Identifying the Dominant Critical Soil for NM Planning
& Other Plan Review Issues

– Tolerable soil loss
– N recommendations
– Spreading restrictions
– Spreader calibration

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www.datcp.state.wi.us/arm/agriculture/land-water/conservation/nutrient-mngmt/planning.jsp
Nutrient Management - What’s New?

• 1.6 million acres NM plans reported in 2008 (up 35% from 2007)

• 22 of 25 NM plans reviewed by the QAT used Snap Plus (up 14% from last year)

• 18 of 25 NM plans had every field meeting T (down 7%)
  – Plan whole rotation
  – RUSLE 2 update *Alfalfa* (grassy, yr 3 +)
  – Reflect soil disturbance *no-till crops with incorporated manure*

• Preliminary 2009 DATCP grants to:
  – $2.2M LCDs cost share for farmers - $1 M lapse for 09
  – $520K Implementation support
    • UW-Soils UW-NPM UW-Discovery Farms MALWEG Technical Colleges
2008 NM plans cover about 18% of WI cropland

NM Plan Checklists were submitted for 62 counties in 2008, 54 counties in 2006.

Marathon reported ~148,000 NMP acres, 39,000 acre increase from 2007 (52% of cropland).

Brown ~104,000 acres (68% of cropland)

Door~39,000 acres (47% of cropland)

Substantially more acres reported in 2008 than in 2007:

Manitowoc 23K
Kewaunee 20K
Dodge 16K
Chippewa 15K
Brown 14K
Walworth 11K
Columbia 10K
1. On Field 19, what is the dominant critical map unit for the field?

a. ThB
b. ThB2
c. HmC2
d. HmB2

11 of 25 plans, 44%, used the proper soil type.
2. On Field 18, what is the dominant critical map unit for the field?

a. ThB
b. ThB2
c. HmC2
d. HmB2
3. On Field 5, what is the dominant critical map unit for this field?

a. WeB
b. SaC
c. SaB
Which field is mostly farmed on the contour?

a. 3  b. 10  c. 14
5. With only fertilizer and no manure applied to this field, does this field comply with 590 Std.'s P applications?

- a. yes
- b. no

17 of 25 plans included rotational P, a 36% improvement from 2007.
Meeting P Recommendations

- Corn has 10 lbs. P2O5/ac excess. According to A2809 p.41, "For soils testing excessively high the application rate is zero, with the exception of potato and corn which may respond to an application of 20-30 lb/ac each of P2O5 and K2O as starter fertilizer."

- Snap bean, soybean exceed P2O5 recommendations by 32 lbs. P2O5/ac over the 5 year crop rotation from 2008-2012.
Meeting P Recommendations

• 2003 & 2008 soil tests
• 13 of 24 fields increased soil test P levels by an average of 47% to over 50 PPM P
• 4 of these 13 fields over 100 PPM P in 2003, increased an average 51%

* % Increase soil test P to > 100 PPM P in 5 yrs
% Increase soil test P to > 50 PPM P in 5 yrs
Tracking Implementation

A NM plan review with 2003 and 2008 soil tests

• Partial list of applications since 2004
  – Need real nutrient application log
    1st year in Snap Plus for this plan

• 2 of 24 fields plainly show not meeting T
  – Plan for T

• Liquid winter applications of 19,500 gal/ac on restricted fields exceed 7,000 gallons/ac winter allowable rate

• Solid winter applications exceeded the P removal of next year’s crop by 10 lbs P2O5/ac
  – Tie NM plan to maps and meet 590 for winter applications
Meeting N Recommendations

15 of 25 plans met N recommendations on every field, a 14% decline from 2007.

