

Iowa Manure Matters

Odor and Nutrient Management

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Soil sampling requirements for manure management plans

by Jeremy Klatt, Iowa Department of Natural Resources

The DNR's manure management plan (MMP) rules were recently revised to include the phosphorus (P) Index as required by state law. The P Index considers factors such as soil P, erosion and location of the field to estimate the risk of P delivery from fields to surface waters. This article explains the minimum requirements that must be met when taking soil samples for a P Index based MMP.

The soil sampling depth and analysis methods needed to run the P index are those that are recommended for crop production in Iowa. Therefore, the samples taken for the P Index can also be used for making nutrient and lime recommendations.

Sampling Method

Soil samples can be taken according to any credible sampling method. For instance, grid sampling, sampling by soil type or elevation, or sampling by designated management zones within a field. Two good sources of soil sampling information are: Iowa State University Extension publication PM 287 *Take a good soil sample to help make good decisions* available on-line at: www.extension.iastate.edu/Publications/PM287.pdf NCR-13 Report 348 *Soil Sampling for Variable-Rate Fertilizer and Lime Application* available on-line at: www.extension.umn.edu/distribution/cropsystems/DC7647.html

Minimum Sampling Requirements

Regardless of what sampling method is used to take the samples, there are minimum requirements that must be met.

- Samples must be analyzed for P and pH once every four years (the P Index and MMP must be updated with the new soil samples every four years)
- Each soil sample can represent no more than 10 acres. For fields 15 acres or less, only one sample is necessary.
- Each sample must be a composite of 10 cores taken at the depth of 0-6 inches.

Using Existing Soil Samples

Soil samples can be used for the plan if they are four years old or less and meet the above requirements. Therefore, producers who need to submit a P Index MMP update in two or four years could plan ahead and begin thinking about soil sampling.

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For producers who must submit an original plan now, existing soil samples that do not meet the above requirements can be used for the original MMP, if they are four years old or less. In this case, soil samples that do meet the requirements must be taken no more than one year after the MMP is approved.

Use Phosphorus-Based Rates to Reduce Soil-Sampling Requirements

One way to reduce the soil sampling requirements associated with the MMP is to apply manure at P-based rates. If P-based application rates are used between soil sampling periods, soil sampling can be reduced to 1 sample per 20 acres for fields with a Very Low, Low, or Medium P Index. So while samples must initially be taken at one sample per 10 acres for all fields, if P-based application rates are adopted after the soil sampling, the next soil samples taken can be reduced to one sample per 20 acres.

A P-based application rate replaces the P that is removed from the field with harvest or is based on a P soil test recommendation. Because up to four years of P removal can be applied in a single application (if the N requirement of the crop is not exceeded), P-based application rates may not be much different than N-based rates. When developing a P-based manure plan, not applying to the same fields every year is often more important than the actual application rate. Reducing the P concentration of the manure (e.g. with phytase) will also make a P-based manure plan more achievable.

Soil Laboratory Analysis

If you have questions about the requirements contact your regional DNR field office.

Manchester	(563) 927-2640
Mason City	(641) 424-4073
Spencer	(712) 262-4177
Atlantic	(712) 243-1934
Des Moines	(515) 725-0268
Washington	(319) 653-2135

Soil samples must be analyzed by a lab enrolled in the Iowa Department of Agriculture and Land Stewardship soil testing certification program. A list of certified soil testing labs can be found at <http://www.agriculture.state.ia.us/certlabs.htm>

The Bray P_1 soil test method should not be used if the pH of the soil is greater than 7.4, as this test does not provide an accurate measurement of available soil P under these conditions. If the Bray P_1 test is used and the pH is greater than 7.4 in one or two samples in a field, do not include these samples in the field average for the P Index. If the majority of samples have a pH greater than 7.4, use the Olsen or Mehlich-3 soil test when samples are taken again. For more information, Iowa State University has a soil fertility Web site that includes information about soil sampling at <http://extension.agron.iastate.edu/soilfertility/>

Who needs an MMP? Confinement feeding operations (totally roofed) with an animal unit capacity of more than 500 animal units, i.e., 1250 finishing swine.

When submitting an “original” MMP for a new or expanding operation, a P Index-based plan is needed when the plan is submitted.

For those who submitted an MMP prior to April 1, 2002, the P Index will be due with the first update after Aug. 25, 2008.

