



Summary

Report

American Farmland Trust Fertilizer Application Research

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Submitted by:



STRATEGIC MARKETING SERVICES

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/ Introduction

Objectives

This study was conducted in order to identify the strengths, weaknesses, and opportunities for the Agflex Better Management Practices (BMP) guarantee program and to develop a comprehensive marketing plan for the BMP guarantee. The survey was designed to gauge farmers' attitudes, opinions, perceptions, values, and barriers as they relate to fertilizer, crop insurance, warranty, and guarantee programs. More specifically, the survey identified farmers' current fertilizer practices, their experiences with crop insurance, warranties or guarantee programs, where they obtain farming information, and whom they trust to deliver information to them.

Methodology

AFT and SMS personnel worked jointly to develop the content of a self-completion mail survey instrument. Upon completion of instrument development, SMS designed, printed and mailed the survey to a random sample of 10,000 farmers in the Midwest and Chesapeake Bay area states. SMS received 511 useable surveys by the December 12th deadline, and an additional 186 surveys at the time this report was written. Since, a statistically valid 95 percent confidence interval was achieved with a sample size of 511 respondents¹, the surveys received after the cutoff date were not individually entered into the aggregate data. However, all of the contact information for those respondents who requested program information is included in Attachment B.

Once data entry and data cleaning was complete, SMS began data analysis in order to complete a comprehensive research and analysis report by the end of the year. The body of this report contains question-by-question results from the aggregate respondent group. SMS also ran statistical testing to determine if any differences existed between small, medium and large farms. Each group was defined by the number of total acres they reported in question one of the survey. Small farms reported Less than 500 total acres, medium farms reported between 500 and 1199 acres while large farms consisted of farms reporting 1200 or more acres. Any statistical findings between these subgroups are included in the body of the report where applicable.

¹ In other words, if we were to conduct the same survey 100 times, 95 out of the 100 administrations should yield results within \pm 4.22 percent of the current data.

Executive Summary

Respondent Characteristics

A majority of the respondent group was over 50 years of age and over half of the respondent group has been farming for more than 30 years. Almost all, 98 percent, of the respondent group had at least a high school diploma/GED and almost one-third of the group reported receiving a college degree. When it comes to management style, two-fifths of respondents stated they tend to change their management style only after they see proof that the change is better than what they are currently doing, while nearly one-third of the respondents indicated they do not change things that are not broken and they tend to do things the same way as long as the benefits are reasonably satisfactory.

Concerns

The survey highlighted some common concerns among the respondent group. Although, an overwhelming majority was very concerned with the increasing cost of fertilizer, slightly less than half of the group has not reduced their fertilizer application rates. Furthermore, only one-fourth of those who have not reduced their fertilizer application rates believe they are at higher levels than university recommendations. Of the half who has reduced their fertilizer application rates, most reported doing so to save money. Over half of the total respondents were somewhat concerned with the over application of fertilizer by farmers in their area and an additional one-quarter were very concerned. Furthermore, a majority of respondents were somewhat concerned that others should know about their own and/or other farmers' efforts to protect the environment.

Applications

The study also worked to gather information regarding farmers' fertilizer applications. When it comes to determining fertilizer application rates, soil tests were deemed the most important of all options while the other farmers in the area was of least importance. A majority of respondents do not routinely apply commercial fertilizer to fields that have had manure applied to them within the last year. Of the remainder that do routinely apply commercial fertilizer and manure, nearly three-fourths of them reduce the amount of commercial fertilizer used on those fields to offset the nutrient content of the manure. Additionally, an overwhelming majority of respondents reduce the amount of commercial fertilizer used on cornfields that follow soybeans to offset the nitrogen contribution of the soybeans.

Roughly two-thirds of respondents do not use variable rate application for nutrients for corn or banded applications of fertilizer for corn. Furthermore, the majority of respondents do not use in-season testing and application for nitrogen fertilizer in corn. A large portion of the group also reported currently testing their soil for phosphorus, and of those respondents currently testing for phosphorus over two-thirds test 100 percent of their fields. In terms of frequency, about half of the respondents test their fields for phosphorus every three years, but only seven percent test annually for phosphorus. Moreover nearly two-thirds of respondents do not currently use a harvest yield monitor.

When it comes to university fertilizer application recommendations about half of the respondents believe that their fertilizer application rate is about the same as university recommendations and an additional one-third of the group believes their rates is lower than university recommendations. Slightly more than half believe that university recommended fertilizer application rates for their area provide average yields. In terms of those who are unsure about the yields provided by university recommendations, less than 10 percent believe they were at levels above university recommendations. As for influential fertilizer application rate information, fertilizer dealers were rated as the most frequently used source of information. Over half of the respondents were very satisfied with their current source of information regarding fertilizer application rates.



Programs

Over half of the respondents were somewhat interested in reducing their fertilizer application rates to university recommended levels if a program were available to compensate them in the event their yield declined. In the past, the respondent group reported being most satisfied with federal crop-insurance and were most willing to work with a private non-profit organization and least willing to work with a government agency or private for-profit company. As a group they were most concerned with obtaining a clear understanding of the rules of the program and least concerned with the lack of government backing. To fund such a program slightly over half of the respondents reported they would be willing to pay less than one-tenth of their fertilizer cost savings, while roughly one-third of the respondents would be willing to pay up to one-third of their fertilizer cost savings.

An overwhelming majority of respondents were not aware of American Farmland Trust and its programs to help preserve working farms. Of the respondents that were aware of AFT, less than one-tenth had an unfavorable opinion. Just over half of the respondents requested information about a program currently being developed to compensate farmers' yield losses due to reducing fertilizer application rates to university recommended levels. Just over half of the respondents who have not reduced their fertilizer application rates and are at a higher level than university recommendations would like more information about the program. Furthermore, 40 percent of the respondents who have not reduced their fertilizer application rates and are at the same level or lower than university recommendations would like more information about the program.



Results

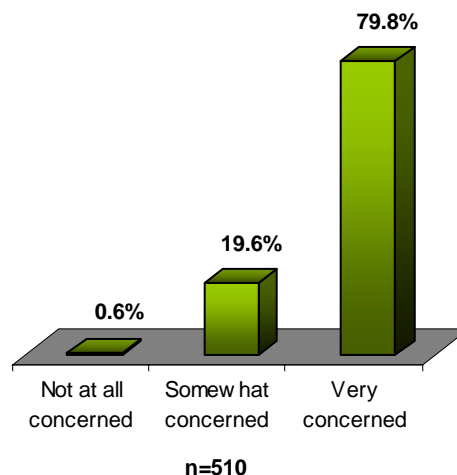
1. Approximately how many of your acres are planted with the following types of crops each year?

The following table shows the number of corn, soybean and other crop acres planted by respondents each year. On average participants reported planting 373 acres of corn, 327 acres of soybeans and 146 acres of “other” crops. Almost 70 percent of the respondent group reported having 400 or fewer acres of corn. Just over 60 percent of the group reported having 300 or fewer acres of soybeans and almost 75 percent have 200 or fewer acres of “other” crops.

Number of Acres	Corn n=502	Soybean n=461	Other n=255
Less than 100 acres	15.3%	22.8%	51.8%
100-199 acres	26.3%	24.3%	23.1%
200-299 acres	16.5%	13.9%	9.8%
300-399 acres	10.8%	8.5%	4.7%
400-499 acres	5.8%	7.6%	4.7%
500-599 acres	5.8%	6.1%	1.6%
600-699 acres	4.0%	4.8%	1.6%
700-799 acres	1.8%	1.7%	0.8%
800-899 acres	3.0%	2.0%	0.8%
900-999 acres	1.6%	0.9%	0.0%
1,000-1,500 acres	7.4%	6.5%	1.2%
More than 1,500 acres	1.8%	1.1%	0.0%

2. At this time, how concerned are you with the increasing cost of fertilizer?

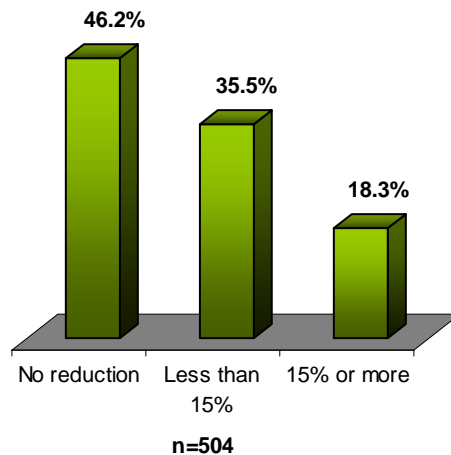
An overwhelming majority (79.8 percent) of respondents were very concerned with the increasing cost of fertilizer, while approximately 20 percent of respondents were somewhat concerned. Less than one percent of respondents were not at all concerned with the increasing cost of fertilizer.



3. During the past five years, how have you reduced your application rates of fertilizer?

Roughly 46 percent of respondents have not reduced their fertilizer application rates. Approximately 36 percent of respondents have reduced their fertilizer application rates by less than 15 percent, and 18 percent of respondents have reduced their fertilizer application rates by 15 percent or more.

