

**2003 Manure Applicator Certification Program**  
**July 1, 2002 to June 30, 2003**  
**Agreement Number 03-7112-01**  
**Final Report**

**Introduction**

In 1998, the Iowa Legislature passed HF 2494. This bill required certification of commercial manure applicators and confinement site manure applicators with operations of a designated size. The purpose of this project, entered into by the Iowa Department of Natural Resources (IDNR) and Iowa State University Extension (ISUE) was to develop manure certification training and testing materials and to conduct certification workshops for commercial manure applicators and confinement site manure applicators. This is the fifth year of this mandatory program, and each year new legislative, rulemaking or interpretative changes have led to changes in program delivery and implementation. This report reviews the fifth year of the certification program.

**Training Material Development**

**Confinement Site Manure Applicator Program**

Training materials for the Confinement Site programs were developed into individual modules. The goal of the module concept was that the material could be used again in future programs with minimal time used in development of the presentation of the materials but instead, time focused on updating the subject matter of each module for future use. The modules are identified at a yearly planning meeting. An Extension campus and/or field specialist or IDNR staff member then develops each module. The materials are developed into a PowerPoint presentation and then burned onto a CD for use at the annual workshops. Each module may be modified at the local level by extension field specialists to adapt for regional or county use to meet certain manure application practices, crop, soils or topography requirements.

Materials developed for the 2003 Confinement Site Manure Applicator program focused on manure nutrient management for crop production, in particular, phosphorus for crop production and phosphorus impacts on water quality. These materials were specifically developed in preparation of new legislation requiring producers to develop phosphorus based manure management plans in 2003. The program goal was to inform producers about the requirements of the mandated phosphorus manure management plans. When preparations for the 2003 MAC program began, it was expected that the DNR would have the rules and paperwork completed for phosphorus plans based on legislative deadlines. This did not happen, therefore the MAC program staff proceeded with development of the module "Phosphorus and Water Quality" to help prepare livestock producers for future phosphorus issues. In addition to this module, other modules included: 1) Review of New Applicator Rules, Separation Distances for Land Application and Update Rules for Confinement Feeding Operations; 2) Earthen Basin Inspections (video); and 3) Annual Recordkeeping Requirements. A complete listing of modules by year, and time allocated is presented in Table 1.

**Commercial Manure Applicator Program**

Materials developed for the 2003 Commercial Manure Applicator program were also discussed at a yearly planning meeting and with input from commercial manure applicators via an informal survey.

The program materials were delivered with PowerPoint presentations in live format once per year by means of a satellite downlink. Please see the discussion under certification workshops for more detail.

The 2003 Commercial Manure Applicator program included the following modules: 1) Land Application Rules, Applicator Requirements and Separations Distances; 2) Phosphorus and Water Quality; 3) Manure Application Equipment effects on Odor, Residue Cover and Crop Yield; 4) Cases Studies and Manure Spill Responses; 5) Pollution Liability Insurance and 6) Commercial Nutrient Applicators Association. Complete listing of modules by year, and time allocated is presented in Table 1 (prior to 2001, program was not developed into modules).

### **Supporting Training Materials**

Three fact sheets were distributed to manure applicators via the training workshops in 2003. These fact sheets, prepared by IDNR and reviewed by ISUE, included updated versions of:

- DNR 113, Separation Distances for Land Application of Manure (revised October, 2002)
- DNR 115 Commercial Manure Applicator Certification (revised October, 2002)
- DNR 116 Manure Applicators Certification (revised November, 2002)

These fact sheets were also linked on the Manure Applicators Certification web page at:

<http://extension.agron.iastate.edu/immag/mac.html> This page is a component of the IMMAG web page.

These fact sheets were also made available at field days, Pork Congress and association meetings.

Copies of these fact sheets are available in Appendix 1.

As a result of rule changes, and the need for confinement site applicators to take exam for recertification purposes in 2003, Chapter 7 of PM 1779 “Confinement Site Manure Applicators Certification Study Guide” was updated. This chapter was completely re-written by ISUE project staff and reviewed by DNR. Due to budget constraints, the study guides were not reprinted, but applicators purchasing copies of the study guide will also receive a packet insert to update their guides. The material was posted on the web and all future study guides updates will be made available on the web. PM 1779 is available on the web at: <http://www.extension.iastate.edu/pubs/PM1779/homepage.html>

The chapter on rules in PM 1778, “Commercial Manure Applicator Certification Study Guide” will be updated in 2003 to reflect new legislative changes and will again be available on the web. Revised inserts will be included in existing study guides that are purchased. These study guides will not be reprinted due to budget constraints. PM 1778 is available on the web at:

<http://www.extension.iastate.edu/pubs/PM1778/homepage.html>

Chapters in both manuals will be updated as legislative requirements change in the future or as time and staff are available to complete this project.

