



# Odor and Nutrient Management

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## Your Phosphorus Index Manure Management Plan

by Angela Rieck-Hinz, Department of Agronomy,  
Iowa State University

If you have a confinement feeding operation with more than 500 animal units, or if you have an open lot with more than 1,000 animal units (or designated as a Concentrated Animal Feeding Operation or CAFO), state law requires you to implement the Iowa Phosphorus (P) Index as part of your manure or nutrient management plan. This requirement is not new, yet implementing this particular part of the manure or nutrient management plan seems to cause livestock producers many headaches. Why is this so? Mainly because the process of the nutrient management planning has become so complicated that few producers have the time, skills or knowledge to run the software programs it takes to develop the plan.

### What is a P Index Plan?

A P Index plan requires that you run the P Index software on each field in your plan that receives manure. This software calculates the potential risk of loss of phosphorus (P) from a field. Depending on your risk rating, it will allow you to continue to apply manure on a nitrogen-based rate or will require that you implement some type of P management plan to reduce that risk of loss of P from the field. A P management plan could include but is not limited to, reducing the manure application rate to supply enough P for the crop rotation, applying manure less frequently, applying no manure to a field, implementing soil conservation practices on the field, reducing the amount of P in the manure by addressing feed management issues and so forth. Because erosion is the primary factor determining loss of P from fields, the P Index software uses the Revised Universal Soil Loss Equation (RUSLE2) to calculate soil loss. This software is quite complex to use and should be used only by people who have been trained to use it.

### Confinement Feeding Operations

If you need to develop your P Index manure management plan, please don't ignore any letters you receive from the Iowa Department of Natural Resources (IDNR). Some letters are being sent six months in advance of when your P Index plan is due. The IDNR is no longer granting extensions to the monthly deadlines, so please heed the letter. With fieldwork and planting season nearly upon us, please be advised your plans are still due in a timely fashion, regardless of how busy you are in the field. If you plan to develop your P index plan on your own, start early. Make sure your soil samples are recent and have been taken according to the rules. Seek training to ensure that you are capable of using the P Index Calculator and the RUSLE2 software, and have your data organized and readily available. Collect the necessary information from your neighbors who may receive manure as part of your manure easement or agreement. You will have to include P Index calculations and have the required soil samples on those fields as well as your own.

### Open Feedlots

Feedlots over 1,000 animal units must develop nutrient management plans as part of their National Pollutant Discharge Elimination System (NPDES) permit. These nutrient management plans will be required to go through a public notice. Nutrient management plans, just like manure management plans for confinement feeding operations, will require the implementation of the P Index. Please see the information under "What is a P Index Plan" earlier in this article for additional information about the P Index. At this point in time, nutrient management plans for feedlots must be completed and submitted to IDNR by July 31, 2007.

If you are a feedlot producer and you plan to develop your own nutrient management plan please make sure you use the appropriate forms, be sure to meet the soil and manure sampling requirements, start early on the development of the P Index or seek training to ensure you can adequately run the software.

### Hiring a Consultant

If you don't plan to develop the P Index plan yourself, you should plan to contact a consultant who can help prepare your plan. Please note, in Iowa, consultants are not required to be certified to develop manure or nutrient



### (Management Plan continued from front page)

management plans for IDNR. Please see box below for a link to a list of consultants. If you do plan to hire a consultant, you should start this process early, perhaps two to three months in advance of when your plan is due. If you need to meet the soil sampling requirements, you may need to start that process six to nine months in advance of when your plan is due. Make sure you have copies of all of the needed information. Take the time to find the right consultant for your operation. You should consider asking them questions such as:

- How many P Index plans have you developed?
- Have you developed plans for my type of operation?
- Have you had plans rejected by the IDNR? If so, why?
- Have you been trained to develop these plans?
- How do you keep current on regulations?
- Will you just develop my plan or will you also provide recordkeeping assistance?
- What kind of follow-support do you provide for my plan?
- Will you teach me how to read and implement the plan?
- What do you charge and what services will I receive for this charge?

Your manure or nutrient management plan should work for you regardless of what the regulations require you to do. Your plan should be more than an application rate. Your plan should allocate nutrients to a field based on what crop will be grown and the nutrients needed to grow those crops. You should understand how the plan was developed and how changes to your daily operation may affect your plan. Manure is a valuable nutrient resource so manage it wisely.