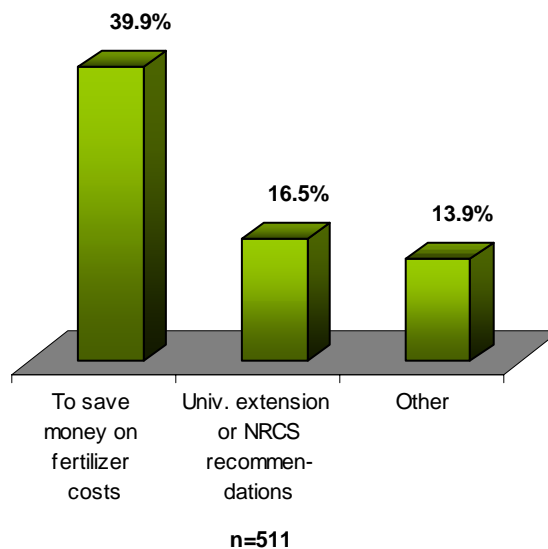
Chi-Square statistical testing revealed a significant relationship between farm size and the reduction of fertilizer application rates. When compared to medium and large size farms, respondents with a small size farm were less likely to have reduced their fertilizer application rates in the last five years. Additionally, respondents with a large size farm were more likely to have reduced their fertilizer application rates by less than 15 percent, while respondents with medium size farm were more likely to have reduced their fertilizer application rates by more than 15 percent.



4. If you have reduced your application rates of fertilizer in the past five years, why did you choose to do so?

Of those respondents who have reduced their fertilizer application rates, 40 percent did so to save money. Nearly 17 percent did so based on a university/extension or NRCS recommendation, while 14 percent did so for other reasons, which are listed below.

Chi-Square statistical testing revealed a significant relationship between farm size and the reduction of fertilizer application in the past five years. Respondents with a small farm were less likely to use recommendations from a university/extension or NRCS compared to medium and large farms.



Other reasons for reducing fertilizer application rates:

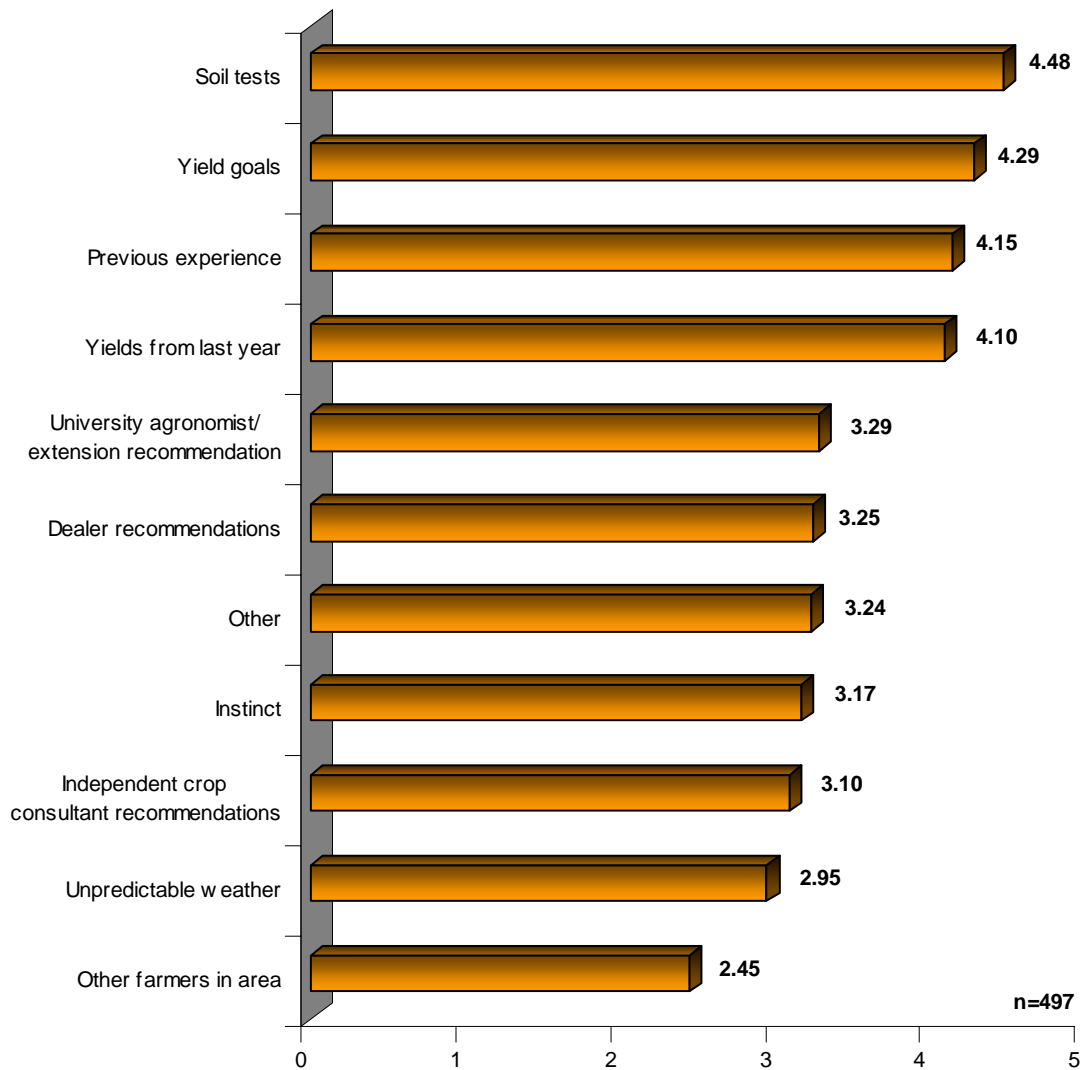
- Soil test (20)
 - Requirements
 - Results
 - Very high in P & K
 - Recommendation from soil test
 - Indicated less
 - Indicate fertility levels are higher than necessary
 - Soil testing and SGS used
 - Lowered goals for test readings running on past buildups
 - More accurate soil testing and analysis
 - Manure (9)
 - Hog manure (2)
 - Manure application (2)
 - More manure
 - Composted manure
 - Spread manure and take into account Nit SB and hay add to ground
 - Use manure
 - Went to almost all manure
 - Better use of our manure
 - Environmentally Friendly (3)
 - To put less nitrates in soil water
 - Certified organic
 - Agronomist (2)
 - Crop rotation (2)
- Mistake on application
 - Concerns of about over application
 - Cover crops
 - Ag spectrum user
 - Balance nutrients
 - Based on actual tests
 - Better technology
 - Crop consultant
 - Crop scout
 - Dry year
 - Farm magazines
 - Fertilizer representative
 - Grid samples and university research
 - How it is put on
 - More biological farming has reduced nitrogen use substantially
 - Low yields and less maintenance
 - Need to correct Ph First
 - On farm research
 - On farm trails
 - Past experience
 - Poor return on soybeans
 - Site crop specific efficiency
 - Sludge is available
 - Some is unneeded
 - Switched to Nutro-Flo and grow more liquid plant food
 - Uncertainty on rented land
 - Went to VRT application



5. How important are each of the following when determining your fertilizer application rates?

Soil tests were deemed the most important of all options with a mean of 4.48 on a five-point scale. Yield goals (4.29), previous experience (4.15) and yields from last year (4.10) followed in importance. The importance of other farmers in the area was rated the lowest with a mean of 2.45.

One-way ANOVA statistical testing revealed a statistically significant relationship between farm size and factors in determining fertilizer application rates. Large farms were statistically less likely to rely on yields from last year, instinct and dealer recommendations when compared to other farm sizes. On the other hand, small farms were statistically more likely to look at unpredictable weather conditions and consider other farmers in the area when determining fertilizer application rates. In addition, small farms were statistically less likely to rely on soil tests when compared to other farm sizes.



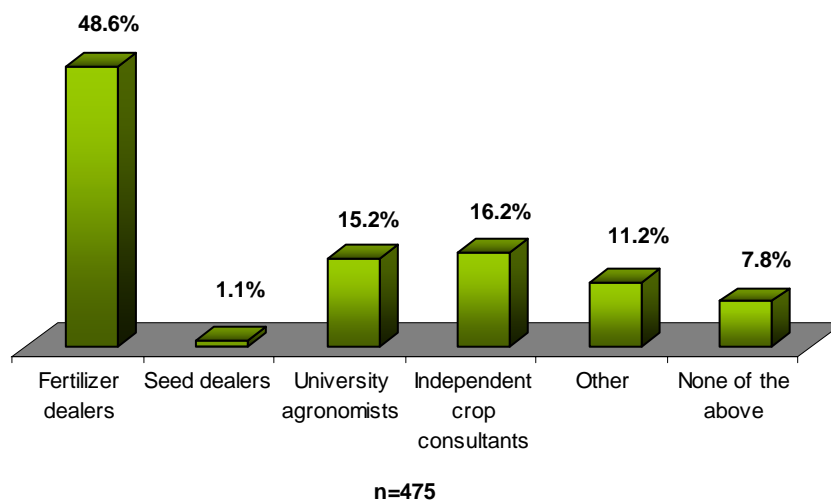
Other important factors for determining fertilizer application rates:

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> ■ Cost (2) ■ Soil tests (2) ■ Field trials (2) ■ Environment impact ■ Soil conservation service ■ Organic approved OMRI | <ul style="list-style-type: none"> ■ Grid sample ■ Maintenance ■ New ideas like splitting applications ■ Piece of commodity being raised | <ul style="list-style-type: none"> ■ Previous crop rotate ■ Seed company ■ Term of keeping land farmed |
|--|--|---|

6. At this time, which of the following do you consider to be your most used source of information regarding fertilizer application rates?

