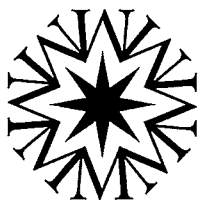


# Educational Interests, Needs, and Instructional Preferences of Producers Enrolled in the Minnesota Farm Business Management Education Program

Academic and Student Affairs

June 2012



**Minnesota**  
STATE COLLEGES  
& UNIVERSITIES



Joerger, R. M., Bowen, M., Jaber, J., Werner, M., & Nelson, R. K. (June, 2012). *Educational interests, needs, and instructional preferences of producers enrolled in the Minnesota Farm Business Management Education Program*. Academic and Student Affairs, Minnesota State Colleges and Universities, St. Paul, MN.



## Acknowledgements

Agriculture is the number two economic engine of Minnesota which indirectly employs over 340,000 individuals. The success of the producers is ensured with access to quality continuing education delivered through the Minnesota State Colleges and other providers. Many people and organizations were involved in envisioning, researching, and collecting the information needed to help meet the future education needs of Minnesota farmers.

We want to initially thank the Minnesota farmers who shared their information for this report. Views of their education interests, needs, and instructional delivery preferences will inform providers how to effectively deliver quality education. A special note of gratitude is also extended to the 2010 Farm Business Management Education Task Force chaired by Keith Stover and Del Lecy. Likewise, we extend our appreciation to the 2010 FBM Task Force Curricula and Program Development Workgroup members including Larry Lundblad, Sue Meyer, Jim Molenaar, Julie Tesch, Ron Langrell, Jere Rambow, Kim Lippert, Pauline Van Nurden, Del Lecy, and Gerald Swarsensky. The research was also influenced by the members of the 2010 FBM Task Force Database Work Group including Jim Boerboom, Deron Erickson, Brad Burklund, Del Lecy, Al I Brudelic, Dale Nordquist, and Jeff Williamson. The 2010 FBM Taskforce Resource and Partnership Development Work Group were also contributors to this research project. Members included Ron Dvergsten, Tom Anderson, Betty Strehlow, Stuart Shelstad, John Monson, Tim Penny, Jerry Schoenfeld, Pete Neigabauer, and Eric Deters.

We also thank the team who assisted in the development of the instrument to collect the producer information. Team members included Brad Finstad, Marnie Werner, Jason Jaber, Larry Lundblad, Del Lecy, Tony Warner, Deena Fruchtman, Thaddeus McCammant, Robert Yawson, Sue Meyer, and Richard Joerger. Reviewers of the instrument also included presidents of colleges offering FBM programs. The presidents included Douglas Allen, Anne Temte, Kevin Kopischke, Joyce Helens, Richard Shrubb, Terry Leas, and Keith Stover and Larry Lundblad. In addition to Doug Hartwig and Dan Holtus, we also thank the FBM Regional Deans of Management Educations Del Lecy, Eric Deters, Jim Molenaar, Ron Dvergsten, and Al Brudelic, who assisted with editing the instrument.

We are also very appreciative for the fiscal and in-kind support from the project partners who include: Minnesota Agricultural Leadership Council, AgStar Financial Services, University of Minnesota Center for Farm Financial Management, Center for Rural Policy and Development and the Minnesota Department of Agriculture.

Kathy Weersma from the Minnesota State Colleges and Universities was likewise, a key player in this project. And finally, we want to thank our project leaders, designers, researchers, writers, and editing team. The team consisted of Randi Nelson, Mauvalyn Bowen, Jason Jaber, Marnie Warner and Brad Finstad.

## Table of Contents

Acknowledgements .....	i
List of Tables.....	v
List of Figures .....	vi
Background .....	vii
Farm and Farm Business Characteristics.....	vii
Business Management Education Interests and Needs.....	vii
Production Management Education Needs for Crops .....	viii
Production Management Education Needs for Livestock Producers .....	ix
Training Employee Needs .....	ix
Instruction and Program Delivery Preferences of FBM Students .....	ix
Instructional Methods and Strategies .....	x
Instructional Media Preferences .....	xi
Related Factors Influencing Program Participation.....	xi
Barriers to Program Participation.....	xi
Other Factors Influencing Program Participation.....	xii
Providers of Education and Training for the FBM Students and Employees.....	xii
Primary Conclusions: .....	xiii
SECTION I INTRODUCTION .....	1
Purpose and Objectives .....	2
Methodology .....	2
Design.....	2
Sample and Population .....	2
Instrumentation.....	3
Data Collection.....	3
Data Analyses.....	3

SECTION II RESULTS .....	4
Demographic Characteristics of the Participants.....	4
Profile of the Producers Enrolled in the Minnesota FBM Program .....	4
Farm Business Management Education Interests and Needs .....	5
Farm Business Profile of Minnesota FBM Students .....	6
Selected Vendors used by Farmers.....	6
Selected Marketing Strategies. ....	7
FBM Student Interest in Business Management Education .....	8
FBM Producers' Selected Farm Business Management Hot Topics.....	12
Crop Production Management Education Needs and Interests .....	15
Crop Production Management Education Needs of Minnesota FBM Producers .....	16
Hot Topic Crop Production Education Needs of FBM Producers .....	17
Livestock Production Management Education Needs and Interests.....	17
Proportion of farms with selected livestock enterprises. ....	18
Livestock Production Management Education Topics by Class of Livestock. ....	18
Hot Topics for Livestock Production Management Education. ....	19
Education and Training Needs for Employees by Type of Farm .....	20
Categories of Education and Training Needs for Employees.....	20
Instructional and Program Delivery Preferences.....	21
Educational and Training Delivery Preferences by Type of Farming Operation. ....	22
Producer Preferences for Selected Instructional Methods and Strategies. ....	23
Instructional Media Preferences. ....	25
Related Factors Influencing Program Participation.....	26
Barriers to Participation in Educational Programs Delivered by Colleges and Universities.....	26
Distance and Willingness to Pay by Type of Farm. ....	27
Related Information by Type of Farm. ....	27

SECTION III CONCLUSIONS AND RECOMMENDATIONS .....	29
Business Characteristics and Management Education Needs of FBM Farmers.....	29
Crop Production Management Education Needs of FBM Farmers.....	30
Livestock Production Management Education Needs of FBM Farmers .....	31
Employee Training Needs of FBM Farmers .....	31
Education and Training Delivery Preferences of FBM Farmers .....	31
Barriers to Education and Training Participation .....	32
Related Factors influencing Program Participation.....	32
SECTION IV REFERENCES .....	34
APPENDIX A – INSTRUMENT.....	35
Education Interests, Needs, and Learning Preferences of Minnesota Producers Survey .....	35
APPENDIX B - TABLES - B1-B36 .....	43



## List of Tables

Table 1:	Characteristics of the FBM Minnesota Producers Study Participants (%).....	5
Table 2:	Farm Business Characteristics of FBM Minnesota Producers Study Participants (%).....	6
Table 3:	Selected Vendors Used by the Farmers (N=404) .....	7
Table 4:	Selected Marketing Strategies Used by the Farmers (N=404) .....	8
Table 5A:	Comparison of Foundational and Advanced Business Management Education Topics Desired by FBM Students (N=404) .....	10
Table 5B:	Foundational and Advanced FBM Education Needs by Type of Farms .....	11
Table 6:	Percentage of FMB Producers Interested in Selected FBM Education Hot Topics .....	13
Table 7:	Crop Enterprises in the Fall of 2011 by Type of Farm .....	15
Table 8:	Crop Production Management Education Needs of MN FBM Producers (N=404) .....	16
Table 9:	Hot Topic Crop Production Education Needs of all Producers (N=404) .....	17
Table 10:	Proportion of Farms with Selected Livestock Enterprises (N = 404).....	18
Table 11:	Livestock Production Management Education Topics by Enterprise for all Producers...	19
Table 12:	Hot topics for Livestock Production Management Education .....	20
Table 13:	Categories of education and Training Needs for Employees by Farm Types (N=404)...	21
Table 14:	Education and Training Delivery Preferences of Farmers by Type of Farming Operation .....	23
Table 15:	Instructional Preferences of Farmers by Type of Operation .....	24
Table 16:	Instructional Media Preferences of Farmers by Type of Farm .....	25
Table 17:	Barriers to Participation in Education and Training Provided by Farm Type .....	26
Table 18:	Mileage and Payment Options by Type of Farm .....	27
Table 19:	Related Information by Type of Farm .....	28
Table 20:	Conclusions and Recommendations .....	29

## List of Figures

Figure 1: Education Topics Most Desired by FBM Producers .....	viii
Figure 2: Education Topics Most Desired by FBM Crop Producers .....	viii
Figure 3: Education Topics Most Desired by Livestock Producers .....	ix
Figure 4: Program Delivery and Instruction Preferences of FBM Producers .....	x
Figure 5: Instructional Methods and Strategies of FBM Producers .....	xi
Figure 6: Barriers to Program Participation .....	xii
Figure 7: Top Providers of Education and Training for FBM Students and Employees .....	xiii

## **Executive Summary**

### **Background**

The Farm Business Management (FBM) Education Program has invested nearly 60 years in developing and delivering business management education to Minnesota producers. The FBM program is designed to provide business management knowledge and skills which enable producers to meet their business, family, and personal goals. Over 65 program faculty members currently teach the program to over 2700 producers annually using tailored individual and group instruction. The 2010 FBM Task Force reviewed the program and recommend changes to ensure it was more financially sound and educationally effective in the future. The initial recommendation of the FBM Task Force was for program leaders to determine the educational interests, needs, and instructional preferences of Minnesota farmers. The findings are to be used for further development of current curriculum and alternative course delivery methods.

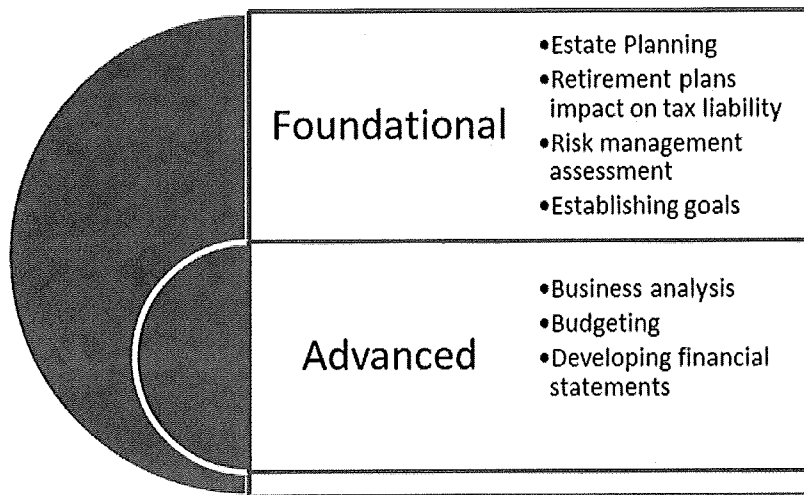
### **Farm and Farm Business Characteristics**

The majority of the Minnesota producers are sole proprietors (75%) and the remaining 25% are either legal partnerships or corporations. Over half of the producers are crop farmers and the remaining half either farm livestock or a combination of both in the conventional way. The farmers used FBM instructors, tax preparation services and bankers as their most popular vendors. The majority of FBM producers utilized cash sales (83%) and contracts (70%) as their main marketing strategies when marketing their produce.

### **Business Management Education Interests and Needs**

The FBM producers indicated a need for foundational education in most of the 23 business topics. Initial topics selected by most farmers were estate planning, retirement plans impact upon tax liability, risk management assessment, and establishing goals. Sixty percent of the producers indicated interest in the advanced topic areas relating to business analysis, budgeting, and developing financial statements among others.

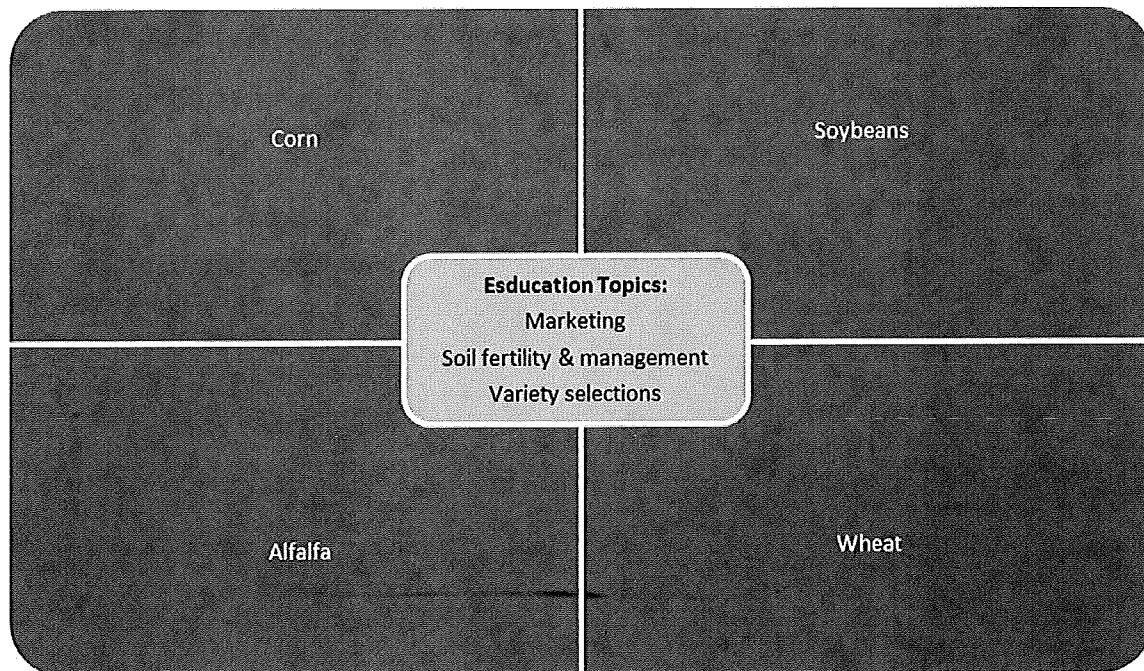
**Figure 1: Education Topics Most Desired by FBM Producers**



**Production Management Education Needs for Crops**

Corn, soybeans, alfalfa/mixed hay, and wheat were the crops grown by most of the farmers enrolled in the FBM program. Marketing, soil fertility and management, variety selections were among the top four education topics for the major crops grown by FBM farmers.

