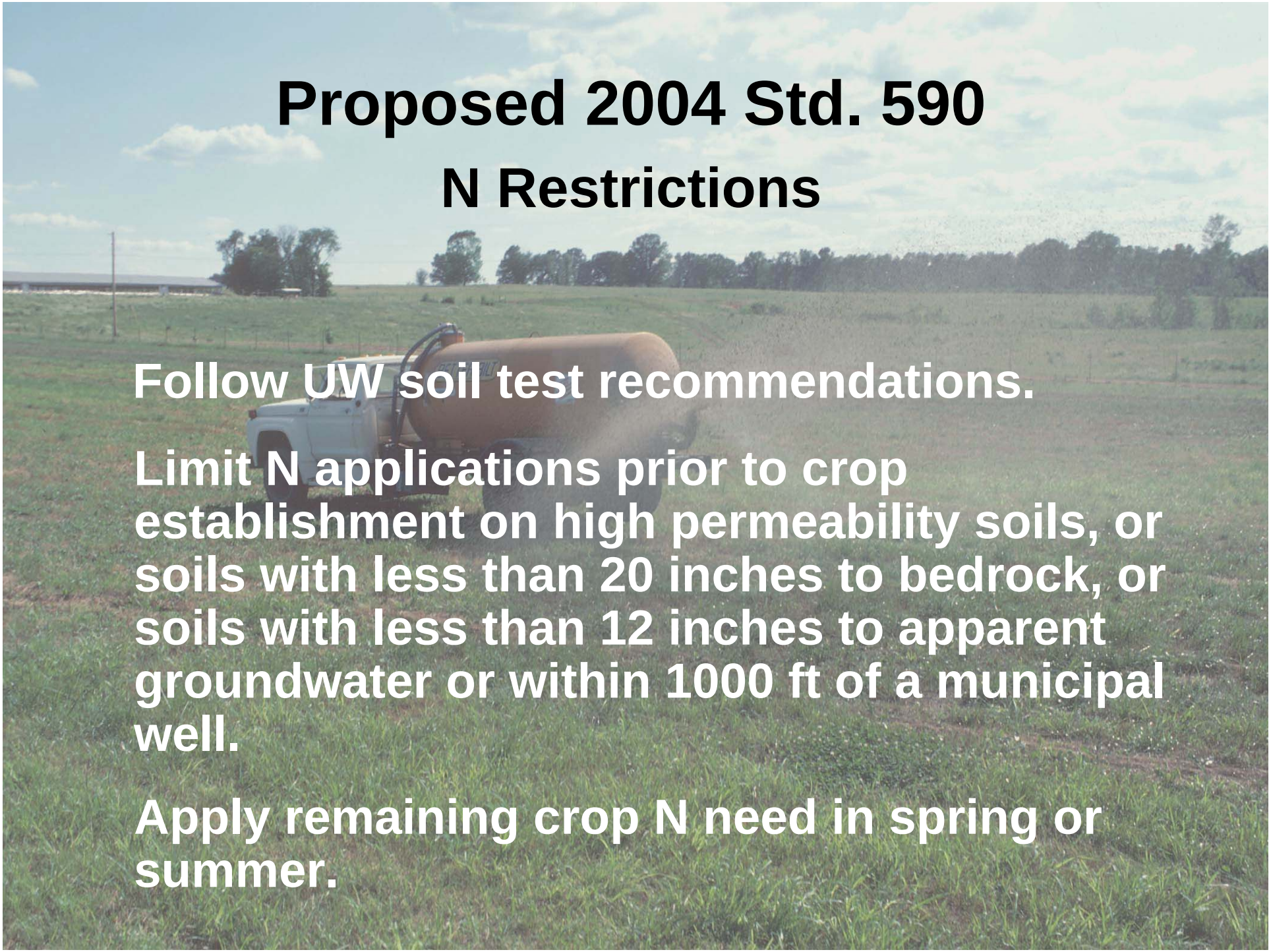
Table 1.
Maximum Unincorporated Liquid Manure Application Rate on Unsaturated Soil in the SWQMA.

	Dry soil rate gal./ac.	*Dry soil rate gal./ac.*	*Wet soil rate gal./ac.*	*Wet soil rate gal./ac.*	
% Crop Residue Cover	**>30%**	**<30%**	**> 30%**	**<30%**	**In Field Wet Soil Description Upon Squeezing**
Fine soil texture	10,000	6,000	5,000	3,000	Easily ribbons out, has slick feeling.
Medium soil texture	15,000	10,000	7,500	5,000	Forms a ball, is very pliable, slicks readily
Coarse soil texture	20,000	14,000	10,000	7,000	Forms weak ball, breaks easily

Non-frozen soil within 1000’ of lakes & 300’ of perennial streams

When manure applications occur, including unincorporated liquid, use one or more of the following practices:

1. **Install or maintain permanent vegetative buffers.**
2. **Maintain a minimum of 30% crop residue or vegetative cover.**
3. **Incorporate nutrients in 72 hours (meet T).**
4. **Establish cover crops promptly following application.**



Proposed 2004 Std. 590

N Restrictions

Follow UW soil test recommendations.

Limit N applications prior to crop establishment on high permeability soils, or soils with less than 20 inches to bedrock, or soils with less than 12 inches to apparent groundwater or within 1000 ft of a municipal well.

Apply remaining crop N need in spring or summer.

Other Proposed Changes

- Require a second year legume credit.
- Plant tissue analysis has been added for use with crops where an acceptable soil test protocol has not been established (cranberries and orchard crops).
- Soil Quality and Air Quality concerns added when identified as a conservation planning resource concern.

P Management Options
Soil Test P vs. P Index

- Soil Test P Management
  - As soil test P levels increase additional P applications are restricted.
  - Allows manual development of plan.
  - Less responsive than the P index.
- P Index
  - Estimates risk of P delivery to surface waters.
  - Requires computer software to calculate (SNAP+).

SNAP + Update

- SNAP+ software
  - Efficient method to balance nutrient applications with crop need.
  - Provides a record of nutrient applications and tracking of nutrient credits.
  - Provides an estimate of soil erosion rates during the crop planning process (SNAP+ soil erosion calculations will be accepted as demonstrating soil loss to T for NRCS programs).

SNAP + Update

- Final software programming to occur January 2005.
- Release for public use February 2005.
- Evaluate Phosphorus Index outputs with data from Discovery and Pioneer Farms.
- Evaluate user comments and develop a strategy for refinement of SNAP+, June 2005.

Comprehensive Nutrient Management Planning

- CNMP training for private sector initiated by UW Extension's Kevin Erb.
  - Improved curriculum and reference materials.
  - Consistent training for agency and private sector employees.
  - May eventually lead to a TechReg TSP certification similar to the Tennessee State University process.
  - Develop a consistent quality assurance process similar to QAT for 590 plans.

Comprehensive Nutrient Management Planning

- CNMP's are currently required for EQIP program participants who receive cost sharing for a manure storage practice.
  - CNMP is not currently a stand alone cost sharable practice.
  - TSP funding for development of a CNMP in Wisconsin is currently limited to development of the 590 Nutrient Management Plan component.
  - NRCS may contract for private sector assistance with the CNMP workload. The solicitation will establish the minimum qualifications that respondents must possess.

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