Nearly half of the respondents reported fertilizer dealers are their most used source of information regarding fertilizer application rates. Independent crop consultants (16.2 percent) and university agronomists (15.2 percent) were the next most selected sources. Slightly over 11 percent of respondents cited other information sources and those are listed below.

Chi-Square statistical testing revealed a significant relationship between farm size and most used sources of information regarding fertilizer application rates. Respondents with a small size farm were more likely to use fertilizer dealers when seeking information regarding fertilizer application and large farms were less likely to use fertilizer dealers when compared to medium sized farms. Additionally, respondents with a small size farm were less likely to use independent crop consultants not working for a dealer for information while respondents with large size farm were more likely.

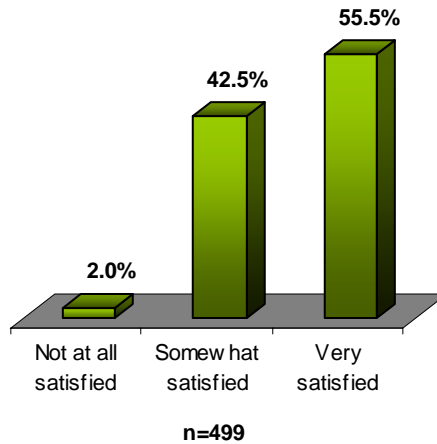


Other most used sources of information regarding fertilizer application rates:

- Experience/Instinct (12)
 - Prior results (3)
 - Instinct and Manurea Anoliz
 - Past experience and field history
 - Habit
 - Myself
- Soil Tests (5)
 - Soil samples (2)
 - University soil tests
 - Yield goal and soil tests
 - Co-op soil tests
- Agronomist (3)
 - Dealer contracted agronomist
 - Co-op agronomist
 - Agronomy
- Guide
- Family members
- Mid-state farm instructor
- Other farmers
- Removal from crop
- Yield maps and manure rates

7. Currently, how satisfied are you with the source of information you specified in the previous question?

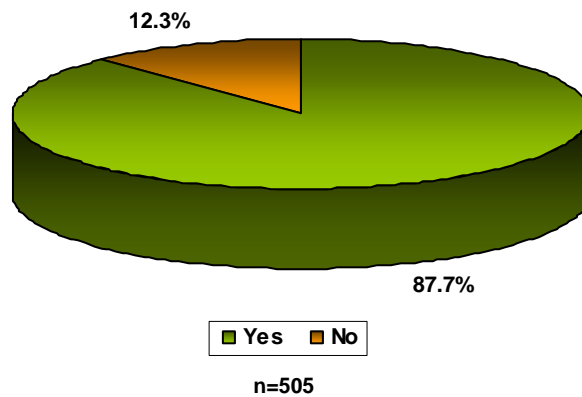
Roughly 56 percent of the respondents were very satisfied with their current source of information. Approximately 43 percent were somewhat satisfied and two percent were not at all satisfied with their current source of information.



8. Do you currently test your soil for phosphorus?

An overwhelming majority, approximately 88 percent, of respondents currently test their soil for phosphorus; while slightly over 12 percent do not test their soil for phosphorus.

Chi-Square statistical testing revealed a significant relationship between farm size and farmers who test their soil for phosphorus. Medium and large size farms were more likely to test for phosphorus than small farms.



9. Of your fields, what percentage is tested for phosphorus?

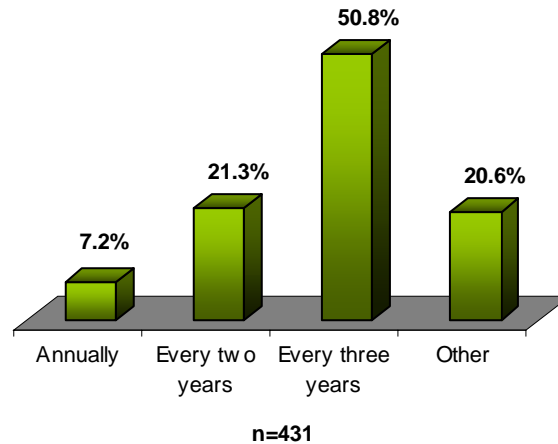
Nearly 68 percent of respondents test 100 percent of their fields for phosphorus and roughly 13 percent test 50-59 percent of their fields for phosphorus. Less than one percent of respondents test one-quarter of their fields or less for phosphorus.

Percent of Field Tested for Phosphorus	Percent of Respondents n=419
None (0%)	0.2%
1-9%	0.2%
10-19%	0.4%
20-29%	5.0%
30-39%	3.3%
40-49%	1.2%
50-59%	13.4%
60-69%	0.5%
70-79%	3.1%
80-89%	1.6%
90-99%	3.1%
All (100%)	67.8%

10. Approximately, how often are your fields tested for phosphorus?

Approximately 51 percent of the respondents test their fields for phosphorus every three years. Every two years (21.3 percent) and other (20.6 percent) were the next most selected time frames. Roughly seven percent test their fields annually for phosphorus.

Chi-Square statistical testing revealed a significant relationship between farm size and how often fields are tested for phosphorus. When compared to small and medium size farms, respondents with large farms were more likely to test for phosphorus annually. Additionally respondents with a large size farm were more likely to test their soil every two years, while respondents with small size farm were less likely to do so. On the other hand, respondents with small size farm were more likely to test the soil for phosphorus every three years when compared to medium and large farms.



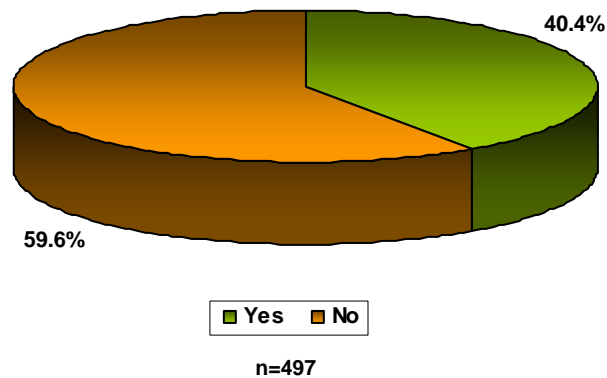
Other responses to how often their fields are tested for phosphorus:

-
- Every four years (3)
 Five to six years (2)
 Four to six years
- Grid sample every four years
 Three to five years (2)
 Every rotation from hay to corn and corn to hay
- Five Years (2)
 Half of one year and half of the next
 Grid samples
- Grid sampling every five years
 Three to four years
 Four to five years

11. Do you routinely apply commercial fertilizer to fields that have had manure applied to them within the last year?

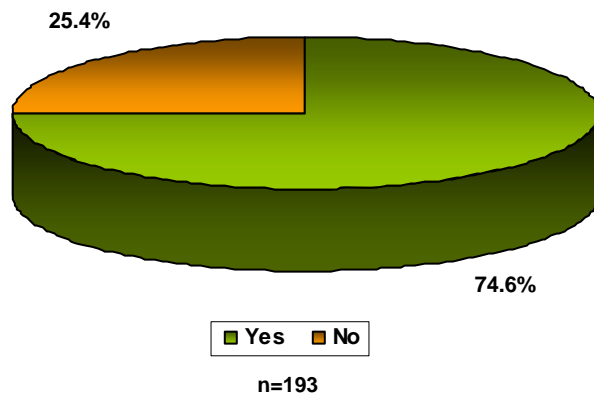
Roughly 60 percent of respondents do not routinely apply commercial fertilizer to fields that have had manure applied to them within the last year. Just over 40 percent have applied commercial fertilizer to fields that have had manure applied to them within the last year.

Chi-Square statistical testing revealed a significant relationship between farm size and the routine application of commercial fertilizer to fields that have had manure applied to them within the last year. When compared to medium and large size farms, respondents with a small size farm were more likely to apply commercial fertilizer to fields that have had manure applied to them within the last year.



12. Do you reduce the amount of commercial fertilizer used on those fields to offset the nutrient content of the manure?

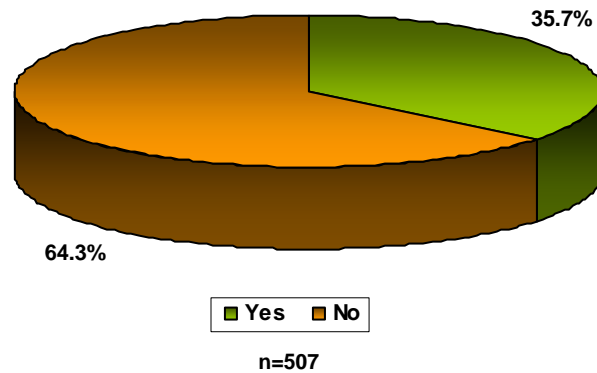
Of those respondents who routinely apply commercial fertilizer to fields that have had manure applied to them within the last year, nearly 75 percent do reduce the amount of commercial fertilizer used on those fields to offset the nutrient content of the manure, while roughly 25 percent do not.