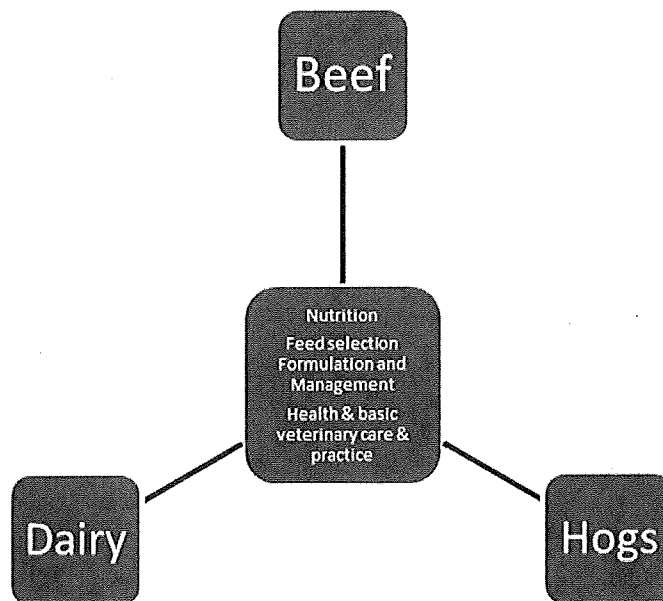
**Figure 2: Education Topics Most Desired by FBM Crop Producers**



### **Production Management Education Needs for Livestock Producers**

The livestock production management education topics selected by the highest number of FBM producers were: nutrition, feed selection, formulation and management and health and basic veterinary care and practice. Farmers who specialized in finishing hogs suggested interest in programming concerning waste handling systems and management, facilities selection, ventilation and marketing as their prioritized topics.

**Figure 3: Education Topics Most Desired by Livestock Producers**



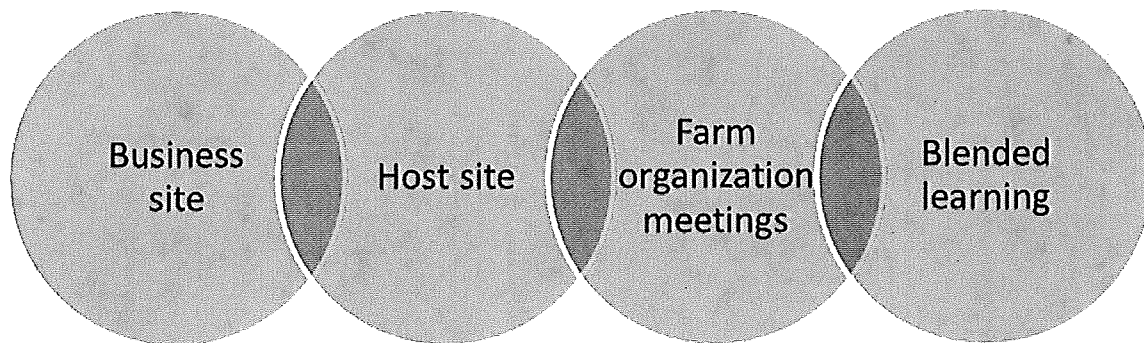
### **Employee Education and Training Needs**

Employability skills and knowledge was the category of education that reflects the greatest training and education needs of the employees of FBM students. Education in selected mechanics skills and knowledge and livestock were the second and third largest education categories. Business knowledge and skills was the education category with the least requests for training and education.

### **Instruction and Program Delivery Preferences of FBM Students**

In order of preference, FBM farmers' preferred FBM education programming be delivered to them in their business setting, on the farm of other farmers, at farm organization meetings, and through blended learning strategies (combination of traditional and online learning delivery methods). Complete delivery of programs using the internet was the least preferred option for learning.

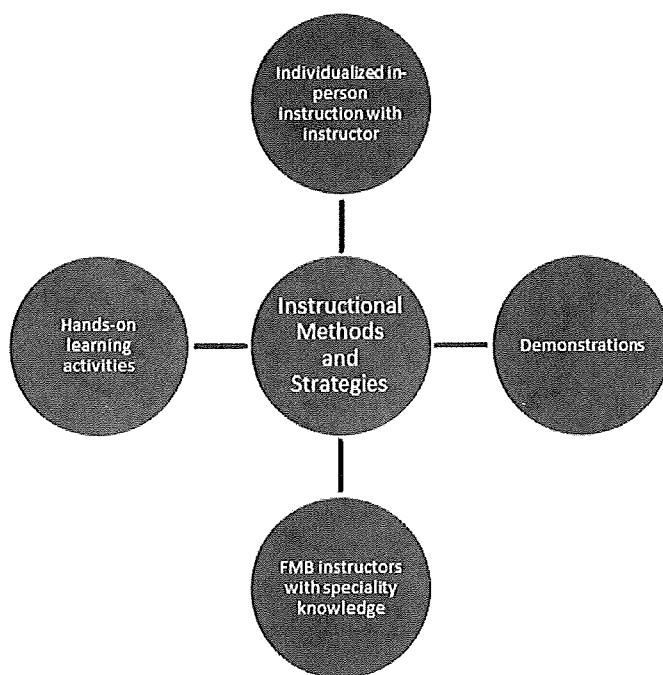
**Figure 4: Program Delivery and Instructional Preferences of FMB Producers**



### **Instructional Methods and Strategies**

The most preferred instructional methods used for teaching the FBM farmers were: individualized in-person instruction with an instructor, hands-on learning activities, demonstrations and instruction from FBM instructors with specialty knowledge (e.g., swine, marketing, dairy equipment). Use of a webinar featuring a speaker or other instruction was the least preferred method of instruction.

**Figure 5: Instructional Methods and Strategies of FBM Producers**



### **Instructional Media Preferences**

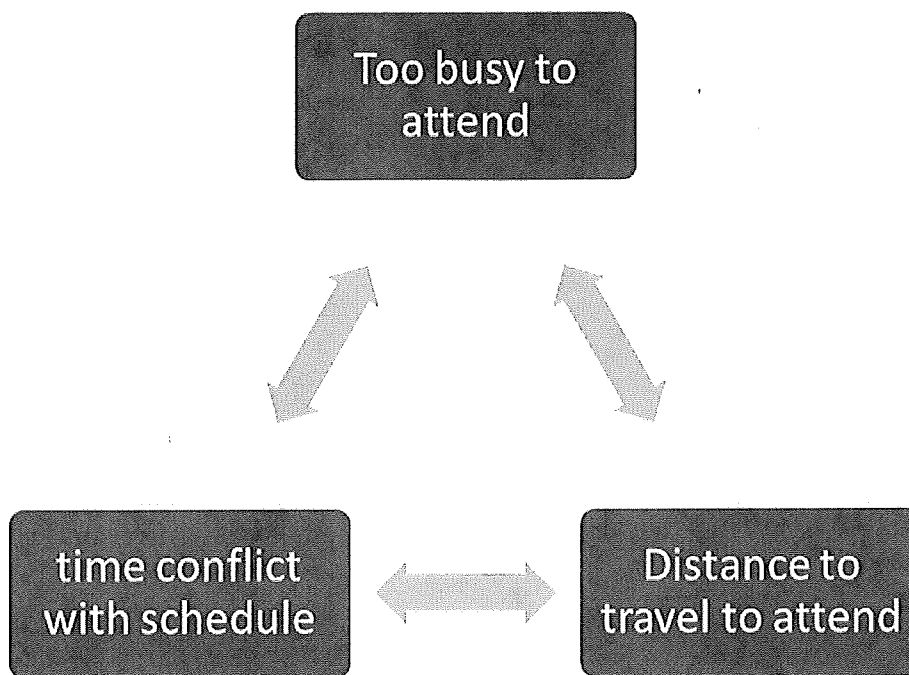
The producers most preferred printed materials, communication with the instructor by telephone, farm demonstration plots, email communications from the instructor, informative newspaper articles prepared by the instructor, sample programs and simulations, and use of the Internet for online instruction and information. The least instructional media preference for the Minnesota producers was an online library.

### **Related Factors Influencing Program Participation**

#### ***Barriers to Program Participation***

The top three barriers to participation in college and university education programming by farmers were being too busy to attend, schedule conflicts due to the time when the education programs were offered, and the distance needed to travel to attend. Minnesota producers indicated that they would be willing to travel an average of 56 miles to attend educational programs if they are relevant and applicable to their needs.

**Figure 6: Barriers to Program Participation**



***Other Factors Influencing Program Participation***

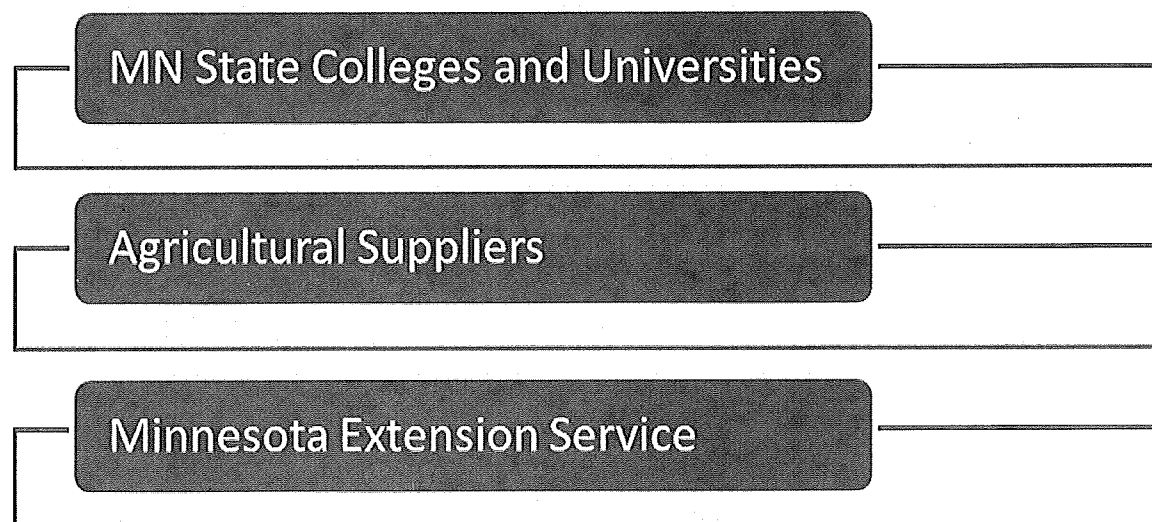
Tuition, fees and registration costs influence participation. The FBM farmers indicated that they are willing to pay on average of \$1305 for a yearlong FBM program, up to \$60 for half-day and \$99 for a full-day workshops. Nearly 90% and 80% of the FBM students had access to the internet and high speed internet, respectively, within their farm businesses. Over 92% of farmers indicated they planned to re-enroll in an FBM program in FY 2012. Three to forty-eight percent of the producers indicated they would attend from one to nine education and training workshops within the next 10 months.

***Providers of Education and Training for the FBM Students and Employees***

The three initial providers of education and training indicated by the largest number of FBM students were the MN State Colleges and Universities, agricultural suppliers, and Minnesota Extension Service.



**Figure 7: Top Providers of Education and Training for FBM Students and Employees**



**Primary Conclusions:**

1. Education providers should utilize this study and secure additional information to ensure they are meeting the education and training needs of their diverse audience by partnering with the major vendors of Minnesota farmers. Providers may gain program and fiscal support from on-going purposeful relationships with traditional and non –traditional vendors.
2. Education and training providers and partners should establish a systematic multi-year approach to delivering foundational, advanced, and continuing education which addresses a variety of business management topics utilizing the best medium to reach all farmers. Special attention should be given to farmers who have similar challenges and common characteristics and interests.
3. Education providers and partners should utilize the data from this study to confirm producers' education interests in production management education for the major crops prior to offering high quality instruction; and leverage the expertise of their technical staff members to teach the production management topics of interest when producers are available using traditional and Internet-based technologies.
4. The design of any livestock production management program should consider all topics of interest, consulting with relevant partners and stakeholders to strategically plan and deliver production management education of high quality in locales where farmers reside.

5. Education providers and partners can use the results of this study as a framework to explore and design educational programming to meet the on-going and immediate needs of the employees of local farmers. Being cognizant of the core skills required and changing or reinforce their teaching methods and educational experiences to align with farmers learning preferences for more successful educational programming.
6. Educational providers and instructors should utilize a blended approach to learning and instruction in order to help all farmers learn and to deliver high demand business and production management education programming; while exposing farmers to various forms of technology so that they can become familiar and comfortable with their use.
7. Providers of education and training need to better understand the farmers' subculture to effectively combat deterrents and increase participation rate and experience while enhancing enrollment and retention.
8. Farmers' use of computers continues to grow. Therefore, computers should be increasingly used by colleges and universities for delivering online education and training.

# SECTION I

## INTRODUCTION

The agri-food industry is one of the largest economic sectors in Minnesota. The Minnesota food industry is complex, with thousands of meat and dairy herds, hundreds of manufacturers, processing plants, and food distributors, thousands of retail stores, approximately 20,000 restaurants, schools, institutions and many other food facilities (Senf et al., 2008). Minnesota's agri-food industry is a leading global exporter, and it affords significant added value, offering growth potential within the United States, development of regional economies, and exploitation of cultural diversity and tradition. The agri-food industry is thus central to the wider economic development of Minnesota. "With a 22 percent share of the state's total exports, food and agricultural production adds more than any other single industry. In addition, food and agriculture accounts for nearly 14 percent of the state's value-added income, and 14 percent of the state's personal income and employment" (Senf et al., 2008).