<table>
<thead>
<tr>
<th>Field Name: BROWNS EAST</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td>Crop</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Potatoes, late harvest</td>
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<tr>
<td>Corn grain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snap Beans early plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Corn grain</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Soybeans 30-36 inch</td>
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<tr>
<td>Yield Goal</td>
<td>451-550</td>
<td>191-220</td>
<td>4.6-5.5</td>
<td>191-220</td>
<td>56-65</td>
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<tr>
<td>Tillage</td>
<td>Field Cultivation, cove</td>
<td>Field Cultivation, cove</td>
<td>Field Cultivation, cove</td>
<td>Field Cultivation, cove</td>
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<td>Irrigation / MRTN info</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Season notes</td>
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<td>(lbs/acre)</td>
<td>N 75 280</td>
<td>N 205 0 30</td>
<td>N 60 0 100</td>
<td>N 205 0 30</td>
<td>N 0 0 20</td>
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<td>Recommendation</td>
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<td>295</td>
<td>10 48</td>
<td>69 16 95</td>
<td>216 10 48</td>
<td>16 16 64</td>
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<tr>
<td>Total plant-available</td>
<td>295</td>
<td>11 10 18</td>
<td>216</td>
<td>9 16</td>
<td>216</td>
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<tr>
<td>Over(+) / Under(-) UW Rec</td>
<td>75 2 25</td>
<td>9 16 -5</td>
<td>11 10 18</td>
<td>11 10 18</td>
<td>11 10 18</td>
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<tr>
<td>Annual Total PI</td>
<td>0.3</td>
<td>0.2</td>
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</table>
Meeting N Recommendations

• Are higher applications of N being used to compensate for less than optimal timing of N applications?

**Excess N** according to limits set in the Wisconsin Nutrient Management Standard 590:

- Overapplication of manure or fertilizer N of 75 lbs N/acre.
- On irrigated fields, apply a majority of N after crop establishment or use a nitrification inhibitor with ammonium forms of N.
Meeting N Recommendations

snap bean, corn, potato, corn, soybean rotation

• Plan narrative - *All of the crops follow UW recommendation except for the N recommendation for potatoes. The rates used for potatoes are higher than UW recommendations. The increase in N is supported by a history of petiole sampling. Each year the samples show a deficiency in N even at the current over application rates.*

Are N applications based on past experience from other growing seasons?

• A2809 says *Potato N rates include N in starter fertilizer. Reduce N rate by 25% if petiole nitrate test is used to guide in-season N applications.* In most cases, less N is used with small amounts provided more often to reduce N losses and the A2809 N recommendations are not exceeded.
Place reminders of spreading restrictions in the Field screen notes. This will show up on the Snap Plus Cropping Screen and in the NM Plan Sorted by Crop Report to help follow 590.

<table>
<thead>
<tr>
<th>Field #</th>
<th>FSA Field #</th>
<th>Size (acres)</th>
<th>County</th>
<th>Soil Map Symbol</th>
<th>Soil Series Name</th>
<th>N Restriction</th>
<th>Field Slope (%)</th>
<th>Field Slope Length (ft)</th>
<th>Below Field Slope to Water (%)</th>
<th>Distance to Water (ft)</th>
<th>Rotation Start Year</th>
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<tr>
<td>13.2</td>
<td>WI-Waukesha</td>
<td>HmC2</td>
<td>HOCHHEIM</td>
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<td>301 - 1000</td>
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<td>11</td>
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<td>200</td>
<td>0 - 2</td>
<td>0 - 300</td>
<td>2005</td>
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</tr>
</tbody>
</table>

Field info text input.

Use this data entry dialog box to enter any relevant field specific information.

No winter applications.
Well Spreading Restrictions

• 10 of 25 plans, 40%, mention well restrictions, including neighbors
• 13% increase from last year
• Incorporate spreading restrictions into the plan.
• Account for all the manure on all farms in the operations.
• Amend rotations and applications with what really was done.

http://mmas-mapping.soils.wisc.edu/
Spreader Calibration

- 9 plans, 36%, calibrated manure applications to account for speed and manure.
- Snap Plus now includes a place for spreader calibration.
NM Plan Review Summary

- **Dominant critical soil** is the most erosive soil that covers 10% or more of the field.
- **T and P management** is for the whole rotation. Update plans with apps, rotations, and tillage that are used and meet T.
- **N applications** need to meet 590 and UW recs.
- **Spreading restrictions** from maps need to be part of the plan.
- **Know what’s applied** calibrate spreaders and update plan.
When Are Producers Required to Have a Nutrient Management Plan?

- When offered [70%] cost-share for NM
- When accepting manure storage cost-share
- When participating in farmland preservation program
- When regulated under a county ordinance for manure storage or livestock siting
- When regulated under a DNR WPDES permit
- Are required to prevent or mitigate imminent harm to waters of the state as an emergency or interim response to a grossly negligent pollution discharge