13. Do you currently harvest using a yield monitor?

Approximately 64 percent of respondents do not currently harvest using a yield monitor, while 36 percent do currently harvest using a yield monitor.

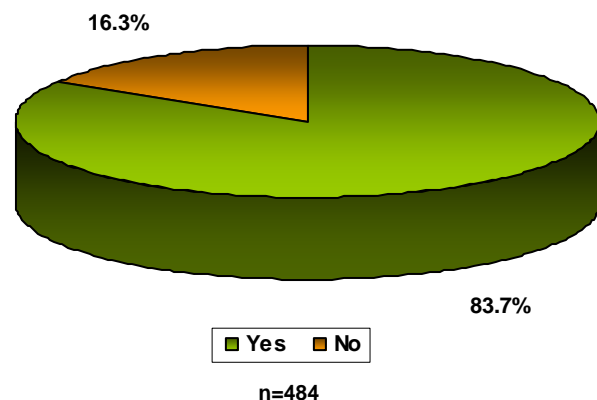
Chi-Square statistical testing revealed a significant relationship between farm size and if the farmer currently harvests using a yield monitor. Small farm were significantly less likely to use yield monitors during harvest whereas medium and large farms were significantly more likely.



14. Do you reduce the amount of commercial fertilizer used on corn fields that follow soybeans to offset the nitrogen contribution of the soybeans?

An overwhelming majority (83.7 percent) of respondents do reduce the amount of commercial fertilizer used on cornfields that follow soybeans to offset the nitrogen contribution of the soybeans. Slightly over 16.3 percent do not reduce the amount of commercial fertilizer used on corn fields that follow soybeans.

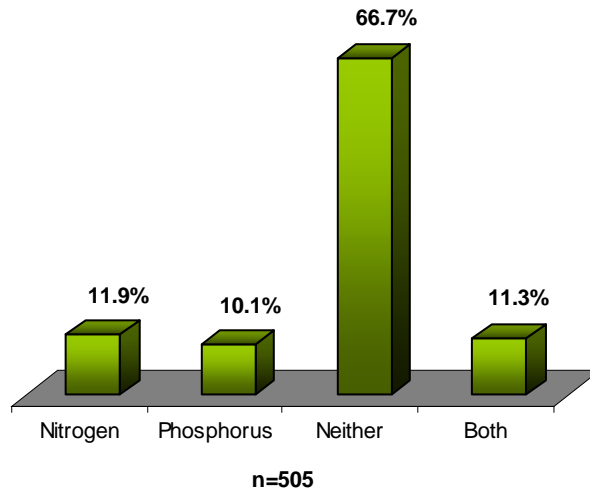
Chi-Square statistical testing revealed a significant relationship between farm size and the reduction of commercial fertilizer used on cornfields that follow soybeans to offset the nitrogen contribution of soybeans. When compared to medium and large size farms, respondents with a small size farm were less likely to reduce the amount of fertilizer used.



15. Do you use variable rate application for nutrients for corn?

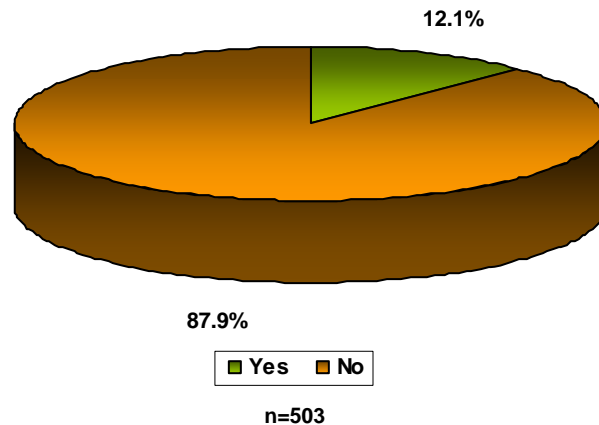
Roughly 67 percent of the respondents do not use variable rate application for nutrients for corn. Nearly 12 percent use nitrogen and 10 percent use phosphorous, while 11 percent use both nitrogen and phosphorus.

Chi-Square statistical testing revealed a significant relationship between farm size and variable rate application for nutrients for corn. When compared to medium and large size farms, respondents with a small size farm were less likely to use variable rate application.



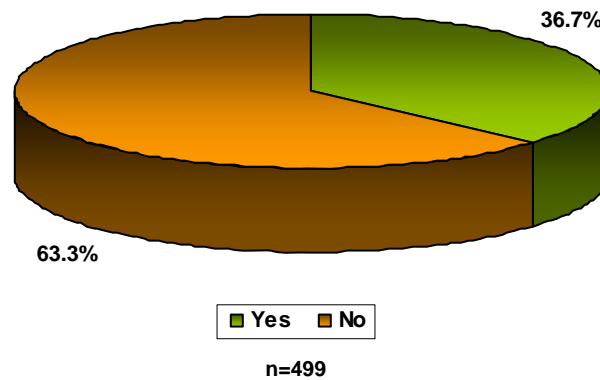
16. Do you use in-season testing and application for nitrogen fertilizer in corn? (i.e. the pre-sidedress or late spring nitrogen tests)

An overwhelming majority, almost 90 percent, of respondents do not use in-season testing and application for nitrogen fertilizer in corn, while 12 percent reported they do use in-season testing and application for nitrogen fertilizer in corn.



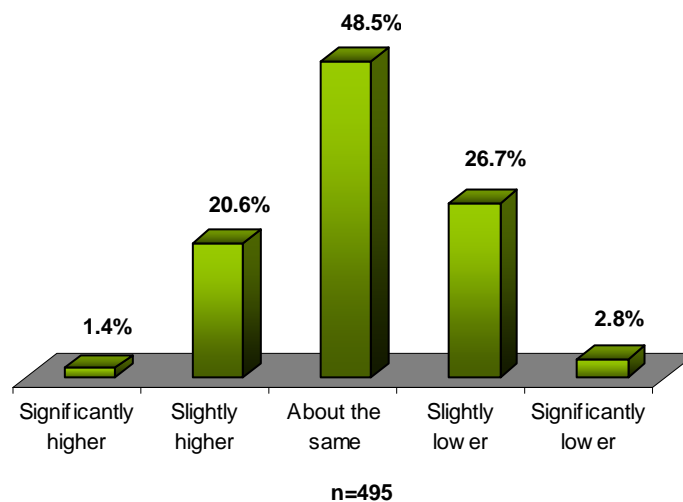
17. Do you use banded applications of fertilizer for corn?

Roughly 63 percent of respondents do not use banded applications of fertilizer for corn compared to the 37 percent who do use banded applications of fertilizer for corn.



18. On average, do you believe that your fertilizer application rate is...

Approximately half of respondents believe that their fertilizer application rate is about the same as university recommendations. Just under 21 percent believe it is slightly higher and 27 percent believe it is slightly lower than university recommendations.

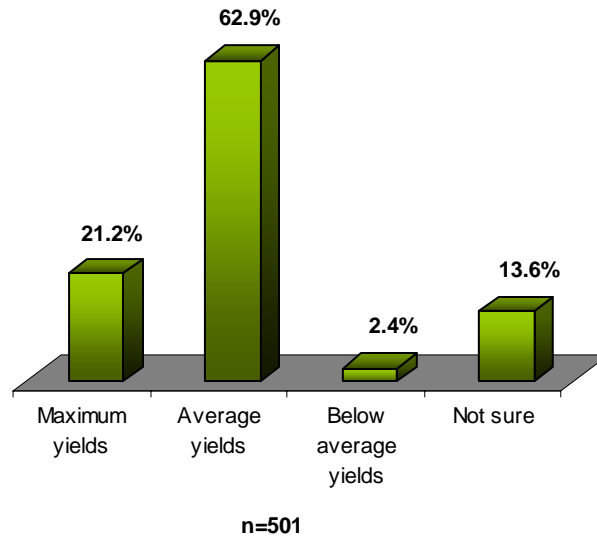


When conducting cross-tabulations, it was found that of the 233 respondents who reported not having reduced their fertilizer application rates in question three, only 22.5 percent believe their current application rates are slightly higher than university recommendations with an additional 1.3 percent who believe their rates are significantly higher. Almost half the group, 53.3 percent, believes their application rates are about the same as university recommendations. The remaining 22.9 percent believe their current application rates are slightly or significantly lower than university recommendations.

19. In your opinion, do you believe that university recommended fertilizer application rates for your area provide...

Nearly 63 percent believe that university recommended fertilizer application rates for their area provide average yields, while 21 percent believe that university recommended fertilizer application rates for their area provide maximum yields. Almost 15 percent of the respondent group were not sure about the yields provided using university recommended fertilizer application rates.