For those who submitted their original MMP between April 1, 2002 and Oct. 25, 2004, the P Index will be due with the first update after Aug. 25, 2006.



Collecting a soil core for soil sampling requirements.



ONM newsletter welcomes new coordinators

by Angela Rieck-Hinz, Department of Agronomy

As the project coordinator of the Iowa Manure Matters-Odor and Nutrient Management Newsletter, I am pleased to announce the addition of two new coordinators for the newsletters, Dr. Wendy Powers and Dr. Robert Burns.

Dr. Wendy Powers is an Associate Professor in Animal Science and serves as an environmental extension specialist she has a joint research and extension appointment. Her research focuses on odor characterization and quantification, dietary manipulation of manure nutrients and their impact on odor, and the influence of management systems on manure nutrients. Dr. Powers' extension responsibilities include providing technical support and information to policymakers, producers and the public that promote environmentally sound agriculture. She has been with ISU for eight years.

New to ISU is Dr. Robert Burns, Associate Professor of Agricultural and Biosystems Engineering. Dr. Burns has a joint extension and research appointment in the area of animal waste management. He is a licensed Professional Engineer (P.E.) and Certified Crop Advisor (CCA). His area of extension specialization is the design of animal waste management systems and

nutrient management planning for livestock and poultry operations. He currently leads a national Comprehensive Nutrient Management Planning (CNMP) certification program for USDA Technical Service Providers (TSPs).

His research focuses on animal waste management and includes work on phosphorus recovery, anaerobic digestion and ammonia emission control from animal production facilities. Prior to joining the faculty at Iowa State University, Robert was on the faculty at The University of Tennessee for nine years where he served as the Water Quality and Waste Management specialist for the Tennessee Agricultural Extension Service.

The goal in having multiple coordinators is to ensure the newsletter puts forth research and extension information that is well represented in manure odor and nutrient management across the multiple-disciplines of Agricultural and Biosystems Engineering, Agronomy and Animal Science.



Commercial applicator training for 2005

by Angela Rieck-Hinz, Department of Agronomy

Iowa State University (ISU) Extension, in cooperation with the Iowa Department of Natural Resources (IDNR), will offer a satellite downlink program on Wednesday January 5, 2005 for the commercial manure applicator program. This program will begin with registration at 8:30 a.m. and the program concludes at 12:30 p.m. You must be registered and in your seat by 9 a.m. when the program begins. This program will provide the mandated three hours of annual training required of commercial manure service representatives and business managers. All currently certified commercial applicators must attend training and submit forms prior to March 1, 2005 to avoid paying late fees.

Commercial manure service representatives and managers may also meet training requirements by scheduling an appointment and watching the 3-hour tape at their local ISU Extension office or by

contacting their regional IDNR field office and scheduling an appointment to take the exam. Because the training tapes are an edited version of the three-hour satellite program and must be duplicated and sent to county offices, ISU Extension can't guarantee the training tapes will be available for training prior to mid February 2005. For this reason you are encouraged to attend the satellite program on Jan. 5, 2005.

Currently certified commercial applicators will receive a registration brochure in mid-December 2004. Complete the registration form and mail to the ISU Extension county office listed in the brochure where you plan to attend prior to Dec. 27, 2004. If you do not receive a brochure, please print one from the Web at: extension.agron.iastate.edu/immag/certification/05commmacbrochure.pdf or

contact your ISU Extension county office. There is no registration fee to attend this program.

A manure applicator workshop for dry manure applicators will be held on Feb. 25, 2005 at 9 a.m. at the Wright County Extension office in Clarion. Please register for this event prior to Feb. 23, 2005 by calling the Wright County Extension office at (515) 532-3453. This workshop will be three hours in length and will meet training requirements for both confinement site and commercial manure applicators.

Commercial applicators needing to be certified in both Iowa and Minnesota can meet requirement for each state by attending one of the joint training sessions held on Jan. 5, 2005. The locations for joint training are the extension offices in Dickinson, Howard and Winnebago counties. Applicators will attend the mandatory three hours of Iowa program requirements, followed by one additional hour to meet Minnesota requirements. If you have questions about the joint training workshops, please call Angie Rieck-Hinz at (515) 294-9590.

