

Feedlot Rules Education Project Evaluation

**Land application of manure:
Minnesota livestock producers' practices and
educational needs**

Focus group and questionnaire results

**University of Minnesota
Water Resources Center
St. Paul, Minnesota**

November, 2002

Acknowledgements

Many thanks to those individuals and organizations who made this event possible:

Project sponsors, collaborators, and staff

Jim Anderson, Department of Water, Soil, and Climate, University of Minnesota
Kevin Blanchet, University of Minnesota Extension Service
Dennis Busch, University of Minnesota Extension Service
Leslie Everett, Water Resources Center, University of Minnesota
Bruce Montgomery, Minnesota Department of Agriculture
Philip Nesse, University of Minnesota Extension Service
David Wall, Minnesota Pollution Control Agency

Local cooperators

Robert Stommes, University of Minnesota Extension Service, Pope County
Juergen Peters, University of Minnesota Extension Service, Waseca County
Jerrold Tesmer, University of Minnesota Extension Service, Fillmore County
Daniel Martens, University of Minnesota Extension Service, Benton County

Producers

We appreciate the time and interest afforded by the farmers in Pope, Waseca, Fillmore, Benton, and Dakota Counties who participated in the Focus Group sessions.

Helping hands

Mark Hauck, Benton Conservation District
Lawrence Zilliox, University of Minnesota Extension Service, Douglas County
Other county Extension staff

Project support

U.S. Environmental Protection Agency '319' Grant, administered by Minnesota Pollution Control Agency

Land application of manure:

Minnesota livestock producers' practices and educational needs

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(Feedlot Rules Education Project Evaluation)

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November, 2002

Feedlot Rules Education Project Evaluation:
Phase II, Land Application

**Land application of manure:
Minnesota livestock producers' practices and educational needs**

Executive summary

Introduction

Focus groups: key findings

Questionnaire: key findings

Introduction

This report is the result of an effort directed by the Water Resources Center, University of Minnesota to identify farmers' educational and informational needs in the area of manure and nutrient management, particularly, land application of manure. Eight farmer focus groups were conducted in four counties—Pope, Waseca, Fillmore, and Benton. The previous winter—2001-2002—county level, producer workshops on land application of manure had been held in each of these, as well as many other counties in the state. Each pair of focus groups in a county consisted of one group who attended the winter workshop ('Attendees') and another group of participants who had not attended ('Non-Attendees'). The Focus Group proper was preceded by a three-page questionnaire to get the participants thinking about issues that would be explored in more detail during the course of the discussion. The participants retained the questionnaire through the discussion and were asked to refer to it at different points during the session. A total of 51 producers attended the sessions. Session size ranged from four to eight, with a mean of 6.4.

All groups were conducted by the same moderator. In addition to the moderator, each session was staffed by a county Extension Educator, as well as either a Regional Extension Educator or a Conservation District representative. The Focus Group sessions were recorded on audiotape. Abbreviated transcripts for each session were prepared. The key findings from the discussions and the questionnaire are presented below. Focus group results are presented first in summary form and then in more detail with supporting quotes for the first five of the eight listed key findings. The last three findings are relevant, of interest, and equally important in terms of representing the weight of the farmers' opinions. However, they are not as useful in terms of Extension action or follow up. For the supporting quotes for these three findings, see Chapter 3.

Focus groups: key findings summary

• **Variability and availability and the consequences**

The variability in open lot and other solid manure and in the first and second year availability of nutrients, makes it difficult to apply at rates that closely match crop needs.

• **Spreader calibration: promote, provide, assist**

Many of the producers who spread their own solid manure, need and request on-farm assistance with weighing their manure wagons/spreaders. Some have never calibrated their equipment.

• **Manure application record keeping forms are needed**

Producers that apply their own solid manure, need and want suitable forms for field-by-field record keeping.

- **Nutrient Management Plans: assistance needed; involve private sector, ag. professionals**

Those producers with some experience with NMP, recognize that it not something they can readily do or would want to do themselves. Those who are interested in starting NMP, know they need assistance. In some cases, it is not clear where this assistance will come from. The participants suggest that more private sector ag. professionals be trained to provide this service.

- **Website as a source of information: important to some, but most farmers are not keen to use**

There is quite a range in the level of interest and proficiency when it comes to computers and the Internet. However, most of the participants are not likely to use an Extension website very often.

- **Sensitive area rules are generally workable**

Most of the producers feel that the rules for sensitive areas are generally fair and workable and do not pose much of a problem in their own operation. (Exception: Pope Co. participants)

- **Sensitive areas setbacks will pose a difficulty for some farmers AND Setbacks are not fair, reasonable, etc [Pope Co.]**

For some of the farmers, the setbacks will be a hardship. In most cases, these producers are daily scrape and haulers with a limited amount of land that is not near a sensitive area. The inability to incorporate in the winter, adds to the difficulty.

- **Farmers look to Extension for research, demonstration, and education**

Farmers continue to expect that Extension will play an important role in research, on-farm demonstrations, educational events, and in providing informational materials and services. This sentiment was expressed in a general sense in the context of, for example ‘most important thing Extension could do’. It was also expressed with respect to specific topics such as ‘rates’, nutrient management planning, and ‘sensitive areas’.

Focus groups: key findings with supporting quotes

1. Variability and availability and the consequences

The variability in open lot and other solid manure and in the first and second year availability of nutrients, makes it difficult to apply at rates that closely match crop needs.

The nutrient content of solid manure varies greatly, being influenced by many factors such as bedding content, water content, animal age, feed, etc. The first and second year nutrient availability of manure also varies, according to weather, tillage practices, etc. The responses and attitudes of producers are understandable. Many of the daily scrape and haul operators feel it’s not practical or worthwhile to keep track of all the loads and all the fields (and portions of fields). Record keeping and the calculation of application rates is too time consuming and they have other things that have to be done. Most of them do not keep good records. Some use estimates; some even ignore the manure’s nutrient contribution, especially if they have a lot of land for the amount of manure that has to be applied. Many deem it adequate to rotate fields and do soil tests. In some cases, the cost of hauling the manure is greater than the value of the nutrients contained, so the manure is viewed as a liability rather than an asset. Many operators—including those with storage capacity, tend to over apply commercial fertilizer, because they are not confident that the manure’s nutrients will be available when it’s needed by the crop.

Selected producer quotes

[For a more complete listing of relevant quotes for each of these key findings, see Chapter III]

But, it’s hard to believe there’s that much nitrogen left on those second year credits. I think that’s where we typically over do it.

And it's hard to do with the type of manure we apply. Cause it depends on how much straw happens to be in the gutters that particular day. Some days it's more solid than others. And, so your rates do vary a little bit from day to day. Has Extension come yet, with a good, clear answer on how much of that nitrogen's available first year? That's sort of a floating figure.

So, the temperature has a lot to do with when the stuff is gonna be released. [name] applied hog manure from a neighbor two years ago. Cold summer, boy—just seen nitrogen deficiency all summer long. And, we had went that 20% over the rate . . . more people complain that, don't seem like that hog manure gets released in cool temperatures as fast as what you would anticipate it would. Or, that your plant probably needs it. You're short at a certain time. And I don't know how the farmer is going to compensate for some of this sometimes. Sometimes a little commercial fertilizer put on either at planting time—to be readily available, and then wait for the manure to kick in when the soil temperatures warm up. Seems to be what I've found.

I think that's where it's easy to get 20% over, because I know the formulas I ran through, boy it was hard to hold some of those numbers up—that--second year credit. I mean I'd just as soon you erase that 20-30 lbs to zero and make sure I got enough N going into this year, than saying well that's—that bottom end of your second year, holding you off the top end of your first year—or yer upcoming year. You know you're holding that 30 lbs. off because supposedly you got that left from 18 months ago—boy that's—with open winters, and heavy rains, yeah aggggh. Hard to do.

Note: Also see third quote, next section.

2. Spreader calibration: promote, provide, and assist

Many of the producers who spread their own solid manure, need and request on-farm assistance with weighing their manure wagons/spreaders.

A number of the participants had previously availed of Extension or the Conservation District for assistance with weighing manure wagons and spreader calibration. Some have never calibrated. Some were not aware that scales and assistance were available to them. A number indicated that this is one area where they could use some one-on-one assistance. They don't have time to get scales and then return them. They recognize that if they don't calibrate, then they don't know their application rates very well, even if they are doing nutrient sampling. On the other hand, some feel that because of the variability in their manure, it isn't worthwhile to calibrate. To them, it is not worth the trouble to 'fine-tune' their applications. Again, they are satisfied with using estimates, rotating their fields, and doing soil testing. Calibration was one of the two topics most often suggested for field days. Pope Co. does not appear to have any suitable scales available.

Producer quotes

I think they're going to have to have scales available . . . so that you can go out and weigh these box spreaders . . . when we're spreading solids out of a manure pack—we're gonna have to know what these spreaders weigh. And, you're going to have to do this more than just once. . . . have to do this for a few years to get half a handle on what you're spreading.

That's the problem with that. The convenience of getting that stuff, you know. There's only so many days you can get stuff done. What do you do there? Do you run to [city] and get a scale and . . .

How do you calibrate it when you haul about 10-12 different kinds of manure in one day? Yeah, you could weigh it on a scale and so forth, but I mean, like I'd said before you take one load out of the yard that's steer manure and you scrape it up and if there's more water in it, it's a lot heavier and your next time it might be dry and you pick up a around a round bale feeder or you go out and get dirt in it and it'd be very hard to come up with an accurate—other than just common sense of not over applying it and basically soil tests to put it on. [Note this quote is also relevant with respect to the previous key finding]

I just think it's [calibration] pretty important—it's all a mute point if you don't know what that load weighs.

With one-on-one assistance, you know the SWC[D] came out and helped me calibrate the poultry spreaders—that was very helpful. Had scales and stuff like that. 'Cause it, quite frankly, wouldn't get done, otherwise. Can try to hunt up scales and do that kind of stuff— is too time consuming for me.

3. Manure application record keeping forms are needed

Producers that apply their own solid manure, need and want suitable forms for field-by-field record keeping.

The farmers are not aware of a suitable form for field-by-field, manure application record keeping or they do not think the form in the Extension publication, “Manure Planning and Record Keeping Guide” is suitable for use in the field. [Benton SWCD has its own form for EQIP participants.] This issue came up in almost all the sessions. Both pocket size and full (letter) size options are needed. Most of the respondents expressed interest in something suitable for use in the field—very simple and easy to use. Some were thinking more in terms of something that would be on file in the office and that could, for example, be useful for reviewing previous years. Some currently use a calendar, computer spreadsheet, or field maps.

Producer quotes

Maybe [there's] not a uniform record keeping system. If you had a form on there and it had field acres, where you can just go down the line and write in the numbers, it probably would get done a little easier too, I suppose.

I think you all were laughing about the plastic jacket, but I think it's going to have to be readily available even in your milk room or in the cab of your tractor that your spreading manure with or something that's going to have to be protected and something that's real user friendly so I can mark down that hey, I put down 7 loads on this date and this field, and you're done. That's it It's going to have to be real user friendly to the farmer for him to do it. If it's gonna be a chore it's not gonna get done. The farmers just don't have the time . . .

Those pocket size books that we had a few years ago for keeping track of calves are . . . really handy and something like that—sometimes that would be more user friendly than the large book.

[Response to previous] Use it out there so you can transfer it later . . . It's gotta be the smaller one that does fit in your pocket and stays there—would be a very handy thing to carry along all the time. It's surprising when you do carry that along most of the time, how much stuff you do write in there all the time. . . . that'd be the handiest.

I think it would be nice if it did have full page, but have enough room that you could write maybe on page for three or four years before you have to start a new page. Then you could look back—instead of paging back through two books.

. . . the only thing I really want to work on is get a better system on the record keeping. You know, try to improve that some. Where it would be easier to go back a couple years and see . . .

4. Nutrient Management Plans: assistance needed; involve private sector, agricultural professionals

Most of the producers with some experience with NMP recognize that it not something they can readily do or would want to do themselves. Those who are interested in starting NMP, know they need assistance. In some cases, it is not evident where this assistance will come from, although it is becoming clear that in many cases, they cannot rely on the public sector. The participants suggest that more private sector agricultural professionals be trained to provide this service.

Producer quotes

I think you are going to have to get the private consultants or the agronomists involved wholeheartedly in this because, number one, the farmers are already working with agronomists now. . . . I think those people have to be brought up to the speed because they're the ones you are already making contact with, they're the ones that know your farm plans and what you've done in the past already, and it'd be very simple . . . for the farmer to get involved with them to do the manure management and help these guys out, really quick. Versus bringing a new person in that you have to train and he has to go through the whole background of what's going on. So I think agronomists in the local area are the ones that really have to be helped out. Maybe Extension helps them, to train them—I think those are the key people that can get this thing really rolling quick.

If they're gone be done [Nutrient Management Plans], who's gonna do it . . . ?

The problem is that we're not going to have a place to go get one [NMP]. Because the guys [Extension Educators] are gonna be . . . six counties away.

Well, I think we're in trouble. Because I went through a plan with [Extension Educator] here a couple weeks ago and if Extension—if he's not available—where are the people gonna come from that do these plans? I mean it isn't—you're talking about—you're drawing on a lot of experience and lot of expertise that, that's not necessarily out there—to do these plans for us. You're talking a large investment by the individual producer if you're gonna try and do them yourself.

. . . .What do other consultants think of the practice? Because, I think most people would rather listen to their consultant, than to what the state or what the county or [?] somebody tells them to do. So maybe to get more consultants on board would really help.

5. Website as a source of information: important to some, but most farmers are not keen to use

There is quite a range in the level of interest and proficiency when it comes to computers and the Internet. However, most of the participants are not likely to use an Extension website very often.

Most of the farmers either don't use or seldom use the World Wide Web to get information. Some don't have computers. Some have computers, but don't use it much or don't use it much for farm matters. There are some that are moderate to avid users, but would not be likely to go to an Extension website very often to get info. It appears that among those who gave a high rank to [Extension] 'Website' on the questionnaire, only some of these would actually use it very often.

Producer quotes

I can't say I've looked at it a lot lately

Because that's just so convenient for me, I mean, I have, you know, the favorite lists on the websites that I check almost daily or weekly

That's—pretty much where if I need to research something or any product or look for buying or whatever, first place I hit—convenient, it's in the office, I hit the website, I research stuff.

Probably because I just probably wouldn't go and do it. You know, I just wouldn't say "Boy, I better check the Extension website" [responding to question re. why gave it a low rank]

I guess for me—I can check it whenever I want. I don't have a set time where I have to be someplace

I like calling somebody up and say, 'hey, this is what I need, tell me what I need to know'. I get on the Internet, it's kinda like I could spend all day look for something that takes me five minutes to get out a phonebook and . . .

That is true. [responding to preceding comment/quote] I rated it high out of all these [educational formats and options on questionnaire]. But, it's not saying I would use it a lot . . .

Yeah, I did [gave it a high rank on questionnaire], because I spend a lot of time with the technology, the Internet.

I just detest the thing. [computer]. My kids and wife are on it all the time and I can't get anything else out of it.

Yeah [responding to preceding quote], instead of spending an hour at a meeting. It's an efficient use of time—you can get something that you need.

I don't know how to work a computer. I think I'm too old to learn about a computer.

Questionnaire: key findings

1. More farmers are adopting recommended manure and nutrient management practices.

For a group of ten practices or sets of practices examined [Questionnaire items 4-13], the overall rate of implementation or adoption increased from 55 percent 'Before 2000' to a Current rate of 72 percent, with a predicted rate of 88 per cent 'By 2004'. This overall trend was mirrored in all subsets examined: 'All Attenders', 'All Non-Attenders', and each of the four counties.

2. Pope County appears to lag other counties in the implementation of these recommended practices.

For the combined results for 10 practices (questionnaire items), differences among the four counties and between Attenders and Non-Attenders are small. The largest difference noted was for the Pope County participants. Their current (2002) rate of implementation is 58 percent. The participants from other counties reported rates ranging from 71 to 80 percent. [The differences between counties for the beginning (Before 2000) and ending time (By 2004) frames are relatively small (but Pope County's rates are the lowest or tie for lowest in each case)].

3. Differences between Attenders and Non-Attenders are generally small to moderate, but variable.

For the combined results for ten practices, Non-Attenders started at somewhat higher implementation levels (60 vs. 52%) and Attenders expect higher levels by 2004 (91 vs. 83%). Current rates are the same (71 and 74%). However, for each of the three time frames, there are individual items among the ten for which the differences between Attenders and Non-Attenders exceed fifteen percentage points.

4. Almost all of the individual practices are predicted to be implemented at rates exceeding 80 percent 'By 2004', by both Attenders and Non-Attenders.

There are exceptions:

- Adjust for phosphorus (68%, Non-Attenders)
- Develop/update manure management plans (70%, Non-Attenders)

5. For Extension programs or educational events, three of ten listed topics [Item 16A] stood out in terms of likelihood of attendance.

The farmers' top choices were:

- Field selection: soil phosphorus levels and manure application rates
- Managing sensitive areas
- Applying and incorporating manure: methods, implements, uniformity, timing

6. 'Publications' are the preferred 'format' for obtaining manure management information.

Of a list of seven 'educational items or opportunities', 'publications' was the most preferred format.

