9-13-2004

Soil sampling for future manure management plans

Angela M. Rieck-Hinz
Iowa State University, amrieck@iastate.edu

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Soil sampling for future manure management plans

Abstract
By the time this newsletter hits your mailbox, harvest season will have begun in Iowa and soil sampling will follow shortly behind the combines. Soil sampling is just one part of the soil testing process that eventually leads to fertilizer recommendations, and now soil sampling will be a requirement for those fields receiving manure as part of a state-required manure management plan using the new P-index plans as regulated by the Iowa Department of Natural Resources (IDNR).

Keywords
Agronomy

Disciplines
Agricultural Science | Agriculture | Agronomy and Crop Sciences | Soil Science
Soil sampling for future manure management plans

By the time this newsletter hits your mailbox, harvest season will have begun in Iowa and soil sampling will follow shortly behind the combines. Soil sampling is just one part of the soil testing process that eventually leads to fertilizer recommendations, and now soil sampling will be a requirement for those fields receiving manure as part of a state-required manure management plan using the new P-index plans as regulated by the Iowa Department of Natural Resources (IDNR).

All service providers, such as co-op agronomists who provide soil sampling services and crop and livestock producers who are applying manure from a confinement facility with more than 500 animal units and required to have a manure management plan, should be aware of the following requirements. These requirements are effective for producers once they are required to file a P-index manure management plan.

See the implementation schedule in Table 1. For many producers this requirement for soil sampling will phase in from October 2004 throughout the next 4 years, but because soil samples are now required once every 4 years, the samples you take this fall may be used in your manure management plan for the P-index as a requirement in the next 2 to 4 years. If your current soil samples do not meet the following requirements and you are required to file a new manure management plan this fall, you will have 1 year to meet the soil sampling requirements after the plan is approved.

- Soil samples shall be taken from each field in a manure management plan at least once every 4 years.
- Each sample must be analyzed for phosphorus (P) and pH.
- Soil samples may be taken by soil map unit, management zone, or grid sampling. Please see the Iowa State University Extension publication PM 287, Take a good sample to help make good decisions [1].
- Each soil sample must be a composite of at least 10 cores from the sampling area.
- Each core taken must represent the top 6 inches of the soil.
- Each soil sample can represent no more than 10 acres, unless the size of the field is 15 acres or less, then only one sample is necessary. If manure is applied at a phosphorus-based rate and the P-index is Very Low, Low, or Medium between sampling years, the sample can represent up to 20 acres. See Table 2 for IDNR P-index categories.
- Soil analysis must be completed at a laboratory enrolled in the Iowa Department of Agriculture and Land Stewardship’s soil testing certification program.
- If soil pH is greater than or equal to 7.4, the Bray P1 extraction method is not suitable for analysis.

The most difficult challenge in meeting the soil sample requirements will be the decision on
how to divide fields up for sampling. Some areas of the field may be a large risk for erosion, consequently driving up the P-index rating. These areas may be subdivided into separate fields or management area and soil sampled separately so that future applications of manure can be made to the remainder of the field. Producers are encouraged to discuss defining fields with their service providers and to work with service providers who have been trained to use the P-index.

Table 1. **Implementation dates for P-index manure management plans***

<table>
<thead>
<tr>
<th>Original MMP Submitted</th>
<th>P-Index-Based MMP Update Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to April 1, 2002</td>
<td>First update after August 25, 2008</td>
</tr>
<tr>
<td>Between April 1, 2002 and October 24, 2004</td>
<td>First update after August 25, 2006</td>
</tr>
<tr>
<td>On and after October 25, 2004</td>
<td>Upon submittal</td>
</tr>
</tbody>
</table>

*Adapted from the Iowa Department of Natural Resources

Table 2. **IDNR P-index categories**

<table>
<thead>
<tr>
<th>Very Low (0-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (&gt;1-2)</td>
</tr>
<tr>
<td>Medium (&gt;2-5)</td>
</tr>
<tr>
<td>High (&gt;5-15)</td>
</tr>
<tr>
<td>Very High (&gt;15)</td>
</tr>
</tbody>
</table>

This article originally appeared on page 111 of the IC-492(20) -- September 13, 2004 issue.

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