The increasing demand by consumers for quality, convenience, diversity, and health, and their justifiable demand for safe, ethical, and sustainable food production, underlie the need for innovation in all aspects of the agri-food system, including how farmers are trained. Adult agriculture education formally started in the United States after the American Revolution with the beginning of local and regional agricultural societies (National Research Council, 2009). The passage of the Smith-Hughes Act (1917) sanctioned public school system involvement in the educational process for farmers. Specifically, the Smith-Hughes Act endorsed public school educational programs for current and prospective farmers. Subsequent vocational legislation has emphasized the importance of local adult agricultural education programs and thus has influenced curriculum development (NRC, 2009). Joerger and Murray (1999) suggested farm business management program administrators and instructors regularly assess the needs and preferences of farmers for the purpose of program improvement. Instructional technologies, producer characteristics, and program funding continue to change, resulting in opportunities to refine offerings and delivery options via the Minnesota Farm Business Management (FBM) Education Program.

The FBM Education Program has invested nearly 60 years in delivering business management education to Minnesota producers. The program is designed to provide education that assists producers in meeting their business goals. More than 65 program faculty members currently teach the program to more than 3,200 producers annually using tailored individual and group instruction. An FBM Task Force was convened from December 19, 2009, to April 9, 2010, to review the program and recommend changes that would improve its financial efficiencies and instructional effectiveness to ensure a strong and sustained future.

The initial recommendation of the FBM Task Force was to develop and implement alternative course delivery methods. Their primary strategy to address this recommendation was to develop and conduct an analysis of the educational needs of Minnesota farmers. Task Force members, producers, agri-industry leaders, FBM instructors, policy-makers, college administrators, and FBM program administrators have expressed the need to understand the business management and farm production management education interests, needs, and delivery preferences of producers. The same stakeholders desire to know the barriers and factors that promote participation in educational programs. This summary of findings from the assessment of FBM students' needs and preferences for business and production management education and forms of program delivery is a first step toward developing alternatively delivered curricula and instruction to meet the needs of Minnesota farmers.

### **Purpose and Objectives**

Instructional technologies, producer characteristics, and program funding continue to change, resulting in opportunities to refine the Minnesota Farm Business Management Education program. The purpose of this investigation was to determine the preferred delivery approaches and the business management and production management education needs of Minnesota farmers. The objectives of this study are to describe the needs, interests, and preferences of Minnesota farmers regarding:

1. Farm business management education
2. Production management education
3. Program delivery preferences
4. Barriers to participation in education programs.

## **Methodology**

### **Design**

This descriptive survey investigation sought to describe the farm business management and production management education needs and instructional delivery preferences of producers enrolled in the Minnesota Farm Business Management (FBM) Education Program.

### **Sample and Population**

The population of the investigation consisted of 2,850 farmers enrolled in the FBM program in FY2011. A systematic random sample of nine producers was drawn for each FBM instructor except instructors in their first year of teaching. Instructors distributed a total of 585 instruments.

## **Instrumentation**

The principal investigators developed the data collection instrument, deriving survey items from the literature in addition to those created by the principal investigators. The instrument incorporated closed-ended Likert-type items, forced-choice items, and open-ended questions. The instrument was divided into 10 sections, namely: Background Information; Farm Business Management Interests and Needs; Crop Production Management Education Interests and Needs; Livestock Production Management Education Interests and Needs; Employee Education Interests and Needs; Producer Preferences for the Delivery of Education and Training Programs; Producer Preferences for Different Instructional Methods and Strategies; Preferred Instructional Media and Aids for Learning; Related Information; and Participant Information. The face and content validity were reviewed and approved by a panel of experts consisting of regional deans of management education, FBM presidents, and agricultural education researchers. A field test involving 10 farmers resulted in additional suggestions for instrument item content and format. A pilot study was conducted to establish the internal consistency of selected measures. The respective Cronbach's alpha coefficients for the preferred educational delivery, instructional preference, and instructional media and aids scales were 0.72, 0.88, and 0.82. The survey instrument is included in Appendix A.

## **Data Collection**

Data were collected in the fall of 2011. After students were informed of the study, the survey instruments were delivered to the producers by FBM instructors in September. When completed by the respondent, the instruments were placed in sealed envelopes and returned by the FBM instructors. Producers were also provided the option of completing the online version of the instrument. Instructors provided a second instrument to producers at the end of September 2011 to capture non-respondents. Telephone calls and email messages to non-respondents were made from September 25 to October 25, 2011. A total of 404 useable instruments were returned from the 585 respondents, yielding a 69% response rate.

## **Data Analyses**

Versions 17 and 19 of the Statistical Program for the Social Sciences (SPSS) and Excel<sup>TM</sup> were used to calculate applicable descriptive statistics (i.e., means, standard deviation, percentages) for each item. T-tests and one-step ANOVAs with follow-up tests and measures of practical significance were used to compare the means of the responses. Alpha was established at .05 a priori.

## **SECTION II**

### **RESULTS**

The results of this study are presented in this section following the demographic characteristics of the respondents. The results for the farm business characteristics and business management education preferences are followed by results for the crops production management education preferences; livestock production management education preferences; education methods, instructional media, and delivery priorities; and information related to the delivery of the program.

#### **Demographic Characteristics of the Participants**

Researchers and scholars agree that demographic and socio-economic factors help to influence an individual's decision to start a business. The type of produce farmers bring to the marketplace is affected by changes in the makeup of the consumer population, income, lifestyles, and desire for convenience. Additionally, demographic factors such as household size, age, and distribution of the population can alter consumption trends (USDA, SB-928). According to Minniti (2005), the age distribution of a population has immediate implications for the expected level of entrepreneurial activity of a country, including farming. The survey instrument sought to capture demographic information on age, gender, work status, education level, and racial background, allowing the researchers to analyze a number of variables. This section shares the findings of the demographic characteristics of the participants across the state. Table 1 reflects information by state, while information by region and farm type is reflected in Appendix B1.

#### **Profile of the Producers Enrolled in the Minnesota FBM Program**

The data in Table 1 reveal that 87.9% of the respondents were the primary operators of their farms. They were predominantly white (94.8%), male (96%), and averaged 46.9 years of age. (Review Appendix B1 & B2 for additional detail about participant characteristics based on region and type of farm). Minniti (2005) reported that "the educational background of individuals influences both their chances in the regular labor market and their potential for starting a business, and that people with more education usually have better job alternatives" (p. 24). The data in Table 1 reveal that 145 of the respondents (35.9%) completed a two-year college degree, diploma or certificate, 70 completed bachelor's degrees (17.3%), and 4 finished graduate degrees (1.0 %). In total, 66.8% of the producers had earned one or more postsecondary degrees, certificates, or diplomas. Nearly one in four (24.5%) of the participants worked part-time off the farm, and one in five worked more than 20 hours a week away from their farm business.

*Table 1. Characteristics of the FBM Minnesota Producers Study Participants (%)*

Demographic Characteristics	N	%
No. of Respondents	404	
Primary Operators of the Farm (Q2) <sup>1</sup>		
Respondent	355	87.9
Spouse	109	27.0
Business partner	62	15.3
Age in Years (M/SD)	46.9/12.3	
Gender		
Male	387	95.8
Female		
Highest level of education completed (Q46)		
8 <sup>th</sup> grade	1	0.24
High School Graduate	103	25.5
One-Year College Degree	51	12.6
Two-Year College Degree	145	35.9
Bachelor's Degree	70	17.3
Graduate Degree	4	1.0
Work Part-Time Off the Farm (Q44)	99	24.5
Spanish, Hispanic or Latino Background (Q47)	1	0.2
Race (Q48)		
American Indian or Alaskan Native	2	0.5
Native Hawaiian or Other Pacific Islander	1	0.2
White	383	94.8
Black or African American	1	0.2
Asian	0	0

<sup>1</sup>The letter Q followed by a number represents the survey questions number (Appendix A).

### **Farm Business Management Education Interests and Needs**

Agriculture education research gives the opportunity for farmers to directly share their learning preferences, providing them a way to influence and improve farm business management education programming and delivery. A farmer's desire to remain viable and innovative can be met in part through their ongoing education, as well as through effective professional development for their FBM instructors. Effective professional development of FBM instructors is possible when content and processes align with students' business and production management education needs and interests as well as their preferred methods of learning, instructional technologies and delivery options. Differences exist in agricultural education needs among different farmer groups (Franz et. al., 2010). This section reveals the farm business management education interests and needs of FBM students. Table 2 will reveal information statewide, while Appendix B2 will show information relating to farmers from different regions of the state.

## Farm Business Profile of Minnesota FBM Students

The data in Table 2 indicate that 75.2% of the FBM students are sole proprietors. The remaining business owners operate as corporations (10.9%) or legal partnerships (10.1%). The students average

*Table 2. Farm Business Characteristics of FBM Minnesota Producers Study Participants (%)*

Business Characteristics	<i>N</i>	%
No. of Farms	404	<b>100</b>
Form of Farm Business (Q4)		
Sole Proprietorship	304	75.2
Corporation (LLC or C)	44	10.9
Legal Partnership	41	10.1
Other	9	2.2
Years Involved in Ownership in Farming (Q5)		
M	24.1	
SD	12.1	
Average Annual Farm Sales (Q7)		
< \$10,000	1	0.2
\$10,000-\$24,999	2	0.5
\$25,000-\$49,999	7	1.7
\$50,000-\$99,999	21	5.2
\$100,000-\$249,999	73	18.1
\$250,000-\$499,999	117	29.0
\$500,000-\$999,999	105	26.0
\$1,000,000-\$2,499,999	60	14.9
>\$2,500,000	9	2.2
Type of Farm Operation (=>70% of income) (Q10)		
Crops	218	54.0
Crops and Livestock	99	24.5
Livestock	74	18.3
Other	8	2.0
Type of Production on Your Farm (Q 11)		
Conventional	372	92.1
Certified Organic	14	3.5
Organic Transitional	2	0.5
Sustainable	13	3.2
Grass-based	7	1.7

<sup>1</sup>The letter Q followed by a number represents the survey question number (see Appendix A).

24.2 years (*SD* 12.1) of farming experience. Producers with average annual farm sales of \$250,000 or more make up 72.1% of the respondents. Only 7.6% of the respondents generated less than \$100,000. The majority of the respondents (54.5%) were crops farmers. Livestock and crops and livestock farmers made up 42.8% of the respondents. More than 9 in 10 producers (92.1%) were conventional farmers; certified organic and grass-based producers made up 5.2% of the sample. See Appendix B for more details about the farm business students.

**Selected Vendors used by Farmers.** The statewide combined data in Table 3 reveal that the vendors FBM students use most often are FBM instructors (95.5%), tax preparation services (85.6%), and bankers (84.7%). Other frequently used vendors include veterinary services (44.1%), crop marketing advisors (44.8%), and



crops and soils consultants (61.4%). Over 35% of the farmers rely on other farmers as sources of information and counsel. Disproportionately low due to the low number of livestock farms in the state, livestock consultants and livestock marketing advisors are used by 12%-13% of the FBM students. The top four vendors used by the livestock farmers were FBM educators (98.6%), veterinary services (94.6%), tax preparation services (89.2%), and bankers (85%). The crop farmers differ slightly, with their top four being FBM educators (94%), bankers (85.8%), tax preparation services (83.9%), and crop consultants (61.5%). Except for increased use of veterinary services (76.8%), crop and livestock farmers used the same three primary vendors as the crop farmers.

*Table 3. Selected Vendors Used by Farmers (N=404)*

	Type of Farm							
	Total		Crop		Livestock		Crop & livestock	
	404	%	218	%	74	%	99	%
Farm Business Management educator(s)	386	95.5	205	94.0	73	98.6	96	97.0
Tax preparation service	346	85.6	183	83.9	66	89.2	87	87.9
Bankers/ag lenders	342	84.7	187	85.8	63	85.1	79	79.8
Crop consultant	248	61.4	134	61.5	36	48.6	72	72.7
Crop marketing advisor(s)	181	44.8	117	53.7	7	9.5	52	52.5
Veterinary service	178	44.1	27	12.4	70	94.6	76	76.8
Other farmers	144	35.6	65	29.8	32	43.2	43	43.4
Nutrition consultant	138	34.2	11	5.0	59	79.7	65	65.7
Lawyer	128	31.7	65	29.8	19	25.7	40	40.4
Business accounting service	66	16.3	40	18.3	12	16.2	14	14.1
Livestock consultant	53	13.1	3	1.4	20	27.0	30	30.3
Livestock marketing advisor(s)	49	12.1	4	1.8	13	17.6	29	29.3
Retirement specialist	40	9.9	13	6.0	7	9.5	16	16.2
Marketing specialist for value-added functions	23	5.7	13	6.0	3	4.1	7	7.1

**Selected Marketing Strategies.** The combined statewide data in Table 4 reveals that cash sales of crops (83.2%) and contracts of crops (70.3%) were the two marketing strategies used by the greatest share of FBM producers. Use of commodity futures for crops was also used by 39.1% of the respondents. Over 40% of the producers used livestock cash sales (44.1%) as a marketing strategy. The least used marketing strategies by the FBM producers are direct marketing of fruits and vegetables (1.5%), traditional newspaper, TV or radio (1.5%), and social media marketing (1.7%). Selected marketing strategies used by the majority of crop farmers were cash sales (93.6%), contracts (84.9%) and commodity futures (52.8%). Livestock farmers showed a

greater number of them utilizing livestock-cash sales (89.2%), while the crop and livestock producers indicated crop-cash sales (91.9%), livestock-cash sales (76.8%), and crops-contracts (74.7%) as their top three marketing strategies. Marketing strategies used by producers when categorized by farm sales and regions of the state are presented in tabular form in Appendix B4.

