Nutrient Management Planning In Iowa

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- State - Regulatory
  - IDNR
    - **Manure Management Plans (MMPs)**
- State and Federal- Voluntary
  - IDALs and NRCS
    - **Nutrient Management Plans (NMPs)** and
    - Comprehensive Nutrient Management Plans (CNMPs)
- Federal - Regulatory
  - EPA and DNR -
    - National Pollutant Discharge Elimination System Permit (NPDES) - Current - no nutrient plans
    - CNMPs and Permit Nutrient Plans (PNP) Proposed

Manure Management Plans

- **Administered by Iowa Department of Natural Resources (IDNR), Chapter 65**
- **Required of Confinement Feeding Operations of designated size**
  - **> 200,000 lbs swine or poultry**
  - **>400,000 lbs. bovine**
  - **constructed, expanded after May 31, 1985**
  - **also, construction permits**
  - **does not exempt dry systems**

Manure Management Plans

- **Must be submitted on *designated forms***
  - **forms available on Internet, DNR Field Offices or via IMMAG**
- **Deadline for submission was 11/15/99**

- **DNR still accepting plans, however, after 9/18/01 no manure application until plan approved (60 days)**

Manure Management Plans

- **Anyone can develop these plans**
  - **no certification required**
  - **currently a list of 40 indicate they are developing manure management plans in Iowa**

Requirements

- **Owner**
- **Contact person**
- **Location of operation**
- **Animal species and manure structures**
- **Animal weight capacity**
  - **maximum number of animals**
  - **average weight of animals**

Requirements

- **Calculations-land area**
- **Annual nitrogen production**
- **Crop yield, usage rates, schedule**
- **Method and timing of application**
- **Location of land application**
- **Annual animal and manure production**
- **Soil loss controls**

Calculations for land area

- **acres needed for manure application**

  total nitrogen available / crop usage rate

Nitrogen available

N produced X appl. loss X availability

- **Nitrogen produced (book values or analysis)**
- **Nitrogen application loss factor based on application method**
- **% availability 1st yr, 2nd yr, 3rd yr**

Crop usage rate

- **Optimum yield**

Adjusted by the following

- legume nitrogen credits

- commercial nitrogen

- manure nitrogen carryover

Optimum Crop Yield

- **Iowa Ag Statistics county averages**
- **County average-FSA catastrophic crop insurance program**
- **Multi-peril crop insurance proven yield**
- **Individual farm proven yield records**
- **FSA proven yield**
- **Soil survey yield records**

Location of Manure Application

- **Owned**
- **Rented**
- **Written agreement**
- **all need plat map and aerial photos**
- **mark unsuitable or restricted areas**

Soil Loss Control

- **If applying manure on Highly Erodible Land need to attach a copy or summary of a conservation plan**
- **methods, structures, practices to control soil erosion**
- **plan approved by local soil and water conservation district**

Updates

- **Current MMP kept at the site of the operation**
- **Document changes in plan**
- **Not required to submit revisions to IDNR**

Record keeping

- **Maintained for 3 years or length of rotation whichever is greater**
- **Method of application**
- **Date manure applied or sold**
- **Location of field and acres**
- **Manure application rate**

NRCS Nutrient Management Standard (590)

- **NRCS has NMP standard since 1990. Revised March 2001**
- **Nutrient Management Plan is not a Stand alone plan**
- **It is meant to be planned and applied as part of a conservation system**

What Is It?

- **Managing:**

  - Amount

  - Source

  - Placement (location, method)

  - Form

  - Timing of nutrient application

  To: Achieve realistic yields and minimize N&P movement to surface and groundwater

- **Applies to:**
  - **Technical assistance (TA) provided by NRCS employees (Goal: assist producer to implement a nutrient management plan.)**
  - **Technical assistance provided by Third Party vendors when providing TA for NRCS programs.**

PURPOSE

- **To budget and 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 conditions of soil.**

Summary of Requirements

- **Soil Test**
- **Analysis According to IDALS**
- **Nutrient Application**
  - **According to ISU**
  - **Realistic Yield Potential**
  - **Account for nutrient from legumes, manure, or organic nutrient sources**

Requirements Continued

- **Manure analysis or book values**
- **Calibration of equipment**
- **Frozen, snow covered, saturated ground**
  - **runoff control**

Additional Criteria

- **Addresses environmental concerns with application of nutrient over and above the needs of the crop to be grown.**
- **<u>Manure Application Concerns</u>**
  - **-Defines when Planning for N or P**
  - **-Describes the Phosphorus Index**
  - **-Criteria for sensitive areas**

Additional Criteria

- **Surface & Ground Water Concerns**
  - **Defines Impaired waterbodies**
  - **When PI is to be used**
    - **High Soil Test Phosphorus**
    - **Soil Loss Exceed Tolerable Levels**
  - **Criteria for sensitive areas**

Additional Criteria

- **<u>Physical, Chemical, and Biological Conditions of Soil</u>**
  - **Soil Structure**
  - **Chemical properties**
  - **Biological conditions**

  (Example Soil Compaction)

National Option for Phosphorus Risk Assessment

- **Determined by three methods**
  - **Soil Test (least sensitive to site conditions)**
  - **Soil Phosphorus Threshold (soil specific)**
  - **P-Index (more sensitive to site conditions)**

Iowa Phosphorus Index

- **Component in NRCS Nutrient Management Standard (590)**
- **Voluntary Program when Technical Assistance is provided by NRCS or for Program where NRCS has technical responsibility. (not part of Iowa rules)**

When is Phosphorus Risk Assessment Required

- **Animal Manure or Organic By-Products applied**
- **ID as designated P related impairment**
- **Current Soil Test P is very high**
- **Soil Losses exceed T**

NUTRIENT MANAGEMENT PLAN

- **Aerial photo, map, and soil map**
- **Current and planned crop rotation**
- **Results of soil, plant, manure, or organic by-product analyses**
- **Realistic yield potentials**
- **Quantification of all nutrient sources**
- **Recommended nutrient rates, timing, form and method of application, and incorporation**

NUTRIENT MANAGEMENT PLAN CONT...

- **Location of designated sensitive areas or resources and the associated nutrient management restrictions**
- **Guidance for implementation, operation, maintenance, and recordkeeping**
- **Complete nutrient budget for nitrogen, phosphorus, and potassium for the rotation**

NUTRIENT MANAGEMENT PLAN CONT...

- **Statement that plan was developed based on the requirements of the current Iowa NRCS standard and any applicable federal, state, or local regulations and any change in any of these requirements may necessitate a revision of the plan.**

Certification

- **State Conservationist will establish and implement a process for:**
  - **Certified Conservation Planner**
    - **Develop a CNMP, conservation plan**
  - **Certified Specialist(s)**
    - **Develop specific element(s) of a CNMP**
    - **Linked to conservation practice standard(s)**

65 vs 590

- Confinement (roofed)
- nitrogen based
- no soil test required
- designated forms
- no certification
- no equip. calibration

- AFO requesting assist
- P-Index (N or P)
- soil test
- no forms
- approved by certified
- equip. calibration

Iowa Manure Management Action Group (IMMAG)

http://extension.agron.iastate.edu/immag

Iowa NRCS

www.ia.nrcs.usda.gov