Make up tests required for confinement site manure applicators

by Karen Grimes, Iowa Department of Natural Resources

Nearly half of the confinement site manure applicators whose certificates will expire in 2004 missed one or more of three required training sessions during their three-year certification.

Confinement site applicators choose between passing one test or taking three annual training sessions when they apply for a manure applicator's certificate. For those who choose training, if they miss one or more training sessions and want to renew their certificate they must first pass a remedial or make-up test to satisfy the requirements under state law.

The Department of Natural Resources has notified approximately 257 confinement site applicators who missed a training session during the last three years that they will need to pass the make-up test before renewing their certificate. After passing the make-up test, applicators can decide to take three years of training or pass another test when they renew their certification.

Most applicators pass the test the first time that they take it. A passing score is 35 correct out of the 50 true/false and multiple-choice questions.

To prepare for the test, applicators should be familiar with state laws on land application of manure. Study guides are available on the Iowa

Manure Management Action Group's Web site at extension.agron.iastate.edu/immag/mac.html. More information on land application rules is available, too, on the DNR Web site at www.state.ia.us/epd/wastewtr/feedlot/sepdstb4.pdf and at <http://www.state.ia.us/epd/wastewtr/feedlot/files/hqwr2.pdf>.

DNR regional field offices will offer tests in January and February. If you were notified that you need to pass a make-up test, please pre-register for one of the following dates with the appropriate DNR field office. You must bring a photo identification card. You should bring a pencil and calculator. and arrive at least 15 minutes early to allow for registration.

Confinement site applicators can continue to apply manure during the January and February grace period if they were certified in 2004, but make-up tests and the training or testing for the coming three-year certification should be completed by March 1, 2005. After March 1, commercial and confinement site applicators must pay a late fee of \$12.50 before renewing their certificates. They cannot apply manure until they are certified.



Manure applicators attend training workshop at the Iowa State University Northwest Iowa Research Farm

Confinement site applicators make up testing schedule

Field Office	Phone Number	Exam Date	Time	Exam Location
# 1 Northeast	(563) 927-2640	Jan. 13 or 27	9 a.m.-Noon	DNR Field Office 909 W. Main, Suite 4 Manchester
#2 North Central	(641) 424-4073	Jan. 11 or 12	9 a.m.-Noon	Lime Creek Nature Center 3501 Lime Creek Road Mason City
# 3 Northwest	(712) 262-4177	Jan. 14	1-3 p.m.	Iowa Lakes Community College, 1900 Grand Ave Spencer
		Feb. 9	1:30 to 3:30p.m.	ISU Extension Office 110 W Fourth Street Suite 100, Spencer
#4 Southwest	(712) 243-1934	Jan. 19 or Feb. 4	1-3 p.m.	DNR Field Office, 1401 Sunnyside Lane Atlantic
# 5 Central	(515) 725-0268	Jan. 18 or 25 Feb. 8 or 22	2-4 p.m	DNR Field Office 401 SW 7 th St., Suite I Des Moines
#6 Southeast	(319) 653-2135	Jan. 11	10 a.m.-Noon	DNR Field Office 1023 W. Madison Washington



2005 Confinement site manure applicator workshops

by Angela Rieck-Hinz, Department of Agronomy

Iowa State University Extension will offer workshops for confinement site applicators in January and February 2005, see locations and dates. These workshops will provide the 2 hours of annual training required by law for confinement site manure applicators. Confinement site applicators are encouraged to attend one of the offered workshops to avoid paying late fee penalties for renewing applicator certificates. Due to the short turn-around time in deadlines, ISU Extension can't guarantee the availability of videotapes for training prior to mid-February 2005.

Material covered in the 2005 program will include land application rules, hydrogen sulfide emissions during agitation and pumping, an introduction to the P Index and RUSLE2 for your future manure management plan requirements, and soil sampling requirements for future manure management plans.



Liquid manure application at fall manure field day.

For exact workshop locations and to confirm exact times or to determine meeting options in the event of bad weather, please call the ISU Extension office in the county where you plan to attend a workshop. Registration is not required for these workshops, however, you may wish to contact your Extension office to ensure there will be adequate space and training materials available. A copy of the confinement site workshop brochure can be accessed at extension.agron.iastate.edu/immag/certification/05csmacbrochure.pdf

Please note: If you received a confinement site applicator brochure in the mail, the time listed for the Clay County workshop on Feb. 9, 2005 was inadvertently listed as 9:30 p.m. and should be 9:30 a.m.