Also, compared to Non-Attenders, Attenders were more interested in:

- 'farm visit by specialist or consultant OR one-on-one assistance'
- 'workshops'

I Methods brief

Introduction, background

This document reports the results for the project evaluation component of a two-year effort. In 1999, the University of Minnesota, Water Resources Center was awarded a '319' grant (Minnesota Pollution Control Agency) for a project titled 'Education to improve feedlot, manure, and nutrient management.' The overarching purpose of the project was to reduce environmental impacts from animal agriculture, particularly impacts to water quality. The major project activities were the development of educational materials, regional workshops for agricultural professionals, and county workshops for producers. The collaborating institutions were the University of Minnesota Extension Service, Minnesota Department of Agriculture, Minnesota Pollution Control Agency, Board of Water and Soil Resources, and the USDA Natural Resources Conservation Service.

A meeting with project staff and collaborators was held in early 2002 to determine the general parameters of the evaluation component. The decision was made to emphasize future educational needs, rather than evaluate project activities and assess outcomes. The results reported here help to characterize farmers' practices, especially, their changes in practices over time, relative to the implementation of the 'new feedlot rules (Minn. Rules, Ch. 7020). The results also indicate their preferences and suggestions respecting the topics they are interested in for educational programming and the formats in which they prefer to obtain information or participate in educational programs, along with related suggestions and opinions to inform Extension education efforts.

A second meeting was held to further refine the content and format of the Pre-discussion questionnaire and discuss ideas regarding the questions used in the Focus Group. The resulting questionnaire (see Appendix D) and Focus Group 'Question Route' (See Appendix E) was tested first, with a Douglas County farmer (who is also an Extension Educator) and second, with a group of three producers in Dakota County. The first pilot effort (done via telephone) did lead to some minor changes. The second test session (conducted in person) did not reveal the need for any further revisions in the two instruments.

Focus group sessions

Two Focus Groups were conducted in each county. The first session in each county consisted of participants who had participated in the winter 2001-2002 producer workshops on land application of manure ('Attender' group or 'Attendees'). The second session in each county was conducted with producers who had not participated in the workshops ('Non-Attender' group or 'Non-Attendees'). The counties were chosen primarily on the basis of three criteria:

- geographic representation
- importance of animal agriculture in the county
- local interest in hosting the sessions.

All of the counties chosen were personally recommended by the respective participating Regional Extension Educator, Dennis Busch or Phil Nesse. They made the original inquiries to the prospective local cooperators. Then, project consultant, John Vickery, contacted each local cooperator to further discuss the effort. A detailed, email letter followed these telephone conversations. See Appendix A, for an example. Each pair of sessions in a county was organized by a local cooperator, a county Extension Educator:

- Pope County, Robert Stommes
- Waseca County, Juergen Peters
- Fillmore County, Jerrold Tesmer
- Benton County, Daniel Martens.

The local cooperators made initial contacts by telephone with the prospective farmer participants, usually about two weeks prior to the planned dates. Cooperators were provided with a telephone screening script/form to guide their approach and to record the results of the calls. This document is available as Appendix B. The method used to create ‘call lists’ varied by county and group. In general, they started with the event sign-in list for the land application of manure workshops the previous winter for the Attenders group. For Non-Attenders, cooperators consulted with or obtained a list of the county’s animal operations from the County Feedlot Officer. The local cooperators were asked to use a systematic procedure for building the participant groups. General guidelines for such were provided. Two additional criteria were specified: A) participants should be representative of the county with respect to size of operation and types of animals raised (exceptions: poultry raisers were not a target group, but could be included if they had other livestock; and see ‘B’); B) participants should have 100 to 999 animal units. It was deemed acceptable to have one or two participants per session with more than 1000 animal units, if such was representative of the county (This occurred only in Waseca Co.).

A reminder letter was sent from the county Extension offices to each invitee. This letter reiterated the purpose of the meeting, provided details on the location, and re-mentioned the cash incentive. Cash incentives generally ranged from \$40 to 50. The incentive was first mentioned during the initial telephone query/invitation. The cash payments were extended at the end of each session. The local cooperators were provided with a ‘reminder letter template’ to adapt or customize. Generally speaking, these follow up letters were to be received a few days after the phone call or a few days before the Focus Group session. An example is given in Appendix C. The participants were given a reminder telephone call, nominally the day before the session.

A total of 51 farmers participated in the sessions—27 Attenders and 24 Non-Attenders. Session size ranged from 4 to 7, with a mean of 6.4, a median of 7, and a mode of 7. The number attending from each of the four counties ranged from 11 to 14. The number of producers participating in each session is given below:

Focus group participation

<u>County</u>	<u>Group</u>	<u>Number of participants</u>
Pope	Attenders	7
	Non-Attenders	5
Waseca	Attenders	7
	Non-Attenders	4
Fillmore	Attenders	7
	Non-Attenders	7
Benton	Attenders	6
	Non-Attenders	8
Total	Attenders	27
	Non-Attenders	24
Total number of participants		51

All of the sessions began with a meal, followed by the questionnaire and then the focus group proper. In Pope County, the meal was preceded by or held concurrently with a farm management update seminar by a guest speaker. The Pope and Benton County sessions were held at local restaurants. The Fillmore and Waseca County sessions were held in local government/county Extension offices. Again, the three-page questionnaire was given to the participants before beginning the Focus Group session. Participants retained the questionnaire until the session was over—they were asked to refer to the Questionnaire during the course of the discussion. Consultant, John Vickery, moderated the sessions.

Two Extension staff members were present at each session—the local cooperators and the respective Regional Nutrient Management Extension Educators’, Phil Nesse and Dennis Busch. In Benton County, Mark Hauck from the Conservation District served in Mr. Nesse’s stead. These Focus Group team members or associates staff members played important roles during the sessions. They:

- 1) served as experts to answers questions or address technical or legal/regulatory issues that arose during the sessions
- 2) presented a review of the sensitive area rules on setbacks, buffers, and incorporation (preceding a Focus Group question set on that subject)
- 3) gave an oral ‘verification summary’ at the end of the session (see next paragraph)
- 4) participated in post-Focus Group debriefing sessions (which were recorded)
- 5) operated the sound recording equipment.

The ‘verification summary’ is a brief oral summary, covering all the major points made by the participants under each of the post-introduction and preliminary questions of the question route. After the summary, the participants were asked questions such as “Is that a fair summary?,” “Did we leave anything out?,” and “Is there anything else you would like to add?”. The purpose of the ‘verification summary’ is two-fold. It gives the participants the sense that their input is important—that staff was really paying attention and that the information obtained that day will be used. For staff, it is an opportunity to obtain verification that what was heard was properly understood and that what was heard was all that needed to be heard (and said).

A summary report was developed for each Focus Group. These reports are based on the Focus Group team’s notes (including the notes used as a basis for the end of session ‘verification summary’), the post-session debriefing, as well as a review of the recordings of the end-of-session summary and the debriefing. They do not reflect an analysis of the transcripts. The two focus group summary reports for each county were combined into a single, preliminary report for each county. See Appendix G.

Transcripts

The tape recordings from the sessions were transcribed using a Panasonic Standard Cassette Transcriber. The prepared documents are partial or abbreviated transcripts. Only the more central or important portions of the sessions were transcribed. Off-topic remarks and digressive discourse were omitted, as were the responses to the preliminary questions at the beginning of ‘question route’. The transcripts are typically 12-13 pages each, but range from 10 to 19. They are presented in Appendix H.

The transcripts were analyzed using the ‘long table analysis’ procedure describe in Richard A. Krueger and Mary Anne Casey, *Focus Groups: a practical guide for applied research*, 3rd Ed., 2000, pages 132-137. The results are summarized in detail in Chapter III, B. “Combined transcripts summary”. This summary was used to identify eight key messages or findings. These findings are given in part A of Chapter III, along with the supporting farmer quotations. All eight are also presented in the Executive Summary. For five of these key findings—those that are most relevant with respect to Extension action and follow up—the Executive Summary also includes a sample of the supporting farmer quotes. Recommendations that address the key findings are offered in Chapter IV.

Questionnaire

The results for each session were first hand tabulated on an individual, questionnaire form. They were then transferred to tables in Word software for analysis, calculations, and presentation. Preliminary reports were prepared for each county (Pope and Waseca were combined). The preliminary reports are available in Appendix G. A summary of the results for all four counties is given in Chapter II. This version of the questionnaire results reports statistics for all participants combined (all 8 sessions), along with comparisons between Attenders and Non-Attenders and between counties.

Please help Extension to plan future educational programming.

16A. First, in the table below, tell us which **topics** you would likely attend or participate in.

Use the following rating system

- Yes** I would probably attend.
Maybe I might attend; I might not.
No I would probably not attend.

For each lettered topic on the left, circle one of the choices on the right.

TOPIC	Would you attend?		
A. Calibrating my manure spreader	Yes	Maybe	No
B. Manure sampling and nutrient content analysis	Yes	Maybe	No
C. Soil sampling and testing	Yes	Maybe	No
D. Manure application record keeping, for each of my fields	Yes	Maybe	No
E. Using UM Extension tables to calculate application rates	Yes	Maybe	No
F. Field selection: soil phosphorus levels and manure application rates	Yes	Maybe	No
G. Managing sensitive areas	Yes	Maybe	No
H. Developing or updating a written nutrient management plan	Yes	Maybe	No
I. Applying and incorporating manure: methods, implements, uniformity, timing	Yes	Maybe	No
J. Determining total acres needed for all of my manure	Yes	Maybe	No
<u>Other topics:</u>			
K.	Yes	Maybe	No
L.	Yes	Maybe	No

16B. Now, which of the above topics is your top choice for a workshop, field day, or other education event—the one(s) you would be **most likely to attend**? (1 to 3 letters)

_____, _____, _____

16C. Finally, which of the following **educational items** or **opportunities** would be most useful to you to help with manure applications and nutrient management?

Rank your choices from first to last priority. (Use '1' for top choices(s), '2' for next most useful; then '3', '4' and so on, if needed. For items of equal priority, use the same number.)

- | | |
|---|--|
| _____ Publications | _____ Comprehensive web site |
| _____ Workshops | _____ Nutrient management computer software |
| _____ Farm tours/
demonstrations | _____ Farm visit by specialist or consultant
OR one-on-one assistance |
| _____ Newsletter, 'update',
or periodic bulletin | _____ Other _____ |

Thanks much for completing this questionnaire!!

5/15/02

II Questionnaire results summary

Pope, Waseca, Fillmore, and Benton Counties

Participation summary

<u>County</u>	<u>Group</u>	<u>Number of participants</u>	
Pope	Attenders	7	
	Non-Attenders	5	
Waseca	Attenders	7	
	Non-Attenders	4	
Fillmore	Attenders	7	
	Non-Attenders	7	
Benton	Attenders	6	
	Non-Attenders	8	
Total	Attenders	27	4 sessions
	Non-Attenders	24	4 sessions
Total number of participants		51	8 sessions

Each questionnaire item is treated in numerical sequence. The questionnaire item itself is followed by a presentation of the results in one or more tables. Each table is followed by a results summary.

Questionnaire item #1

1. What is the size of your operation in animal units? (1000 lbs/ AU)
 A. less than 100 B. 100-299 C. 300-999 D. 1000 or more (Circle one)

Table 1 Response choice counts for each participant group and combinations of groups, Item #1.

Location and group	Response choice counts by size of operation			
	A <100 AU	B 100-299 AU	C 300-999 AU	D >= 1000 AU
Pope Attenders	1	6	0	0
Pope Non-Attenders	1	1	3	0
Waseca Attenders	0	1	3	3
Waseca Non-Attenders	0	2	1	1
Fillmore Attenders	0	4	3	0
Fillmore Non-Attenders	0	2	5	0
Benton Attenders	1	4	1	0
Benton Non-Attenders	1	3	4	0
All Attenders	2	15	7	3
All Non-Attenders	2	8	13	1
Total, all participants	4	23	20	4

Summary

All participants

- There is an even distribution of participants in the two size ranges targeted for the sessions: B. 100-299 (23 participants) and C. 300-999 (20 participants).
- Eight of the participants did not meet the established selection criteria for size of operation. Four were too small—less than 100AUs; Four were too big—more than 1000 AUs.
(Note: it was deemed acceptable to have a few participants with more than 1000 AUs, if such was representative or characteristic of the county concerned. Such is characteristic of Waseca Co, the only county from where we had large operators as participants.)

Attendees versus Non-Attendees

- On average, Non-Attendees had somewhat larger operations (Exception: Waseca Co)

Counties

- Waseca Co. participants, on average, had larger operations
- Pope and Benton Co. participants, on average, had smaller operations

Questionnaire item #2.

2. What animals do you have in your feedlot operations? (Circle all that apply)

A. hogs B. beef C. dairy D. poultry E. other

Table 2 Response choice counts for each participant group and Combinations of groups, Item #2.

Location and group	Response choice counts by type of animal					No. of respondents with more than one type of animal
	A hogs	B beef	C dairy	D poultry	E other	
Pope Attendees	0	2	5	0	0	0
Pope Non-Attendees	1	4	3	0	0	2 ⁺⁺
Waseca Attendees	5	0	2	0	2 ⁺	2
Waseca Non-Attendees	2	1	2	0	0	1
Fillmore Attendees	2	5	3	0	0	3
Fillmore Non-Attendees	4	5	3	0	1 ⁺	5 ⁺⁺
Benton Attendees	2	1	4	2	0	2 ⁺⁺
Benton Non-Attendees	2	3	7	3	0	5 ⁺⁺
All Attendees (N=27)	9	8	14	2	2	7
All Non-Attendees (N=24)	9	13	15	3	1	13
Total, all participants (N=51)	18	21	29	5	3	20

⁺ Waseca Attendees, one-horses, one-sheep; Fillmore Non-Attendee, sheep

⁺⁺ There were five participants with three kinds of livestock: 1 Pope Non-A, 1 Fillmore Non-A, 1 Benton Attendee, and 2 Benton Non-As

Note: All of the participants with poultry, horses, or sheep, also raise hogs, beef, or dairy.

Summary

All participants

- Hogs, beef, and dairy were all well represented in the sessions, with dairy being the most prevalent livestock raised (29 out of 51 participants). [Note however, that there were only six participants who raised only beef. See Table 7]
- About 40% of the participants (20 out of 51) raise more than one type of animal

Attenders versus Non-Attenders

- Attenders and Non-Attenders are similar in the animals they raise, except that Non-Attenders are more likely to have beef (13 Attenders vs. 8 Non-A) and more diverse operations (13 Non-A vs. 7 Attenders have more than one type of animal).

Counties

- Fillmore and Benton county participants tend to have more diverse operations—with two or more types of animals (15 out of 28 vs. 5 out of 23 from Pope and Waseca counties).
- Waseca is the only county where a majority of the participants raised hogs.
- Most of the beef producers are from Pope and Fillmore Counties; only five of the 21 beef producers are from Waseca and Benton Counties.

Questionnaire item #3

3. What type of manure do you apply? (Circle one)

A. liquid B. solid C. both

Table 3 Response choice counts for each participant group and combinations of groups, Item #3.

Location and group	Response choice by type of manure		
	A liquid	B solid	C both
Pope Attenders	0	3	4
Pope Non-Attenders	0	2	3
Waseca Attenders	4	1	2
Waseca Non-Attenders	2	1	1
Fillmore Attenders	0	1	6
Fillmore Non-Attenders	0	2	5
Benton Attenders	0	3	3
Benton Non-Attenders	0	3	5
All Attenders (N = 27)	4	8	15
All Non-Attenders (N = 24)	2	8	14
Total, all participants (N= 51)	6	16	29

Summary

All participants

- Most of the participants (29 of 51) are applying both liquid and solid manure. Most of the rest (16), apply only solid manure. (Only six participants apply only liquid manure.)

Attenders vs. Non-Attenders

- The distribution of response choices is very similar for Attenders and Non-Attenders.

Counties

- All of the six of the participants who apply just liquid manure are from Waseca Co.
- Compared to Pope and Benton County, relatively few of the Waseca and Fillmore county participants apply only solid manure.

Questionnaire items 4-13

Instructions: "For items 4 - 13, circle 'yes' or 'no' for each time period."

This series of questions was designed to measure changes in practices over time.

Each of the ten items asked about a desirable practice. For example:

4. If you apply your own manure, do you calibrate your manure spreaders?

That is, do you measure the weight of solids or volume of liquid applied per acre?

Prior to year 2000? yes no

Currently? yes no

Plan to by 2004? yes no

[All of the questions can be seen in Table 4]

Table 4 Adoption rates for ten manure management practices averaged across groups.