### Manure and Nutrient Management Plan Resources

- **Manure Management Plan Consultants**  
<http://extension.agron.iastate.edu/immag/spprivmmp.html>
- **Iowa P Index Calculator**  
<ftp://ftp-fc.sc.egov.usda.gov/IA/technical/pindex010307.xls>
- **The Iowa Phosphorus Index and Manure Management Plans for Confinements**  
[http://www.iowadnr.com/afo/files/pindex\\_fs.pdf](http://www.iowadnr.com/afo/files/pindex_fs.pdf)
- **IDNR Forms for Manure and Nutrient Management Plans**  
<http://www.iowadnr.com/afo/forms.html>
- **Data Collection Worksheet for RUSLE2 and Iowa Phosphorus Index**  
<http://www.extension.iastate.edu/Publications/Pm2021.pdf>

Iowa State University Extension in cooperation with the USDA-NRCS offer P Index and RUSLE2 workshops. Please see the article titled Upcoming Events on page 5 for additional information.

## New Environmental Program to Provide You Results

by Carrie Keppy, Department of Animal Science, Iowa State University Extension

Environmental management has become more and more challenging to producers as new regulations develop and public concern increases. The Iowa Pork Industry Center has the opportunity to work with you or a group of producers on a plan to address the management concerns related to your operation. Through the Smithfield-Iowa Attorney General agreement, monies were made available to work with producers to improve environmental management in the state of Iowa for pork producers. The program is called an environmental management system or EMS.

### What is an EMS?

An environmental management system is an organized approach to managing environmental impacts.

An EMS:

- is voluntary;
- leads to more orderly, consistent and comprehensive environmental management;
- provides standard procedures and steps designed to support continual improvement;
- provides a framework for a producer to meet their environmental goals and objectives;
- increases a producer's confidence that they are addressing all issues related to their farm's impact on the environment;
- is dynamic and adaptable;
- is results-oriented; and
- emphasizes pollution prevention.

An EMS does not:

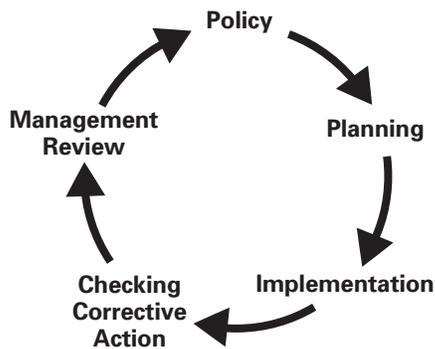
- establish additional environmental compliance requirements.
- establish any performance levels.

An EMS follows a Plan-Do-Check-Act cycle, or PDCA, and has similar elements to quality programs farms now use. Following a PDCA model leads to continuous improvement, an important feature of an EMS.





### EMS Model



**Policy** is the farm’s own mission statement that includes a commitment to regulatory compliance, environmental stewardship and continuous improvement.

**Plan** – Identify environmental impacts and legal and other requirements. Establish environmental performance goals and objectives, and develop plans for addressing environmental impacts.

**Do** – Implement plans and procedures. Establish roles and responsibilities.

**Check** – Implement techniques for measuring progress towards goals and for addressing EMS problems and corrective/preventive actions. Establish audit processes.

**Act** – Implement management review procedures, improvement plans, and adjustments (to goals, procedures, etc.).

#### What are the benefits?

Producers who implement an EMS have greater confidence that they are doing the right things for regulation and stewardship. They may also benefit from enhanced compliance, increased employee environmental awareness, improved operating efficiencies, improved public perception and better understanding of root causes of noncompliance.

An EMS takes an “umbrella” approach and considers day-to-day activities, infrequent activities (such as sludge clean-out), and potential accidents or emergencies that may impact the environment. It is a method to be proactive through organized practices and record keeping rather than reactive and it is a systematic way to focus on priorities without having things fall through the cracks. An EMS also allows for a farm to consider cumulative impacts from various activities that combined may have more of an impact than when considered singly.

While an EMS doesn’t mean necessarily mean immediate improvement, one pork producer who has implemented the program said it’s been a good thing.

“Although EMS has not instantaneously corrected all of my problems, it has given me the vision needed to address environmental impacts related to my farm,” Chuck Stokes said. “Within the year, I feel confident that my overall operation will be dramatically enhanced by the implementation of EMS.”

