

Nutrient Management Plan

Management tools to help you develop a nutrient management plan and use the Iowa Phosphorus Index.

What is a nutrient management plan?

A nutrient management plan is defined in the USDA Natural Resources Conservation Service (NRCS) Standard (590) as, "Managing the amount, source, placement, form and timing of the application of nutrients and soil amendments." The NRCS nutrient management standard (590) is the guidance provided to NRCS field staff and other planners when providing technical assistance to producers participating in voluntary programs. The purpose of the 590 standard is to meet the nutrient needs of the crop to be grown, while minimizing the loss of nutrients to surface and ground water. The purposes of a nutrient management plan are:

- To adequately supply nutrients for plant production.
- To properly utilize manure or organic by-products as a plant nutrient source.
- To minimize agricultural nonpoint source pollution of surface and ground water resources.
- To maintain or improve the physical, chemical and biological condition of soil.

Why have a nutrient management plan?

A nutrient management plan will help you manage commercial fertilizer and animal manure input costs. It will also help you do your part to improve Iowa's surface water quality. A nutrient management plan for

Key Points

- What is a nutrient management plan?
- Why have a nutrient management plan?
- What is the Iowa Phosphorus Index?
- Basic components of a nutrient management plan.
- Resources.

nitrogen (N), phosphorus (P) and potassium (K) should consider all potential sources of nutrients including, but not limited to:

- N contributions from legumes and crop rotations
- Animal manure and organic by-products
- Waste water
- Commercial fertilizer
- Soil nutrient availability
- Irrigation water

What is the Iowa Phosphorus index?

The Iowa Phosphorus Index is a tool used to assess the potential

for P movement from fields to surface water. It uses an integrated approach that considers soil and landscape features as well as soil conservation and P management practices in individual fields. The USDA Natural Resources Conservation Service (NRCS) worked with Iowa State University (ISU) research staff and other agencies and organizations to develop the P Index and provide management alternatives for the nutrient management 590 standard.

Basic components of a nutrient management plan.

The following components should be included in a nutrient management plan:

- An aerial photograph or map, and a soil map of the field.
- A current and/or planned crop production sequence or crop rotation.
- Results of soil, plant, water, manure or organic by-product sample analysis.
- Realistic yield potentials for crops in the rotation.
- A quantification (listing) of all nutrient sources.
- Recommended nutrient rates, timing, form and method of application including incorporation timing for the time period of the plan.

- Location of designated sensitive areas or resources and the associated nutrient management restriction.
- Guidance for implementation, operation, maintenance, record keeping, and complete field-by-field nutrient budget for nitrogen, phosphorus, and potassium for the rotation or crop sequence.
- A statement that the plan was developed based on current standards and any applicable Federal, state, or local regulations or policies; that changes in any of these requirements may necessitate a revision of the plan.

Resources.

Contact your Soil and Water Conservation District office (also available on the Iowa NRCS Web Page, (<http://www.ia.nrcs.usda.gov>) for copies of:

- Nutrient Management (590) Standard
- Iowa Technical Note 25, Iowa Phosphorus Index
- Background and Basic Concepts of the Phosphorus Index
- Phosphorus Index Calculator (Excel Spreadsheet)
- Waste Utilization Standard (633)

Contact your ISU county Extension office for copies of the following publications, or download them from the ISU Continuing Education and Communications Web Page (<http://www.extension.iastate.edu/pubs/>)

- PM 1428c, *Protecting our water quality with effective soil sampling*
- PM 1310, *Interpretation of soil test results*
- PM 1714, *Nitrogen fertilizer recommendations for corn in Iowa*
- PM 1688, *General guide for crop nutrient recommendations in Iowa*
- PM 869, *Fertilizing pasture*
- PM 1584, *Cornstalk testing to evaluate nitrogen management*
- PM 1811, *Managing manure nutrients for crop production*
- PM 1558, *How to sample manure for nutrient analysis*

The above offices can also provide technical assistance in developing a nutrient management plan.

Best Management Practices, or BMPs, utilize the most effective and practical means available to reduce or prevent water pollution from farm operations. BMPs are selected based on assessment, analysis of the impact of alternative practices and their economic considerations. They are implemented using current available technologies, management skills and available resources. BMP information sheets available from ISU Extension include:

- NMEP 1, *Soil Testing*
- NMEP 2, *Phosphorus Application*
- NMEP 3, *Manure Resources*
- NMEP 4, *Residue Management*
- NMEP 5, *Crop Rotation*
- NMEP 6, *Crop Yields*
- NMEP 7, *Nitrogen Application*
- NMEP 8, *Nutrient Management Plan*
- NMEP 9, *Equipment Calibration*
- NMEP 10, *Conservation Reserve Program*
- NMEP 11, *Conservation Practices*

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