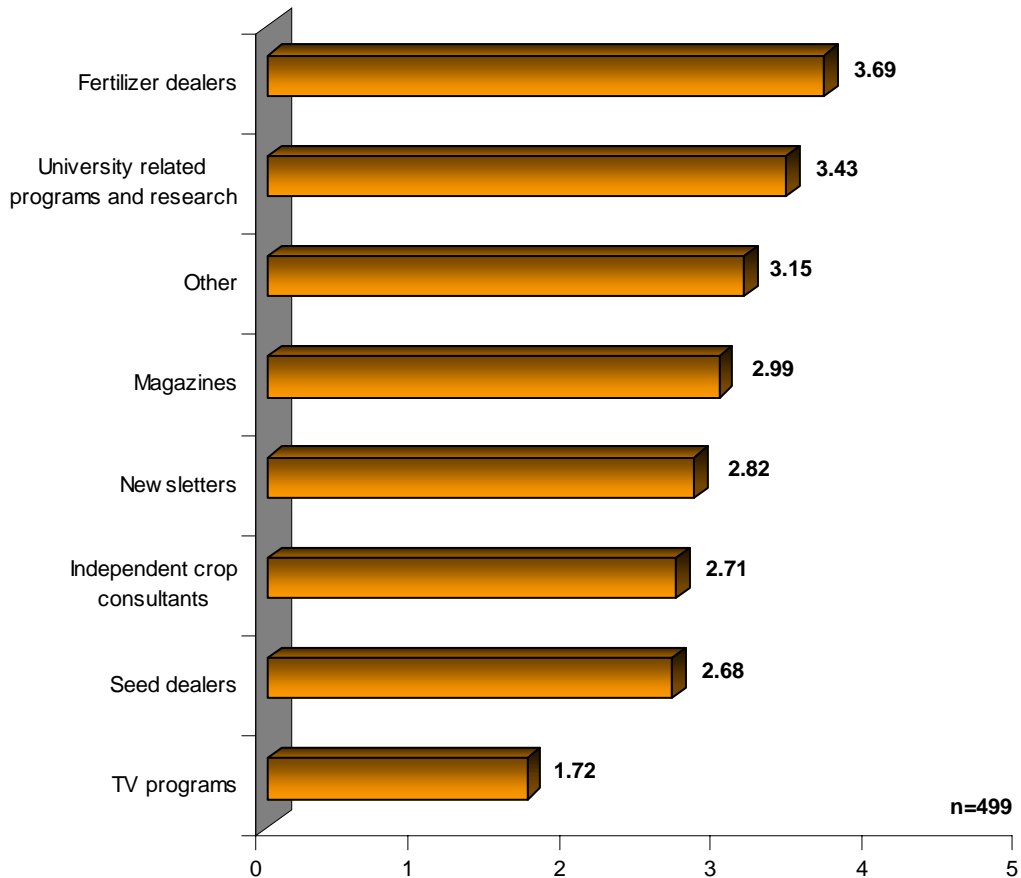
Chi-Square statistical testing revealed a significant relationship between farm size and what farmers believe that university recommended fertilizer application rates for their area provide. Respondents with a medium size farm were more likely to believe university recommendations provide average yields. Additionally respondents with a small size farm were more likely unsure of what the application rates provide.



When conducting cross-tabulations, it was found that of the 68 respondents who were unsure about the yields provided using university recommended fertilizer application rates, less than 10 percent believed that their current fertilizer application rate was at slightly higher levels than university recommendations. The remaining 90 percent believed their fertilizer application rates were at about the same level or below university recommendations.

20. How frequently do you reference the following sources to learn about fertilizer application rates?

Respondents most often looked to fertilizer dealers to learn about fertilizer applications rates with a mean of 3.69 on a five-point scale. University related programs and research (3.43) and other (3.15) options followed in frequency of use. TV programs were used the least with a mean of 1.72.

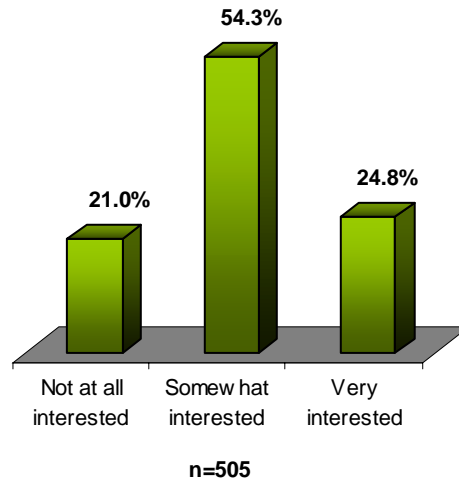


Other important sources to learn about fertilizer application rates:

- Own analysis (3)
- Acres magazine
- Ag spectrum
- Agronomy guide
- Family members
- Friends
- Local co-op
- Workshops

21. How interested would you be in reducing your fertilizer application rates to university recommended levels if a program were available to compensate you in the event your yield declines as a result of the reduced rates?

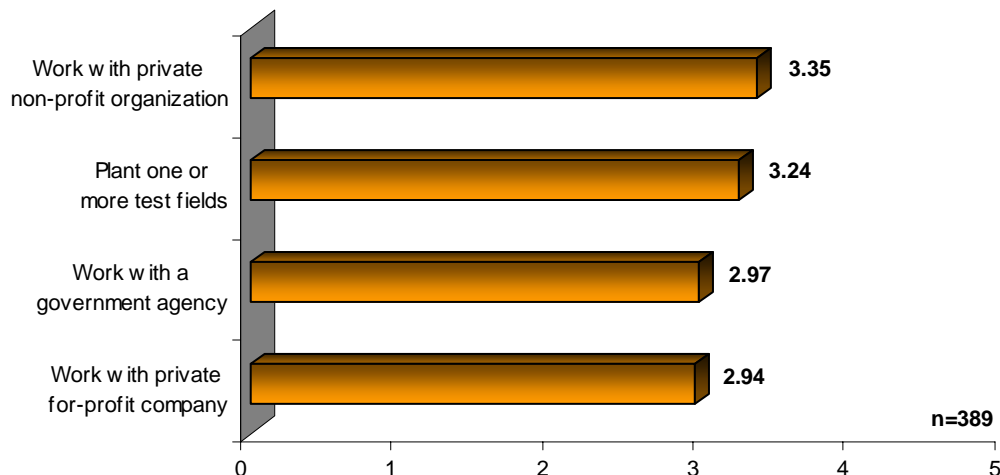
Roughly 54 percent of respondents were somewhat interested with an additional 25 percent who were very interested in reducing their fertilizer application rates. However, 21 percent were not at all interested in reducing their fertilizer application rates to university recommended levels even if a program were available to compensate them in the event their yield declined.



22. If you are somewhat or very interested in the program described above, how willing would you be to do each of the following?

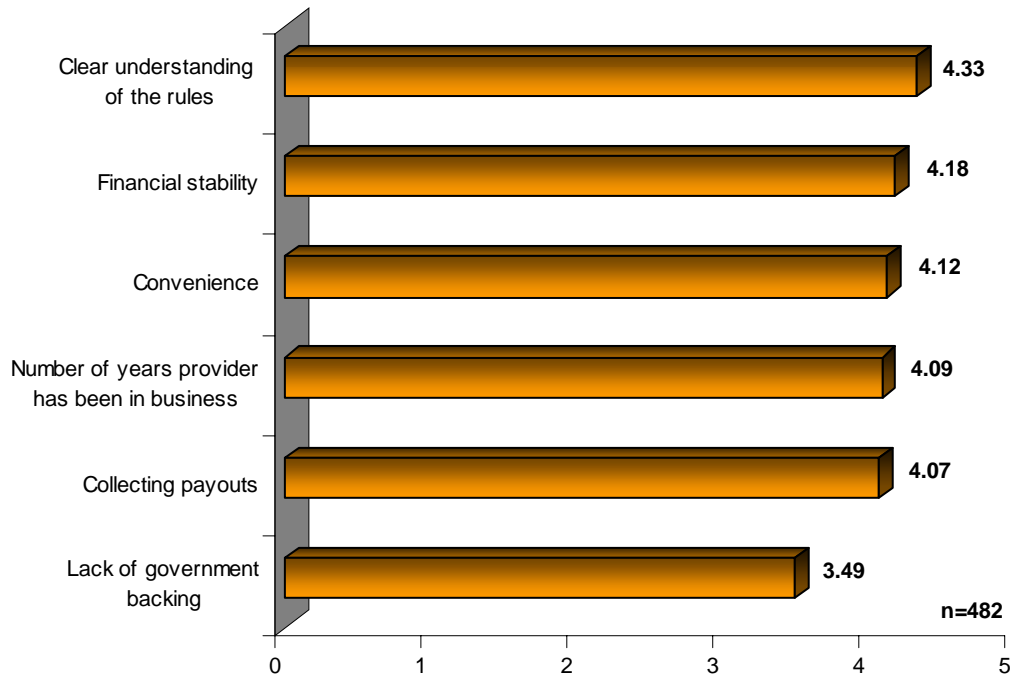
Respondents were most willing to work with a private non-profit organization with a mean of 3.35, and second most willing to plant one or more test fields with a mean 3.24 on a five-point scale. Respondents were least willing to working with a private for-profit company (2.94) and with a government agency (2.97).