*Table 4. Selected Marketing Strategies Used by Farmers (N=404)*

	Type of Farm							
	Total		Crop		Livestock		Crop & livestock	
	404	%	218	%	74	%	99	%
Crops – cash sales	336	83.2	204.0	93.6	35.0	47.3	91.0	91.9
Crops – contracts	284	70.3	185	84.9	19	25.7	74	74.7
Livestock – cash sales	178	44.1	31	14.2	66	89.2	76	76.8
Crops – commodity futures market	158	39.1	115	52.8	3	4.1	38	38.4
Livestock – contracts	61	15.1	5	2.3	26	35.1	29	29.3
Livestock – commodity futures market	32	7.9	1	0.5	13	17.6	17	17.2
Direct marketing of meat	23	5.7	8	3.7	4	5.4	10	10.1
Value-added approaches to marketing (i.e., processed meats, milk, grains, and other produce)	14	3.5	4	1.8	2	2.7	8	8.1
Internet-based product marketing	8	2.0	4	1.8	4	5.4	0	0.0
Product marketing using social media (i.e., Facebook, Twitter, etc.)	7	1.7	2	0.9	3	4.1	1	1.0
Traditional advertising – newspaper, radio, or TV	6	1.5	0	0.0	2	2.7	2	2.0
Direct marketing of fruits and vegetables	4	1.0	3	1.4	0	0.0	1	1.0
Other	9	2.2	2	0.9	2	2.7	4	4.0

### **FBM Student Interest in Business Management Education**

Farmers indicated their level of interest in education or training in 23 farm business management education topics by indicating if they wanted to learn foundational (introductory concepts and/or skills) or advanced concepts and skills (intermediate or advanced concepts and skills) in each topic. They also had the option of indicating if they had no interest in learning a concept or skill.

Table 5A portrays the foundational and advanced business management education interests and needs of the FBM producers. If they believed they needed the education, FBM producers selected their need for education as foundation or advanced in nature. They selected “NI” (not interested) if they believed they did not need the education. As noted in Table 5A, interest in foundational topics ranged from a low of 28% to a high of 42% of

producers. An average of 32.8% of the FBM students desired education for each of the topics. The greatest share of producers showed an interest in foundational education concerning estate planning, retirement plan's impact on tax liability, risk management assessment, establishing goals, and new technologies. The topics in which the least number of producers expressed education included completing an annual analysis, establishing credit needs, creating budgets and break-even calculations, establishing enterprise budgets, and cash flow plans.

The data in Table 5A also reveal that, compared to foundational education, a much larger share of the FBM producers are interested in advanced education in business topics, ranging from a low of 22.2% to a high of 66.8% of producers. A review of the data reveals that an average of 46.3% of the FBM students desired advanced levels of education and training in at least one of the topics. Over 60% of the producers desire advanced education in completing a farm business analysis, using business analyses for decision making, creating budgets and calculating break-even points, establishing enterprise budgets and cash flow statements, determining capital and credit needs, and developing financial statements to secure capital. The lowest percentage of farmers indicated advanced education relating to personnel issues, farm organization benefits, personal leadership benefits, and communication skill development.

The business management education topics with the least interest, or most "not interested" responses, included: personnel issues (45.5%), personal leadership benefits gained from participation in organizations (43%), farm and community organization participation benefits (35.6%), communications skills (28.2%), and business transitions (26.5%). Summary information is presented in tabular form in Appendices B6 and B7 for FBM students showing differences by regions of the state and levels of farm sales.

*Table 5A. Comparison of Foundational and Advanced Business Management Education Topics Desired by FBM Students (N=404)*

Business Education Topic	N	Level of Education			
		<u>Foundational</u>		<u>Advanced</u>	
		%	Rank	%	Rank
Estate planning options	396	42.9	1	38.9	17
Retirement plans' impact on tax liability	394	42.1	2	37.8	18
Risk management strategies	394	41.4	3	41.4	16
Establishing goals	398	41.0	4	45.7	14
New technologies	396	38.9	5	52.0	11
Tax management strategies	394	38.8	6	55.3	9
Farm community organization benefits	394	38.1	7	24.6	22
Marketing plan	393	37.2	8	48.3	13
Commodity markets	395	35.2	9	49.4	12
Business transition options	395	35.2	9	37.2	19
Creating a business plan	396	34.6	11	52.5	10
Communications skills	391	33.8	12	36.8	20
Recordkeeping system	394	33.0	13	58.9	8
Personal leadership benefits	391	33.0	13	24.8	21
Business structure	395	31.6	15	44.6	15
Financial statements to secure capital	396	31.1	16	62.4	6
Business analysis for decision making	397	30.7	17	65.0	2
Personnel issues	396	30.6	18	22.2	23
Financing capital assets	393	30.5	19	59.5	7
Enterprise budgets & cash flow	395	30.1	20	63.8	4
Budgets and break-even analyses	396	29.3	21	64.9	3
Capital and credit needs	393	29.3	22	63.4	5
Complete a farm business analysis	395 <sup>1</sup>	28.4 <sup>2</sup>	23	66.8 <sup>3</sup>	1

Note: <sup>1</sup>Total number of respondents to the topic. <sup>2</sup>% of FBM students indicating interest in foundational instruction in the topic. <sup>3</sup>% of FBM students indicating interest in advanced instruction in the topic.

Data in Table 5B reveals the foundational and advanced Business Management education needs by farm types. All farmers indicated the need for some level of education at both the foundational and advanced levels in all 23 education topics. Crop farmers indicated their top five topics in which they require foundational education as: estate planning options (40.4%), impact of retirement plans on tax liability (40.4%), establishing goals (39.0%), tax management strategies (38.1%), and new technologies (38.1%).

The top foundational topics for livestock farmers were: risk management assessment, creating a business plan, estate planning options, impact of retirement plans on tax liability, and farm and community organization benefits. The combined crop and livestock producers chose similar foundational topics for their top five, except that they added personal issues as a topic of importance.

Interest in advanced education topics was somewhat different. Approximately 61% of crop farmers indicated an interest in advanced education in the following topics: annual business analysis, budgets and break-even calculations, business analysis, capital and credit needs, and financial statements to secure capital.

Livestock farmers desired similar advanced education topics. Their top five choices were: annual business analysis (71.6%), business analysis (66.2%), enterprise budgets-cash flow (63.5%), budgets and break-even calculations (62.2%), and capital and credit needs (60.8%). The combined crop and livestock producers showed similar interests, indicating the same top five advanced topics as those of the crop producers and livestock producers. The advanced topics in which farmers showed the least interest were: personal issues, commodity markets, and personal leadership benefits. These sentiments were echoed by farmers across all farm types. Differences with regards to total farm sales and regions of the state may be viewed in Appendices B6 and B7.

*Table 5B. Foundational & Advanced Farm Business Management Education Needs by Type of Farm*

Education Topics		Type of Farm								
		Crops (N= 218)			Livestock (N= 74)			Crops & Livestock (N= 99)		
		Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested
Establishing goals	<i>n</i>	85	97	36	34	32	6	38	50	10
	%	39.0	44.5	16.5	45.9	43.2	8.1	38.4	50.5	10.1
Business structure	<i>n</i>	66	97	53	31	24	16	26	50	22
	%	30.3	44.5	24.3	41.9	32.4	21.6	26.3	50.5	22.2
Recordkeeping system	<i>n</i>	73	120	22	23	44	4	30	63	5
	%	33.5	55.0	10.1	31.1	59.5	5.4	30.3	63.6	5.1
Annual business analysis	<i>n</i>	67	137	13	17	53	1	24	70	4
	%	30.7	62.8	6.0	23.0	71.6	1.4	24.2	70.7	4.0
Business analysis	<i>n</i>	72	135	10	22	49	1	24	71	3
	%	33.0	61.9	4.6	29.7	66.2	1.4	24.2	71.7	3.0
Budgets, break-even calculations	<i>n</i>	66	137	14	20	46	5	24	71	3
	%	30.3	62.8	6.4	27.0	62.2	6.8	24.2	71.7	3.0
Enterprise budgets- cash flow	<i>n</i>	69	130	17	20	47	4	24	71	3
	%	31.7	59.6	7.8	27.0	63.5	5.4	24.2	71.7	3.0
Capital and credit needs	<i>n</i>	65	131	19	21	45	5	24	70	3
	%	29.8	60.1	8.7	28.4	60.8	6.8	24.2	70.7	3.0
Financing capital assets	<i>n</i>	64	127	23	26	37	9	28	65	4
	%	29.4	58.3	10.6	35.1	50.0	12.2	28.3	65.7	4.0
Financial statements to secure capital	<i>n</i>	70	131	16	22	44	5	26	68	4
	%	32.1	60.1	7.3	29.7	59.5	6.8	26.3	68.7	4.0
Create a business plan	<i>n</i>	63	120	34	37	31	3	33	52	13
	%	28.9	55.0	15.6	50.0	41.9	4.1	33.3	52.5	13.1

Estate planning options	<i>n</i>	88	92	37	37	17	17	41	40	18
	%	40.4	42.2	17.0	50.0	23.0	23.0	41.4	40.4	18.2
Business transition options	<i>n</i>	69	86	62	30	18	22	38	37	23
	%	31.7	39.4	28.4	40.5	24.3	29.7	38.4	37.4	23.2
Personnel issues	<i>n</i>	54	48	115	25	16	30	39	20	39
	%	24.8	22.0	52.8	33.8	21.6	40.5	39.4	20.2	39.4
Marketing plan	<i>n</i>	72	117	26	30	22	19	38	49	10
	%	33.0	53.7	11.9	40.5	29.7	25.7	38.4	49.5	10.1
Commodity markets	<i>n</i>	67	121	27	31	19	21	36	52	11
	%	30.7	55.5	12.4	41.9	25.7	28.4	36.4	52.5	11.1
Tax management strategies	<i>n</i>	83	119	14	34	32	5	32	61	4
	%	38.1	54.6	6.4	45.9	43.2	6.8	32.3	61.6	4.0
Retirement plans on tax liability	<i>n</i>	88	88	39	37	16	18	39	38	21
	%	40.4	40.4	17.9	50.0	21.6	24.3	39.4	38.4	21.2
Risk management assessment	<i>n</i>	79	93	43	40	18	13	39	47	12
	%	36.2	42.7	19.7	54.1	24.3	17.6	39.4	47.5	12.1
New technologies	<i>n</i>	83	109	24	32	36	4	37	54	7
	%	38.1	50.0	11.0	43.2	48.6	5.4	37.4	54.5	7.1
Communication skills	<i>n</i>	63	83	68	29	24	18	35	33	28
	%	28.9	38.1	31.2	39.2	32.4	24.3	35.4	33.3	28.3
Farm & community organization benefits	<i>n</i>	73	55	88	36	12	23	38	26	33
	%	33.5	25.2	40.4	48.6	16.2	31.1	38.4	26.3	33.3
Personal leadership benefits	<i>n</i>	61	57	96	35	8	27	29	28	40
	%	28.0	26.1	44.0	47.3	10.8	36.5	29.3	28.3	40.4

Note: Percentages reflect the number of respondents who selected foundational, advanced, or not interested from the total number of farmers for each type of farm/year of experience category

### FBM Producers' Selected Farm Business Management Hot Topics

Table 6 reveals a number of business management hot topics provided by the 391 FBM producers who responded. The top three topics of FBM producers overall and crop farmers in particular were: 1) creating a marketing plan (13.0%); 2) exploring estate planning options (10.5%); and 3) implementing a comprehensive record keeping system (9.7%). Among crop and livestock farmers, the top three were: 1) exploring estate planning (3.8%); 2) implementing a comprehensive recordkeeping system (3.1%); and 3) creating a farm business plan (2.6%). Livestock farmers gave similar top hot topics, prioritized as follows: 1) implementing a comprehensive record keeping system (2%); 2) using the annual farm business analysis reports to make decisions (1.5%); and 3) exploring estate planning options (1.5%). Appendix B10 presents the details of differences due to income levels and farm types.

Table 6. Percentage of FBM Producers Indicating Business Management Education Hot Topics (N=404)

(V-404)

Business Management Hot Topics	Type of Farm							
	Total	Crop		Crop & Lvstk		Livestock		
	<i>N</i> =391	<i>Rank</i>	<i>n</i> =218	<i>Rank</i>	<i>n</i> =99	<i>Rank</i>	<i>n</i> =74	<i>Rank</i>
Establishing business, family, and personal goals	9 <sup>1</sup> 2.3% <sup>2</sup>		4 <sup>3</sup> 1.0% <sup>4</sup>		2 0.5%		3 0.8%	8
Evaluating/establishing a business structure model	5 1.3		1 0.3		3 0.8	7	1 0.3	
Implementing a comprehensive recordkeeping system	37 9.5	3	17 4.3	3	12 3.1	2	8 2.0	1
Completing an annual farm business analysis	15 3.8	6	9 2.3	8	2 0.5		4 1.0	
Using the annual farm business analysis reports to make decisions	21 5.4	5	10 2.6	5	5 1.3	5	6 1.5	2
Developing current crop &/or livestock budgets including break even calculations	6 1.6		2 0.8		3 0.8	7	0 0.0	
Using the current crop &/or livestock enterprise budgets to develop an annual cash flow plan	11 2.8	10	6 1.5		1 0.3		4 1.0	6
Determining the capital and corresponding credit needs of the business	9 2.3		5 1.3		1 0.3		3 0.8	8
Selecting the best options for acquiring and financing farm capital assets	9 2.3		4 1.0		4 1.0	6	1 0.3	
Preparing financial statements and other documents commonly used for securing capital	8 2.0		7 1.8	10	1 0.3		0 0.0	
Creating a farm business plan	26 6.6	4	11 2.8	4	10 2.6	3	5 1.3	4
Exploring estate planning options	41 10.5	2	20 5.1	2	15 3.8	1	6 1.5	2
Exploring business transition options (changing or adding enterprises)	11 2.8	10	5 1.3		3 0.8	9	3 0.8	8
Hiring, managing, evaluating, and terminating the employment of business employees	9 2.3		2 0.5		3 0.8	9	4 1.0	5
Creating a marketing plan	51 13.0	1	37 9.5	1	10 2.6	3	4 1.0	5
Using commodity markets to increase profits and reduce risk	15 3.8	6	10 2.6	5	3 0.8		2 0.5	
Evaluating tax management strategies	15 3.8	6	10 2.6	5	3 0.8	9	2 0.5	
Evaluating the impact of personal retirement plans on tax liability	5 1.3		2 0.5		2 0.5		1 0.3	

Implementing a risk management	6		2		2	2
assessment plan for the farm and	1.5		0.5		0.5	0.5
non-farm operations						
Identifying new technologies needed to	12	<b>9</b>	8	<b>9</b>	2	2
remain competitive	3.1		2.0		0.5	0.5
Developing written and verbal	3		2		1	0
communication skills	0.8		0.5		0.3	0.0

---

Note: <sup>1</sup>Total responses. <sup>2</sup>Percentage of total (391). <sup>3</sup>Number of corresponding farm type with interest in business management topic. <sup>4</sup>Percentage of total responses (391).