Item no.	Topic or 'practice'	Combination of groups	Percent 'Yes' answers		
			Adopted prior to 2000	Currently adopted (2002)	Plan to adopt by 2004
Average for all ten practices Non-Attendees, N = 24 Attendees, N = 27		Total / All participants	55**	72**	88**
		Attendees	52**	71**	91**
		Non-Attendees	60**	74**	83**
4	Do you calibrate your manure spreaders?	Total	32*	53**	81**
		Attendees	32	48*	80**
		Non-Attendees	32	59	82**
5	Do you have your manure tested for nutrient content?	Total	55	63**	88**
		Attendees	56	63**	93**
		Non-Attendees	54	63	83*
6	Do you have most of your fields soil tested every four years or more frequently?	Total	86	94	98*
		Attendees	93	96	96
		Non-Attendees	79	92	100*
7	Do you account for nitrogen available from prior manure applications and previous legume crops when calculating manure and fertilizer rates?	Total	86	96	96
		Attendees	89	96	96
		Non-Attendees	83	96	96
8	Do you follow UM Extension recommended nitrogen rates when calculating manure and fertilizer applications?	Total	69	86	91*
		Attendees	61	83	92*
		Non-Attendees	79	89	89
9	Do you adjust the amount of manure you apply according to soil phosphorus test results?	Total	38*	62*	80**
		Attendees	37*	63*	89**
		Non-Attendees	39	61	68*
10	Do you keep records of manure application amounts for each field?	Total	44*	64*	86**
		Attendees	41	65*	89**
		Non-Attendees	48	63	83*
11	Have you located the sensitive areas in your fields where there are special requirements regarding manure incorporation and phosphorus management?	Total	53*	75	89**
		Attendees	44*	74	93**
		Non-Attendees	64	76	85
12	Near water and open tile intakes, do you inject or incorporate manure within 24 hours or maintain a 50-100 foot vegetated buffer?	Total	60*	83	91**
		Attendees	44*	78	93**
		Non-Attendees	80	90	90
13	Do you or does your consultant develop or update a manure management plan each year?	Total	31	46**	78**
		Attendees	19	38**	85**
		Non-Attendees	43	54	70

* Significant at $P < 0.05$

** Significant at $P < 0.01$, comparing 2000 with 2002 (column 1), 2002 with 2004 (column 2), and 2000 with 2004 (column 3). Percentages and tests of significance were adjusted for non-responses to individual questions. Comparisons were made using a 2x2 contingency table with Pearson's Chi-square test.

Notes: For most items, there are one or more participants who were not included in calculating the percentages shown for an individual item-timeframe combination. The reasons for non-inclusion can generally be characterized as ‘no answer given’, ‘not applicable’, ‘answer difficult to interpret’, and similarly. In these cases the denominators—51, 27, and 24, for Total, Attenders, and Non-Attenders, respectively—of the ratios, were reduced or deducted accordingly.

For items 5, 6, and 7, the denominators used in calculating the percent figures were the same as the number of participants in each grouping—there were no ‘denominator deductions’.

Item 8 There were several respondents who answered ‘Don’t know’ or ‘Use another source for rate recommendations’. Their answers were not used in calculating the figures shown. If their responses had been treated as ‘No’, then the percent figures shown would decrease by 8-14 points (depending on the timeframe and session grouping).

For items 11 and 12, the figures for Non-Attenders might be considered artificially high, as there were four participants from Fillmore Co. who indicated that they did not have sensitive areas. Their answers were treated as ‘not applicable’.

Summary

All participants, overview

For a group of ten practices examined, the overall rate of adoption as indicated in the pre-discussion questionnaire had increased from year 2000 (prior to the rules revision) to 2002 when the focus groups were held. Participants expressed the intention to further increase adoption by 2004, as indicated in Table 4. The intended adoption rate was higher for Attenders than for Non-Attenders by 2004 for 7 of 10 practices, but because of low sample numbers, was only statistically significant when data was pooled across practices. Participants expressed the intention to implement all of the individual practices at rates exceeding 80 percent by 2004, except for developing/updating manure management plans. A more detailed discussion of results follows:

Adoption of Specific Manure Management Practices

A review of Table 4 indicates that reported or intended adoption of specific practices can be grouped into four classes: 1. reported adoption rates were high (at or above 80%) before rules revision, 2. reported adoption rates became high following rules revision and the producer information sessions, 3. intended adoption rates are high for two years after the focus group meetings, and 4. intended adoption rates do not reach 80%.

1. Practices for which reported adoption rates were high before rules revision:

- Soil testing
- Nitrogen crediting for prior manure applications and legume crops

2. Practices for which reported adoption rates became high following rules revision and the producer information sessions:

- Follow UM recommended nitrogen rates
- Inject or incorporate manure near water and open tile intakes

3. Practices for which intended adoption rates are high two years after the focus group meetings:

- Calibration of manure spreaders
- Testing manure for nutrient content
- Adjust manure application rates for soil phosphorus (Attenders)
- Keep records of manure application
- Identify sensitive areas in fields for protective measures
- Develop or maintain a manure management plan (Attenders)

4. Practices for which intended adoption rates do not reach 80%:

- Adjust manure application rates for soil phosphorus (Non-Attenders)
- Develop or maintain a manure management plan (Non-Attenders)

The reported 2002 and expected 2004 rates of adoption of some practices by these producers exceeds actual rates found in previous on-farm surveys (FANMAP, Minnesota Department of Agriculture).

Several factors may be contributing to the differences, including:

- A statement of adoption on the questionnaire may have indicated partial implementation of the practice, such as partial crediting for nitrogen in prior manure applications and legume crops.
- Producers may not fully understand the practice, such as protective measures for environmentally sensitive areas, resulting in an indication of adoption when compliance was not complete.

Table 5 **Items 4-13, combined results: Implementation of desirable practices by county.**

Focus Groups: various combinations of individual sessions	Items 4-13 combined, percent 'Yes' answers		
	Prior to 2000	Currently (2002)	Plan to by 2004
Pope Co. Attenders and Non-Attenders	52	58	85
Waseca Co. Attenders and Non-Attenders	61	80	91
Fillmore Co. Attenders and Non-Attenders	57	79	91
Benton Co. Attenders and Non-Attenders	53	71	85

Counties

- The four counties had similar beginning levels of implementation ('Prior to 2000'), ranging from 52 % (Pope) to 61 % (Waseca).
- For the intermediate time or 'Currently', three counties report similar rates of implementation, ranging from 71 to 80 %, but Pope Co. lags at 58%.
- In Pope Co., little change occurred between 'Prior to 2000' (52%) and 'Currently' (58%); but, considerable change is planned between 'Currently' and 'By 2004' (85%). In all other counties, more of the total percent increase in implementation occurred between the first two timeframes ('Prior to 2000' and 'Currently/2002'), than is planned to occur between the last two timeframes ('Currently/2002' and 'By 2004').

Table 6 **Items 4-13, combined results:
Implementation of desirable practices over time.
Percent rate of implementation by size of operation.**

Timeframe	Size of operation in animal units (AU)		All participants ⁺⁺ (N = 51)
	B. 100 - 299 AU (N = 24) ⁺	C. 300 - 999 AU (N = 19) ⁺	
Prior to 2000	48	62	55
Currently (2002)	68	79	72
Plan to by 2004	89	88	88

⁺ B) 16 Attenders, 8 Non-Attenders; C) 6 Attenders, 13 Non-Attenders

Note: Because there were only four participants each in the size classes A) <100 AU and D) >1000 AU, they are omitted from the table and summary.

⁺⁺ From Table 4

Size of Operation

- For both the beginning and intermediate timeframes, smaller operators had an overall lower rate of implementation than larger operators (48 vs. 62% and 68 vs. 79%, respectively).
- However, for the ending time frame (By 2004) the predicted rates of implementation for the two groups are the same (89 and 88%).

Table 7 **Items 4-13, combined results:**
Implementation of desirable practices over time.
Percent rate of implementation by type of animal raised⁺.

Timeframe	Animal raised						All ⁺⁺ participants (N = 51)
	A. Hogs		B. Beef		C. Dairy		
	Hogs only (N = 10)	All hog producers (N = 18)	Beef only (N = 6)	All beef producers (N = 21)	Dairy only (N = 20)	All dairy producers (N = 29)	
Prior to 2000	68	70	48	52	49	49	55
Currently	82	83	58	67	69	69	72
Plan to by 2004	92	90	83	84	85	85	88

⁺ For each animal, two sets of figures are given. One is for those producers who raise only one type of livestock, for example, 'Hogs only'. The other figure is for all producers who raise that type of livestock, including those that raise other types of livestock, for example 'All hog producers'.

⁺⁺ From Table 4

Note: Those producers of hogs, beef, or dairy who in addition, also produce only poultry or 'other' (sheep, horses), were treated as 'hogs only', 'beef only', or 'dairy only', respectively. There were five such producers.

Type of Animal

- For each timeframe, hog producers' rates of implementation are higher than those of beef and dairy producers. The largest differences are for the earlier two timeframes.
- With one exception, there is little or no difference in the two values for each type of animal—the value for producers who produce only that animal and the value for all producers of that animal (including those who produce only that animal and those who produce that animal, as well as one or more other animals.) The exception was for Beef, Currently, with rates of 58% and 67%.
- Thus, based on the preceding, the rates of implementation must also be similar in the case of each animal, for those producers who raised only that animal and those producers who raised that animal, as well as another animal (results not shown). Again, the exception is for the middle timeframe (Currently, 2002), where beef producers who also raise hogs or dairy, have higher rates of implementation than beef producers who do not raise other livestock.
- Rates of implementation were very similar for beef and dairy producers (with the exception of the somewhat lower rates for the 'Currently' timeframe for 'Beef only').
- A majority of hog producers (10 of 18) and a majority of dairy producers (20 of 29) have only hogs or dairy, respectively; whereas only a minority of beef producers (5 of 21) raises only beef.

Question 14

14. Do you have UM Extension, MPCA, and/or MDA publications on the following topics?

(See topics listed in table below)

(Check all that apply)

Table 8 Number of participants in each session who have relevant publications.

Focus group session or combination of groups (no. of respondents)											Publication topics
Attendees					Non-Attendees					TOTAL, all eight groups (51)	
County				All Attendees (27)	County				All Non-Attendees (24)		
Pope (7)	Waseca (7)	Fillmore (7)	Benton (6)		Pope (5)	Waseca (4)	Fillmore (7)	Benton (8)			
Number of participants in each group who have publications a – h											
6	4	7	6	23	2	0	3	2	7	30	a. manure spreader calibration
5	6	7	6	24	1	2	5	4	12	36	b. manure sampling and testing
4	4	6	6	20	2	3	4	5	15	35	c. soil sampling and testing
5	4	4	6	21	2	1	2	2	7	28	d. calculation of manure and fertilizer rates for each field
6	7	5	6	24	1	1	5	2	9	33	e. manure application records
6	5	6	5	22	1	1	2	4	8	30	f. application of manure in sensitive areas
6	6	7	6	25	4	1	5	7	17	42	g. feedlot rules
4	4	4	5	17	1	1	3	3	8	25	h. directory of feedlot resources
42	40	46	46	176	14	10	29	29	83	259	Total
6	5.7	6.6	7.7	6.5	2.8	2.5	4.1	3.6	3.5	5.1	Average number of publications per participant

Additional statistic: average no. of publications per participant, by county

Pope: $(42 + 14) / 12 = 4.7$

Waseca: $(40 + 10) / 11 = 4.5$

Fillmore: $(46 + 29) / 14 = 5.4$

Benton: $(46 + 29) / 14 = 5.4$

Summary

All participants

- Each of the publications is 'owned' by a simple majority of participants, except for 'h' (49%, 25/51; see 'TOTAL' column).
- The average rate of 'ownership' is 5.1 publications per participant (259 publications owned/51 participants).
- Only one publication, is owned by more than 80% (42 of 51) of the participants, 'g', 'feedlot rules'.

Attenders vs. Non-Attenders

- Attenders have many more of the publications than do Non-Attenders.
 - The average rate of ownership for Attenders is 6.5 (176/27); for Non-Attenders, 3.5 (83/24).
 - The number of participants who have each publication, ranges from 17 to 25 (63-93%) for Attenders (out of 27 total) versus 7 to 17 (29-71%) Non-Attenders (out of 24 total).
- Publications ‘b’, ‘c’, and ‘g’ are the only publications that half or more (12) of the Non-Attenders have (highest percent: 71% for h. directory of feedlot resources).
- All of the publications are owned by 20 or more out of the 27 Attenders (74%), except for ‘h’, which only 17 have.

Counties

- Among Non-Attenders, Fillmore and Benton Co. participants have more of the publications than do Pope and Waseca Co. participants (4.1 and 3.6 books per participant vs. 2.8 and 2.5).
- Among Attenders, Benton Co. participants have the most publications (7.7 publications per participant, versus 6.6, 6.0, 5.7).
- Combining the figures for Attenders and Non-Attenders in each county (see calculations just below Table 6), rates of ownership are higher in Benton and Fillmore Counties (both at 5.4 documents/participant) than in Pope and Waseca Counties (4.7 and 4.5, respectively).

Question 15

15. Did you attend one or more education meetings in the winter of 2001 - 2002 where topics (such as those above) on land application of manure were presented? (Check one)

- Yes, I attended one meeting
 Yes, I attended two or more meetings
 No, I did not attend

Results and summary

- One Attender group participant (Waseca) reported that he had not attend a meeting.
- At least four Non-Attender group participants (Pope, Fillmore, Benton) reported that they had attended a meeting.

(Because of inconsistencies in or the nature of their responses for other items, the answers for two additional Benton Co. Non-Attenders are difficult to interpret or trust.)

The results reported elsewhere in this document and companion documents, have not been adjusted to reflect these presumed, ‘mistaken’ group assignments.

Question 16A

Please help Extension to plan future educational programming.

16A. First, in the table below, tell us which **topics** you would likely attend or participate in.

Use the following rating system

- Yes** I would probably attend.
Maybe I might attend; I might not.
No I would probably not attend.

For each lettered topic on the left, circle one of the choices on the right.

Table 9 Gauging overall interest in attending Extension programs on manure management topics⁺.

Results for all 10 topics, a – j, combined			
Combination of Focus Group sessions	Response choice rate, per cent		
	‘Yes’	‘Maybe’	‘No’
Total, All participants	31	50	19
Pope Co.	39	45	16
Waseca Co.	30	45	25
Fillmore Co.	24	59	16
Benton Co.	33	47	20
Attenders, all four counties	32	53	15
Non-Attenders, all four counties	30	46	23

⁺See Table 8 for results for individual topics

Summary

All groups

- By far, the most likely response choice was ‘Maybe’. It accounted for half of the responses.
- Respondents were more likely to choose ‘Yes’ than ‘No’ (31 vs. 19%).

Attenders vs. Non-Attenders

- Responses for the two groups were similar, with Attenders somewhat more likely than Non-Attenders to choose ‘Maybe’ (53 vs. 46%) and Non-Attenders somewhat more likely than Attenders to choose ‘No’ (23 vs. 15%).

Counties

- Pope Co. participants were the most likely to choose ‘Yes’ (39%), Fillmore participants were least likely (24%), and Waseca and Benton were at similar, intermediate levels (30%, 33%).
- Fillmore Co. participants were most likely to choose ‘Maybe’ (59%), while the other three groups were at very similar levels (45-47%).
- Waseca participants had the highest level of ‘No’ responses (25), with the other groups in the 16-20% range.

Question 16B

16B. Now, which of the above topics is your top choice for a workshop, field day, or other education event—the one(s) you would be **most likely to attend**? (1 to 3 letters)

_____, _____, _____

Table 8 Item 16A, Likelihood of attending or participating in educational programming: analysis by topic for Attenders, Non-Attenders, and all Focus Group participants combined (percent).
Item 16B, Top choices for topics (counts).

Lettered topic/ questionnaire item	Percent 'Yes', 'Maybe', and 'No' responses for each lettered topic											
	Attenders (4 counties)				Non-Attenders (4 cos.)				All participants			
	Top ⁺ 16B	Yes	Maybe	No	Top ⁺ 16B	Yes	Maybe	No	Top ⁺ 16B	Yes	Maybe	No
A. Calibrating my manure spreader	5	19	48	33	4	17	46	37	9	18	47	35
B. Manure sampling and nutrient content analysis	11	33	52	15	6	25	46	29	17	29	49	22
C. Soil sampling and testing	4	11	33	56	6	29	25	46	10	20	29	51
D. Manure application record keeping	6	37	59	4	5	25	42	33	11	31	51	18
E. Using UM Extension tables to calculate application rates	3	19	74	7	4	29	58	13	7	24	67	10
F. Field selection: soil P levels and manure application rates	9	37	59	4	7	29	63	8	16	33	61	6
G. Managing sensitive areas	9	48	41	11	7	33	46	21	16	41	43	16
H. Written nutrient management plan	4	30	67	4	8	42	46	12	12	35	57	8
I. Applying and incorporating manure	10	38	54	8	7	29	63	8	17	34	58	8
J. Determining total acres needed for all of my manure	7	48	41	11	7	46	29	25	7	47	35	18
	Top	Yes	Maybe	No	Top	Yes	Maybe	No	Top	Yes	Maybe	No

⁺ For 'Top' choice in part 16B, respondents were allowed to list up to three choices. Most gave three. Results are given as counts or number of times listed or named, rather than percent

Summary

All groups combined

- The topics for which there is the highest likelihood of participation based on 'top choice' results are B, F, G, and I, with counts of 16-17 out of 51 respondents. (The next highest was 12)
- The topics for which there is the highest likelihood of participation based on 'yes' answers, are G and J with 41 and 47%, respectively. (The next highest was 35%)
- The topics for which there is the highest likelihood of participation based on the combination of 'yes' and 'maybe' responses, are F, H, and I at 94, 92, and 92%, respectively
- The topics that came out on top on two of the preceding three methods of comparison are:
 - F. Field selection: soil P levels and manure application rates
 - G. Managing sensitive areas
 - I. Applying and incorporating manure

Table 9, Notes cont. 1) Rounded to 3 significant digits; '5' in 4th place, dropped (rounded downward). 2) Because of the nature of this statistic, relatively small differences have relatively large import. 3) Not adjusted for: the number of participants in each group (varied from 4 to 7); the highest rank given in a given group; etc.