Table 1. Certification modules developed and presented at training meetings by program and year.

<b>Year</b>	<b>Confinement Site Manure Applicator Program</b>	<b>Commercial Manure Applicator Program</b>
2001	Sampling Manure 20 min.	Recordkeeping 20 min
	Manure Nutrient Research 20 min.	Emergency Action Plan 30 min
	Emergency Action Plans 30 min.	Rules 30 min
	Rules 25 min	Manure Application Techniques 45 min
	Recordkeeping 25 min	Case Studies 30 min
		Questions and Answers 25 min
2002	Feeding Strategies for Nutrient Management 30 min	Rules
	Equipment Calibration 20 min	Case Studies
	Dead Animal Disposal 30 min	Pumping, Hauling and Land Application Issues
	Equipment Options and Land Application Concerns 20 min	Interview with County Supervisor – road and bridge damage, weight restrictions (video)
	Dry Manure Issues (optional) 20 min	
2003	Phosphorus and Water Quality 40 min	Land Application Rules; Separation Distances and Review of Matrix Implications 40 min + 10 min Q and A
	Review of Rules 40 min	Manure Application Equipment effects on Odor, Residue Cover and Crop Yields 40 min
	Earthen Basin Inspection (video) 20 min	Case Studies and Manure Spill Responses 15 min
	Recordkeeping 20 min	Pollution Liability Insurance 20 min
		Iowa Commercial Nutrient Applicators Association 10 min
		Phosphorus and Water Quality Issues 30 min + 15 min Q and A

### **Certification Workshops**

#### **Confinement Site Workshops**

Training workshops for the 2003 Confinement Site Manure Applicator Certification program began in January 2003 and continued through March 2003. Sixty training workshops were held at 59 County Extension offices. In addition to the workshops, Confinement Site applicators were trained by offering a two-hour videotape for training that could be watched by producers by scheduling an appointment at a County Extension office.

Extension staff reported that 1,372 confinement site manure applicators attended the certification meetings, of that number 1,061 confinement site applicators returned evaluations of the program based on the workshop they attended and 138 confinement site applicators returned evaluations from the training in which they watched two-hour video at a county extension office. A total of 1,199 evaluations were submitted by attendees. Over 60 training events were implemented for the 2003 Confinement site program involving staff resources of 17 Extension field specialists - ag engineering and crop specialists. The most recent version of the IDNR database indicates that a total of 1,738 people have a confinement site manure applicator licenses in Iowa. There are 777 applicators who have renewed their certificates in 2003 and 215 who have applied for the first time. The discrepancy between the number of people certified and the number of people trained is due to three factors: 1) the applicators originally certified in 2000 are considered to be active, certified applicators until December 31<sup>st</sup> of this year when their licenses expire, regardless of whether they are still operating as a confinement site applicator, 2) confinement site applicators may attend training at any time throughout the remainder of this year to maintain their certificates, and 3) a small percentage of confinement site applicators choose to take the exam to become certified.

### **Commercial Applicator Workshops**

The 2003 Commercial Manure Applicator program was delivered via satellite downlink on January 7, 2003. This downlink was broadcast to 43 Iowa county extension offices. There are currently 894 commercial applicators who have been trained to date in 2003. Of the 894 commercial applicators trained, 123 of them were new Commercial applicators that had not been previously certified. 652 have evaluations were returned with 496 evaluations from applicators attending the satellite downlink and 156 evaluations were returned from people viewing the videotape.

Portions of the program delivered via the Commercial satellite downlink program were used to develop the training videotapes for both the Confinement Site Applicator and Commercial Applicator program. The module on rules is taped separately for the confinement site program. The satellite downlink was taped and edited accordingly to provide a two-hour and three-hour program respectively. Each county extension office receives one copy of the two-hour Confinement Site Applicator Tape and one copy of the three-hour Commercial Applicator Tape. The tapes were produced and distributed within 2 weeks of the commercial manure applicator program to ensure that applicators have adequate time to view tapes prior to the annual March 1<sup>st</sup> uniform certification deadline.

### **Specialty Certification Workshops/Training**

On December 4, 2003, with the permission of DNR, an applicator meeting was held in conjunction with the Iowa Turkey Grower's annual association meeting. This meeting was open to all poultry producers. This certification meeting provides the same materials as a regular confinement site applicator meeting, but discussion is geared primarily at dry manure issues. Twelve producers attended this meeting and six of those 12 were attending to meet certification requirements.