## Crop Production Management Education Needs and Interests

Providing for the crop production management education needs of farmers starts with awareness of the number of farmers currently producing each of the major crops. The production management education needs for the major crops are subsequently summarized and discussed for all producers and for producers within selected farm types. The data for this section was provided by respondents who indicated the names of two crops and their interest in corresponding production management education topics. *Only the first crop choice of interest was tabulated and reported in this study.*

Data reflected in Table 7 shows crop enterprises during the fall of 2011 by type of farm operation. The top four crops as indicated by the farmers were corn (86.9%), soybeans (79.0%), alfalfa/mixed hay (43.3%) and wheat (25%). The type of farm operation with the highest instance of these crops were crop producers (218), with an average of 60% production. Crop and livestock had 99 enterprises with an average production of 67%. Among livestock operations, 74 enterprises were producing the top three crops, averaging 64% of production, although oats (28.4%) showed up as the fourth crop. Among the crop enterprises, soybeans (95.9%) was the most popular crop, while crop and livestock enterprises produced more corn (96.0%), with the livestock enterprises producing more alfalfa/mixed hay (82.4%). The least produced crops among all enterprises across all farm operations was fruits (0.2%). More detailed data relating to the differences in crop enterprises by income levels and farm types may be reviewed in Appendix B11.

*Table 7. Crop Enterprises in the Fall of 2011 by Type of Farm*

Crops	Total		Type of Farm					
			Crops		Crop and Livestock		Livestock	
	N=404	%	n= 218	%	n= 99	%	n= 74	%
Corn	351	<b>86.9</b>	189	<b>86.7</b>	95	<b>96.0</b>	60	<b>81.1</b>
Soybeans	319	<b>79.0</b>	209	<b>95.9</b>	84	<b>84.8</b>	21	28.4
Alfalfa/mixed hay	175	<b>43.3</b>	44	20.2	67	<b>67.7</b>	61	<b>82.4</b>
Wheat	102	<b>25.2</b>	80	36.7	19	19.2	3	4.1
Oats	47	11.6	8	3.7	16	16.2	21	28.4
Other crops and vegetables	46	11.4	31	14.2	7	7.1	7	9.5
Sugar beets	27	6.7	25	11.5	2	2.0	0	0.0
Barley	23	5.7	8	3.7	16	16.2	21	28.4
Vegetables	19	4.7	10	4.6	9	9.1	0	0.0
Canola	7	1.7	7	3.2	0	0.0	0	0.0
Fruits	1	0.2	1	0.5	0	0.0	0	0.0

## Crop Production Management Education Needs of Minnesota FBM Producers

Table 8 shows the number of FBM producers who desire production management education for the top five crops. Approximately half the corn farmers indicated a need for education in marketing (52.5%) and soil fertility (49.8%). Another 29%-30% showed interest in topics such as precision farming, varietal selection, and planting. There were similar preferences by farmers in soybeans, with 27.7%-46.8 % indicating interest. Additionally, pest management and government programs seemed to be of some interest to corn and soybean producers, with an average of 30% of producers indicating a need. Sugar beet farmers, however, indicated a great need for soil fertility and management (2.7%). Producers across all five crops were least interested in food safety education. To see the differences by income level and regions across the state, see Appendix B12.

Table 8. Crop Production Management Education Needs of Minnesota FBM Producers (N=404)

Education Topic	Crops									
	Corn		Soybeans		Alfalfa		Wheat		Sugar beets	
	n	%	n	%	n	%	n	%	n	%
Marketing	212 <sup>1</sup>	52.5 <sup>2</sup>	189	46.8	9	2.2	21	5.2	5	1.2
Soil fertility and management	201	49.8	155	38.4	36	8.9	19	4.7	12	3.0
Precision farming	164	40.6	144	35.6	11	2.7	15	3.7	7	1.7
Varietal selection	143	35.4	120	29.7	30	7.4	19	4.7	9	2.2
Planting	137	33.9	112	27.7	22	5.4	6	1.5	7	1.7
Handling and storage	131	32.4	74	18.3	29	7.2	5	1.2	3	0.7
Pest management	129	31.9	135	33.4	28	6.9	15	3.7	8	2.0
Government programs	126	31.2	102	25.2	16	4.0	9	2.2	4	1.0
Harvesting	121	30.0	81	20.0	29	7.2	5	1.2	9	2.2
Machinery selection and maintenance	120	29.7	81	20.0	23	5.7	9	2.2	7	1.7
Facilities design, management &/or maintenance	103	25.5	45	11.1	10	2.5	6	1.5	3	0.7
Soil conservation	97	24.0	71	17.6	15	3.7	8	2.0	3	0.7
Environmental programs	97	24.0	71	17.6	17	4.2	6	1.5	2	0.5
Water management	69	17.1	56	13.9	11	2.7	6	1.5	7	1.7
Food safety	22	5.4	23	5.7	4	1.0	1	0.2	1	0.2
Total	1872		1459		290		150		87	

Note: <sup>1</sup>No. of producers in the study (N=404) who desired production management education for the respective education topic. <sup>2</sup>Percentage of producers with interest in production management education.

### Hot Topic Crop Production Education Needs of FBM Producers

FBM producers were further asked to identify at least two hot crop production management topics for their operation. Table 9 reveals that marketing (17.1% & 15.6%) and soil fertility and management (9.2% & 5.9%) were indicated as two hot topics by corn and soybeans producers, respectively. Soil fertility and management (3.0%) and pest management (1.7%) were the two high-priority topics for alfalfa producers. Wheat producers were most interested in soil fertility and management (1.7%) and marketing (1.5%). Sugar beet producers indicated a similar (.05%) education interest in soil fertility and management, variety selection, and water management. More details regarding desired production management education hot topics by regions and income levels may be seen in Appendix B13. *Please note that only the first choice of interest was tabulated and reported.*

Table 9. Hot Topic Crop Production Education Needs of FBM Producers (N= 404)

Production Management Topics	Corn		Soybeans		Alfalfa		Wheat		Sugar Beets	
	n	%	n	%	n	%	n	%	N	%
Marketing	69 <sup>1</sup>	17.1 <sup>2</sup>	63	15.6	2	0.5	6	1.5	0	0.0
Soil fertility and management	37	9.2	24	5.9	12	3.0	7	1.7	2	0.5
Variety selection	19	4.7	23	5.7	4	1.0	4	1.0	2	0.5
Precision farming	17	4.2	21	5.2	0	0.0	1	0.2	0	0.0
Planting	14	3.5	8	2.0	1	0.2	0	0.0	1	0.2
Pest management	10	2.5	19	4.7	7	1.7	2	0.5	0	0.0
Handling and storage	9	2.2	3	0.7	6	1.5	0	0.0	0	0.0
Water management	9	2.2	5	1.2	1	0.2	1	0.2	2	0.5
Government programs	7	1.7	5	1.2	1	0.2	0	0.0	0	0.0
Facilities design, management &/or maintenance	5	1.2	2	0.5	0	0.0	0	0.0	0	0.0
Soil conservation	5	1.2	3	0.7	1	0.2	0	0.0	0	0.0
Harvesting	4	1.0	3	0.7	3	0.7	0	0.0	0	0.0
Machinery selection and maintenance	2	0.5	0	0.0	1	0.2	0	0.0	0	0.0
Environmental programs	1	0.2	1	0.2	0	0.0	0	0.0	0	0.0
Food safety	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Note: Percentage of farmers who indicated a need for production management education. <sup>1</sup>No. of producers who desired production management hot topics for the respective crop. <sup>2</sup>Percentage of total producers (N=404) with interest in production management hot topics for the respective crop.

### Livestock Production Management Education Needs and Interests

Providing for the livestock production management education needs of farmers starts with awareness of the number of farmers currently producing each of the major classes of livestock. The production management education needs for the primary classes of livestock are subsequently summarized and discussed for all producers and for producers within selected farm sales categories. The data for this section were provided by respondents who indicated the name of one or two classes of livestock and their interest in education for

corresponding production management topics. *For this study only the first choice of livestock and their interest was tabulated and reported.*

**Proportion of farms with selected livestock enterprises.** Table 10 shows data relating to the proportion of farms with selected livestock enterprises in the fall of 2011. Of the 404 FBM farmers who responded, 26.0% of farms raised beef, 25.2% raised dairy production, and 16.3% raised hogs. About 15% of producers concentrated on horses, other livestock and poultry, chickens, sheep, goats, and geese. Crops and livestock operations accounted for 99 of the farms with selected livestock enterprises, focusing mainly on beef (49.5%), dairy (3.4%), and hog (40.4%) production. The 74 producers in the livestock category with livestock enterprises produced mainly beef (23.0%) and dairy (78.4%). Appendix B14 provides additional information concerning differences based on income and farm type.

*Table 10. Proportion of Farms with Selected Livestock Enterprises (N=404)*

Classes of Livestock	Total		Type of Farm					
	404 <sup>1</sup>	%	Crops		Crop & Livestock		Livestock	
			218	%	99	%	74	%
Beef	105	26.0 <sup>1</sup>	34	15.6 <sup>2</sup>	49	49.5 <sup>2</sup>	17	23.0 <sup>2</sup>
Dairy	102	25.2	4	1.8	38	38.4	58	78.4
Hogs	66	16.3	17	7.8	40	40.4	7	9.5
Horses	21	5.2	8	3.7	7	7.1	5	6.8
Other Livestock & Poultry	13	3.2	3	1.4	7	7.1	3	4.1
Chickens	12	3.0	4	1.8	6	6.1	2	2.7
Sheep	10	2.5	1	0.5	5	5.1	3	4.1
Goats	5	1.2	4	1.8	1	1.0	0	0.0
Geese	1	0.2	1	0.5	0	0.0	0	0.0
Turkeys	0	0.0	0	0.0	0	0.0	0	0.0

Note: <sup>1</sup>Percentage of total respondents (N=404) <sup>2</sup>Percentage of respective types of farms (e.g., crops, crop and livestock, livestock)

**Livestock Production Management Education Topics by Class of Livestock.** Table 11 shows the topics of interest for livestock production management education. Nutrition, facilities selection, feed selection, and health and basic veterinary care and practices were the top four topics selected by dairy cow producers. Heifer and steer farmers indicated a need for the same production management education topics. Marketing (7.9%), nutrition (7.4%), feed selection (6.9%) and health and basic veterinary care and practices (6.4%) were the top four livestock production management education topics for beef cow producers. Livestock farmers specializing in breeding hogs submitted nutrition (2.0%), facilities selection (2.0%), ventilation (2.0%), and equipment selection (2.0%) as their top interests. Waste handling systems and management, facilities selection, ventilation, and marketing were the top four topics for producers of finishing hogs.

Table 11. Livestock Production Management Education Topics by Enterprise for All Producers (N=404)

	Class of Livestock									
	Dairy Cows		Beef Cows		Heifers/Steers		Breeding Hogs		Finishing Hogs	
	n	%	n	%	n	%	n	%	n	%
Nutrition	64	15.8	30	7.4	29	7.2	8	2.0	4	1.0
Facilities selection, design, management & maintenance	63	15.6	24	5.9	28	6.9	8	2.0	10	2.5
Feed selection, formulation, and management	58	14.4	28	6.9	29	7.2	7	1.7	5	1.2
Health and basic veterinary care and practices	51	12.6	26	6.4	27	6.7	5	1.2	4	1.0
Breeding and selection	46	11.4	20	5.0	14	3.5	7	1.7	0	0.0
Ventilation	42	10.4	8	2.0	17	4.2	8	2.0	8	2.0
Waste handling systems and management	41	10.1	11	2.7	17	4.2	6	1.5	12	3.0
Marketing	37	9.2	32	7.9	16	4.0	6	1.5	7	1.7
Basic animal husbandry practices	33	8.2	18	4.5	14	3.5	6	1.5	4	1.0
Government programs (i.e., FSA & NRCS, labor regulations)	32	7.9	14	3.5	11	2.7	7	1.7	3	0.7
Environmental programs (i.e., EPA, MPCA, NRCS, etc.)	30	7.4	17	4.2	11	2.7	7	1.7	6	1.5
Equipment selection	28	6.9	16	4.0	13	3.2	8	2.0	5	1.2
Live animal handling	26	6.4	15	3.7	11	2.7	7	1.7	4	1.0

Note: Percentage of farmers who desired production management education. <sup>1</sup>No. of producers who desired production management education for the respective classes of livestock. <sup>2</sup>Percentage of total producers (N=404) with interest in production management for the respective classes of livestock.