Summary

All groups

- 'Publications' is the item or opportunity for which there is the most interest. Nineteen of 51 participants gave it a rank of '1' (with the next highest item with '14'). It had the second lowest number of 'last' rankings at 5 (Workshops and Farm tours had '4' each). Publications also had the lowest, 'average of the median rank' at 1.81.
- There is relatively low interest in 'Comprehensive website' and 'Nutrient management computer software'. These items had the highest number of 'last' rankings (17, 22), the lowest number of 'first' rankings (4, 6), and the highest 'average of the median rank' values (3.37, 3.81).
- Farm visit or one-on-one assistance had somewhat dichotomous results, receiving high to intermediate numbers of both 'first' (13; range: 4-19) and 'last' (14; range: 4-22) rankings and a high to intermediate value for 'average of the median rank' (2.69; range: 1.81-3.81).

Attendees vs. Non-Attendees

Results for these two groups are generally similar, with two exceptions, 'Workshops' and Farm visit/one-on-one assistance.

- *Farm visit / one-on-one assistance*
Based on the average of the median statistic, Attendees are much more interested than Non-Attendees in 'Farm visit / one-on-one assistance' (2.12 vs. 3.25). For Attendees, this item tied with two other items for the second lowest value (2nd highest rank); whereas for Non-Attendees, this item tied with one other item for the second highest (lowest rank) value. The differences are not apparent, using the counts for 'first' and 'last' rank, which are similar (8 and 7 vs. 5 and 7). Note that the number of Non-Attendee assignments of 'first' is heavily influenced by the Benton Co. contingent—their eight members account for three of the total of five.
- *Workshops*
Attendees are relatively more interested than Non-Attendees in workshops. For Attendees, this is one of the items, along with 'publications', for which there is the highest interest. It tied with 'publications' for the highest number first rank assignments (9). It had the least number of 'lasts' (1). And, it tied with two other items for the second best (lowest) value for 'mean of the median rank' (2.12). For Non-Attendees, this is an item of intermediate interest, with low numbers of both high and low rank assignments (3, 3) and an intermediate value for 'average of the median rank' (2.75; range: 1.87-3.62).

Note: Non-Attendees are somewhat more interested than Attendees in 'Newsletter', but the difference is small compared to the two preceding items.

III Focus Group results

Key findings supported by farmer quotations pp. 1-11

Combined transcript summary, pp. 12-24

Quotations of interest or special note, pp. 25-26

Key findings

The key findings were chosen from among the themes, comments, and suggestions offered by the participants. They were chosen on the basis of frequency, length or amount of time spent on them, and 'extensiveness' (number of counties and sessions). Those participant comments are summarized in the second section of this document. That section, 'Combined transcript summary,' is based on the focus group transcripts. Each key finding is followed by the supporting quotations—which in most cases are preceded by a summary. Eight focus groups were conducted, two in each of four counties—Pope, Waseca, Fillmore, and Benton. Land Application of Manure training sessions had been conducted in each county during the winter of 2001-2002. Each county pair consisted in one session with farmers who attended the training and one session with farmers who did not attend the session.

Items with an asterisk are presented as 'selected key findings' in the Executive Summary.

Key findings summary

- **Variability and availability and the consequences***

The variability in open lot and other solid manure and in the 1st and second year availability of nutrients, makes it difficult to apply at rates that closely match crop needs.

- **Spreader calibration: promote, provide, assist***

Many of the producers who spread their own solid manure, need and request on-farm assistance with weighing their manure wagons/spreaders. Some have never calibrated their equipment.

- **Manure application record keeping forms are needed***

Producers that apply their own solid manure, need and want suitable forms for field-by-field record keeping.

- **Sensitive area rules are generally workable***

Most of the producers feel that the rules for sensitive areas are generally fair and workable and do not pose much of a problem in their own operation (Exception: Pope Co. participants)

- **Sensitive areas setbacks will pose a difficulty for some farmers AND Setbacks are not fair, reasonable, etc [Pope Co.]**

For some of the farmers, the setbacks will be a hardship. In most cases, these producers are daily scrape and haulers with a limited amount of land that is not near a sensitive area. The inability to incorporate in the winter, adds to the difficulty.

- **Nutrient management Plans: assistance needed; involve private sector, ag. professionals***

Those producers with some experience with NMP, recognize that it not something they can readily do or would want to do themselves. Those who are interested in starting NMP, know they need assistance. In some cases, it is not clear where this assistance will come from. The participants suggest that more private sector ag. professionals be trained to provide this service.

- **Website as a source of information: important to some, but most farmers are not keen to use***

There is quite a range in the level of interest and proficiency when it comes to computers and the Internet. However, most of the participants are not likely to use an Extension website very often.

- **Farmers look to Extension for research, demonstration, and education**

Farmers continue to expect that Extension will play an important role in research, on-farm demonstrations, educational events, and informational materials and services. This sentiment was expressed in a general sense in the context of, for example ‘most important thing Extension could do’. It was also expressed with respect to specific topics such as ‘rates’, nutrient management planning, and ‘sensitive areas’.

Individual key findings and supporting quotations

Variability and the consequences

Summary

The nutrient content of solid manure varies greatly, being influenced by many factors such as bedding content, water content, animal age, feed, etc. The first and second year nutrient availability of manure also varies, according to weather, tillage, etc. The farmers’ responses are understandable. They feel it’s too much to keep track of and don’t keep good records of it. It makes record keeping and the calculation of application rates more time consuming, and they have other things that have to be done. They use gross estimates or even ignore the manure’s nutrient contribution, especially if they have a lot of land for the amount of manure that has to be applied. In some cases, the cost of hauling the manure is greater than the value of the nutrients contained, so the manure is viewed as a liability rather than an asset. They tend to over apply ‘commercial’, because they are not confident that the manure’s nutrients will be available.

From the farmers

And it’s hard to do with the type of manure we apply. Cause it depends on how much straw happens to be in the gutters that particular day. Some days it’s more solid than others. And, so your rates do vary from a little bit from day to day. And even doing an analysis of that manure varies a lot from season to season and day to day. And so it’s a little hard to pin it down. You take a ballpark figure is what you do and try and go from there.

... dry box spreader manure, that’s the tougher one ...

Depends on where it’s located, how often you added straw and cornstalks, or whatever ... pit manure is much easier to deal with as far as nutrients are concerned.

There’s been times we’ve cleaned out our open lots and you spread practically all ice ... brown ice is all you’re really spreadin’ ... And next time you come back, it might be pretty soupy manure. Open lots are just about impossible from one time to the next time— ...

Has Extension come yet, with a good, clear answer on how much of that nitrogen’s available first year? That’s sort of a floating figure.

Well, Ok, you’ve got the nitrogen availability from manure now—that would vary too, like if you incorporated it, if it’s setting for awhile too—right?—now how do you gauge that then?

But, it’s hard to believe there’s that much nitrogen left on those second year credits. I think that’s where we typically over do it.

The hardest part about this whole thing is the second year credits

So, the temperature has a lot to do with when the stuff is gonna be released. [name] applied hog manure from a neighbor two years ago. Cold summer, boy—just seen nitrogen deficiency all summer long. And, we had went that 20% over the rate . . . more people complain that, don't seem like that hog manure gets released in cool temperatures as fast as what you would anticipate it would. Or, that your plant probably needs it. You're short at a certain time. And I don't know how the farmer is going to compensate for some of this sometimes. Sometimes a little commercial fertilizer put on either at planting time—to be readily available, and then wait for the manure to kick in when the soil temperatures warm up. Seems to be what I've found.

I guess when they use 110 lbs of nitrogen there following soybeans . . . for us following soybeans we just feel that if you've got 170 bushel corn out there in that field maybe you're just a little on the short side at 110 lbs. Especially with manure when it could be so variable . . . you want to give yourself some leeway . . . to fill in the gaps . . . probably go even over maybe the 20% over the 110 lbs. But, when we're just looking at regular crop ground, we're probably within that 20% . . .

I think that's where it's easy to get 20% over, because I know the formulas I ran through, boy it was hard to hold some of those numbers up—that--second year credit. I mean I'd just as soon you erase that 20-30 lbs to zero and make sure I got enough N going into this year, than saying well that's—that bottom end of your second year, holding you off the top end of your first year—or yer upcoming year. You know you're holding that 30 lbs. off because supposedly you got that left from 18 months ago—boy that's—with open winters, and heavy rains, yeah aggggh. Hard to do.

Spreader calibration: promote, provide, assist

Summary

A number of the participants had previously availed of Extension or the Conservation District for assistance with weighing manure wagons and spreader calibration. Some have never calibrated. A number indicated that this is one area where they could use some one-on-one assistance. They don't have time to get scales and then return them. They recognize that if they don't calibrate, they don't know their application rates very well, even if they are doing nutrient sampling. On the other hand, some feel that because of the variability in their manure, it is not practical to fine-tune their applications. They are satisfied with using estimates, rotating their fields, and doing soil testing. Calibration was one of the two topics most often suggested for field days. Pope Co. does not have any suitable scales available.

From the farmers

Well, presently I don't calibrate anything so it's still a guess. I guess there is some difficulty in really determining what's out there. Unless you calibrate and spread at the right rates . . . You can guess at it—but it's—like a say it's the 'swag method'.

I think they're going to have to have scales available . . . so that you can go out and weigh these box spreaders . . . when we're spreading solids out of a manure pack—we're gonna have to know what these spreaders weigh. And, you're going to have to do this more than just once. . . . have to do this for a few years to get half a handle on what you're spreading.

That's the problem with that. The convenience of getting that stuff, you know. There's only so many days you can get stuff done. What do you do there? Do you run to [city] and get a scale and . . .

I think it'd be a good thing to have, just as a service . . . farmers isn't gonna afford to pay, how many hundreds or sometimes, thousand dollars, to have an accurate scale—that he's gonna use a couple times . . . Where UofM could have one circulating . . .

I think the calibrating the manure spreader is a service . . . most of us don't have scales.

I just think it's [calibration] pretty important—it's all a mute point if you don't know what that load weighs.

It might be nice to have somebody calibrate your spreader.

How do you calibrate it when you haul about 10-12 different kinds of manure in one day? Yeah, you could weigh it on a scale and so forth, but I mean, like I'd said before you take one load out of the yard that's steer manure and you scrape it up and if there's more water in it, it's a lot heavier and your next time it might be dry and you pick up a around a round bale feeder or you go out and get dirt in it and it'd be very hard to come up with an accurate—other than just common sense of not over applying it and basically soil tests to put it on.

I need help calculating my manure spreader. [Biggest one-on-one assistance need]

With one-on-one assistance, you know the SWC came out and helped me calibrate the poultry spreaders—that was very helpful. Had scales and stuff like that. 'Cause it, quite frankly, wouldn't get done, otherwise. Can try to hunt up scales and do that kind of stuff is too time consuming for me.

. . . there's a lot of small parts under that that you need to know in order to make that management plan and I think one of them would be like calculating a manure spreader and . . . I've wanted to do it several times, but you just can't load up a big load of manure and haul it all the way to town to weigh it and then haul it back home and then take the empty spreader back . . .

I wouldn't really have a clue of how to calibrate a solid spreader. [re. field day topic]

Yeah, but they've had those before haven't they and they haven't—not much of a turn out to 'em [rejoinder to previous]

Field-by-field manure applications record keeping forms are needed

Summary

The farmers are not aware of a suitable form for field-by-field, manure application record keeping or they do not think the form in the Extension publication, “Manure Planning and Record Keeping Guide” is suitable for use, in the field. [Benton SWCD has its own form for EQIP participants] This issue came up in almost all the sessions. Both pocket size and full (letter) size options are needed. Most of the respondents expressed interest in something suitable for use in the field—very simple and easy to use. Some were thinking more in terms of something that would be on file in the office and that would be useful for reviewing previous years. Some currently use a calendar, computer spreadsheet, or field maps.

From the farmers

Maybe [there's] not a uniform record keeping system. If you had a form on there and it had field acres, where you can just go down the line and write in the numbers, it probably would get done a little easier too, I suppose.

I think you all were laughing about the plastic jacket, but I think it's going to have to be readily available even in your milk room or in the cab of your tractor that your spreading manure with or something that's going to have to be protected and something that's real user friendly so I can mark down that hey, I put down 7 loads on this date and this field, and you're done. That's it It's going to have to be real user friendly to the farmer for him to do it. If it's gonna be a chore it's not gonna get done. The farmers just don't have the time . . .

Those pocket size books that we had a few years ago for keeping track of calves are . . . really handy and something like that—sometimes that would be more user friendly than the large book.

What we're doing is I just got a calendar hanging on the wall, where the tractor and that spreader's parked, and when the guys haul manure, I told em, you know, tell them at the end of the day, trying to remember how many loads they hauled and where and from what place and write it down.

[Response to previous] Use it out there so you can transfer it later . . . It's gotta be the smaller one that does fit in your pocket and stays there—would be a very handy thing to carry along all the time. It's surprising when you do carry that along most of the time, how much stuff you do write in there all the time. . . . that'd be the handiest.

Well, they have a little bit in that there. [referring to “Manure Planning and Record Keeping Guide” booklet] But, maybe a little simpler record keeping system. . . . I’m in the EQIP program now—and . . . they changed it—it’s pretty simple, it’s a lot simpler than it was. You don’t wanna be spending all day filling out a—you want something fast . . .

What I got is a couple sheets of paper and I got all—each field on it—and I got about 50 fields—and they’re small . . . and I just write on there, but you know you put it away, and then try to find it now. It’s easy ‘cause you can just mark it down—manure on this field, that field. But, it isn’t—you know it would be nice if they had it on a—a book of it you know and you could go back to each year and have—because it was a separate piece of paper and it gets in the files and it’s hard to look back and it could be a lot easier to look back and find out what you did four years ago or five years ago.

I think it would be nice if it did have full page, but have enough room that you could write maybe on page for three or four years before you have to start a new page. Then you could look back—instead of paging back through two books.

. . . maybe a booklet or something, showing us how to write it. Ya know . . . up and ready to go.

I suppose if you get a chart . . .for when your hauling a load of manure, if you had it hanging handy, you can put what field you haul it on. [Responding to “What’s the best thing Extension could do to improve manure application record keeping practices?”]

Probably have it like your days of the month—of the calendar year. And then have, say, loads and field number or something like that . . . [Describing desired record keeping form]

. . . the only thing I really want to work on is get a better system on the record keeping. You know, try to improve that some. Where it would be easier to go back a couple years and see . . .

. . . we get stretched for time. We get stretched on the amount of paperwork we have to do . . . Recording manure stuff gets put pretty low on the list. Because there’s other things staring us in the face that have to be done. And nobody’s gonna ask us if we recorded how much manure got put on that field. There’s not a lot of accountability with manure applications, as of yet.

Sensitive area rules are generally workable

Summary

For the most part, the participants think that the sensitive area rules are not be too much of a problem, that they are workable, fair, and so on. Sometimes they acknowledged that some farmers would have a problem with certain aspects of the rules, but they themselves did not. [Note that the Pope Co. producers, both Attenders and NonAttenders, tended to disagree. Many of them think that the rules are unfair, inflexible, not based on science, pose a hardship, etc.]

From the farmers

It’s a workable deal, now.

We don’t have a problem, but everybody thinks we do.

Guess I really don’t have any of those—I don’t have any sinkholes that I haul around or streams or—it’s not really a problem for me.

I don’t know how they can change them a whole lot to make them any fairer and still have any workable rule.

Of course, 300 feet isn’t too far, you know—[other participant responding:] Yeah, and even at 300 feet is nothing. So the 25 and 50 feet almost seem like a joke.

They're all pretty good for us . . . I mean just so we know what they are.

. . . the [X] River runs through my property. And I have a—field comes up to the river, but—for years already, I always maintained about a hundred feet that I cut hay on. I never go up to the river—never have. I use that for just hay land, see. And, the pasture don't go to the river either—the cows don't go up to the river—they stay about 500 feet away. I don't have no problem with all of that.

Looks like to me it's common sense. You don't dump a load of manure in a stream or right close to it. Seems like pretty much common sense, actually.

I don't think following the rules is that hard if you know what the variables are. And that begins with, you know, where is a waterway, what is your soil phosphorous level, so you know what criteria you fall into, and what practice that means you are supposed to do in that area. It's not that hard to go out there and spread manure in that 300 foot zone and then go and incorporate it right away if you know that's what you're supposed to do. It's not difficult to do, it's just do you know that's what you're supposed to do.

Sensitive areas setbacks will pose a difficulty for some farmers AND Setbacks are not fair, reasonable, etc. [Pope Co.]

Summary

For some of the farmers, the setbacks will be a hardship. In most cases, these producers are daily scrape and haulers with a limited amount of land that is not near a sensitive area. The inability to incorporate in the winter, adds to the difficulty.

From the farmers

Three hundred feet's gonna to be the toughest one—isn't it?
[other farmer responding] Well that's if you don't incorporate . . .