On January 28, 2003, a workshop was offered exclusively for ISU farm employees. While ISU farm employees are not required to be certified for land application, employees choose to go through this training as part of their professional development. The two-hour confinement site program was offered to 15 people. As a result of this training two farm managers decided to become certified applicators.

On January 16 and 21, 2003, Kris Kohl, Area Ag Engineer in northwest Iowa, held two training sessions for confinement site manure applicators for recertification test preparation. A total of 32 people attended these two sessions. These sessions were offered in response to the large number of confinement site applicators who were required to take an exam to be eligible to recertify as a confinement site applicator for the next 3 years. Approximately 616 applicators needed to take the exam to be eligible to recertify in 2003, according to IDNR data shared with ISU. As of March 19, 2003, 148 applicators took the exam according to DNR data.

On January 31, 2003, Shawn Shouse, Area Ag Engineer in southwest Iowa offered a MAC workshop for employees of Premium Standard Farms (PSF) in Princeton, MO. PSF employees must meet Iowa MAC requirements if land-applying manure in Iowa. This training is provided annually for PSF employees, 72 employees attended this training in 2003.

Commercial manure applicators were offered the opportunity to attend joint Iowa-Minnesota training on January 7, 2003 at the Dickinson, Howard and Winnebago County Extension offices. This joint training provides 3 hours of the mandatory commercial applicator training for Iowa applicators and 1 additional hour of training to cover Minnesota regulations. If applicators choose to attend all 4 hours of this program, they meet the requirements for training in Minnesota. This joint program has been very well received by commercial applicators who apply manure in both states. Future joint programming efforts will be discussed with Minnesota Department of Ag officials.

Finally, the Commercial Manure Applicator program was also downlinked to two County Extension Offices in Wisconsin and one County Extension Office in Nebraska. Due to the high numbers of employees in these counties who apply manure in Iowa, the program was coordinated with these respective Extension services to offer this training in other states. Neither Nebraska nor Wisconsin has mandatory manure certification requirements at this time.

### **Certification Workshop Evaluations**

Evaluation forms were created with questions from the applicators training material. At the end of each workshop and at the end of each video, the applicators were asked to fill out an evaluation on the material, an overall evaluation, and any changes in their manure management practices. Some of the practices evaluated in 2003 were as follows:

- 56% of the Commercial applicators understood and implemented the new separation distances, while 35% planned to adopt new separation distances as a result of training.
- 36% of Commercial applicators understood and implemented application rates based on phosphorous, and 48% planned to adopt the new application rates as a result of training. (NOTE: we find these statistics rather surprising considering that the majority of existing manure management plans are based on N applications and not P applications).
- 57% of Commercial applicators work with producers to maintain their residue management for conservation compliance, odor reduction and proper manure application rates for their plans. 29% of applicators planned to adopt these practices as a result of training.
- 63% of Confinement applicators understood and implemented the new separation distances, while 30% of them planned to do so due to training.

- 44% of the Confinement applicators understood the phosphorous impacts on water quality and have made changes to their manure management plans or to their application rates. 50% of the applicators planned on doing so because of the training.
- 64% of Confinement applicators maintain their application records, while 28% plan to adopt these practices due to the current training in 2003.

Complete results of program surveys are included in Appendix 2. These results are continuously updated as we receive evaluations from County Extension offices. For the latest version of these evaluations, please access the files on the web at: <http://extension.agron.iastate.edu/immag/maceval.html> Evaluations from the 2001 and 2002 MAC program are also available at this site.

### **Advisory Committee**

The 2003 advisory committee included ISUE campus and field specialist, DNR staff and NRCS staff. The group met on August 28, 2002 at ISU to review the 2002 program, discuss the development of the 2003 training materials, updates to certification forms, attendance forms, and other required paperwork including the development of the evaluation forms for both 2003 programs. The committee set deadlines for program material development and review. Communication following the meeting was primarily conducted electronically via email.

### **Promotional Materials**

Promotional materials used in the 2003 Manure Applicator Certification programs were similar to that of previous years. Brochures were developed for both programs and used as an informational and recruitment tool. Copies of the brochures are attached in Appendix 3. A press release was prepared and used by county extension offices for local media; see Appendix 3. Workshop dates were maintained on the IMMAG web site (<http://extension.agron.iastate.edu/immag>) and were linked on the Iowa Pork Industry Center's web page (<http://www.extension.iastate.edu/ipic/events.html>). A list of workshop dates was distributed to attendees at the Iowa Pork Congress in January 2003.