**Hot Topics for Livestock Production Management Education.** The FBM farmers indicated topics they considered to be hot topics. Table 12 reveals the data by the class of livestock. An average of 16 dairy cow producers stated that their top two hot topics are nutrition (4.2%) and facilities selection, design management, and maintenance (3.7%). Marketing (2.2%) and breeding and selection (2%) were the two hot topics of interest for beef producers. Marketing and facilities selection, design management, and maintenance were the top two hot topics for livestock producers raising heifers and steers. Farmers who specialized in breeding hogs chose facilities selection, design, management, and maintenance (0.7%) and basic animal husbandry practices (0.5%) as their key educational topics. A large share of producers of finishing hogs indicated marketing and facilities selection, design management, and maintenance. *Only the first class of livestock indicated by the farmers was tabulated and reported.*

Table 12. Hot Topics for Livestock Production Management Education

	Class of Livestock									
	Dairy		Beef		Heifers/Steers		Breeding		Finishing	
	Cows		Cows				Hogs		Hogs	
	n	%	n	%	n	%	n	%	n	%
Nutrition	17	4.2	4	1.0	5	1.2	1	0.2	0	0.0
Facilities selection, design, management & maintenance	15	3.7	3	0.7	8	2.0	3	0.7	4	1.0
Health and basic veterinary care and practices	14	3.5	6	1.5	4	1.0	1	0.2	0	0.0
Breeding and selection	12	3.0	8	2.0	2	0.5	1	0.2	0	0.0
Marketing	9	2.2	9	2.2	9	2.2	0	0.0	4	1.0
Feed selection, formulation, and management	5	1.2	7	1.7	3	0.7	1	0.2	1	0.2
Basic animal husbandry practices	4	1.0	2	0.5	2	0.5	2	0.5	1	0.2
Equipment selection	2	0.5	0	0.0	0	0.0	0	0.0	0	0.0
Waste handling systems and management	2	0.5	2	0.5	2	0.5	0	0.0	3	0.7
Environmental programs (i.e., EPA, MPCA, NRCS, etc.)	2	0.5	0	0.0	0	0.0	0	0.0	2	0.5
Ventilation	1	0.2	1	0.2	2	0.5	0	0.0	1	0.2
Live animal handling	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0
Government programs (i.e., FSA & NRCS, labor regulations)	0	0.0	1	0.2	1	0.2	0	0.0	0	0.0

NOTE: Percentage of farmers who desired production management education. <sup>1</sup>No. of producers who desired production management education for the respective classes of livestock. <sup>2</sup>Percentage of total producers (N=404) with interest in production management for the respective classes of livestock.

### Education and Training Needs for Employees by Type of Farm

This section reveals the types of education and training producers desire for their employees.

**Categories of Education and Training Needs for Employees.** FBM students were asked about the type of education and training they would be interested in for their employees. Table 13 shows that a total of 74 farmers (18.3%) indicated that they would be interested in education and training in the areas of employability skills and knowledge. Farmers with crop operations showed the most interest at 43.2% of crop farmers, while 29.7% of crop and livestock farmers reported interest, followed by livestock at 27.0%. The category of mechanical skills and knowledge saw 4.5% of employers demonstrating interest. Again the crop farmers showed the greatest interest (44.4%), followed by crop and livestock farmers (38.9%), and livestock farmers (16.7%). In the third category, livestock care and knowledge, 9% of farmers overall showed interest, with crop farmers showing no interest at all. In the business knowledge and skills category, a mere 4% of crop farmers showed interest. More details on differences by income level may be viewed in Appendix B17.

Table 13. Categories of Education and Training Needs for Employees by Farm Type (N=404)

Employee Training Categories	Total	Type of Farm		
		Crop (n=218)	Crop and Livestock (n=99)	Livestock (n=74)
<b>Employability Skills &amp; Knowledge</b>	<b>74<sup>1</sup></b>	<b>32</b>	<b>22</b>	<b>20</b>
	18.3% <sup>2</sup>	43.2% <sup>3</sup>	29.7%	27.0%
Safety	20	9	4	7
Communication	18	9	5	4
Attention to detail	13	6	5	2
Workplace behaviors	6	3	2	1
Punctuality	5	0	2	3
Other: bilingual language, cleanliness, attitude, motivation, time management, workplace scheduling, proper behaviors, hiring the best	20	9	4	7
<b>Mechanics Skills &amp; Knowledge</b>	<b>18</b>	<b>8</b>	<b>7</b>	<b>3</b>
	4.5%	44.4%	38.9%	16.7%
Equipment maintenance	11	6	4	1
Standard operating procedure	2	0	0	2
License CDLs	1	0	1	0
Equipment maintenance	1	0	1	0
<b>Livestock Care and Knowledge</b>	<b>9</b>	<b>0</b>	<b>3</b>	<b>6</b>
	2.2%	0.0%	33.3%	66.7%
Livestock handling	6	0	3	3
Animal husbandry	2	0	0	2
Herd health	1	0	0	1
Livestock handling	6	0	3	3
<b>Business Knowledge &amp; Skills</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>
	1.0%	100.0%	-	-
Develop a business plan	1	1	-	-
Financial management	1	1	-	-
Marketing	1	1	-	-
Recordkeeping – Quickbooks	1	1	-	-

Note: <sup>1</sup>Total number of producers desiring respective employee education and training. <sup>2</sup>Percentage of total farmers in the study (N=404) who desire the respective training and education. <sup>3</sup>Number of producers from corresponding type of farm who desire employee training. <sup>4</sup>Percentage of total desiring education from corresponding type of farm.

### Instructional and Program Delivery Preferences

When designing successful educational programs, agricultural educators need to understand the needs and struggles of farmers to be able to design programs that are of value to them (Tubene and Hanson 2002).

According to Baharanyi and Zabawa (1996), there are four questions that should be answered when designing

educational programs targeted to farmers. The first question relates to availability. That is, are the programs that target the specific needs of the farmer available to them? The second question involves accessibility. Are programs targeting the farmers accessible to them? Third is the issue of equity. Are farm programs funded and delivered in an equitable manner given the population and needs of the producers? The fourth question deals with social capital. Do local farmers have the necessary social capital to allow them access to available programs and other related resources?

Educational programs should be delivered through as many different mechanisms as possible to reach the most diverse audience possible (Israel & Wilson, 2006; Vergot et al., 2005). While many educational professionals would like to incorporate new technology into their delivery, including distance education, to make programs more affordable and to allow access to the largest number of farmers, some research indicates that farmers prefer more traditional delivery methods, like field days, newsletters, and one-on-one consultations (Gaul et.al, 2009; Joerger et al, 2000).

**Educational and Training Delivery Preferences by Type of Farming Operation.** Table 14 shows the ranked order of mean scores for education and training delivery preferences of farmers by type of farming operation as implied by the state. Farmers indicated the most preferred methods of delivery were at their business site (5.4), the host site of a farmer (4.1), farm organization meetings (4.1), and a blended learning approach (traditional and online learning) (4.0). The least preferred method of delivery for the farmers was total online delivery (2.5). Crop farmers (218) had the highest number of participants, followed by crop and livestock (99), and livestock only, with 74 farmers.

Table 14 also reflects the ANOVA analyses by type of farming operations. Significant differences for four of the delivery preferences existed among the means of the three farm types. Practical differences were of a low magnitude, though differences in preferences can be noticed by an informed observer. Differences were found among the farm types for business site ( $F=3, 326, p=.004$ ), college or university ( $F=3, 372, p=.002$ ), classroom at an off-campus site ( $F=3, 373, p=.008$ ) and total online delivery ( $F=3, 321, p=.02$ ). While the mean scores were similar to crop and livestock farmers ( $M=5.7, SD 1.67$ ), livestock farmers had a significantly higher preference ( $M=6.0, SD 1.47$ ) for program delivery at the business site compared to crop farmers ( $M=5.2, SD 2.04$ ). Likewise crop and livestock farmers ( $M=3.5, SD=1.86$ ) had a statistically higher preference for education delivered at a college or university campus than did livestock farmers ( $M=2.5, SD 1.64$ ). Crop farmers ( $M=4.1, SD 1.97$ ) had a statistically higher preference compared to livestock farmers ( $M=3.3, SD 1.87$ ) for program delivery at an off-campus site. Though significant differences existed among preferences for total online delivery of programs, the responses revealed that producers do not prefer programs to be delivered via



the Internet. For comparisons of education and training delivery preferences by age of producer, farm sales, and the region of the state, see Appendices B18, B19 and B21.

*Table 14. Education and Training Delivery Preferences of Farmers by Type of Farming Operation*

	Type of Farm				ANOVA		
	Total	Crops	Livestock	Crop and Livestock	<i>F</i> (df <sub>b</sub> , df <sub>w</sub> )	<i>P</i>	$\eta^2$
	<i>N</i> = 391	<i>n</i> = 218	<i>n</i> = 74	<i>n</i> = 99			
Business site	5.4 <sup>1</sup> 1.88 <sup>2</sup>	5.2 <sup>A</sup> 2.04	6.0 <sup>B</sup> 1.47	5.7 <sup>AB</sup> 1.67	5.37* (3, 326)	.004*	.037
Host farm	4.1 1.88	4.0 1.87	4.3 2.05	4.3 1.81	.97 (3, 372)	.41	
Farm organization meeting	4.1 1.82	4.2 1.88	3.7 1.75	3.8 1.71	1.93 (3, 370)	.12	
Blend of face-to-face and online delivery	4.0 1.99	4.1 2.00	3.7 2.03	3.9 1.90	2.16 (3, 377)	.09	
Classroom at an off-campus site	3.9 1.92	4.1 <sup>A</sup> 1.97	3.3 <sup>B</sup> 1.87	3.7 <sup>AB</sup> 1.82	3.99 (3, 373)	.008	.031
College or university campus	3.3 1.94	3.5 <sup>A</sup> 2.01	2.5 <sup>A</sup> 1.64	3.5 <sup>A</sup> 1.86	5.13 (3, 376)	.002	.039
Individualized instruction using video conferencing (Skype or similar technology)	3.1 1.90	3.1 1.94	2.9 1.71	3.2 1.86	2.16 (3, 368)	.09	
Total online delivery	2.5 1.82	2.5 1.88	2.0 1.75	2.5 1.71	3.65* (3, 321)	.02*	.038

Notes: <sup>1</sup>Scale: Mean score on a scale of 1 = Not preferred to 7 = Highly preferred. <sup>2</sup>Standard Deviation.

\*Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

**Producer Preferences for Selected Instructional Methods and Strategies.** Table 15 shows the mean scores and ANOVA analyses of producer preferences regarding instructional approaches and strategies by farm type. The mean scores of the different methods and strategies indicate that FBM farmers most prefer individualized in-person instruction with an instructor (5.8), hands on learning activities (5.3), demonstrations (5.0), and FBM instructors with specialty knowledge (5.0). The least preferred instructional strategy was webinar (3.5).

The ANOVA analyses indicate that the mean scores of two instructional strategies are significantly different from the others when looked at by type of farm, namely conferences for producers ( $F=3, 363, p=.046$ ) and

representatives of agriculture supply companies ( $F=3, 382, p=.008$ ). Though a low practical significance exists, the mean score of crop farmers ( $M=5.0, SD=1.57$ ) was statistically higher than the respective scores of the livestock farmers ( $M=4.5, SD=1.77$ ). The mean scores in Table 15 indicated there was also a significant

Table 15. Instructional Preferences of Farmers by Type of Operation

	Type of Farm				ANOVA		
	Total	Crop	Livestock	Crop and Livestock	$F$ ( $df_b, df_w$ )	$P$	$\eta^2$
	$N= 391$	$n= 218$	$n= 74$	$n= 99$			
Individualized in-person with instructor	5.8 1.47	5.8 1.54	6.1 1.29	5.7 1.43	1.51 (3, 363)	.21	
Hands on learning activities	5.3 1.47	5.2 1.52	5.3 1.55	5.4 1.34	1.63 (3, 363)	.60	
Demonstrations	5.0 1.48	5.1 1.43	4.7 1.71	5.0 1.38	1.58 (3, 369)	.19	
FBM instructors with specialty knowledge	5.0 1.46	5.1 1.47	4.8 1.66	5.0 1.35	.73 (3, 377)	.54	
Other farmers	5.0 1.61	4.9 1.66	5.3 1.67	5.0 1.48	1.62 (3, 378)	.18	
Conferences for producers	4.9 1.59	5.0 1.57	4.5 1.77	4.9 1.47	2.70 (3, 366)	.046	.022
Guest speakers	4.9 1.44	4.9 1.43	4.6 1.71	4.9 1.29	1.97* (3, 363)	.14*	
Question and answer session	4.8 1.43	4.9 1.42	4.8 1.49	4.7 1.47	.75 (3, 372)	.52	
Events at a central location with featured speakers	4.7 1.56	4.9 1.57	4.5 1.60	4.6 1.57	1.41 (3, 369)	.24	
Field trips	4.7 <sup>1</sup> 1.58 <sup>2</sup>	4.7 1.58	4.6 1.66	4.7 1.49	.14 (3, 375)	.94	
Representatives of agriculture supply company	4.4 1.53	4.6 1.65	4.2 1.43	4.3 1.36	4.54* (3, 382)	.008	.016
Case study guided by instructor	4.3 1.66	4.4 1.66	4.3 1.84	4.2 1.57	.27 (3, 370)	.85	
Webinar	3.5 1.93	3.5 1.96	3.1 1.90	3.7 1.86	1.77 (3, 369)	.15	

Notes: <sup>1</sup>Scale: Mean score on a scale of 1 = Not preferred to 7 = Highly preferred. <sup>2</sup>Standard Deviation.