One-way ANOVA statistical testing revealed a statistically significant relationship between farm size and interest in reducing fertilizer application rates to university recommended levels if a program was available to compensate in the event yield declines as a result of the reduced rates. Small farms were statistically less likely to work with a private non-profit and for-profit organization to implement the program when compared with large farms. On the other hand, large farms were statistically more likely to plant one or more test fields or check strips in 2006 or 2007 when compared to small farms.



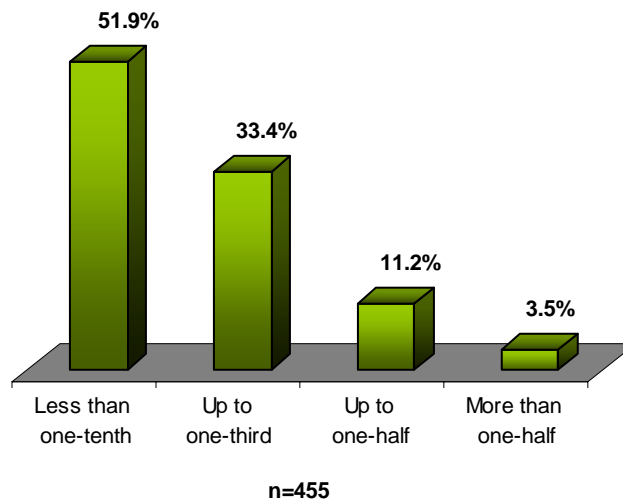
23. In the event you would consider a program to protect your yields if you reduce fertilizer use, how concerned would you be with each of the following?

Respondents reported they would be most concerned with obtaining a clear understanding of the rules of the program with a mean of 4.33 on a five-point scale. Financial stability (4.18), convenience (4.12), number of years provider has been in business (4.09), and collecting payouts (4.07) followed in concern. The lack of government backing was of least concern with a mean of 3.49.



24. How much would you be willing to pay for a program that would pay you for any losses resulting from reducing your fertilizer rates to university recommended levels?

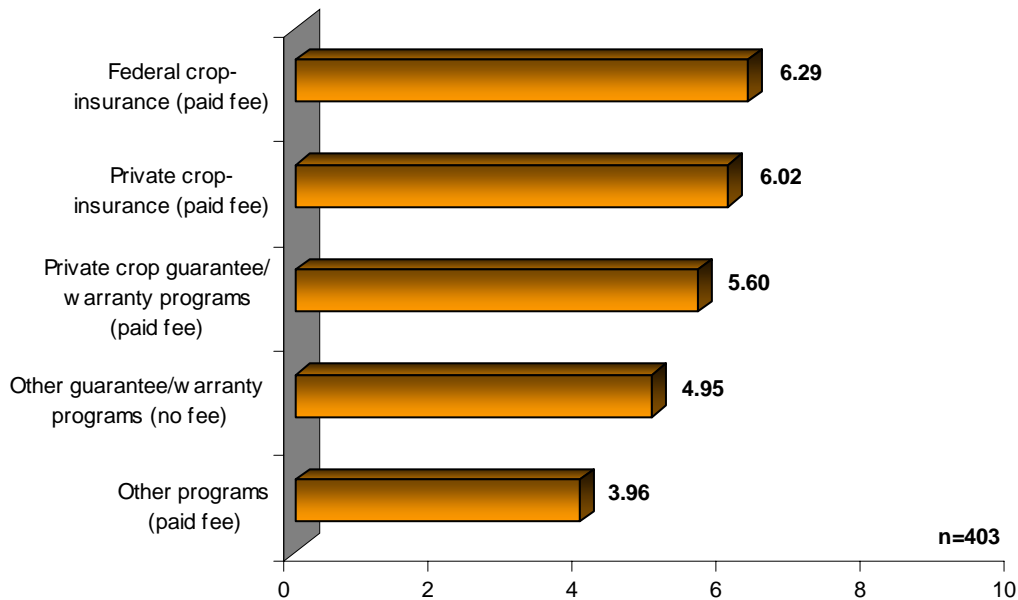
Slightly more than half of the respondents reported they would be willing to pay less than one-tenth of their fertilizer cost savings. Roughly 33 percent reported they would be willing to pay up to one-third of their fertilizer cost savings, while less than four percent reported they would be willing to pay more than one-half of their fertilizer cost savings.



25. First, please indicate which of the following you have used in the past. Then, evaluating only the services you HAVE used in the past, please rate your level of satisfaction with each.

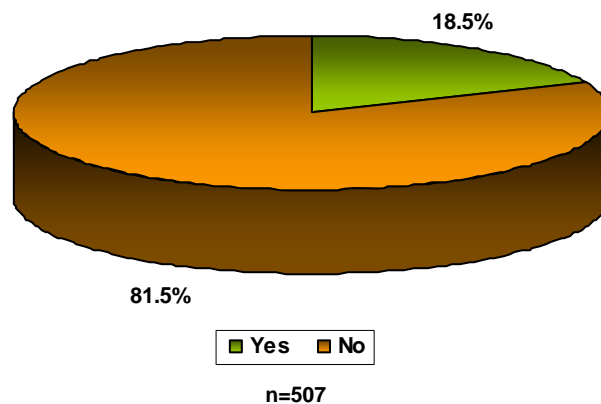
Respondents were most satisfied with federal crop insurance and private crop insurance with means of 6.29 and 6.02 respectively. Private crop guarantee/warranty programs (5.60) and other guarantee/warranty programs (4.95) followed in satisfaction rankings. Other programs with a paid fee received the lowest in satisfaction rating with a mean of 3.96.

One-way ANOVA statistical testing revealed a statistically significant relationship between farm size and satisfaction. Large farms were statistically more likely to be satisfied with other warranty or guarantee programs that do not require a fee/premium as compared to small and medium farms.



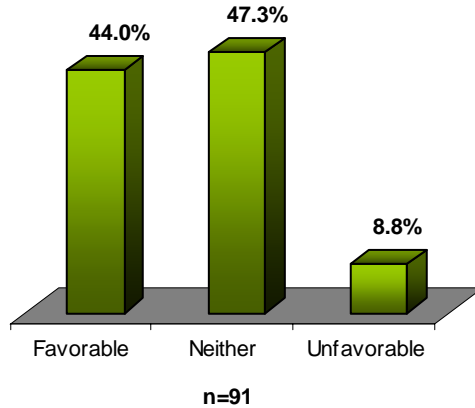
26. Are you aware of American Farmland Trust and its programs to help preserve working farms?

An overwhelming majority (81.5 percent) of respondents were not aware of American Farmland Trust and its programs to help preserve working farms compared to approximately 19 percent who were aware of their programs.



27. Is your opinion of American Farmland Trust...

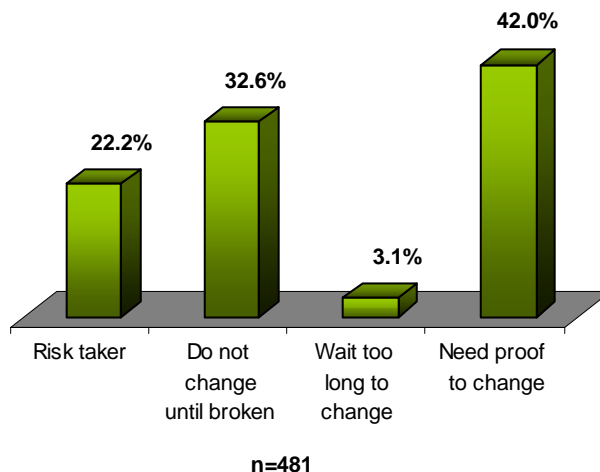
Of the respondents that were aware of American Farmland Trust and its programs to help preserve working farms, roughly 47 percent had neither a favorable nor unfavorable opinion of American Farmland Trust. Forty-four percent of respondents who were familiar with American Farmland Trust reported having a favorable opinion and roughly nine percent had an unfavorable opinion.



28. In your opinion, which of the following most accurately describes your farm management style?

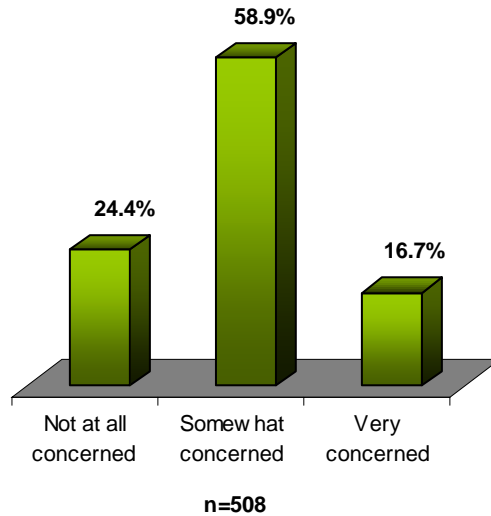
Forty-two percent of the respondents stated they tend to change their management style only after they see proof that the change is better than what they are currently doing. Nearly 33 percent reported they do not change things that are not broken and they tend to do things the same way as long as the benefits are reasonably satisfactory. Approximately 22 percent reported being a risk taker who is always trying new things even if they cost them in the short-run, while three percent reported they tend to wait longer than they should to change things.