Well, there's a lot of sinkholes close to me, so I'm sure that's a problem for some farmers. The setbacks on the sinkholes, I'm sure—or something like that.

That [surname]ground . . .—it's a woodland, mostly, but I mean there's ten of 'em in five acres there. I mean, if you go 300 feet, you might as well—you ain't gonna spread manure on that place at all.

So, it might cause the smaller guys a real problem, because they've got a limited number of acres to apply on, and all these setbacks and stuff, where, you know, you guys with more acres, got more choices, and— . . .

I think for me, the hardest would be, the drainage ditch thing. Like I've got a lot of rolling fields with a dip in 'em here or there and you make a little drainage ditch to get the water, so it doesn't sit in the low end of the field. So, the 300 feet from some of these, at times, would be the hardest. What is a drainage ditch?

Well, like I say back as an everyday hauler. Winter application—spring melts, you gotta stay on the high ground—you get limited. Then you get back into your phosphorous numbers—and it's just kind of a vicious cycle. It's a little tough to work with. . . . I've got some fields that are way off the charts up there even. But, then if I spread in the low ground—that's gonna run off, in the spring. And if pile—I can't pile it every place either. I got to stay so far away from grader ditches and any cricks. So, as an everyday hauler, it's probably botherin' me more than a lot of them.

Well, the winter one gives you the longest—for the setbacks, so. That would be the toughest one, the way it looks to me, to work with.

I'd say the incorporation one would be—if you go to figuring solid manure. You know, it's not too much of a problem with the liquid manure because it's either fall or spring. But, once you get to solid manure—you know you don't have six months storage for that . . .

Well, plus in the winter time, you can't—there's no way you can incorporate—I mean, you still have to clean out some of—like your lots . . .

And the setbacks aren't unreasonable—I mean, when stop and think, I mean—they're certainly aren't—not unreasonable. But, it's like, you can't incorporate—like we've got to go in the winter time everyday.

From Pope Co. farmers

The 300 feet from a tile inlet and 300 feet from a stream or a lake, is ridiculous; unless it's on a very [steep?] slope, it's just ridiculous . . .

That to me is the biggest problem that I have; because I've got tile inlets here and there and I've got relatively small fields to begin with and you take 300 ft. ('yeah') around them and there isn't much left.

. . . and personally, I just think it's too far. I mean it's too big, too many feet. It's not necessary. [

. . . literally when you throw a map up . . . you have a ditch here, then you have your tile intakes, and there's 300 feet around this and 300 around that—pretty soon this guy's down to about five acres out of a 80 acre field that he can apply manure too—that doesn't make any sense . . . 'Cause I know for a fact these are just feel good distances.

Nutrient Management Plans: assistance needed; involve private sector, ag. professionals

Summary

Those producers with some experience with NMP, recognize that it not something they can readily do or would want to do themselves. Those who are interested in starting NMP, know they need assistance. In some cases, it is not clear where this assistance will come from. The participants suggest that more private sector ag. professionals be trained to provide this service.

From the farmers

I think you are going to have to get the private consultants or the agronomists involved wholeheartedly in this because, number one, the farmers are already working with agronomists now. . . I think those people have to be brought up to the speed because they're the ones you are already making contact with, they're the ones that know your farm plans and what you've done in the past already, and it'd be very simple for . . . for the farmer to get involved with them to do the manure management and help these guys out, really quick. Versus bringing a new person in that you have to train and he has to go through the whole background of what's going on. So I think agronomists in the local area are the ones that really have to be helped out. Maybe Extension helps them, to train them—I think those are the key people that can get this thing really rolling quick.

I think there has to be open communication. I would say Extension should take the lead informing the agronomists that these meetings [small group, NMP training for farmers] are gonna be held and they are—for the purpose of educating the farmers and the agronomists, so that we're all kind of in this thing together.

If they're gone be done [NMP], who's gonna do it . . . ?

Well, I think we're in trouble. Because I went through a plan with [Extension Educator] here a couple weeks ago and if Extension—if he's not available—where are the people gonna come from that do these plans? I mean it isn't—you're talking about—you're drawing on a lot of experience and lot of expertise that, that's not necessarily out there—to do these plans for us. You're talking a large investment by the individual producer if you're gonna try and do them yourself.

[responding to previous] Yeah . . . Provide the resources that we need. . . the people to—available to answer the questions—you know if you're gonna do this whole county and we've got one person to—plus, he has other things—
[interjection: He's not available]

. . . What do other consultants think of the practice? Because, I think most people would rather listen to their consultant, than to what the state or what the county or [?] somebody tells them to do. So maybe to get more consultants on board would really help.

The problem is that we're not going to have a place to go get one [NMP]. Because the guys [Extension Educators] are gonna be six miles—six counties—away.

I don't know where it fits into which question or whatever, but as a rule, I think most of us are not real keen on always having to listen to the government and to the government agencies, but if it comes from our consultants, we're much more open to that. . . . If it comes from somebody other than them [government staff], it tends to be a little more palatable.

Website as a source of information: important to some, but most farmers are not keen to use

Summary

Most of the farmers either don't use or seldom use the World Wide Web to get information. Some don't have computers. Some have computers, but don't use it much or don't use it much for farm matters. There are some that are moderate to avid users, but would not be likely to go to an Extension website very often to get info. It appears that among those who gave a high rank to [Extension] 'Website' on the questionnaire, only some of these would actually use it very often.

From the farmers

I think that all goes back to you can look at it on your own time. [Reason why participant gave it a high rank on questionnaire]

I can't say I've looked at it a lot lately.

Because that's just so convenient for me, I mean, I have, you know, the favorite lists on the websites that I check almost daily or weekly.

Well convenience and then resources, links to other sites—just user friendly.

I'm probably the opposite of [names on another participant] I don't get into computers.

. . . we use it some but we got—lost one service of the Internet and I never took it again. Got sick of it. Kids on it all the time and they tied up the telephone line. And I've been surviving ever since, and they have too . . .

I use the computer a little bit. The farm has it's own—I don't know—main [?] page—or what ever the hell it is—anyway i/we got our own heading. Every time I go into that thing to look something up, I get mail I don't even want to know about . . .

That's— pretty much where if I need to research something or any product or look for buying or whatever, first place I hit—convenient, it's in the office, I hit the website, I research stuff.

Probably because I just probably wouldn't go and do it. You know, I just wouldn't say "Boy, I better check the Extension website". [responding to question re why gave it a low rank]

I like calling somebody up and say, 'hey, this is what I need, tell me what I need to know'. I get on the Internet, it's kinda like I could spend all day look for something that takes me five minutes to get out a phonebook and . . .

I guess for me—I can check it whenever I want. I don't have a set time where I have to be someplace . . .

That is true. [responding to preceding comment/quote] I rated it high out of all these [educational formats and options on questionnaire]. But, it's not saying I would use it a lot . . .

Yeah, I did [gave it a high rank on questionnaire], because I spend a lot of time with the technology, the Internet.

I just detest the thing. [computer]. My kids and wife are on it all the time and I can't get anything else out of it.

. . . I just thought it'd be a way of checking in to see if there was something there that was useful to you, without committing a whole lot of time or energy to it—being able jump off if there's nothing there . . .

Yeah [responding to preceding quote], instead of spending an hour at a meeting. It's an efficient use of time—you can get something that you need.

I don't how to work a computer. I think I'm too old to learn about a computer.
[calling on another participant]—do you know how to run a computer? Me neither. If I knew how, I wouldn't be here.

Farmers look to Extension for research, demonstration, and education

Summary

Perhaps the most pervasive view underlying the opinions expressed during the sessions, was that research, information, and education is Extension's role. This was amply expressed in a general context in response to the 'catch all' or 'summing up' questions near the end of the session (preceding the summary). It was also expressed with respect to a specific topics, especially 'sensitive areas' and 'rates'. Together, all this sentiment indicates a very broad range of expectations, interests, and needs. Individually, however, most of the farmers have limited or specialized needs or interests with respect to topics and the way they want to receive the information.

From the farmers

Responding to “. . . what's the most important thing Extension could do . . . ?”:

I've got workshops as number one. I believe these smaller meetings and smaller get-togethers at the right time of the year are an excellent opportunity to . . .

I think provide the tools like the . . .format for filling out a plan or a format for filling out records, proper calibration and application of various types of manure and you can incorporate your setbacks into that, or your buffer strips or whatever . . . And then following up with the research. And then the promotion of the practices to the general public . . . you got the research to back up the accepted practices. And you can tweak the practices if the research comes out and shows you that—well this isn't probably the way we should be doing things . . . You need to provide the tools . . .the delivery of that is going to be tough, whether it's workshops or some of the other publications or Internet.

I don't know, just more information—I shouldn't say more information—just updates.

Just keep getting the information out there, so people could take it and be informed—whether it's in a publication or a newspaper or a website—and most of that stuff can be done—especially, newspaper and website stuff—can be done pretty inexpensively . . . Individual mailings . . . and some meetings can get pretty costly.

. . . keep saying what you're saying . . .we'll retain 10 percent of what we hear and if you say it enough, we'll eventually get the other 90 percent.

I think the meetings do help. You know, the people that do go there—you pick up things . . .

Well just a . . . certain amount of education . . . 'how close to a stream can you spread manure?' and things similar to that. 'How do you calculate your spreader?' And, you know, just some education would help a lot, just farmers know what they're doing wrong or what is right. I mean—you maybe can't do everything right, but you try, anyhow. So I'd say education—some way to get it out to the farmers.

Well, we rated these things on the bottom [of the Questionnaire], you know, and I think a lot of it—everybody rated farm tours quite high, or demonstrations—I mean that would be a way of teaching people how to calculate a spreader. I've been hauling manure—manure tank for 25 years—I've never calibrated a speck of it, you know.

With limited role of Extension, I think it's more keeping the industry going. And the press—doing things like that . . . if you guys have scientific stuff that says . . . get out in front and start showin' and tellin' and goin' with it . . .

Responding to: “Of all the education and assistance needs mentioned today, which is most important to you?”:

I think they have to be a good resource. Some place that when you need to know something--you can't always have a workshop or a meeting to answer questions. Sometimes you need to know an answer to something right now. And, I think that Extension can be that source of knowledge for us. And knowing that they're gonna be a reliable source of information I think is really important—at least to me.

Knowing it's the right information (yeah) and not just make sure it's studied. You can come up with a conclusion to anything, but is it really backed by anything substantial. [Responding to preceding comment]

I don't know exactly to say which is most important. As long as a person keeps being informed of the changes or what's going on—whether it'd be a large meetings or small ones like this—it does help, because it gives you an idea . . .

I would say the most important for me would be the deadlines when each of these need to be in use, for the manure management plans. [And] updates on any new setbacks or anything like that. That type of thing . . .

. . . I think, just, just the notes on what we need, or dates, rather, and things we need to be legal, and take care of liability and things like that.

[not trainings or a meeting] just an update . . .if you're already at the 21 parts per million threshold, What is the levels we can apply? And not go over to the building process. It's not a very long answer—it's just, we need the answer. Now we can go off of that.

Responding to: ‘What can Extension do to help you with the rules for sensitive areas?’

I don't know if it's specific to Extension. But I think we need good science on a lot of these issues. Emotion play such a role in rule making, that you need to be able to get in there and say, now this is the research that has been done by our Universities and that doesn't necessarily jive with what the rule making processes come up with. And I think that needs to be--Maybe that's part of Extension's job too.

They do a pretty good job of keeping us updated on new ideas that come out, but that might be an area where, if there's new publications or new rules to keep us well informed so that we don't get blindsided by our own ignorance.

My feeling, one of the best thing Extension can do for us is give some facts and data on this that we can take to some of these meetings and say this is the fact, this is the truth, this is done by the State of Minnesota, and this is not superstition, it's not what the neighbor told you, this is actual truth.

Yeah, they don't necessarily have to back us—if they can provide the data from their own experiments, and from the laws they've written, or(?) then show us data over the years, that has said . . . this is the way it works, if they are applying this manure with this manure sample, at this rate—they aren't over applying . . .

You do need something to prove, to kind of show 'em that it has be regulated, it has been tested, and they have found this for reasons . . .

I think Extension can monitor all the rules that are out there and come back to us with the rules that don't work, too. . . . if there's rules that don't work—don't be afraid to step up to the plate and say this didn't work. Instead of all of us coming and saying, well this works, and this works, and this works—tell us what don't work too, and what does work. . . . I'm sure there's counties they're gonna run into problems with things they are gonna have to rework . . . Extension should be our direct pipeline to things that do not work.

Maybe the new rules. I guess . . . most of them [farmers] probably don't know those—the exact numbers—to be legal. But that's kind of minor thing . . . If they change every year or whatever—I don't know what they'd do. But, that would be something we should know, I guess—just information.

In response to: “What could Extension do to make it easier to follow the recommended rates?”

I think basically what they're doing, just continue to try to do tests and figure out how much is there, ya know, continue to do research on it. Try to get this nailed down . . .

. . . The feed's are changing. Livestock's' heavily changed, last ten years, you know, just stay on top of it.

Right the more data they got—the more scenarios they got, the more you got to chose from. You can sort of go back to a year that was like, say, 5 years ago. If you had a year this year like it was five years, ago, you'd have something to compare it to. Where there's just not enough running data, you know, long enough data . . . But if you got weather data and stuff to know how this stuff is gonna act on a cold spring, on a wet spring, or how it's gonna act on a hot dry spring. You know that would give you a lot more data to go by, to go back on.

Yeah, ya think it seems that whether it's a government agency or even Extension expecting all the farmers to change all the time—we probably sit here and expect Extension to change just as much. Say that their rates have been overdone or underdone or wait a minute, they're gonna redo a table here or there—because after five years we've realized when you inject by the hose, that it doesn't quite work out to their numbers that they've figured already. So, if they don't set their numbers in stone, ya know, we're always adapting our practices and changes, so I guess we expect them to do the same thing

. . . I would like to see them do more, in more areas maybe, with using recommended rates versus an additional amount of nitrogen applied sometime during when the corn is up, to see if yields—if it's going to pay or not to do that. . . . I'm kinda thinking maybe the rates—and it depends on the year. If you get a lot of rain after planting, some of that nitrogen is dissipating through runoff or—just, it's not there, because of runoff and that way if you do sidedress it, it will give that corn a boost. . . just more farmer trials. And it's gonna be more than one year's—it'd be nice to get a couple years of information. If the Extension Service or Natural Resources . . . maybe come out and help when you're weighing it or so forth.

Combined transcript summary

This transcript summary is based on all of the focus group transcripts. It is the intermediary product of the ‘long table’ analysis approach mentioned in Chapter I. The next step or ‘final product’ is the group of key findings and supporting quotations given at the beginning of this chapter. Note that this transcript summary does not include quotations, per se, but paraphrasing and use of identical or similar language. Also, it does not reflect the questionnaire results or the preliminary Focus Group reports previously prepared for each county.

Focus group code For the major points under each question or theme, the provenance is indicated with two-letter codes. The first letter is for the county—P, W, F, B, for Pope, Waseca, Fillmore, and Benton, respectively. The second letter is either ‘A’ or ‘N’, for Attender or Non-Attender.

Themes or opinions that are listed under the last section, ‘Other’, under each major heading, typically were mentioned in only one or two sessions. Those with their own subheading, were usually mentioned in three or more sessions. The results here, are presented according to the Question Route sequence used in the Focus Groups. However, some of the summarized items under a given question or statement, may have originated from another part of the session.

BARRIERS

Rates: [Questionnaire #8]

PLEASE IDENTIFY SOMETHING ABOUT EXTENSION’S RECOMMENDED RATES THAT MAKES THEM HARD TO USE OR FOLLOW.

Variability in nutrient content (esp., solid manure) (PA, FA, FN, BA)

There is a lot of variability in solid manure, both from barns and open lots. It is time consuming to get a good sample for analysis and to calibrate spreaders. It is not practical to get an analysis for every load or day. Have to rely on estimation, past history or experience. Since they don’t know how much they are putting on, they can’t follow the rates too closely.

Uncertainty in first year nitrogen availability (WA, BN, WN)

Many factors affect how much of the N is available in the first year. Since one can’t be confident in how much will be available, there is tendency to put on extra fertilizer in order to be sure that there is enough N—especially, early in the season. They would rather exceed the allowed 20% extra, rather than risk ‘shorting’ the crop.

Uncertainty in second year nitrogen availability (WA, FN, BN)

There is a lot of variability in second year nitrogen availability. Many factors are involved and it’s difficult to predict how much will be available to the crop. There is a tendency to be skeptical and apply more N than is recommended.

Private sector professionals tend to use maximum rates or exceed recommendations (BA, WN, FN)

Labs, agronomists, and consultants either disagree with Extension’s rates or advise applying at the high end of the recommended rate range, sometimes at rates exceeding the 20% ‘safety margin’.

Other reasons

- Variability in liquid manure (lagoons)
- Difficult to deal with within-field variability in soil type, organic matter level—not practical to change spreader settings
- Recommended rates are probably not adequate for sandy/low organic matter soils

- Weather, time, management: sometimes you just have to spread it when and where you can, even if that means exceeding recommended rates (daily scrape and haulers; those without adequate storage)
- Because of the number fields, variability in the manure, weather affects, etc., the record keeping can be overwhelming. (And, if you don't keep the records, then you can't be sure about following the rates closely)
- It can be very difficult to balance for all three nutrients
- Have had bad results/experience using the recommended rates.
- Dollars (crop yield) comes before conservation
- If the nutrient content of the material (solid or liquid) is very low, you cannot put enough on and attain the recommended rates
- Human nature: it is difficult to set realistic yield goals. The tendency is to doubt if you're not 'selling yourself short' by not putting enough on. Some put on a lot more than they need.