\*Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

difference between the instructional preferences for use of representatives of agriculture supply companies by crop farmers ( $M=4.6$ ,  $SD=1.65$ ) and livestock farmers ( $M=4.2$ ,  $SD=1.43$ ). Appendices B23-B26 detail the mean comparisons by age, region, type of operations and average annual sales. communication with instructor by telephone (5.0), and farm demonstration plots (5.0). Crop farmers ( $M=4.9$ ,  $SD=1.77$ ) showed a significantly higher preference than livestock farmers ( $M=4.1$ ,  $SD=1.91$ ) regarding electronic (or digital) materials delivered via e-mail or the Internet ( $F=3,383$ ,  $p=.006$ ). A significant difference also existed between livestock ( $M=4.2$ ,  $SD=2.01$ ) and crop and livestock farmers ( $M=5.1$ ,  $SD=1.76$ ) in their preferred use of email communications from instructors ( $F=4.01$ ,  $p=.008$ ). Crop and livestock farmers

**Instructional Media Preferences.** Table 16 shows the instructional media preferences of FBM producers. The top three preferences: printed materials (5.6),

*Table 16. Instructional Media Preferences of Farmers by Type of Farm*

	Type of Farm				ANOVA		
	Total <i>N</i> = 391	Crop <i>n</i> = 218	Livestock <i>n</i> = 74	Crop and Livestock <i>n</i> = 99	<i>F</i> ( <i>df</i> <sub>b</sub> , <i>df</i> <sub>w</sub> )	<i>P</i>	$\eta^2$
Printed materials	5.6 <sup>1</sup> 1.26 <sup>2</sup>	5.6 1.22	5.4 1.40	5.5 1.26	.45 (3, 383)	.72	
Communication with instructor by telephone	5.0 1.62	4.9 1.69	5.0 1.66	5.2 1.44	.41 (3,380)	.74	
Farm demonstration plots	5.0 1.44	5.1 1.41	4.7 1.63	4.9 1.38	1.67 (3,383)	.17	
Electronic (or digital) materials delivered via email or the internet	4.8 1.79	4.9 <sup>A</sup> 1.77	4.1 <sup>B</sup> 1.91	5.0 <sup>A</sup> 1.65	4.21 (3,383)	.006	.032
E-mail communications from instructor	4.7 1.83	4.7 <sup>AB</sup> 1.78	4.2 <sup>A</sup> 2.01	5.1 <sup>B</sup> 1.76	4.01 (3,378)	.008	.031
Informative newspaper columns prepared by instructor	4.6 1.55	4.5 1.53	4.4 1.60	4.6 1.56	1.60 (3,378)		
Sample problems/and or simulations	4.2 1.64	4.2 1.67	4.2 1.70	4.3 1.59	.15 (3,376)	.93	
The internet for information and class instruction	4.1 1.83	4.2 1.85	3.6 1.86	4.2 1.74	2.07 (3,376)	.10	
Online library of general information	3.8 1.82	3.8 1.77	3.6 1.85	3.9 1.90	.52 (3,375)	.67	
Online video library	3.7 1.78	3.7 1.75	3.6 1.87	3.7 1.79	.65 (3,372)	.59	

Notes: <sup>1</sup>Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation.

\* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

preferred the use of email communications to a greater extent than livestock farmers. The instructional media showing the least preferred among respondents was online video library-presentations (3.7). For comparisons and differences by regions of the state and age group, see Appendices B28 and B29.

## Related Factors Influencing Program Participation

**Barriers to Participation in Educational Programs Delivered by Colleges and Universities.** Table 17 shows the primary reasons farmers indicated for not participating in education and training opportunities sponsored by their local college or university. Overall, the top three barriers were: I am too busy to attend (67.3%), the time of day conflicts with my schedule (46.3%), and the distance to attend the event is too far (28.7%).

*Table 17. Barriers to Participation in Education and Training by Farm Type*

	Type of Farm							
	Total		Crops		Livestock		Crop and Livestock	
	404 <sup>1</sup>	%	218	%	74	%	100	%
I am too busy to attend	272 <sup>2</sup>	67.3 <sup>3</sup>	143 <sup>4</sup>	65.6	57	77.0	64	64.0
The time of day the events often conflicts with my schedule	187	46.3	82	37.6	44	59.5	55	55.0
The distance to attend the events is too far	116	28.7	52	23.9	28	37.8	33	33.0
I am not aware of the education events	74	18.3	47	21.6	8	10.8	15	15.0
Agricultural suppliers already provide the education	61	15.1	38	17.4	8	10.8	14	14.0
The education programs are not designed for my type of operation	50	12.4	17	7.8	14	18.9	17	17.0
The cost of registration is too high	49	12.1	21	9.6	15	20.3	13	13.0
I do not have time to complete related assignments	40	9.9	9	4.1	14	18.9	16	16.0
Similar events in the past have not provided sufficient information to justify attendance	34	8.4	20	9.2	6	8.1	8	8.0
The instruction does not meet my needs	31	7.7	13	6.0	7	9.5	10	10.0
I can usually find what I need to know on the Internet	27	6.7	16	7.3	4	5.4	6	6.0
I learn what I need to from family, friends, and other producers	24	5.9	12	5.5	7	9.5	5	5.0
The instruction does not provide for my preferred ways of learning	18	4.5	10	4.6	5	6.8	3	3.0

*Note:* <sup>1</sup>Total number of producers in the study (N=404). <sup>2</sup>Total number of farmers in the study who desire the respective training and education. <sup>3</sup>Percentage of total desiring education from corresponding type of farms. <sup>4</sup>Number of producers from corresponding type of farm.

**Distance and Willingness to Pay by Type of Farm.** The data in Table 18 reveal the average miles farmers are willing to travel to meetings and what they are willing to pay for workshops by type of farm. Farmers indicated that they would be willing to travel an average of 56.5 (SD=63.2) miles if an education program is applicable and relevant to them. The crop farmers (M=57.9, SD=76.7) had the highest mean mileage, followed by livestock (M=54.6, SD=41.1) and crop and livestock combined (M=53.1, SD=33.2).

*Table 18. Distance and Willingness to Pay by Type of Farm*

	Type of Farm				ANOVA	
	Total N= 391	Crop n= 218	Livestock n= 74	Crop and Livestock n= 99	F (df <sub>b</sub> , df <sub>w</sub> )	p
Total miles willing to travel to meeting	56.5 <sup>1</sup> 63.2 <sup>2</sup>	57.9 76.7	54.6 41.1	53.1 33.2	.57 (3, 368)	.64
Amount (\$) willing to pay for a year-round FBM program	1,305.4 704.8	1,294.3 665.9	1,211.6 744.08	1,445.0 753.4	2.12 (3, 339)	.10
Amount (\$) willing to pay for a half-day workshop	59.7 59.4	60.1 65.2	51.6 44.4	64.3 56.8	.70 (3, 345)	.55
Amount (\$) willing to pay for a full-day workshop	99.2 87.5	98.7 88.1	87.5 89.2	106.2 85.7	.96 (3, 339)	.41

Notes: <sup>1</sup>Scale: Mean score on a scale of 1 = Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation.

**Related Information by Type of Farm.** Table 19 reveals responses according to the type of farm operation. Eighty-nine percent of FBM students indicated that they use the Internet in their home or farm business office. Crop farmers (92.7%) were the largest group of users, followed by crops and livestock farmers (90%) and livestock farmers (77.0%). Nearly 80% of FBM students (78.5%) reported having high-speed Internet in their home or farm business office; approximately 80% of crop and crop and livestock farmers have high-speed Internet; 67.6% of the livestock farmers indicated they have high-speed Internet. Nearly 93% (92.8%) of the producers said they would be re-enrolling in the Farm Business Management Education Program in FY2012.

Approximately 68% of producers stated that they are willing to attend between one and six workshops within the period August 2011 to June 2012, while 7.7% reported planning to attend approximately seven to nine workshops in the next 10 months. The crop farmers were listed among the highest in most workshop categories. Indicating their sources of choice for education and training in FY2012, an average of 63.6% of all producers indicated Minnesota State Colleges and Universities and agricultural suppliers as their top one and two choices respectively. This was demonstrated across all farm types. Private agricultural consultants (31.4%)

and government agencies (27.0%) were at the bottom for providers of education and training across all farm types. Appendices B34-36 show comparisons by average total farm sales, regions of the state, and farm types.

*Table 19. Related Information by Type of Farm*

	Total		Type of Farm					
			Crop		Livestock		Crop & Livestock	
	N= 404	%	n= 218	%	n= 74	%	n= 100	%
Internet	360	89.1	202	92.7	57	77.0	90	90.0
High-speed internet	317	78.5	178	81.7	50	67.6	80	80.0
Will enroll in the FBM program	375	92.8	201	92.2	70	94.6	93	93.0
No. workshops in next 10 months								
1-3	192	47.5	99	45.4	35	47.3	52	52.0
4-6	83	20.5	43	19.7	15	20.3	22	22.0
0	48	11.9	28	12.8	8	10.8	11	11.0
7-9	20	5.0	13	6.0	4	5.4	2	2.0
>9	11	2.7	8	3.7	1	1.4	2	2.0
Providers of education & training								
MN State Colleges and Universities	<b>261</b>	<b>64.6</b>	<b>135</b>	<b>61.9</b>	<b>47</b>	<b>63.5</b>	<b>70</b>	<b>70.0</b>
Agricultural Suppliers (Credit, feed, seed, insurance, equipment, etc.)	<b>253</b>	<b>62.6</b>	<b>138</b>	<b>63.3</b>	<b>40</b>	<b>54.1</b>	<b>66</b>	<b>66.0</b>
Extension Service	<b>137</b>	<b>33.9</b>	<b>76</b>	<b>34.9</b>	<b>20</b>	<b>27.0</b>	<b>35</b>	<b>35.0</b>
Crop &/or livestock commodity orgs.	135	33.4	79	36.2	17	23.0	34	34.0
Private agricultural consultants	127	31.4	74	33.9	17	23.0	34	34.0
Government agencies (FSA, NRCS, MPCA, etc.)	109	27.0	60	27.5	16	21.6	29	29.0

## SECTION III

### CONCLUSIONS AND RECOMMENDATIONS

The primary conclusions and a sampling of recommendations for each of the analyses are addressed in this section. Further review of the data will ensure that additional suggestions for delivering programs will emerge to better meet the needs of Minnesota farmers.

*Table 20. Conclusions and Recommendations*

Conclusions	Recommendations
<b>Business Characteristics and Management Education Needs of FBM Farmers</b>	
1. Farmers enrolled in the Minnesota Farm Business Management Education Program use the FBM instructor more than any other vendor for assisting in being or becoming successful business owners.	<p>1.1 Noting the value of the benchmark data secured from farmer records used by government agencies, researchers, educators, and the agriculture industry; the economic impact of successful farm businesses upon local communities and the state; and the importance of the FBM instructor upon the success of producers' businesses, the FBM program must be supported and remain accessible to Minnesota farmers.</p> <p>1.2 There are a large number of vendors who assist farmers who should be partners with education providers. Together they should design and deliver pertinent, effective, and timely education for producers.</p>
2. Minnesota has diverse population of crop, crop and livestock, and livestock farmers enrolled in the Minnesota Farm Business Management Education Program.	2.1 Education providers need to recognize the varied forms of business, type of farming operations, average annual total farm sales, education, and age of the farmers when designing and delivering business and production management education.
3. Farmers enrolled in the FBM program look to their FBM instructor as their primary vendor to assist them in operating their farm businesses.	3.1 Farmer access to readily available and highly qualified FBM instructors is important for the success of farm business owners enrolled in the FBM program.
4. FBM farmers look primarily to Farm Business Management instructors, tax preparation services, agricultural lenders, veterinary services, and crop and soils consultants for assistance in operating their farm businesses.	4.1 Education and training providers should ensure that their programs continue to meet producer needs by inviting input and/or partnering with the major vendors when designing and delivering education programs.

5. While cash crop, livestock sales, and contracts are the most common methods of marketing used by FBM farmers, many also use a variety of other commodity futures-based and digital approaches to marketing.
- 5.1 Since there are a variety of traditional and innovative marketing options, education providers and partners need to ensure adequate education is provided to targeted groups of farmers using their preferred delivery methods, instructional methods, and instructional media.
6. There is a substantial demand for foundational and advanced business management education among farmers enrolled in the FBM program.
- 6.1 Education and training providers and partners should establish a systematic multi-year approach to delivering foundational, advanced, and continuing education addressing a variety of business management topics.
7. There is sufficient demand for programs that address hot topics within business management education.
- 7.1 Education providers and partners need to design and deliver courses, seminars, and programs that focus on the hot topics identified by farmers (i.e., creating a marketing plan, estate planning options, and implementing a comprehensive record, etc.)

#### **Crop Production Management Education Needs of FBM Farmers**

1. A large share of producers for each of the major crops expressed interest in production management education.
- 1.1 Since a large number of producers have expressed interest, education providers and partners should offer production management education for key production topics.
2. Producers of the major crops (corn, soybeans, alfalfa, wheat, and other hay) have production management education interests concerning specific production topics.
- 2.1 Education providers and partners should utilize the data from this study to confirm producers' educational interests in production management for the major crops prior to offering high quality production management instruction.
3. The majority of producers of the major crops have expressed definite interest in production management education for selected topics.
- 3.1 Education providers and partners should leverage the expertise of their technical staff to develop programs using traditional and Internet-based technologies for teaching the crop production management topics specifically designated as being of interest to FBM students.

#### **Livestock Production Management Education Needs of FBM Farmers**

1. A large share of producers for each of the major classes of livestock expressed interest in production management education.
- 1.1 Since a large number of livestock producers have expressed interest, education providers and partners should offer production management education instruction for key production topics of the major classes of livestock as documented in this study.