Chi-Square statistical testing revealed a significant relationship between farm size and farm management style. Respondents with large farms felt they were more likely to be a risk taker who always tries new things even if they cost in the short-run. On the other hand, respondents from small size farms felt they more likely to not change things that are not broken and tend to do things the same ways as long as the benefits are reasonably satisfactory. Additionally, respondents with a medium size farm were more likely change only after they see proof that the change is better than what they are currently doing.



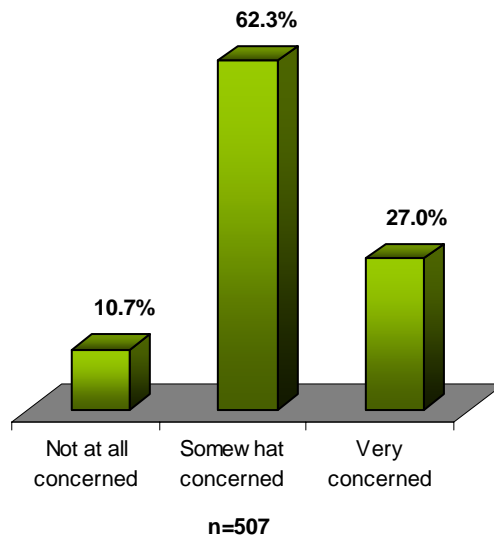
29. How concerned are you with over application of fertilizer by farmers in your area?

Nearly 59 percent of respondents were somewhat concerned with the over application of fertilizer by farmers in their area and an additional 17 percent were very concerned. Approximately one-fourth of the group was not at all concerned.



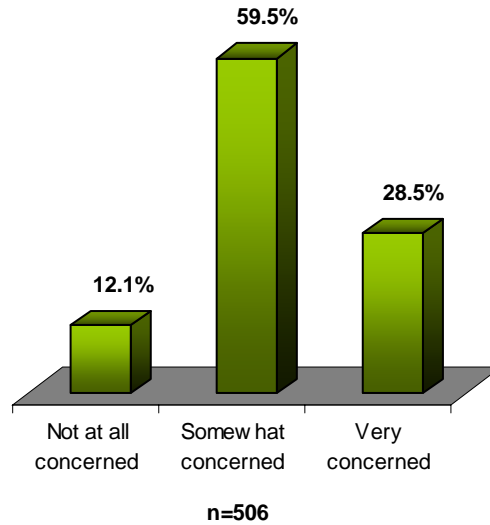
30. How concerned are you with potential impacts on the environment from the over application of fertilizer?

Roughly 62 percent of the respondents stated they were somewhat concerned with the potential impacts on the environment from the over application of fertilizer and an additional 27 percent were very concerned. Approximately 11 percent were not at all concerned.



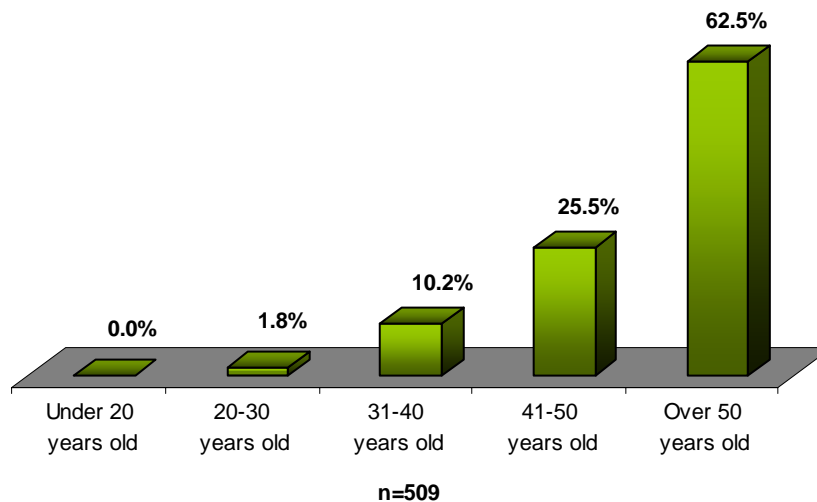
31. How concerned are you that others should know about your own and/or other farmers' efforts to protect the environment?

Nearly 60 percent of respondents reported being somewhat concerned that others should know about their own and/or other farmers' efforts to protect the environment with another 29 percent who reported being very concerned. Just over 12 percent were not at all concerned with others knowing about their own and/or other farmers' efforts to protect the environment.



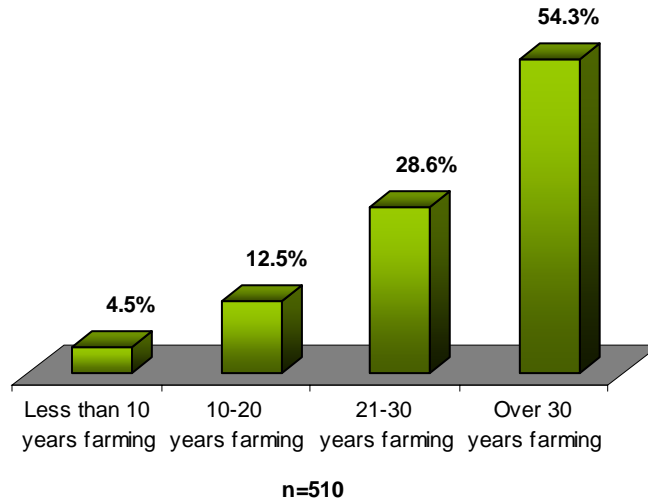
32. To which of the following age groups do you belong?

Nearly 63 percent of respondents were over 50 years of age, roughly 26 percent were between 41 to 50 years old with an additional ten percent between 31 to 40. Nearly two percent were 20 to 30 years old and no respondents were under 20.



33. Approximately, how many years have you been farming?

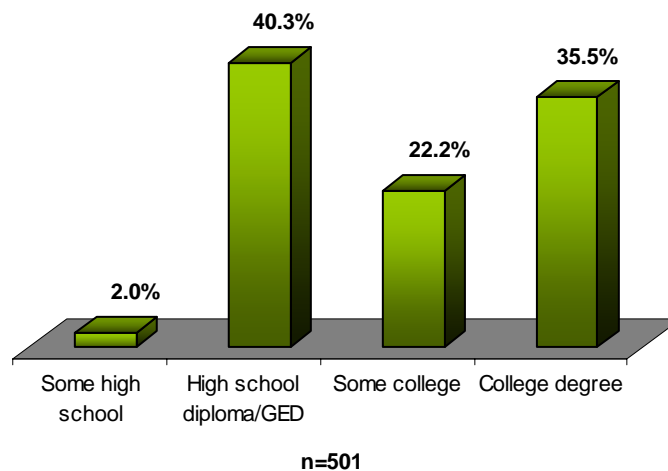
Roughly 54 percent of respondents reported they have been farming for over 30 years and nearly 29 percent reported they have been farming for 21-30 years. Thirteen percent reported they had been farming 10-20 years. Only 4.5 percent reported they had been farming less than ten years.



34. Which of the following best describes your level of education?

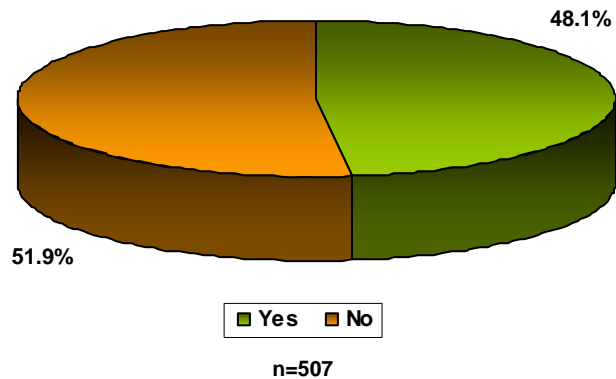
Roughly 40 percent of respondents reported having a high school diploma/GED. Slightly over 22 percent of respondents attended some college and nearly 36 percent reported receiving a college degree.

Chi-Square statistical testing revealed a significant relationship between farm size and the level of education the farmers have received. Respondents with a small size farm are more likely to have a high school diploma/GED when compared to medium and large farms. Respondents from medium and large size farms are more likely to have a college degree than respondents of small farms.



35. Would you like information about a program currently being developed to compensate farmers' yield losses due to reducing fertilizer application rates to university recommended levels?

Approximately 52 percent of respondents would like information about a program currently being developed to compensate farmers' yield losses due to reducing fertilizer application rates to university recommended levels. Roughly 48 percent of respondents would not like information about the program. In addition to the 52 percent there were 113 respondents who replied after December 12 and wanted further information. The contact information for these respondents can be found in Attachment B.



