Moving Ahead with the Phosphorus Management Tool

November, 2014
On November 14, Governor directed MDA to introduce a proposed regulation to implement a phased-in Phosphorus Management Tool. Goal has been to adopt a regulation as part of his administration. Fulfills a MD commitment to EPA under the TMDL/WIP to update the current P risk assessment tool – PSI.
Moving Ahead with the PMT

- Addressing concerns related to:
  - Changes in required management
  - Impacts to the “bottom line”
  - Market value for manure as a commodity
  - Adequacy of infrastructure
    - Manure transportation and handling
  - Perceptions about P availability based on soil P FIV
    - Impacts to yields
  - Crops with high P diets
  - Adopting new technologies
A Phased Approach
- Phased in time
- Phased in “risk”
- Phased in management requirements
Moving Ahead with the PMT

RISK PHASING

- Need to divide the farms with the greatest impact into separate groups ("tiers") and phase in over a staggered time frame.
- Tiers to be defined based on soil test P FIV
- Determine an "average P FIV level" for each operation.
- Based on all fields with soil P FIV >150
- Calculation is done once and only used to determine which group the operation falls in.
Tier C =

- Average soil P FIV >450
- First to begin transition
- Provided the longest time frame
  - 5 years
Tier B =
- Average soil P FIV 300-450
- Second group to start
- Staggered to begin a year later
- 4 years to transition
- Tier A tier =
  - Average soil P FIV 150-300
  - Third group to transition
  - Three year schedule
PMT changes management requirements for certain farms—some more than others.

Sub-surface drainage primary driver
- Eastern shore impacts
- Coincides with the poultry operations and high soil P levels

Distance to surface water
- Affects farms in other parts of the state.

Need to build in “incremental change”
- Especially for operations now scoring “HIGH” (>100) in the PMT calculation.
Moving Ahead with the PMT

MANAGEMENT PHASING

- Need to provide a means to gradually change farm management current PSI to the PMT.
- Create interim or “transitional management” requirements based on PMT score.
- LOW (0-50)/ MEDIUM(50-100)/HIGH (>100) all mean something different during transition.
- Create a three-step process for transition.
  - PSI → Transition Management Phase I (TM 1)
  - TM 1 → Transition Management Phase II (TM 2)
  - TM 2 → PMT
<table>
<thead>
<tr>
<th>PMT Risk Category</th>
<th>Transition Management Phase I</th>
<th>Transition Management Phase II</th>
<th>PMT</th>
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</thead>
<tbody>
<tr>
<td>LOW</td>
<td>N-Based (not to exceed 3 Yr. C.R.)</td>
<td>3 Yr. Crop Removal</td>
<td>3 Yr Crop Removal</td>
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<tr>
<td>MEDIUM</td>
<td>3 Yr Crop Removal P</td>
<td>2 Yr Crop Removal</td>
<td>1 Yr Crop removal</td>
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<tr>
<td>HIGH</td>
<td>1 Yr Crop Removal</td>
<td>50% of 1 Yr C.R.</td>
<td>No Addtl. P</td>
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</tbody>
</table>
6 year phase in

- February 2015 – regulation effective
- Crop Year 2015 and 2016 –
  - Run both PSI and PMT when developing plans
  - Provide farmer management changes to be required under PMT.
  - Calculate ‘Average soil P FIV” value and report to MDA by 9/30/16.

- Crop Year 2017
  - Tier C begins a 5 year transition
  - Fully implementing PMT by 2021
Crop Year 2018
- Tier B begins a 4 year transition
- Fully implementing PMT by 2021

Crop Year 2019
- Tier A begins a 3 year transition
- Fully implementing PMT by 2021

Crop Year 2021
- All operations are fully implementing PMT
### 6 YEAR TRANSITION SUMMARY

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</thead>
<tbody>
<tr>
<td>Tier C - Avg. FIV P 450 and above</td>
<td>PSI</td>
<td>TM1</td>
<td>TM1</td>
<td>TM2</td>
<td>TM2</td>
<td>PMT</td>
<td></td>
</tr>
<tr>
<td>Tier B - Avg. FIV P 300-450</td>
<td>PSI</td>
<td>PSI</td>
<td>TM1</td>
<td>TM2</td>
<td>TM2</td>
<td>PMT</td>
<td></td>
</tr>
<tr>
<td>Tier A - Avg. FIV P 150 - 300</td>
<td>PSI</td>
<td>PSI</td>
<td>PSI</td>
<td>TM1</td>
<td>TM2</td>
<td>PMT</td>
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</tbody>
</table>
Once the PMT is implemented **AND** the PMT risk category is calculated as “HIGH”:

- Certified organic commodities may receive P at 1 Year Crop Removal Rate
- Crops exhibiting phosphorus deficiency using tissue analysis may receive additional P.
  - Excepting cold, wet conditions
  - May apply up to 25% of 1 Year Crop Removal
High P feeders may receive a starter P application.

- 25% of 1 Year Crop Removal Rate
- Applies to vegetable and tobacco crops with 40 lb. P recommendation at “Optimum” and “Excessive” soil fertility levels

Alternative technology

- Operations adopting technologies reducing P content by at least 75% may apply resulting organic sources at 50% of 1 Year Crop Removal.
Moving Ahead with the PMT PROCESS

- Submit to AELR Committee
  - November 14
- Publish in the Maryland Register
  - December 1
- 30 day comment period
- Adopt 45 days after publication
  - January 16, 2015
Copies of the proposed regulation and AELR package available on MDA’s website:

www.mda.maryland.gov

Under “Hot Topics”