Comments

- Some farmers rely heavily on their consultants. They don't know whose rate recommendations the consultants are using. They may not even be familiar with Extension's rate tables
- Some think that rate for corn should be adjusted according to an estimate of how much the previous crop used (rather than using a preplant N test)
- Consultants are asking farmers for more info. than they used to; more of them are taking credits into account, etc.

WHAT COULD EXTENSION DO TO MAKE IT EASIER TO FOLLOW THE RECOMMENDED RATES?

Spreader calibration (PA, WA, FA, PN, WN, FN, BN)

Some of the farmers are interested in getting their spreaders calibrated. Some have never calibrated their spreaders. The scales have to be brought to the farm, for the farmer. The producer doesn't have the time to get and return the scales and it isn't practical to take the manure wagon to the scales. Fillmore and Benton counties have such portable scales available (Extension and Conservation District, respectively). Pope County lacks scales. Waseca—[?]

Keep doing the research and disseminating the information (WA, BA)

Research, field trials, education, information dissemination were the strongest expectations of Extension, generally speaking. For two groups, this role was explicitly referred to with respect to 'recommended rates'. In Waseca, there was interest in long term field trials to examine the effect of weather on 1st and 2nd year nutrient availability. In Benton, the interest was in local field trials with variable rates. They feel that none of the Experiment Stations are relevant to them—too far away.

Other

- Extension should be more flexible and understanding—farmers have to deal with so many factors and so much variability . . .
- There's not a whole lot for Extension to do—it's up to the farmers.
- The currently available publications need to be made more available—especially to those that did not attend the winter meetings
- Cut down on the paperwork. One way to do that is to group fields that can be treated similarly.
- It would be helpful if Extension could provide color coded maps (based on soil sampling) that indicate the nutrient levels (like what one farm is getting from a private company through EQIP). Small producers can't afford to do that themselves.

Record keeping

WHAT'S THE BEST THING EXTENSION COULD DO TO IMPROVE MANURE APPLICATION RECORD KEEPING PRACTICES?

Record keeping forms (PA, WA, FA, BA, PN, WN, FN)

Extension needs to develop and provide simple, user friendly forms for field-by-field manure application record keeping. (Such is not available at the state level, although Benton Co. SWCD has their own for EQIP). Some producers prefer a pocket size version; some prefer a full size (letter, 8.5 X 11) version.

Individual suggestions:

- Prefer a version organized by fields
 - map based
 - such that one sheet is good for three or four years (so that it would be easy to look at data from previous years)
- Prefer a version organized by date
 - like a calendar
 - table/tabular, chart
- Provide a plastic jacket (so that the form/notebook could be hung on the barn wall/milk room, the side of the manure wagon, in the tractor cab)
- Prefer to enter it directly in the computer—have one in the shop. Provide a computer program or spreadsheet.
- Something like the little notebooks for keeping track of calves
- Includes place for soil test results
- Includes place for commercial fertilizer, if any was used to balance

>>The record keeping form was one of the top (frequently made) suggestions from the sessions. However, it was not something that came up again very much at the end of the session with questions about 'biggest barrier', 'most important thing Extension could do', 'biggest need'.

Note The following two questions are treated as preliminary or lead in questions for which the results are not very useful or interesting. The results are not summarized here, with the exception of one, commonly offered comment.

- WHAT ARE SOME OF THE REASONS FOR KEEPING GOOD MANURE APPLICATION RECORDS?
- WHAT IS IT ABOUT SUCH RECORD KEEPING THAT KEEPS IT FROM GETTING DONE OR DONE WELL?

Some farmers feel that in their situation, it is not worth their time to keep records. Their manure often has little nutrient content (lots of ice, snow, water, bedding, etc.) or they have little manure relative to the amount of land to spread it on (e.g., each field gets spread once every three years).

Sensitive areas [Questionnaire #11, 12]

WHICH SETBACK, BUFFER, AND INCORPORATION RULES ARE GOING TO BE THE MOST DIFFICULT TO WORK WITH?

This is one of the few issues for which there were clear differences among the counties (and little difference between Attenders and Non-Attenders within a county). A somewhat simplistic, but useful characterization is as follows:

Pope Co. The rules are unreasonable, ridiculous; they are not science based; they are too much 'one size fits all'; they are unfair relative to the rules for commercial fertilizer (animal producers are treated differently than crop growers)

Waseca Co. The rules are reasonable, we don't have a problem with them (but everybody thinks we do)—just don't change them! And, don't get that 50 foot tile inlet setback like they have in Blue Earth Co. Some of the ditches in the county probably don't have an adequate buffer or setback.

Fillmore Co. The rules are workable, not a problem. We don't have any sensitive areas (or maybe one or two), but some of our neighbors do. But what about in-field waterways and dry runs—do they count? The setbacks might pose a hardship for some, but not me. Three hundred feet isn't very far.

Benton Co. They're workable, not a problem. But, define waterway, define a ditch, wetland, etc. How deep does it have to be before it's a ditch, etc? What's the difference between a DNR protected wetland or stream and others that aren't so designated. Come to my farm and show me, explain to me—the farmer, DNR, and the Conservation District might have different ideas about what is a wetland and what isn't. The setbacks might be a little bit of a hardship for some farmers. I've always had setbacks; it's just common sense; the rules are not that hard to follow—it's just, 'do you know what they are?'

The rules are workable (WA, FA,, BA, WN, FN, BN)

For the most part, the participants thought that the sensitive area rules would not be too much of a problem, that they are workable, fair, and so on. Yes, the rules might pose a hardship on some folks by limiting the spreadable acres and yes, maybe the setbacks are too far in some cases, but they weren't considered much of a problem for most of the participants.

Setbacks (PA, WA, FA, PN, FN, BN)

For some, the 300 foot setbacks will cut back significantly on the land base available for spreading. The setback should vary according to the field slope, soil type, residue (trash) levels, etc. The characteristics of the manure should also be taken into account.

Comment In some cases, it was evident that the farmer offering a comment didn't realize or forgot that they can apply within 300 feet, as long as they incorporate.

Winter setbacks (FA, BA, FN)

For the daily scrape and haulers, the winter setbacks can be a hardship. In the winter especially, there is already a tendency to apply to the acres closest to the barn or lot. Since you can't incorporate during the winter, you are further limited on where you can apply. If you can only apply on the high ground in both the winter and spring, then you will tend to get phosphorous build up. If you don't have storage, the manure has to go somewhere. If you wait until the ground dries up enough to get into the field, then you need to be planting—not hauling manure.

Other

- The setback distances should be adjusted for type of tillage and the amount of residue
- The setback distance should be adjusted for the amount straw, bedding, etc., in the manure
There will be less soil erosion where the pack was applied. So the rules can deter better stewardship.
- The setback distance should be adjusted for field slope
- If a sinkhole is on high ground, why would you need a 300 foot buffer?—water runs away from the sinkhole anyway
- Concern expressed about tighter rules for phosphorous in the future
- Concern expressed about banning manure hauling in the future
- The tighter rules and low return are forcing smaller animal operators out of business or to change to cropping. There will be worse pollution problems with a corn-soybean rotation.
- The current rules are workable, but what about the future? There has to be some give and take.
- Leave the rules the way they are. Don't change them so frequently.
- You aren't going to please everybody—just leave the rules the way they are.
- In the winter in rolling land that breaks every which way, you can't easily tell where the waterways are, so there's a tendency to spread manure over them
- Biggest problem—the waterways move, changes its route
- As long as the producer is paid for the setbacks, there isn't a problem

- Some producers hire the spreading done—so they aren't concerned about it. The commercial spreaders are licensed and should know what to do.
- 300 feet is nothing, 25 and 50 feet almost seem like a joke
- Some producers have always had buffers and setbacks—even wider than what the current rules require

WHAT CAN EXTENSION DO TO HELP YOU WITH THE RULES FOR SENSITIVE AREAS?

Research, revise/update, educate (PA, WA, PN, WN)

There needs to be more research and good science to support the rules. The results from implementing the current rules need to be monitored. If needed, the rules should be amended, whether it means becoming more strict or less strict. The farmers want to know what works (is adequate) and what doesn't work/is not adequate, and then they'll adapt. The rules are probably not going to work in all counties—there's too much variation across the state.

Other

- To be fair and realistic--the rules would need to be customized at the county level (but also recognizes that such would be problematic too)
- Extension should develop materials for those entering a 'spreading agreement' (where one operation spreads manure on another farm). This could be a document with boilerplate or generic language for such an agreement or a list of issues or points that should be considered or incorporated in the agreement.
- Need some attention or emphasis on ditches—there are a lot of ditches without buffers; also, gullies that need to be converted to waterways
- Need more education on identifying the 'less obvious sensitive areas' For lakes, rivers, streams, large wetlands, and larger ditches it's clear that the rules apply and what the rules are. However, it can be confusing when you get to minor ditches, waterways, intermittent streams, and wetlands that don't always have water in them. Do they count—are they sensitive areas? How do you define them? What's the difference between a DNR protected wetland and a wetland? How big (deep, long) does a ditch have to be for the rules to apply? Maybe what is now a waterway, use to be an intermittent stream—how do you treat that?.
- Some farmers are interested in site visits to help identify and manage sensitive areas. (Most of the interest was in Benton Co, especially among Non-Attendees)
- Extension really doesn't need to do much more. They've already gotten enough information and education on the topic. They do what they do because it's the right thing—not because of the rules—and they've done it for years. It's common sense.

EDUCATION

Small group nutrient management plan writing sessions to be done next winter

WHAT ARE SOME THINGS YOU LIKE ABOUT THIS APPROACH?

Brief summary:

- More personalized approach, more likely to get your questions answered
- More hands on; you learn more when you do it yourself, when you write things down
- It's an opportunity to learn; there's always new things to learn
- The results will be relevant to each farmer—because each participant will be working with his/her own information
- It's something new, so many farmers will need help
- You can't always rely on the consultant—you need to know some of it too
- It's like taxes—if there isn't a deadline, you won't get around to it. The meeting date would be a deadline—to get together all the records and info. needed to do the plan
- If it's done by Extension, the cost will be minimal

WHAT IS THE BIGGEST REASON WHY THAT APPROACH WOULD NOT SUCCEED?

No need (WA, FA, PN, WN, FN)

- I don't need to come
 - my son is good with the computer
 - I rely on a consultant to do my plan.
 - we've attended classes (education classes), we could figure out some of that on our own
 - I'd rather get the software and try on my own (and either call if I have questions or just attend part of the training session).
- Some farmers have so little manure or they have little manure for the amount of land they have to spread it on, that it really isn't worth the trouble to keep track of it so closely.
- Some farmers won't do it until there is a need—until they have to do it—the end of 2004.
- Some farmers are doing the record keeping, soil sampling, manure sampling already, but they don't really feel a need to write a formal plan—not for their own needs or use.
- Some of the farmers go over all the important issues with their agronomists—the credits—every year. It's all covered in the planning for the next cropping season. But, they don't really write an official NMP.

Not interested, antipathetic (WA, FA, WN, FN BN)

- There's always that bunch that don't care. They're not going to come no matter what you do.
- Some farmers think they are exempt.
- Some will just refuse to do it (the plan). I own the land, I'll do what I please.
- Some folks just won't be interested—they don't like pushing a pencil, or otherwise. They won't do it until they're forced to do it.
- It's just like most of the educational meetings—the ones that need to go most, won't show up.

Time (PA, WA, BN)

It's another meeting to go to. Time set aside for a meeting is time taken away from the farm operation. Winter is my off time—might not want to spend it at a meeting. Some farmers are just as busy in the winter. A few would rather try the software on their own, when it's convenient, than come to a meeting, particularly if it's held during the day.

Other

- Weather. If the (winter) weather's bad, it won't matter how you promote it, etc.—folks won't come in, livestock people especially
- The approach may succeed, but you're not going to reach many people
- Some folks are not comfortable with a meeting led by someone that's not local (government bureaucrat—defenses go up right away). They'll be more likely to open up they know that's local

Suggestions

- Offer two different courses—one advanced, one beginner
- Separate the 100-300 AU folks from those with over 300 AU. The latter have to do more bookkeeping. Why should a small operator have to sit through a long meeting . . . ? Either two different sessions, or separate them into smaller groups in one meeting.
- Should break the participants up into those with storage and those that are daily scrape and haulers, so that the discussion will be relevant
- Instead of four people presenting to the entire group, break it down where each presenter is working with a smaller group
- To get people interested, it would be useful if you could dangle a dollar amount—how much, on average you'll save if you do NMP. The biggest incentive is if they'll make or save more money—if you can prove it.

- In the promotions, the title and info on the workshop needs to be specific, so people will know if they should come—who's being targeted? Is this relevant to me and my operation, specifically?—e.g., 'for daily scrape and haulers'. Include a detailed agenda/schedule so they can tell what's going to be covered.
- Individual dairy operators usually chore until noon
- Maybe it would be better to use the resources on research and policy

ALL THINGS CONSIDERED, WHAT IS THE BEST THING THAT COULD BE DONE TO GET MORE PLANS WRITTEN?

Get the private sector, ag. professionals involved (PA, WA, FA, WN, BN)

- The agronomists and independent consultants are the key people that Extension has to train. A lot of the farmers are already working with them on nutrients, but not all of them are trained to do a plan.
- They have to be trained along with everyone else, so that they'll know what the customer (farmer) expects
- The consultants are going to have to be able to provide a full service or they won't make it—farmers will look for someone who can
- Extension should inform the agronomists about the winter, small group trainings (open communications)
- If the NMPs have to be done—who's going to do them? Extension won't be able to. And, it takes a lot of experience and expertise to do one—experience and expertise that's not necessarily available. Extension has to provide the resources (by training ag. pros) if it's going to get done
- Most farmers would rather listen to their consultants than to the state or county

Require it; enforce it (PA, WA, PN, WN, FN, BN)

- Deadlines are a motivator for most people
- Most producers get government support (ASCS/FAS)—before they can get their check, they have to have to take this course (the NMP small group sessions) OR have to get their plan written down (the farmers wouldn't like that, but that's how you could get it done)
- Who's going to enforce the NMP requirement?
- Part of the problem is the state, by not sticking to deadlines (refers to last year's deadline—bets half the plans(?) were not in on time; doesn't that penalize those who did it on time?—and maybe paid a lot of money for it)
- Most of the pollution is coming from the small farms—the requirements should be the same for someone under 100 AUs—if you're polluting, you're polluting. Everyone who raises livestock should have to have a conditional use permit, and to get a permit, you have to have a written plan.
- Biggest incentive to do it is a penalty—just like taxes. If you don't do it, you get fined.

Take a positive approach (PN, WN, FN, BN)

- Create a positive environment. Many producers are on their way out, maybe coasting to retirement. They've got too much else to deal with . . .
- Increase profitability; if farming was more profitable, more could be put into nutrient management
- Give the producer an incentive—show the economic advantage of better record keeping, upgrading the facility, etc
- Pay the farmers to do it. They've had funding to pay guys to do the plans, but the farmer ends up doing most of the work—why not pay them?
- It goes over better if you say 'we'll come out and help you do it' rather than 'You have to do this, this is how you have to do it, there's a deadline . . .'
- Some farmers have been working with consultants for many years—some of them could testify to the financial rewards
- Stress that it's to the producer's benefit (downplay 'restrictions', 'requirements')

Other

- Should offer the same material at the university—students should get NMP as part of their coursework
- Extension should develop a pamphlet that describes the components of a plan [such is available, but . . .]
- Make it simple

Preferred training topics and formats

WHICH TOPICS WOULD WORK REALLY WELL WITH A FIELD DAY?

Main points

- Most of the topics could covered in a single field day; different topics covered in different ‘spots’, lots of presenters/demonstrators
- The biggest draw for farmers would be implements and equipment. Invite the dealers; they can help with promotion. The farmers can do their ‘product research’ at one location.
- In terms of number of individual mentions during the sessions, most interest was expressed in two topics from the questionnaire: ‘A. Calibrating my manure spreader’ and again, ‘I. Applying and incorporating manure: methods, implements, uniformity, timing’ [emphasis on ‘equipment’]
- Three of the questionnaire topics did not receive any individual recommendation:
 - F. Field selection
 - H. Nutrient management plan
 - J. Total acres needed for all of my manure

Other

- Some are concerned with biosecurity. They don’t want to bring anything back to their own facility.
- Have demonstrations of an aerator and an injector
- Making it an ‘equipment show and demonstration’ would give it a different feel—not another ‘educational meeting’ or experiment station field day
- Interest was expressed in managing micronutrients

DID ANYONE GIVE A HIGH RANK TO ‘COMPREHENSIVE WEBSITE’?

Summary

Farmers were generally not too interested in an Extension website for nutrient and manure management information. Most farmers do not have a computer, do not or seldom use the computer, or do not use the computer much for their farm operation. There were some avid computer users, but not all them considered an Extension website to be that important. There were no obvious differences overall, between Attenders and Non-Attenders.