When conducting cross-tabulations, it was found that 54 respondents have not reduced their application rates and are at higher levels of fertilizer application than what a university recommends. Just over half of those 54 respondents are interested in receiving more information about the program.

Of the 173 who respondents who have not reduced their application rates and are at the same or lower levels of fertilizer application than university recommendations, 40 percent are interested in receiving more information about the program.

Attachment A

Survey Instrument





November 23, 2005

To Our Fellow Farmer:

American Farmland Trust is partnering with The University of Northern Iowa's Strategic Marketing Services to gather opinions from a select group of farmers on fertilizer application issues. More specifically, we are interested in your current fertilization practices. Your input on past experiences with fertilizer and your opinions on future practices will help American Farmland Trust develop programs more suited to farmers' needs.

Enclosed is a questionnaire that we estimate will take about ten minutes to complete. Your participation in this study is strictly voluntary and you may discontinue participation at any time without penalty. We know your time is valuable, but the few minutes you take to complete the enclosed questionnaire will provide important insight. Your risk as a participant is minimal and while no direct benefits can be guaranteed based on your participation, the information from this study will help SMS and American Farmland Trust develop appropriate programs for farmers across the United States.

Please take this opportunity to help us, help farmers. Return your completed questionnaire directly to UNI's Strategic Marketing Services using the enclosed postage-paid envelope by December 12, 2005. Your responses will be combined with all other responses to compile an aggregate report. We will notify you of future program opportunities ONLY if you give us permission to do so by providing your contact information at the end of the survey¹.

If you have questions directly related to this study, please contact Ron Padavich at Strategic Marketing Services at 319.273-6942 or via email at ronald.padavich@uni.edu. If you have any questions related to your rights as a study participant, please contact UNI's Institutional Review Board at 319.273.2748.

Thank you for taking the time to complete this questionnaire. Your input is greatly appreciated and will help us reach our goal of providing outstanding programs for farmers across the United States!

Sincerely,


Ron Padavich
Director, SMS

¹ SMS has strict standards in terms of information protection. SMS will not provide or sell participants' personal information to any third-party organization. During the survey, you will be asked for your contact information in order to be notified regarding future program opportunities of which you might have interest. If you do not want to provide this information, simply select the choice stating "I wish to remain anonymous."



Fertilizer Application Research

1. Approximately how many of your acres are planted with the following types of crops each year?

Corn _____ acres

Soybeans _____ acres

Other _____ acres

2. At this time, how concerned are you with the increasing cost of fertilizer?

- Not at all concerned
 Somewhat concerned
 Very concerned

3. During the past five years, how have you reduced your application rates of fertilizer?

- I have **not** reduced my application rates. *(Please skip directly to question 5.)*
 I have reduced my application rates by **less than 15%**.
 I have reduced my application rates by **15% or more**.

4. If you have reduced your application rates of fertilizer in the past five years, why did you choose to do so? *(Check all that apply)*

- To save money on fertilizer costs
 Recommendations from university/extension or NRCS
 Other: _____

5. How important are each of the following when determining your fertilizer application rates?

	Not at All Important 1 2 3 4 5 Very Important					N/A
	1	2	3	4	5	
Previous experience over the past few years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yields from last year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpredictable weather conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dealer recommendations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Independent crop consultant recommendations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other farmers in area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yield goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instinct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
University agronomist/ Extension recommendation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. At this time, which of the following do you consider to be your most used source of information regarding fertilizer application rates? *(Check only one)*

- Fertilizer dealer
 Seed dealer
 University agronomist
 Independent crop consultants not working for a dealer
 Other: _____
 None of the above

7. Currently, how satisfied are you with the source of information you specified in the previous question?

- Not at all satisfied
 Somewhat satisfied
 Very satisfied

8. Do you currently test your soil for phosphorus?

- Yes
 No *(Please skip directly to question 11)*

9. Of your fields, what percentage is tested for phosphorus? _____%

10. Approximately, how often are your fields tested for phosphorus?

- Annually
 Every two years
 Every three years
 Other: _____

11. Do you routinely apply commercial fertilizer to fields that have had manure applied to them within the last year?

- Yes
 No *(Please skip directly to question 13)*

12. Do you reduce the amount of commercial fertilizer used on those fields to offset the nutrient content of the manure?

- Yes
 No

13. Do you currently harvest using a yield monitor?

- Yes
 No

14. Do you reduce the amount of commercial fertilizer used on corn fields that follow soybeans to offset the nitrogen contribution of the soybeans?

- Yes
 No



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15. Do you use variable rate application for nutrients for corn?

- Yes, for Nitrogen
- Yes, for Phosphorus
- No

16. Do you use in-season testing and application for nitrogen fertilizer in corn? (i.e. the pre-sidedress or late spring nitrogen tests)

- Yes
- No

17. Do you use banded applications of fertilizer for corn?

- Yes
- No

18. On average, do you believe that your fertilizer application rate is...

- Significantly higher than university recommendations
- Slightly higher than university recommendations
- About the same as university recommendations
- Slightly lower than university recommendations
- Significantly lower than university recommendations

19. In your opinion, do you believe that university recommended fertilizer application rates for your area provide...

- Maximum yields
- Average yields
- Below average yields
- Not sure

20. How frequently do you reference the following sources to learn about fertilizer application rates?

	Never					Always					N/A
	1	2	3	4	5	1	2	3	4	5	
Magazines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
University related programs and research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fertilizer dealers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Seed dealers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Independent crop consultant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TV programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Newsletters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

21. How interested would you be in reducing your fertilizer application rates to university recommended levels if a program were available to compensate you in the event your yield declines as a result of the reduced rates?

- Not at all interested (Please skip directly to question 23)
- Somewhat interested
- Very interested

22. If you are somewhat or very interested in the program described above, how willing would you be to do each of the following?

	Not at all Willing		Very Willing			N/A
	1	2	3	4	5	
Plant one or more test fields or check strips in 2006 or 2007	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work with a government agency to implement the program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work with a private non-profit organization to implement the program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work with a private for-profit company to implement the program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. In the event you would consider a program to protect your yields if you reduce fertilizer use, how concerned would you be with each of the following?

	Not at all Concerned		Very Concerned			N/A
	1	2	3	4	5	
Clear understanding of the rules of the program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collecting payouts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Convenience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of government backing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial stability of provider	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of years provider has been in business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. How much would you be willing to pay for a program that would pay you for any losses resulting from reducing your fertilizer rates to university recommended levels?

- Less than one-tenth of my fertilizer cost savings
- Up to one-third of my fertilizer cost savings
- Up to one-half of my fertilizer cost savings
- More than one-half of my fertilizer cost savings



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25. First, please indicate which of the following you have used in the past. Then, evaluating only the services you HAVE used in the past, please rate your level of satisfaction with each.

Have Used this Service	Not at All Satisfied										Very Satisfied	N/A
	1	2	3	4	5	6	7	8	9	10		
<input type="checkbox"/> Federal crop insurance where you paid a fee/premium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Private crop insurance programs where you paid a fee/premium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Private crop guarantee/warranty programs where you paid a fee/premium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other programs for which you paid a fee/premium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other warranty or guarantee programs for which you did not pay a fee/premium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. Are you aware of American Farmland Trust and its programs to help preserve working farms?

- Yes
- No (Please skip directly to question 28)

27. Is your opinion of American Farmland Trust...

- Favorable
- Neither favorable nor unfavorable
- Unfavorable

28. In your opinion, which of the following most accurately describes your farm management style?

- I'm a risk taker and I'm always trying new things even if they cost me in the short-run
- I don't change things that are not broken and I tend to do things the same way as long as the benefits are reasonably satisfactory
- I tend to wait to change things longer than I should
- I tend to change only after I see proof that the change is better than what I am currently doing

29. How concerned are you with over application of fertilizer by farmers in your area?

- Not at all concerned
- Somewhat concerned
- Very concerned

30. How concerned are you with potential impacts on the environment from the over application of fertilizer?

- Not at all concerned
- Somewhat concerned
- Very concerned

31. How concerned are you that others should know about your own and/or other farmers' efforts to protect the environment?

- Not at all concerned
- Somewhat concerned
- Very concerned

32. To which of the following age groups do you belong?

- Under 20
- 20-30
- 31-40
- 41-50
- Over 50

33. Approximately, how many years have you been farming?

- Less than 10 years
- 10-20 years
- 21-30 years
- Over 30 years

34. Which of the following best describes your level of education?

- Some high school
- High school diploma/ GED
- Some college
- College degree

35. Would you like information about a program currently being developed to compensate farmers for yield losses due to reducing fertilizer application rates to university recommended levels?

- No, I prefer to remain anonymous.
- Yes, please provide information about this program using the contact information below.

Name: _____

Address: _____

City, State, Zip: _____

THANK YOU...FOR PARTICIPATING IN OUR STUDY. PLEASE REMEMBER TO REMEMBER TO RETURN YOUR COMPLETED QUESTIONNAIRE BY DECEMBER 12, 2005.



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Attachment B

Contact Information

(Electronically submitted on CD-Rom)