All of the certification materials have been distributed electronically through the IMMAG site. The Manure Applicator Certification Program button on the IMMAG site links users to a site solely devoted to the Certification Program (<http://extension.agron.iastate.edu/immag/mac.html>). The site contains a description of who needs to be certified, how to get certified and a list of questions and answers most commonly asked about the program. The site also has a "staff only" link for ISU Extension employees to download program-planning materials. This site serves as the primary location for MAC information in the state of Iowa.

### **Budget**

A copy of the budget expenditures as of May 31, 2003 is attached in Appendix 4. A final copy of the expenditures will be submitted within 60 day of the project's end date, per article 3.2 of the contract.

## **Appendix 1.**

### **Fact Sheets**

**DNR 113, Separation Distances for Land Application of Manure (revised October, 2002)**

**<http://www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/sepdstb4.pdf>**

**DNR 115 Commercial Manure Applicator Certification (revised October, 2002)**

**<http://www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/commappcert.pdf>**

**DNR 116 Manure Applicators Certification (revised November, 2002)**

**[http://www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/conf\\_12.pdf](http://www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/conf_12.pdf)**

## **Appendix 2.**

### **Evaluation Summaries**

**2003 Confinement Site Manure Applicator Evaluation Summary**

**<http://extension.agron.iastate.edu/immag/certification/03confevaluation.html>**

**2003 Commercial Manure Applicator Evaluation Summary**

**<http://extension.agron.iastate.edu/immag/certification/03commevaluation.html>**

**Appendix 3.  
Brochures and Press Releases**

**2003 Confinement Site Press Release**

<http://www.extension.iastate.edu/newsrel/staff/2002/dec02so/dec0202s.html>

**2003 Commercial Manure Applicator Press Release**

<http://www.extension.iastate.edu/newsrel/staff/2002/dec02so/dec0201s.html>

**2003 MAC Study Guide Availability Press Release**

<http://www.extension.iastate.edu/newsrel/2002/dec02/dec0204.html>

**2003 Joint IA-MN training press release**

(No longer available electronically)

**2003 Confinement Site Manure Applicator Brochure**

<http://www.extension.iastate.edu/Pages/agron/ForStaff/2003/03confbrochure.doc>

**2003 Commercial Manure Applicator Brochure**

<http://extension.agron.iastate.edu/immag/certification/manurebrochure.pdf>

12/04/02

FOR IMMEDIATE RELEASE

Contacts:

Angela Rieck-Hinz, Department of Agronomy, (515) 294-9590, [amrieck@iastate.edu](mailto:amrieck@iastate.edu)

Jean McGuire, Continuing Education and Communication Services, (515) 294-7033, [jmcguire@iastate.edu](mailto:jmcguire@iastate.edu)

### **Confinement Manure Applicator Training Scheduled**

Confinement site manure applicators should plan to attend a two-hour continuing education workshop offered by Iowa State University (ISU) Extension in January or February 2003 to maintain applicator certification requirements.

"Iowa law requires confinement site manure applicators to obtain two hours of continuing education each year of their three-year certification period or take and pass an exam once every three years," said Angela Rieck-Hinz, ISU extension program specialist and coordinator of the manure applicator certification program. "If applicators fail to get the two hours of continuing education each year, they will be required to pass a written exam to become recertified at the end of 3-year certification cycle."

Applicators who were originally certified in 1999 by attending a workshop and who missed one or more years of training since that time will be receiving a letter from the IDNR telling them they must take the exam to recertify. The letter will include exam dates and locations. To help those who must test to recertify, the study guide manual is now available on the Web at: <http://www.extension.iastate.edu/pubs/PM1779/homepage.html>.

During the workshop, which must be attended for the full two hours to receive credit, applicators will learn about new manure application rules, new land application setback requirements, phosphorus issues and water quality concerns.

The workshop will also serve as initial certification for those applicants who are not currently certified. Due to rule changes this year, applicators should determine if they need to become certified. If a confinement livestock operation has more than a 500 animal unit capacity, the operator must be certified to apply manure unless the manure is applied by a commercial manure applicator. To determine if you have more than 500 animal units contact your ISU Extension county office. The certification fee is \$100 for a three-year certificate.

Due to new uniform certification deadlines, applicators are encouraged to attend workshops prior to March 1 to avoid being assessed a late fee for certification. Also, applicators are highly encouraged to attend the workshops due to the uncertainty of when the videotapes will be available for training in late January and February.