If you’re interested in improving your operation’s environmental performance, management techniques and efficiency; would like to increase employee awareness and accountability, or want to reduce operating expenses and liability, an EMS is a great answer.

#### How to participate

For more information about EMS and how it can work for your operation, contact Carrie Keppy by e-mail at [ctkeppy@iastate.edu](mailto:ctkeppy@iastate.edu) or by phone at (515) 979-6954.



### Financial Resources for Livestock Producers

by Steve Brinkman, Nutrient Management Specialist, USDA-NRCS

Livestock and crop producers have several options for financial assistance to make improvements on their farms. At this time, there are three available sources of funds. Additional sources of funds are available if the producer or landowner is located in specific watersheds that have special water quality projects. Be sure to check with your local Soil and Water Conservation District (SWCD) or your local Natural Resources Conservation Service (NRCS) field office for local sources of help and funds.

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### Iowa State Revolving Fund (SRF)

The Iowa Water Quality Loan Fund which is part of the SRF is a source of low cost financing for farmers and landowners, livestock producers, businesses, homeowners, community groups, watershed organizations and others. The SRF program is administered by the Iowa Department of Natural Resources (IDNR) under an agreement with the United States Environmental Protection Agency (EPA). The Iowa Water Quality Loan Fund is made up of four different programs. Two of the four programs are specific to livestock producers and are discussed below.



The Local Water Protection Program (LWPP) can be used to fund practices such as grassed waterways, terraces, grade stabilization structures, riparian buffers, windbreaks, pasture and hay plantings, water and sediment control basins, and waste (manure) storage structures. The loan applicant must be the owner of the land where the practice will take place. The loan may be for 100 percent of the project as long as the amount loaned is between \$5,000 and \$50,000. The length of the loan may be up to 10 years and there is no pre-payment penalty on these loans. This program works with the Iowa Finance Authority (IFA) and local private lending institutions using a “Linked Deposit Loan” to provide assistance for water quality practices. The IFA agrees to accept a 0 percent rate of return on an investment, usually a certificate of deposit, and the lender agrees to provide the loan to eligible borrowers at a rate less than or equal to 3 percent. The local Soil and Water Conservation District (SWCD) must approve the project, and your lender must qualify you for the financing. For more information and how to apply contact your local SWCD or visit <http://www.iowasrf.com/lwp.html> or <http://www.agriculture.state.ia.us/lwpp.htm>.

The Livestock Water Quality Facilities Program (LWQFP) is another source of low-interest loans. Practices eligible for this program include lagoons, manure management structures and equipment, processing equipment, vegeta-

tive filters and other practices designed to prevent non-point source runoff related to animal feeding operations. These funds are available to feeding operations without National Pollution Discharge Elimination System permits (NPDES). To qualify, the animal feeding operation has to be under 1,000 animal units and the applicant must have legal control of the property and (or) be the operator of record. Applicants must have a Manure Management Plan (MMP) with the Phosphorus Index or develop a plan as part of the proposed project.

The primary purpose of the LWQFP is to assist livestock producers in improving the environmental management of their existing facilities and the state’s water quality. This source of funding is operated by the Iowa Agricultural Development Authority (IADA) in cooperation with IDNR and the Iowa Finance Authority. These loans are similar to the LWPP with cooperation with private lending institutions through the linked deposit structure. More information can be found at the following Websites: [www.iada.state.ia.us](http://www.iada.state.ia.us) or <http://www.iowasrf.com/lwq.html>.

### Environmental Quality Incentives Program

The 2002 Farm Bill brought about an emphasis of providing technical and financial assistance to Animal Feeding Operations (AFOs). This assistance comes through the Environmental Quality Incentives Program (EQIP). EQIP has two objectives with regard to AFOs and regulatory issues. The first is to help producers comply with local, state and federal requirements. The second is to help producers address natural resource concerns in a manner that makes regulatory action unnecessary.

EQIP is a voluntary program that provides assistance to farmers and ranchers who face threats to soil, water, air and related natural resources on their land. EQIP assistance is provided to agricultural producers by the NRCS.

Agricultural producers, individuals, or entities that engage in livestock or agricultural production may participate in EQIP. Applicants must be in compliance with highly erodible land and wetland conservation provisions.

To apply for EQIP there are five steps in the process;

1. A landowner submits an application to the local USDA Service Center, NRCS office, conservation district office, or office of a designated cooperating entity.
2. The NRCS State Conservationist or designee works with the applicant to develop an EQIP plan of operation.
3. The State Conservationist or designated conservationist ranks each application using the locally developed ranking process.