Convenience or a time waster Those that gave a high rank to website, spoke about how convenient it was—they could get the info they wanted, when they wanted, when they had the time, etc. Others would note how much time they could waste looking for what they wanted. They would probably rather have somebody they could call up, if they had a problem or a question.

Other

- Some gave it a higher rank than would be indicated by their use patterns. It seems they think a website is important, Extension should have one, or that they ought to be using it more, but they don’t use it much now. Perhaps they would like to know that it is there—available when they need it. [likewise for the ‘county agent’]
- Tired of the phone line being tied up all the time by the kids (or wife) on the computer
- More efficient use of time than going to a meeting
- Too old to learn about computers

DID ANYONE GIVE A HIGH RANK TO ‘NEWSLETTER / BULLETIN’?

Summary

Interest in a newsletter was relatively high. Most participants preferred that information on nutrient and manure management be included in a more general interest, range of topics type of newsletter, rather than one specific to nutrient management or animal industry. (Some were ambivalent about it being ‘broad’ or ‘specific’.) They’ll review the table of contents and just look at the info. that pertains to them. They want brief, timely information, with deadlines and ‘reminders’, and both technical and policy issues (new regulations, pending legislation). The county FSA bulletin was cited as an example of a design they like. Most preferred to receive it in the mail, rather than via email or a website. Preferred frequency was generally monthly to bi-annually, but up to biannually or annually.

Other

- Gave it a low rank; the expense is more than you’d get out of it
- Would rather just go to a website and get the needed info. when needed
- If just covers technical issues, then it wouldn’t need to come out very often (1-2X/yr)—‘things’ aren’t changing that fast
- Prefer email newsletter, to save expense and cut down on paper
- Would like to see the info. in the local paper—that way the public is exposed to it
- On a webpage is better, because that way it doesn’t get thrown out (wife screens mail)

DID ANYONE GIVE A HIGH (LOW) RANK TO ‘COMPUTER SOFTWARE FOR NUTRIENT MANAGEMENT’?

Summary

Most gave the software a low rank. Most farmers are not going to use the software. They will rely on an ag. professional for that or they will do the planning themselves on paper (or they’re not going to do NMP at all).

Other

- Some expect they will eventually use the software themselves.
- Even among those that gave it high rank, they may not plan to use it themselves (consultant, son).
- A couple of the participants are computer adepts, that have designed their own record keeping systems—spreadsheets
- Some will do the program together with their agronomist/consultant
- A few spoke about how the computer simplifies things, allows you to generate reports, takes the same or less time to get the data down/in and then there’s more you can do with it.
- If the rules get stickier, it might be quicker to do a plan with a computer
- Easier to do calculations with the computer
- One producer did not give ‘the software’ a higher ranking because he wants to evaluate it first. He was thinking about the specific capabilities and features of the NRCS/Extension NMP software—not about the generic concept of NMP software

FOR WHICH TOPICS DO YOU NEED ONE-ON-ONE ASSISTANCE?

Major points

Two items accounted for most of the requests or mentions

Calibration (PA,WA, FA, PN, WN, FN) On farm assistance with calibrating the manure wagon and spreader. Someone to bring the scales to the farm and help with the weighing. Farmer can’t afford his own scales.

Manure/nutrient management planning (PA, FA, WN, FN) Someone to sit down with the farmer and work through it with them

Other

- It's not so much the particular topic, but rather, you want someone to be available when a problem or issue arises. You want to be able to call and talk to someone.
- Calibration not worthwhile—too much variability. Just use common sense: do soil testing, rotate fields, etc.
- Assistance with organizing, promoting, staffing a field day
- Other topics mentioned (once each):
 - C. Soil sampling and testing
 - D. Record keeping
 - F. Field selection
 - G. Managing sensitive areas (interest in 'identifying')
 - J. Determining total acres needed for all my manure (4X)
 - K. Feed ration specialist

GIVEN THE SCARCITY OF PUBLIC STAFF, ARE YOU CONSIDERING HIRING ANYONE FOR ONE-ON-ONE TECHNICAL ASSISTANCE (I.E., BEYOND WHAT YOU ARE/MAY ALREADY DOING)?

Summary

Most said 'no'; a few said they are considering such; a few noted that they were already paying for it even though it wasn't itemized on their bill from the co-op or elevator; and, the agronomists and consultants would start offering more services if there was a demand—and there will be a demand.

Other

- Conservation districts might be understaffed too; also, an agronomist can cover all/more of the farmer's needs, they know the whole farm situation better—District staff can help with only a few issues.
- Extension should work with, train the co-ops and anyone giving advice
- Larger operations will be more likely to hire technical assistance
- But, all farmers need assistance, advice—they'll get it where they can—free, if possible

ENDING

OF ALL THE BARRIERS TO IMPROVING MANURE APPLICATION PRACTICES MENTIONED TODAY, WHICH IS GOING TO BE THE BIGGEST PROBLEM FOR YOU?

Paperwork—record keeping, Plan (PA, GA, BA, FN)

- It is a big problem or step to get a plan in writing, to get it from one's head to the paper. It's hard to get started.
- It takes a lot of time to keep written records and there are a lot of other things that HAVE to be done—record keeping is a low priority.

Other

- Expense, cost, funding. It takes a lot of money to make a major change in your manure management.
- Acres to spread. Some farmers and some townships have more manure than their land area can use.
- Weather. Ruins plans, forces you to do things you shouldn't/neglect things you should take care of
- Public pressure and rule changes. Public pressure lead to the rules—the new requirements are good, but we wouldn't be following them if we didn't have to. The rules will change again and mess things up.
- The rules are not necessarily correct; you can get angry if you're accused of being a violator
- No problem with the plans and the rules, they're working
- Technical assistance—you're going to have to spend more hiring it. We've lost our county guy and that's going to be a problem in implementing the rules.
- Phosphorous. Need more research to lower the P content of the manure—concerned with P buildup.

- Human nature. When a guy's out spreading, there's a tendency to make one more round—to go a little too close to the sensitive area
- Some of the commercial applicators over apply
- Fairness. It will be hard to be fair to everyone—each has a different situation, but the same rules apply to all.

OF ALL THE EDUCATION AND ASSISTANCE NEEDS MENTIONED TODAY, WHICH IS MOST IMPORTANT TO YOU?

There were no particular needs that were voiced in three or more sessions.

Keep the county Extension agent (WA, FA)

Not having someone in the county or someone that is close by that can help them is going to be missed. The regional person won't be in touch with the farmers; the farmers won't be comfortable with someone they don't know. [In three of the four FG counties, the former county Educator remains, although now with regional responsibilities. This sentiment was most forcefully expressed in the county that was losing an educator who won't be replaced.]

Nutrient Management Plan (FA, FN)

Assistance will be needed in learning how to write a plan and in maintaining and 'staying in compliance' with it. Some are thinking of the NMP as an 'umbrella term'—it involves a lot of separate components, many of which the producers are already doing, but that they haven't pulled together.

Other

- There needs to be more publicity and outreach on rule that allows producers to spread so many times a year, with little restriction, as long as they report it in advance to county Environmental Services
- There will be continuing attrition of animal producers, especially as the new rules are implemented. Extension should put less effort into educating farmers and more effort into helping them to be ABLE to farm—help the industry keep going
- We can foresee a future where there is no Extension. We don't want to lose it. Extension's role has been education. It's going to have to change, adapt.
- Extension should help get funding to those that really want to do the right thing, to improve. Most of the money goes to those that have a real problem and are not taking care of things. A person that does things right and always has, can't qualify for assistance.
- "Nutrient management for the crop: getting enough to the plant to provide maximum yields with minimal cost"; taking weather into account and year-to-year variations
- A table or other tool is requested that would allow the farmer to estimate the manure generated and the nutrient content therein, per animal, over a given time period during which it grows from one weight (e.g., 500 lbs) to another (e.g., 750)
- Sampling and testing—getting it done

Other, mentioned/noted elsewhere under other questions

- Educate the farmers—all of them
- Need an outline of the components of a manure management plan.
- Assistance with calibrating a manure spreader
- Explain to public why farmers do what they do

WITH DUE CONSIDERATION TO EXTENSION'S LIMITED RESOURCES, WHAT IS THE MOST IMPORTANT THING EXTENSION COULD DO TO IMPROVE ITS EDUCATIONAL PROGRAMMING TO ACHIEVE BETTER MANURE APPLICATION AND PROTECT WATER QUALITY?

There were two main suggestions:

Educate nonfarmers;

Keep doing the education, keep getting information out.

These suggestions were also made in response to the previous question (most important need), but are collected and reported here.

Keep serving as an information source, keep doing education (in general and with respect to certain topics) (FA, PA, BA, PN, WN, FN, PN)

- Smaller meetings at the right time of year are an excellent opportunity
- provide tools like a format for record keeping, a format for a plan
- 'updates' are the biggest help
- just keep getting the info. out, whether through a newsletter, newspaper, or website . .
- keep saying (repeating) what you've been saying (we only retain 10% of what we hear)
- The meetings do help; you pick up things
- Just some education would help a lot—how close to a stream can you spread your manure? --how do you calibrate your spreader?, etc.
- Farm tours or demonstrations—that would be a way of teaching people how to calibrate a spreader
- Extension can be a good resource, source of knowledge for us. You can't always have a meeting—sometimes you need the info. 'right now', and Extension can be that source for us. Knowing they'll be a reliable source is real important to us.
- Not sure what's important, but it's important that the farmer keeps being informed—whether through large meetings or small--and that he has someone he can call . .
- Keep us informed of the deadlines regarding manure management and the plans and such. Give us updates on changes, new setbacks, etc. Keep it short.
- Provide 'notes' on what's needed, when it's needed, and other things, to be legal; cover liability issues
- Provide info. on scientific results

Target, educate other group, nonfarmers: consultants, public, decision makers/elected officials (PA, WA, PN, BN)

- Legislature needs to know the facts, the research from the Experiment Stations. Few of them have anything to do with farming
- Educate the people in town
- Extension needs to educate the public on what the farmers are being taught; need media exposure for the educational events for farmers
- Promote the practices to the general public
- Extension should cut back (but not eliminate) farmer education on manure management. The independent consultants and others are going to pick up the lead—it's business for them. Put the resources that went to farmer education, into educating the consultants and the public
- You'll reach more farmers by educating the consultants
- Use farmers as spokespersons to the public—like DMI/dairy industry is doing with TV ads. and news briefings
- The farmers are going to end up doing better manure management—because of economics and the 7020 rules. You don't need to be so concerned about educating farmers—they will do it out of necessity. The real issue is that we've got to communicate to the public that we are doing it right
- Most farmers work with some kind of consultant. If the consultants are educated, they'll help the farmers . . .
- Extension needs to work on educating the nonfarmer. We've got so many people against the farmers. Extension has to educate the 98% who aren't farmers. The farmers are doing a good job. If we educated the nonrural people, we'd have less resistance
- Target the lakeshore people first. Out of all the lakes in X Co., only 6-7 lakeshore owners would work with the Conservation District and put in shoreline buffers
- Need more public relations pieces, sound bites for radio and TV

- Educate the people that make the decisions
- Politicians are influenced by the majority and farmers are few [so have to target the majority]

Other

- 'Bad apples' [author's term] Have to target the farmers that are not doing it right. That people that most need to come to meetings, don't go. A small farmer can be doing it wrong and make the rest of us look bad. The reason we have the new rules is that 10% that don't do it right.
- Help with community relations and public relations/the media Extension needs to work on forums where farmers and nonfarmers can have a dialogue on the issues. Extension should do 'public and farmer connection seminars'. Also need to target decision makers. Need to have more field days and demonstrations for the 'community'—farmers can't afford to put on something like that by themselves. Need 30 second spots for the media (environmentalists, fight fire with fire)

Quotations of special interest or note

The following are not presented in any particular order; nor are they combined into categories or otherwise organized.

Yeah, maybe its instead of Extension telling you how to do it, the Extension should be trying to help you still be ABLE to do it . . .

. . . As far as funding and assistance—Most of the guys that are doing the right thing—but they always want to keep improving—won't qualify for any funding. I can't qualify for any funding, but I keep doing little things to improve things all the time. The people that have a real problem—aren't taking care of things—they can get all the funding. Well, you need to get some funding to the people that want to take care of things.

We're in an area that continues to be more urban all the time, people moving in from The Cities. Getting into an environment that people don't understand manure application and stuff and so it behooves us, for those of us who plan to be in this industry for the long run, to be able to do things—not to pacify the general public, but to be doing it in an acceptable way, and to be trying to work with the community and the neighbors as best as possible. Knowing that they won't always understand why we're doing things the way we are, but also being sensitive to the fact that when you take a load of manure on the highway, you don't let a bunch of it fall out the back. You know and just simple things like that. And so, I think that's important, particularly as more people move into this area who have no knowledge about agriculture or about [rural] life . . . To be sensitive to it.

If there was more profit in all of the sectors of the environmental thing a lot of the [?] problems would be taken care of..

One thing that the Soil and Water is working on . . . is a manure set aside program—I don't know if any of you read about it or heard about it . . . The program was set up where farmers are compensated for setting aside ground to spread on during the summer months and there isn't ground available. And, it's kind of a learning tool. It helped to learn some things about—different ways to manage these crops and different uses for set aside that hopefully will be a little more sustainable, because in time we're going to have to have places to go with this manure, every day, especially after the crop is in the ground until the first cutting comes off, is a real problem for a lot of dairy problems. Hopefully, there'll be some information generated by Extension I imagine when it's all done, right?

As far as a plan—I don't think the plan is actually that hard. I think anyone could do it. The main thing is gonna be just so don't over apply. The second thing is that you keep records. That's basically going to be it, personally.

Well, like with the manure management plans—I personally kind of think they're a joke—I haven't changed a thing other than maybe a having the guy[s] to write it down on a calendar. But, that's the way we've handled our manure forever. You know, we just, we get a field spread and then we cover another field. And next year, you know, you just rotate fields, and in a period of about three years or so, every field is covered, other than the one that's six miles away and you can't afford to haul it.

I don't keep no records 'cause basically for the little field I got and the little manure I got, I try to get it spread on everything, ya know—it's not just you load one down because you want to build it up, ya know—just try and get everything covered.

I'm a bad one for attending meetings . . .

I guess in the last five years we've really paid attention to the amount of N we put on. I guess on our specific example we have roughly 150 acres of corn every year. And, we use to put N on all the acres. And, now I think last year, we ended up buying 20 acres of N. The other 130 acres either had manure on it or alfalfa breaking. And so, our Nitrogen needs were met that way.

. . . those agronomists have really just started doing that [applying manure and legume credits] in the last two-three years, where they really—they'll mention it always now—they didn't use to.

. . . that gets back to the rule making thing, but I just think that there's some issues there that are deterring better soil stewardship. I don't think that's what their goal was. [Regarding sensitive area rules; example: manure pack decreases soil erosion]

. . . It seems like to me that they're [Extension] a little bit behind what private industry is on teaching and everything. And I think there's a couple reasons, first of all they are understaffed and second of all they don't have the money. But, if Monsanto or someone else wants something out, man it's out. But, Extension is a little bit [slow?] on getting out, you know, they study it more, and they're a little bit late. And, it seems like some of the topics come out or what they're helping with is a little bit beyond the facts, already they're a little bit late. And, I think they need get more current and more up to speed, faster delivery of what's going on. And, I don't know, maybe you have to research faster or get it out to the farmers faster or whoever they're trying to get it to. [Participant later replied to the effect that the preceding assessment did not necessarily apply to manure issues]

I think most farmers do the best they can with what they have, their financial situation, and what's available to them.

. . . it's economics, you're gonna try and spread that manure as best you possibly can so you get the most value out of it. So, most people try to do the best job they can, I think . . .

Well, talking about those maps [color coded field maps indicating nutrient levels; EQIP]—when we first did 'em—you know, of course in the winter time you've gotta take it where it's closest—you know right around our building—like, like [dumping/bombing sound]. You don't need to spread there for five more years! . . . We've got to drink the water there too. . . . All the land's within four miles anyway . . . That was an eye opener.

IV Recommendations

Focus Groups: selected key findings

Questionnaire: key findings

Other recommendations

These are the preliminary recommendations of the author. It is suggested that they might be used as a starting point for further discussions within Extension and between Extension and its partner institutions.

Focus Groups: selected key findings

1. Variability and availability and the consequences

The variability in open lot and other solid manure and in the first and second year availability of nutrients, makes it difficult to apply at rates that closely match crop needs.

Implications and recommendations for Extension and partners

- More on-farm nutrient rate demonstrations or experiments are needed, especially in parts of the state that are not well represented by Experiment Stations
- Additional on-going or periodic, timely outreach (e.g., newsletter pieces) is needed to help producers to better consider the factors that affect nutrient availability and incorporate them in their decision making
- Ultimately, to fine tune manure applications and nutrient management, more data or tools (in-field experiments or modeling software) will be needed so that producers and consultants can better estimate nutrient availability based on weather and other factors
- There will be a continuing tendency to over apply 'commercial' fertilizer in order to achieve higher yields. Helping producers to be more confident in their estimates of nutrient availability (as per the preceding three items) is part of the solution. Other strategies, such as 'nutrient insurance' should be identified, explored, and implemented.
- For some, the variability in the manure seems to mean that it's not practical to keep records, to test the material, and so on. They have to learn to recognize that there is variability and note such in the plan—that will go a long way with regulators. Complaining about variability and using that as an excuse to not keep records is not going to be accepted by regulators. A part of this group of farmers could be successfully targeted for EQIP funds for building storage. Some of them will not want to make the investment. Some won't be in business long enough to make it a worthwhile investment from the taxpayers' perspective. How else can Extension address this problem? If this problem will 'go away' due to attrition, is it worth expending much effort in targeting the producers involved?