<u>County</u>	<u>Workshop Location</u>	<u>Telephone</u>	<u>Date</u>	<u>Time</u>
Adair	City Hall, Adair	(641) 743-8412	Jan. 21, 2005	1:30 p.m.
Adams	L & J's Kitchen, Corning	(641) 322-3184	Jan. 11, 2005	1:30 p.m.
Allamakee	County Extension Office	(563) 568-6345	Feb. 3, 2005	1:30 p.m.
Benton	US Bank Community Room, Vinton	(319) 472-4739	Jan. 19, 2005	9:30 a.m.
Black Hawk	Hudson Community Center	(319) 234-6811	Jan. 20, 2005	9:30 a.m.
Boone	County Extension Office	(515) 432-3882	Jan. 25, 2005	9:30 a.m.
Bremer	NE Research Farm	(319) 882-4275	Jan. 19, 2005	9:30 a.m.
Buena Vista	AEA Bldg, Storm Lake	(712) 732-5056	Jan. 28, 2005	9:30 a.m.
Butler	NE Research Farm	(319) 882-4275	Jan. 19, 2005	9:30 a.m.
Calhoun	County Extension Office	(712) 297-8611	Feb. 11, 2005	9:30 a.m.
Carroll	Carrollton Inn	(712) 792-2364	Feb. 18, 2005	1:30 p.m.
Cedar	County Courthouse	(563) 886-6157	Jan. 27, 2005	9:30 a.m.
Cerro Gordo	County Extension Office	(641) 423-0844	Feb. 8, 2005	9:30 a.m.
Cherokee	County Extension Office	(712) 225-6196	Feb. 23, 2005	9:30 a.m.
Chickasaw	County Extension Office	(641) 394-2174	Jan. 19, 2005	1:30 p.m.
Clay	Community Bldg., Dickens		Jan. 18, 2005	7:00 p.m.
	County Extension Office	(712) 262-2264	Feb. 9, 2005	9:30 a.m.

This Clay County workshop will include test prep to take the DNR exam for recertification. A \$10 fee will be charged.