If you have questions about your certification status or about meeting dates and locations,

contact your local ISU Extension county office or go to:  
<http://extension.agron.iastate.edu/immag/mac.html>.

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Contacts:

Angela Rieck-Hinz, Department of Agronomy, (515) 294-9590, [amrieck@iastate.edu](mailto:amrieck@iastate.edu)

Jean McGuire, Continuing Education and Communication Services, (515) 294-7033,  
[jmcguire@iastate.edu](mailto:jmcguire@iastate.edu)

### **Commercial Manure Applicator Training Scheduled for January 7, 2003**

To help commercial manure applicators receive the three hours of annual continuing instruction required to maintain their manure applicator certification, Iowa State University (ISU) Extension and the Iowa Department of Natural Resources (IDNR) will conduct a Commercial Manure Applicator Satellite Downlink on Tuesday, Jan. 7, 2003 from 9 am -12:30 pm. There is no fee for the workshop but it is recommended that you register in advance with you local ISU Extension county office.

Commercial manure applicators wishing to recertify and those wanting to certify for the first time should attend. The workshop will provide the required three hours of annual training and will cover new applicator rules, new application setback distances, water quality and phosphorus concerns and the effects of manure application equipment on odor, residue cover and crop yield. Due to program rules changes, all current certified commercial manure applicator licenses will expire on December 31, 2002. Those wanting to renew have until March 1, 2003 to renew and avoid paying the late fee for certification. The certification fee for commercial applicators is \$200 per year and the late fee is \$12.50.

Commercial applicators are highly encouraged to attend the satellite downlink program due to the uncertainty of when videotapes will be available for training in late January and February.

Commercial manure applicators also may contact their local IDNR field office to schedule an appointment to take the certification exam to meet certification requirements. Applicators who want to take the exam may wish to access a copy of the study guide manual to help prepare for exam. The study guide is now available at the following web address:

<http://www.extension.iastate.edu/pubs/PM1778/homepage.html>.

If you have questions about your certification status or the satellite downlink program, contact the local ISU Extension county office or on the Web at:

<http://extension.agron.iastate.edu/immag/mac.html>.

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[jmcguire@iastate.edu](mailto:jmcguire@iastate.edu)

## Updated Study Guide Available for Confinement Site Manure Applicator Certification Program

Commercial manure applicators and confinement site applicators wanting to become certified to apply manure in Iowa can access study guide materials that will help them prepare to take the certification exam. Applicators can become initially certified by attending a workshop hosted by Iowa State University (ISU) Extension or by taking and passing a certification exam administered by the Iowa Department of Natural Resources. Any confinement site applicators who missed one or more annual training sessions in the past three years will need to take the exam to be eligible to renew their applicator certificates.

Study guides for both the Commercial and Confinement Site Manure Applicator Programs are now available on the Web. The Confinement Site Manure Applicator Study Guide contains a new chapter on manure applicator rules and is available at:

<http://www.extension.iastate.edu/pubs/PM1779/homepage.html>. The Commercial Manure

Applicator Certification Study Guide will be updated in the future and is available at:

<http://www.extension.iastate.edu/pubs/PM1778/homepage.html>.

ISU Extension will not be printing updated copies of entire manuals, but will include updated chapters when applicators order any of the remaining manuals in stock. Applicators may order the complete study guides through Extension Distribution Center by calling (515) 294-5247. Confinement Site applicators should order PM 1779 and Commercial Manure Applicators should order PM 1778. Each manual is \$20.

Applicators also may get updated chapters for study guides they already own by downloading from the above Web site or by asking for copies of the updated chapters at ISU extension county offices. If applicators ask ISU Extension county offices to download copies from the Web, local fees for paper, copying or printing may apply.

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**Appendix 4.**  
**Budget Summary**

**MANURE APPLICATOR CERTIFICATION EXPENSES**

July 1, 2002 to May 31, 2003

Salary .....52,932.56

Benefits (Salary & Hourly).....14,221.26

    Subtotal Personnel .....67,153.82

Travel .....5,044.41

Supplies.....1,078.76

Printing/copying.....548.22

Other

    Contracted services .....15,665.00

    County extension workshops, meeting

        Rooms and postage and office asst. ....9,490.00

    Phone and computer.....2,335.48

    Satellite downlink expenses.....2,462.50

    ICN inservice .....0.00

    Videotapes and fees .....833.11

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Total Spent to Date .....104,611.30

Encumbrances (payroll and phone) .....8,535.98

**Balance**.....23,866.72

Pending Allocation (\$12,000 for Field Specialist Salary)