2. Spreader calibration: promote, provide, and assist

Many of the producers who spread their own solid manure, need and request on-farm assistance with weighing their manure wagons/spreaders.

Implications and recommendations for Extension and partners

- On a comprehensive, statewide basis (perhaps through a rotating, regional or area process):
 - determine present availability of or accessibility to scales
 - identify counties or areas in need of scales
 - characterize local staff resources for assisting with calibration
 - develop and implement plans to redress deficiencies
 - develop and implement an outreach and communications plan

- The above recommendation will address the producers who are interested—who recognize a need to do calibration. Other approaches must be taken in order to effect change among producers who do not think it is practical or worthwhile to calibrate their spreaders. Some of these producers could be ‘reached’ through efforts that focus on the economic benefits that would be realized (for the situations where such an argument could be convincingly made). Accordingly, Extension should consider developing materials and implementing communications strategies to support an approach based on financial arguments.

3. Manure application record keeping forms are needed

Producers who apply their own solid manure, need and want suitable forms for field-by-field record keeping.

Implications and recommendations for Extension and partners

- A number of different record keeping tools should be developed (or adapted), tested, and made available.
 - Provide various format options (e.g., pocket size, full size, spreadsheet)
 - Provide options that address different needs (e.g., recording a day’s field applications, making year-to-year comparisons)

Note: Although ‘record keeping form’ was one of the most frequently and extensively made suggestions, it was not something that came up again very much at the end of the session with questions about ‘biggest barrier’, ‘most important thing Extension could do’, and ‘biggest need’.

4. Nutrient management Plans: assistance needed; involve private sector, agricultural professionals

Implications and recommendations for Extension and partners

- Consider developing simplified materials or tools that can be used by farmers themselves, with little or no on-going assistance. These simplified approaches might best be customized for size and type of operation, and are probably more suited to smaller operations. Develop and implement an outreach/education plan.
- Conduct a needs assessment for agricultural professional trainings.
- Conduct a market analysis of the opportunities for ag. professionals in providing nutrient and manure management planning services to animal operators.
- Consult and collaborate with NRCS, MDA, Conservation Districts, crop advisors, counties, etc., on the preceding recommendations, and on related issues such as certification programs for nutrient management planners

5. Website as a source of information: important to some, but most farmers are not keen to use

There is quite a range in the level of interest and proficiency when it comes to computers and the Internet. However, most of the participants are not likely to use an Extension website very often.

Implications for Extension and partners

- Consider making a decision to either focus on other media and downplay the Web’s role in serving farmers OR to promote increased use of the Web

If the latter, then:

- Consider (expanded) county level efforts for general, adult computer literacy programs
- Consider county level efforts for adult computer literacy programs that target farmers
- Use newsletters to identify and promote new publications and other resources available on-line, in a timely manner (i.e., anticipate what the producers will be thinking about at a given time)

- Utilize or publicize Extension's website during meetings and workshops

Questionnaire: key findings

Some counties are behind in the implementation of these recommended practices.

Out of a group of four counties investigated here, Pope County was found to lag behind (presuming that the county participant samples are representative).

- Extension should consider identifying other such counties, probably using informal methods
- The reasons for slower adoption of recommended practices should be identified and discussed
- Additional resources should be targeted to some of these counties to enhance progress on practice implementation

Topics/practices and resource allocation recommendations

Based on need

There are a few practices for which the participants' expected rates of implementation by 2004, will be less than 80 percent.

These are:

- Calibrate manure spreaders (74%)
- Follow Extension's recommended rates for nitrogen (71%, Non-Attendees)
- Adjust for phosphorous (62%, Non-Attendees)
- Properly manage sensitive areas (75%, Non-Attendees)
- Develop/update manure management plans (70%, Non-Attendees)

If the results for the four counties investigated are deemed a suitable basis for making statewide decisions, then:

- Relatively more resources should be applied to efforts addressing the above five issues
- Some strategies should be developed to target the 'Non-Attendees'

Based on interest (likelihood of attending an educational event)

For Extension programs or educational events, three of ten listed topics stood out in terms of likelihood of attendance.

The farmers' top choices were:

- Field selection: soil P levels and manure application rates
- Managing sensitive areas
- Applying and incorporating manure

Overall (need and interest)

Two topics rise to the top here as they are identified both with respect to need (i.e., recommended practices are being implemented at relatively low rates) and interest (farmers' own assessment of whether they would attend an event). These two topics then, could serve as the chief recommendations for resource allocations, especially meetings, workshops, or other events:

- Adjusting for phosphorous; field selection: soil P levels and manure application rates
- Managing sensitive areas

The third chief topic recommendation, arises both out of questionnaire results and the amount of interest expressed during the focus groups:

- Applying and incorporating manure

This last is especially appropriate for a field day. The producers are especially interested in seeing equipment and implements. Such would be the biggest draw for any field day. [Note however, that most

of the participants probably would not attend a field day in their own county. Just because they can provide recommendations for the topics at a field day does not mean they would attend.]

Other recommendations

The following are recommendations and ideas and suggestions that are worth investigation or follow up. Some of them originated from a single person or surfaced in only one or two focus group sessions. Some were mentioned in, or are derived from comments that occurred in a number of sessions, but were given relatively little emphasis or attention, and thus, are not included in the key findings.

Manure application record keeping and nutrient management planning (NMP)

- Financial justification More emphasis should be placed on the economic value of record keeping and planning. This is particularly important for smaller operators. They need to be able to study some case examples. They need to see some figures or estimates on how much the average producer with a particular type of operation will benefit—financially—by investing more resources in record keeping and planning. This is a key motivating factor, yet it was given little emphasis in the workshops and current materials give it little treatment. It is a logical next step for Extension. It is probably one of the key opportunities at this time.
- Liability concerns For some farmers or in some counties, an important motivating factor for improving record keeping and implementing NMP, is to reduce their liability risks and to protect against complaints and regulatory action. Thus, there is the need to develop materials and implement appropriate outreach strategies that will help producers assess the significance or likelihood of such risks, appropriately characterize the nature of such threats, and otherwise help them to make suitable decisions.

Some of the farmers made it plain that they are not going to do more record keeping or planning than they have to, and that right now they aren't really being held accountable. They won't do it unless they have to or if the benefit is proven.

Sensitive areas

- There is additional need for information and education on sensitive areas—both identification and management, but the magnitude and nature of the need varies by location (county, region of the state)
- Examples:
- locating/identifying sinkholes (some farmers have them, but don't know it—and/or don't want to find out!)
 - distinguishing between grass waterways and intermittent streams (what was once an intermittent stream, may now be a grass waterway—how should it be treated with respect to the rules?).
 - in general, identifying sensitive areas in the less obvious cases (wet meadows, low lying portions of fields, in-field waterways, minor ditches, etc.)
 - interpreting/applying the phrase 'waters of the state' on each farm, in each field

Some farmers noted that they wanted research or monitoring to find out if the rules work—for example, 'Are the setback distances are adequate or excessive?'

A few of the participants expressed an interest in site visits to help them with sensitive areas. Such one-on-one assistance is an appropriate role for the public sector. It is not a suitable niche for the private sector.

Manure spreading agreements

- Extension should develop a template agreement or a listing of the key components to consider in an agreement between sending and receiving farms for manure (e.g., between an animal producer and a grain farmer). The primary concern is with having satisfied customers and maintaining good relations with neighbors. This would help reduce problems and keep better relations in the community. Sometimes, the issue comes up rather quickly and there isn't enough time to think through the matter. It ends up being a verbal agreement.

Small group, nutrient management planning sessions for farmers (Winter 2002-3)

- In promoting or advertising the sessions, it is best to provide some details on the course content and the audience being targeted.

Farmers are less likely to go to a workshop, if they aren't sure that it will meet their needs. For example, is it a beginner course or an advanced course? Is it for people with small operations or large, or both? Is it for people with daily scrape and haul operations or for those with storage? The important thing is to make sure that the promotional materials provide this information. If it's not provided, some farmers will be skeptical about going—they'll wonder if it will be worth their time. The different subaudiences should be trained in separate sessions or in separate groups with separate trainers in the same session; that way, more of the material covered and the discussion will be relevant to each producer attending.

Educating, targeting nonfarmers

In three sessions (two counties, especially Pope) some of the participants expressed the opinion that Extension should put more emphasis on educating or targeting groups other than farmers and consultants/ag. professionals. In general, this other audience was identified as 'the public', but sometimes 'lake people'/lakeshore owners, local public officials or decision makers, state legislators, city people, and rural, nonfarmers.

The needs identified:

- education on land management, protecting water quality (lake shore owners)
 - education on the rules that farmers have to follow (general public)
 - publicity on what producers are doing/that they are doing it right—attending educational meetings, implementing stewardship practices (general public)
 - liaisonship between farmers and nonfarmers; building better community relationships between animal producers and their nonfarming neighbors and the 'townspeople'
 - Experiment station results/research finding (legislators—this gets back to the opinion that the new rules lack adequately scientific basis, the legislators don't know farming and they don't know the science, etc.)
- Extension should consider this request or suggestion, determine if or to what extent it should be addressed, and plan and implement accordingly.

Feedlot Rules Education Project Evaluation: Phase II, Land Application Focus Groups

Question Route, in brief, p. 1

Question Route, pp. 2-4 with context, notes, follow up or additional questions or prompts, cues, visual aids, beginning and ending phases, time allotments

Question route, in brief 6/21/02 Final

OPENING

- Let's begin with telling us who you are, what animals you raise, and what you enjoy most when not farming.

INTRODUCTORY

- Describe a farm field with good manure application practices.

TRANSITION

- Please tell us about something interesting or different you've done or seen done in the last couple years to improve manure applications.

KEY: BARRIERS

Question pair: [ref. Questionnaire #8]

- Please identify something about Extension's recommended rates that makes them hard to use or follow.
- What could Extension do to make it easier to follow the recommended rates?

Question triplet: [ref. #10]

- What are some of the reasons for keeping good manure application records?
- What is it about such record keeping that keeps it from getting done or done well?
- What's the best thing Extension could do to improve manure application record keeping practices?

Question pair: [ref. #11, 12]

- Which setback, buffer, and incorporation rules are going to be the most difficult to work with?
- What can Extension do to help you with the rules for sensitive areas?

[If time, do 'barriers' for additional topics: manure and soil testing, equipment calibration, if time allows]

KEY: EDUCATION

Question set re. small group nutrient management plan writing sessions to be done next winter

- What are some things you like about this approach?
- What is the biggest reason why that approach would not succeed?
- All things considered, what is the best thing that could be done to get more plans written?

Question set re. preferred training topics and formats.

- Which topics would work really well with a field day? (farm tour, experiment station demonstration)
- Did anyone give a high rank to 'comprehensive website'?
- Did anyone give a high rank to 'newsletter' or 'update'?
- Did anyone give a high (low) rank to 'computer software for nutrient management'?
- For which topics do you need one-on-one assistance?

If time: - Given the scarcity of public staff, are you considering hiring anyone for one-on-one technical assistance (i.e., beyond what you are/may already doing)?

ENDING

- Of all the barriers to improving manure application practices mentioned today, which is going to be the biggest problem for you?
- Of all the education and assistance needs mentioned today, which is most important to you?
- With due consideration to Extension's limited resources, what is the most important thing Extension could do to improve its educational programming to achieve better manure application and protect water quality?

Question route, with context and notes 6/21 Final total time: 2:00

Beginning [5']

FG background info., things that will help our discussion go smoothly/ground rules; introduce FG team

Opening question (round robin) [5']

Let's begin with telling us who you are, what animals you raise, and what you enjoy most when not farming.

Introductory question [7']

Now let's start to move into today's topic . . . We'll go around the table.

Together then, let's

Describe a farm field with good manure application practices.

____Name____ (1st respondent), would you start with developing this description?

[Prompts: buffers, residue, uniformity/distribution, soil testing]

Transition questions (round robin) [8']

Please tell us about something interesting or different you've done or seen done in the last couple years to improve manure applications.

[Follow up/probing question: Give us an example of something you would like to do to improve manure applications, but haven't done yet]

Key questions [70']

_____BARRIERS (40' for set of three topics)

Now we will begin to look at some specific manure application issues.

Let's start with one of the items on the questionnaire:

8. Do you (or your agronomist) follow UM Extension recommended nitrogen rates when calculating manure and fertilizer applications?

[Visual cue: familiar booklet with sample rate tables]

Question pair: ***Please identify something about Extension's recommended rates that makes them hard to use or follow.***

(Is there anything else that gets in the way of following the recommended rates?)

What could Extension do to make it easier to follow the recommended rates?

[Reminder: these tables include a lot of factors—yield goal, crop history, manure and legume credits, results of soil and manure testing, soil organic matter, and so on.]

[Possible factors (prompts): time, complicated, equipment, need/lack technical assistance,

[Note: there are two issues here: willingness and ability. Both are relevant to Extension programming]

[If time allows, follow up set: Do any of you rely on co-op agronomists or independent consultants to do the soil sampling and fertilizer recommendations? 'Yes', then: do the agronomists obtain info on the prior crop and manure applications to account for nitrogen credits? If not, how can we improve that communication?] [If necessary, can refer to tables, 3-12 in Manure Planning and RecKpg Guide]

Let's look at another item on the questionnaire:

10. Do you keep records of manure application amounts for each field?

Question ***What are some of the reasons for keeping good manure application records?***

triplet: ***What is it about such record keeping that keeps it from getting done or done well?***

(Are there any other reasons why field-by-field record keeping doesn't get done or done well?)

What's the best thing Extension could do to improve manure application record keeping practices?

And, let's do one more; this one is on sensitive areas, numbers 11-12.

[Before asking the next question, prepare them with a 4' minute overview (given by local cooperator) of the 'setback', buffer, and incorporation rules, using a visual aid—large chart on easel, handout or OH projector)]

Which setback, buffer, and incorporation rules are going to be the most difficult to work with?

What can Extension do to help you with the rules for sensitive areas?

[Prompts, follow up questions: Do you want to say more about that? Are there any other concerns with respect to the new rules as they relate to protecting sensitive areas?]

[If time allows: ask similar questions on other topics—manure and soil testing, phosphorous, equipment calibration. Can ask the participants to suggest the topics.]

_____ EDUCATION, 30'

We're now going to shift to education and technical assistance needs on these same issues.

I have some questions for you based on the following information: (15')

Extension is planning to host small-group nutrient management plan writing sessions next winter.

Individual producers will bring in the information necessary to write a plan for two of their fields.

The producer will write the plan in the session with guidance from Extension staff.

Actually, much of the information required for a plan was referred to in the questionnaire you took earlier.

I should note here that the educational and plan writing assistance efforts will be done in collaboration with NRCS and SWCD.

What are some things you like about this approach?

What is the biggest reason why that approach would not succeed?

All things considered, what is the best thing that could be done to get more plans written?

[If time allows: Would you be willing to participate? Any other concerns or comments regarding nutrient management plans? Who will write your plan? (Prompts to get at 'why'?)]

_____ For the next set of questions, please refer to page 3 of your questionnaire. (15')

In the questionnaire you took earlier, you rated a number of topics to indicate the likelihood that you would attend or participate in educational sessions or programs. Then you ranked a set of educational tools (e.g., website) and formats (e.g., workshop). Now we would like to go a little further.

Which topics would work really well with a field day? (farm tour, experiment station demonstration)

Did anyone give a high rank to 'comprehensive website'? (prompts: comments, low ranking?)

Did anyone give a high rank to 'newsletter' or 'update'? (describe the kind of newsletter you'd want; mail or email?; time of year; low ranking.)

Did anyone give a high (low) rank to 'computer software for nutrient management'?

For which topics do you need one-on-one assistance? (say more, etc.)

Given the scarcity of public staff, are you considering hiring anyone for one-on-one technical assistance (i.e., beyond what you are/may already doing)? (Can you tell me more about that? Would you pay SWCD . . . ?)

[If time allows, asks questions about the feedlot/manure application workshops: What did/didn't (do/don't) you like . . . What are some ways in which (the) workshops could be (have been) better?]

Ending question(s) [12']

Let's think back on all topics we've discussed or that were on the questionnaire . . . (And, remember, it's good to provide some comment or explanation, but let's keep the responses real brief here.)

Now, ***Of all the barriers to improving manure application practices mentioned today, which is going to be the biggest problem for you?*** [Can you say just a little about that?]

And, ***Of all the education and assistance needs mentioned today, which is most important to you? With due consideration to Extension's limited resources, what is the most important thing Extension could do to improve its educational programming to achieve better manure application and protect water quality?***

Final FG components [13']

5-10 minute summary by local cooperator.

Is that an adequate summary? Is there anything important that we missed?

Reiterate purpose of study, why we are gathered today (2-3 sentences)

Is there anything else you would like to say about manure application issues, such as barriers, concerns, solutions, or education?

Alright then, thank you very much . . .