<u>County</u>	<u>Workshop Location</u>	<u>Telephone</u>	<u>Date</u>	<u>Time</u>
Clayton	County Extension Office	(563) 245-1451	Feb. 23, 2005	1:30 p.m.
Clinton	DeWitt Community Center	(563) 659-5125	Jan. 27, 2005	1:30 p.m.
Crawford	Western Iowa Research Farm	(712) 263-4697	Feb. 25, 2005	1:30 p.m.
Dallas	County Extension Office	(515)993-4281	Jan. 20, 2005	9:30 a.m.
Davis	County Extension Office	(641) 664-2730	Feb. 1, 2005	1:30 p.m.
Delaware	County Extension Office	(563) 927-4201	Jan. 20, 2005	1:30 p.m.
Dubuque	County Extension Office	(563) 583-6496	Jan. 18, 2005	1:30 p.m.
Emmet	Estherville Public Library	(712) 362-3434	Feb. 24, 2005	1:30 p.m.
Fayette	County Extension Office	(563) 425-3331	Jan. 14, 2005	9:30 a.m.
			Feb. 24, 2005	9:30 a.m.
Floyd	NE Research/Demonstration Farm	(641) 228-1453	Jan. 19, 2005	9:30 a.m.
Franklin	Hampton State Bank	(641) 456-4811	Feb. 22, 2005	9:30 a.m.
Greene	County Extension Office	(515) 386-2138	Jan. 24, 2005	9:30 a.m.
Grundy	Hudson Community Center	(319) 824-6979	Jan. 20, 2005	9:30 a.m.
Hamilton	County Extension Office	(515) 832-9597	Feb. 1, 2005	9:30 a.m. or 1:30 p.m.
Hancock	County Extension Office	(641) 923-2856	Feb. 7, 2005	1:30 p.m.
Hardin	County Extension Office	(641) 648-4850	Feb. 2, 2005	1:30 p.m. or 7:00 p.m.
Henry	Masonic Lodge, Mt. Pleasant	(319) 385-8126	Feb. 2, 2005	9:30 a.m.
Howard	County Extension Office	(563) 547-3001	Feb. 4, 2005	9:30 a.m.
Ida	Correctionville Community Center	(712) 364-3003	Feb. 22, 2005	9:30 a.m.
Jasper	County Extension Office	(641) 792-6433	Jan. 10, 2005	1:30 p.m.
Jefferson	County Extension office	(641) 472-4166	Jan. 25, 2005	9:30 a.m.
Johnson	Stutsman, Inc., Hills	(319) 337-2145	Jan. 19, 2005	1:30 p.m.
Jones	County Extension Office	(319) 462-2791	Feb. 8, 2005	9:30 a.m.
Keokuk	County Extension Office	(641) 622-2680	Feb. 9, 2005	9:30 a.m.
Kossuth	County Extension Office	(515) 295-2469	Feb. 24, 2005	9:30 a.m.
Lee	Pilot Grove Savings Bank	(319) 835-5116	Feb. 2, 2005	1:30 p.m.
Louisa	Donnellson SE Research Farm	(319) 523-2371	Feb. 9, 2005	1:30 p.m.
Lyon	Forster Comm. Bldg., Rock Rapids	(712) 472-2576	Jan. 13, 2005	1:30 p.m.
Mahaska	County Extension Office	(641) 673-5841	Jan. 25, 2005	1:30 p.m.
Marion	County Extension Office	(641) 842-2014	Jan. 20, 2005	1:30 p.m.
Marshall	County Extension Office	(641) 752-1551	Jan. 25, 2005	1:30 p.m.
Mitchell	County Extension Office	(641) 732-5574	Feb. 4, 2005	1:30 p.m.
Monona	Western Iowa Research Farm	(712) 423-2175	Feb. 25, 2005	1:30 p.m.
Muscatine	Extension Office	(563) 263-5701	Feb. 7, 2005	1:30 p.m.
O'Brien	NICC, Bldg C, Sheldon	(712) 957-5045	Feb. 7, 2005	7:00 p.m.
Osceola	Community Center, Melvin	(712) 754-3648	Jan. 19, 2005	1:30 p.m.
Page	County Extension Office	(712) 542-5171	Jan. 19, 2005	1:30 p.m.
Plymouth	Prime Bank Basement, LeMars	(712) 546-7835	Feb. 3, 2005	1:30 p.m.
Pocahontas	Community Center, Rolfe	(712) 335-3103	Jan. 21, 2005	1:30 p.m.
Pottawattamie	Fire Station Meeting Room	(712) 482-6449	Jan. 6, 2005	7:00 p.m.
Sac	Sac City State Bank	(712) 662-7131	Feb. 15, 2005	7:00 p.m.
Scott	Extension Office	(563) 359-7577	Feb. 7, 2005	7:00 p.m.
Shelby	St. Mary's Parish Hall, Portsmouth	(712) 755-3104	Jan. 12, 2005	1:30 p.m.
Sioux	Sioux Center High School	(712) 737-4230	Jan. 14, 2005	9:30 a.m.
Story	County Extension Office	(515) 382-6551	Jan. 24, 2005	1:30 p.m.
Wapello	Eddyville-Blakesburg High School	(641) 682-5491	Feb. 1, 2005	7:00 p.m.
Washington	Super 8 Motel, Washington	(319) 653-4811	Feb. 23, 2005	7:00 p.m.
Wayne	First Baptist Church, Humeston	(641) 872-1755	Jan. 14, 2005	1:30 p.m.
Webster	County Extension Office	(515) 576-2119	Feb. 7, 2005	1:30 p.m.
Winnebago	County Extension Office	(641-584-2261	Feb. 7, 2005	1:30 p.m.
Winneshiek	County Extension Office	(563) 382-2949	Feb. 3, 2005	1:30 p.m.
Woodbury	Correctionville Community Center	(712) 276-2157	Feb. 22, 2005	9:30 a.m.
Worth	County Extension Office	(641) 324-1531	Feb. 8, 2005	9:30 a.m.
Wright	Dows Convention Center			
	119 E. Ellsworth St., Dows	(515) 532-3453	Feb. 9, 2005	9:30 a.m.
	County Extension Office in Clarion		Feb. 25, 2005*	9:00 a.m.

*This meeting will be for dry manure applicators and will be three hours in length to serve commercial applicators as well.

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... and justice for all
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