4. When funds are allocated, the State Conservationist or designated conservationist commits allocated funds to high ranking landowner offers and enters into contracts with selected participants.
5. Following contract signature by NRCS and the selected entity, funds are obligated to the project and the participant may begin to implement the EQIP plan of operations.

Several practices or structures that typically receive assistance in Iowa include: handling and containment structures, composting and mortality facilities, and roof structures that divert clean water. The use of EQIP dollars for these types of practices requires the development and implementation of a Comprehensive Nutrient Management Plan (CNMP).

EQIP is a locally led process to adapt NRCS national priorities to address local resource concerns. The locally led process starts with your county's Soil Water Conservation District Commissioners. These commissioners evaluate and determine priorities on their allotment of EQIP funds. Because this process is locally led, differences between counties exist. For specific information and how to utilize these funds, contact your local NRCS field office.

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### Upcoming Events

#### Feedlot Permit Workshops

The Iowa Beef Center is sponsoring two workshops for feedlot owners/managers and their consultants. These workshops will help feedlot owners understand their federal operation permit, commonly known as the National Pollutant Discharge Elimination Systems (NPDES) permit, prepare for developing a nutrient management plan and assist with the recordkeeping requirements of the permit and nutrient plan. Locations for the meetings are as follows:

#### April 11

at the new Sioux County Extension Office,  
400 Central Ave NW Suite 700, Orange City. (712) 737-4230

#### April 12

at the new Carroll County Extension Office,  
1205 West US Hwy 30, Suite G, Carroll. (712) 792-2364

The workshops will run from 10 a.m. to 3 p.m. Please bring a copy of your permit with you. Registration for the workshops is \$30 for the first person from each operation and \$15 for each additional person from the same operation. Please contact the location where you plan to attend by

April 9 so that adequate lunch and materials can be made available. If you have any questions please contact John Lawrence at (515) 294-2333, Kris Kohl at (712) 732-5056 or Shawn Shouse at (712) 769-2600.

#### RUSLE2 and the Iowa P Index Workshop

Iowa State University Extension, the Iowa Manure Management Action Group (IMMAG) and the USDA-NRCS will offer a RUSLE2 and Iowa P Index workshop on April 16 in Storm Lake, Iowa. This workshop will begin at 9 a.m. and continue to 4 p.m. The objective of this workshop is to teach producers and consultants how to use the RUSLE2 and Iowa P Index software for use in manure management plans. The program agenda and on-line registration form can be found at: <http://www.ucs.iastate.edu/mnet/rusle2/home.html> or please call Kapil Arora at (515) 382-6551, Angie Rieck-Hinz at (515) 294-9590 or Kris Kohl at (712) 732-5056 for additional information.

#### U of Minnesota Air Quality Workshops

The University of Minnesota is sponsoring a series of workshops on Animal Agriculture and Air Quality and a hands-on workshop that will discuss biofilter design and construction in May. For more information please see: <http://manure.coafes.umn.edu/workshops/index.html> or contact David Schmidt at (612)625-4262.

#### Anaerobic Treatment of Agricultural Wastes

A national short-course on the Anaerobic Treatment of Agricultural Wastes is being offered by the Department of Agricultural and Biosystems Engineering at Iowa State University. The course will be held at the Hotel Fort Des Moines, in Des Moines, on May 21 and 22.

The course is designed to provide information on the selection, implementation and operation of anaerobic digesters for manure and agricultural wastes for technical service providers, environmental technicians and facility operators interested in using anaerobic treatment at their facilities; and for technical service providers, NRCS personnel, regulatory and environmental agencies, and extension professionals involved with the implementation anaerobic treatment systems.

Topics will include a background and introductory information on anaerobic digestion, cost sharing and support opportunities, biogas production rates, collection, handling, and electricity production, marketing carbon credits, anaerobic digestion and biogas use at ethanol plants, centralized digestion, and multiple case studies. Equipment, product, and service providers will be available during daily breaks and receptions. For more information, contact Robert Burns ([rburns@iastate.edu](mailto:rburns@iastate.edu)) or Lara Moody ([lmood@iastate.edu](mailto:lmood@iastate.edu) or (515) 294-7355)

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### **. . . and justice for all**

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