- 
- |   |  |
|---|--|
| <p>2. There are a large number of farmers who raise beef, dairy, and hogs who desire production management education for both common and unique production topics.</p> <p>3. The majority of producers of the major livestock groups have definite interest in production management education for selected topics.</p> | <p>2.1 Education providers and partners should use data documented in this study to carefully plan local, regional, and state programming to ensure that the livestock producer education needs are met.</p> <p>3.1 Education providers and partners should leverage the expertise of their technical staff to develop programs using traditional and Internet-based technologies for teaching the livestock production management topics specifically designated of interest to FBM students.</p> |
|---|--|

### **Employee Training Needs of FBM Farmers**

- |   |  |
|---|--|
| <p>1. A large proportion of respondents expressed the need for employability, mechanical, livestock-related and/or business education and training for their employees.</p> | <p>1.1 Educational providers and their partners need to take advantage of this interest in employee training to design and deliver training for the employees of thousands of Minnesota farmers.</p> |
|---|--|

### **Education and Training Delivery Preferences of FBM Farmers**

- |   |   |
|---|---|
| <p>1. Respondents from all types of farms learn in many different ways based on their level of experience, education, personal differences, and locale.</p> <p>2. Minnesota farmers enrolled in the Farm Business Management Education Program have a number of preferred and less preferred program delivery options.</p> <p>3. Minnesota farmers enrolled in the Farm Business Management Education Program have a number of preferred and less preferred instructional methods and strategies.</p> | <p>1.1 Providers of education and training should change or reinforce their teaching methods and educational experiences to align with the learning characteristics and preferences of their farmers.</p> <p>2.1 Education providers and partners should develop methods of delivering education and training to students based on their stated delivery preferences.</p> <p>2.2 Education providers and partners should continue to introduce and demonstrate a range of proven delivery approaches even if they are less preferred.</p> <p>3.1 Education providers and partners should develop methods of teaching producers based on their preferred instructional methods and strategies.</p> <p>3.2 Education providers and partners should continue to introduce and demonstrate a range of proven but less preferred instructional methods and strategies.</p> |
|---|---|
-

- 
- |   |   |
|---|---|
| <p>4. Farmers enrolled in the Minnesota Farm Business Management Education Program have specific preferences concerning instructional media for learning.</p> | <p>4.1 Education providers and partners should teach producers enrolled in the Farm Business Management Program using their preferred instructional media.</p>  |
|   | <p>4.2 Since methods of learning and communication continue to change, educational providers and instructors should incorporate new technologies into their teaching to ensure the preferences of this increasingly diverse group of farmers are met.</p> |

### **Barriers to Education and Training Participation**

- |  |   |
|--|---|
| <p>1. There are common barriers to education and training that prevent a large number of farmers from participating in education opportunities delivered by colleges and universities.</p> | <p>1.1 Education and training providers need to design, market, and deliver education and training programs that address barriers and effectively meet the needs of farmers at their convenience.</p> |
|--|---|

### **Related Factors influencing Program Participation**

- |   |  |
|---|--|
| <p>1. Regardless of the type of farm (crop, crop and livestock, or livestock), Minnesota farmers are willing to travel about 25-30 miles each way to attend education events.</p>                             | <p>1.1 Education and training providers must deliver educational programs at sites that limit travel distance and time for the producers.</p>  |
| <p>2. Farmers have a specific range of prices they are willing to pay for one-half and full-day sessions and year-long business management education programs.</p>  | <p>2.1 Education providers need to assess and carefully consider the price points of farmers when designing and delivering farm business and production management education programming.</p>  |
| <p>3. Nearly 95% of farmers enrolled in the Farm Management Education program have Internet access, and over 80% have access to high-speed Internet.</p>  | <p>3.1 Since high-speed access to the Internet is a limited barrier for most FBM students, education providers should pilot and regularly deliver instruction and training via the Internet to FBM students and their employees.</p> |
| <p>4. Ongoing business management education is important to FBM students, as is evidenced by nearly 93% of farmers planning to re-enroll in the FBM program and to attend workshops in the upcoming year.</p> | <p>4.1 Education providers can count on producer enrollment in a business management education program that meets producer needs.</p>  |

### **Providers of Education and Training**

- |  |  |
|--|--|
| <p>1. The Minnesota State Colleges and Universities System is the primary provider of education and training for farmers who are enrolled in the FBM program (and their employees) in FY 2012.</p> | <p>1.1 The MnSCU system colleges need to continue to provide farm business and production management education to farmers if they are to continue to be the preferred provider of education for farmers enrolled in the FBM Program.</p> |
|--|--|
-

## SECTION IV

### REFERENCES

- Baharanyi, N. and R. Zabawa. 1996. "The Small Farmer and Social Issues." Proceedings of the 1996 Small Farms Conference. Nashville, TN.
- Franz, N., et. al. (2010). How Farmers Learn: Implication for Agricultural Educators. *Journal of Rural Social Sciences*, 25(1), 2010, pp. 37–59.
- Gaul, S., Hochmuth, R.C., Israel, G.D., & Tredewell, D. (2009). Characteristics of small farm operators in Florida: Economics, demographics, and preferred information channels and sources. (WCO88). Gainesville: Department of Agricultural Education and Communication, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Retrieved on March 15, 2011, from <http://edis.ifas.ufl.edu/wc088>.
- Israel, G.D. & Wilson, K.M. (2006). Sources and channels of information used by educational program clients. *Journal of Applied Communications* 90(4): 55–78. Retrieved on March 31, 2011, from [http://www.aceweb.org/archsite/JAC/pdf/JAC\\_pdfs/JAC9004/JAC9004\\_RS03.pdf](http://www.aceweb.org/archsite/JAC/pdf/JAC_pdfs/JAC9004/JAC9004_RS03.pdf).
- Joerger, R. M., Ipe, M., & Persons, E. (2000). An investigation of the nature, effectiveness, and impact of the Minnesota farm business management education program: The final report. College of Agriculture, Food, and Environmental Sciences, University of MN: St. Paul.
- Minniti, M. (with Bygrave, W.D., & Autio, E). (2005). Global Entrepreneurship Monitor 2005 Executive Report. Babson College, MA: USA, p.24.
- Senf, D., Maki, W., & Houck, J. P. (2008). *The Economic Importance of Minnesota's Food and Agriculture Industry*. St. Paul, MN: Department of Agricultural and Applied Economics, University of Minnesota.
- Tubene, S. and J. Hanson. 2002. "The Wholesale Produce Auction: An Alternative Marketing Strategy for Small Farms." *American Journal of Alternative Agriculture* 17(1):18–23.
- United States Department of Agriculture.(1996). *Food consumption, prices, and expenditures, 1996*. Economic Research Service.SB 928.
- Vergot, P., Israel, G.D., & Mayo, D.E. (2005). Sources and channels of information used by beef cattle producers in twelve counties of the Northwest Florida extension district. *Journal of Extension* 43(2). Retrieved on March 19, 2012 from <http://www.joe.org/joe/2005april/rb6.php>.

## APPENDIX A – Instrument

### Education Interests, Needs, and Learning Preferences of Minnesota Producers Survey

Dear Producer:

This survey is being conducted by the USDA, NASS, Minnesota Field Office with Funding from the Minnesota State Colleges & Universities for the education and benefit of farmers. Information about your operation will remain confidential and response to this survey is voluntary.

Thank you,

Richard M. Joerger, PhD  
System Director for Agriculture, and Business Program Coordination  
Minnesota State Colleges & Universities – Office of the Chancellor

Ron Dvergsten, Coordinator and Regional Dean of Management Education  
Northland Community College

[Please verify name and mailing address of this operation. Make corrections (including the correct operation name) on the label and continue.]

### Section 1. Background Information

*Instructions:* Please mark or insert a written response for each of the following questions.

1. What is your primary role in your farm business?  
0001  

<input type="checkbox"/> <sup>1</sup> Owner and operator	<input type="checkbox"/> <sup>2</sup> Spouse of the primary owner and operator
<input type="checkbox"/> <sup>3</sup> Business partner – family member	<input type="checkbox"/> <sup>4</sup> Business partner – non-family member
<input type="checkbox"/> <sup>5</sup> Other Roles: (Please specify): _____	
  
2. Place a check by the primary operator(s) of your farm. (Mark all that apply)  

<input type="checkbox"/> <sup>0002</sup> You	<input type="checkbox"/> <sup>0003</sup> Your spouse	<input type="checkbox"/> <sup>0004</sup> Your business partner(s)
<input type="checkbox"/> <sup>0005</sup> Other (Please specify): _____		
  
3. The farm I operate and/or am affiliated with uses the following vendors to assist the operation. (Mark all that apply.)  

<input type="checkbox"/> <sup>0006</sup> Livestock marketing advisor(s)	<input type="checkbox"/> <sup>0007</sup> Tax preparation service
<input type="checkbox"/> <sup>0008</sup> Crop marketing advisor(s)	<input type="checkbox"/> <sup>0009</sup> Business accounting service
<input type="checkbox"/> <sup>0010</sup> Bankers	<input type="checkbox"/> <sup>0011</sup> Lawyer
<input type="checkbox"/> <sup>0012</sup> Farm Business Manager Educator(s)	<input type="checkbox"/> <sup>0013</sup> Marketing specialist for value-added functions
<input type="checkbox"/> <sup>0014</sup> Crop consultant	<input type="checkbox"/> <sup>0015</sup> Retirement specialist
<input type="checkbox"/> <sup>0016</sup> Livestock consultant	<input type="checkbox"/> <sup>0017</sup> Nutrition consultant
<input type="checkbox"/> <sup>0018</sup> Veterinary service)	<input type="checkbox"/> <sup>0019</sup> Other farmers who have similar operations
<input type="checkbox"/> <sup>0020</sup> Other(s) (Please specify): _____	
  
4. Which of the following best describes the form of your farm business? <sup>0021</sup>  

<input type="checkbox"/> <sup>1</sup> Sole proprietorship	<input type="checkbox"/> <sup>2</sup> Corporation (LLC, C, or other)	<input type="checkbox"/> <sup>3</sup> Legal Partnership
<input type="checkbox"/> <sup>4</sup> Other (Please specify): _____		

5. How many years have you been involved in farming as a part or full owner of a farm? Please enter a number.  
0022 \_\_\_\_\_

6. In what county is your farm located (primary county)? \_\_\_\_\_ 0023

7. What is the average annual total farm sales (including government payments) for your farming operations? 0024

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> <sup>1</sup> < \$10,000          | <input type="checkbox"/> <sup>2</sup> \$10,000-\$24,999       | <input type="checkbox"/> <sup>3</sup> \$25,000-\$49,999   |
| <input type="checkbox"/> <sup>4</sup> \$50,000-\$99,999   | <input type="checkbox"/> <sup>5</sup> \$100,000-\$249,999     | <input type="checkbox"/> <sup>6</sup> \$250,000-\$499,999 |
| <input type="checkbox"/> <sup>7</sup> \$500,000-\$999,999 | <input type="checkbox"/> <sup>8</sup> \$1,000,000-\$2,499,999 | <input type="checkbox"/> <sup>9</sup> > \$2,500,000       |

8. Which of the following crop enterprises do you have on your farm? (Please mark all that apply).

- |  |   |   |  |
|--|---|---|--|
| <input type="checkbox"/> <sup>0025</sup> Alfalfa and/or mixed hay                            | <input type="checkbox"/> <sup>0026</sup> Barley     | <input type="checkbox"/> <sup>0027</sup> Canola   | <input type="checkbox"/> <sup>0028</sup> Corn        |
| <input type="checkbox"/> <sup>0029</sup> Wheat   | <input type="checkbox"/> <sup>0030</sup> Oats       | <input type="checkbox"/> <sup>0031</sup> Soybeans | <input type="checkbox"/> <sup>0032</sup> Sugar beets |
| <input type="checkbox"/> <sup>0033</sup> Fruits  | <input type="checkbox"/> <sup>0034</sup> Vegetables |   |  |
| <input type="checkbox"/> <sup>0035</sup> Other Crops and Vegetables: (Please specify): _____ |   |   |  |

9. Which of the following livestock and/or poultry enterprises do you have on your farm? (Please mark all that apply)>

- |   |  |   |  |  |
|---|--|---|--|--|
| <input type="checkbox"/> <sup>0036</sup> Beef   | <input type="checkbox"/> <sup>0037</sup> Dairy   | <input type="checkbox"/> <sup>0038</sup> Hogs     | <input type="checkbox"/> <sup>0039</sup> Sheep | <input type="checkbox"/> <sup>0040</sup> Goats |
| <input type="checkbox"/> <sup>0041</sup> Horses   | <input type="checkbox"/> <sup>0042</sup> Turkeys | <input type="checkbox"/> <sup>0043</sup> Chickens | <input type="checkbox"/> <sup>0044</sup> Geese |  |
| <input type="checkbox"/> <sup>0045</sup> Other Livestock and Poultry: (Please specify): _____ |  |   |  |  |

10. Which of the following best describes your farming operation (select the category for which you obtain 70% or more of your gross sales.)  
0046

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> <sup>1</sup> Crops                 | <input type="checkbox"/> <sup>2</sup> Crops and Livestock | <input type="checkbox"/> <sup>3</sup> Livestock                     | <input type="checkbox"/> <sup>4</sup> Custom Work |
| <input type="checkbox"/> <sup>5</sup> Fruits /or vegetables | <input type="checkbox"/> <sup>6</sup> Specialty crops     | <input type="checkbox"/> <sup>7</sup> Other (Please specify): _____ |   |

11. Which of the following types(s) of farming best describes your operation? (Please mark all that apply).

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> <sup>0047</sup> Conventional | <input type="checkbox"/> <sup>0048</sup> Certified Organic | <input type="checkbox"/> <sup>0049</sup> Organic Transitional                     |
| <input type="checkbox"/> <sup>0050</sup> Sustainable  | <input type="checkbox"/> <sup>0051</sup> Grass Based       | <input type="checkbox"/> <sup>0052</sup> Organic (uncertified organic procedures) |

12. What types of marketing strategies are you using in your farm business during 2011? (Please mark all that apply).

- |  |  |
|--|--|
| <input type="checkbox"/> <sup>0053</sup> Crops – cash sales                        | <input type="checkbox"/> <sup>0054</sup> Direct marketing of meat  |
| <input type="checkbox"/> <sup>0055</sup> Crops – commodity futures market          | <input type="checkbox"/> <sup>0056</sup> Value-added approaches to marketing (i.e., processed meats, milk, grains, and other produce for food and/or energy) |
| <input type="checkbox"/> <sup>0057</sup> Crops – contracts                         | <input type="checkbox"/> <sup>0059</sup> Internet-based product marketing  |
| <input type="checkbox"/> <sup>0058</sup> Livestock – cash sales                    | <input type="checkbox"/> <sup>0061</sup> Product marketing using social media (i.e., Facebook, Twitter, e-mail, etc.)  |
| <input type="checkbox"/> <sup>0060</sup> Livestock – commodity futures market      | <input type="checkbox"/> <sup>0063</sup> Traditional advertising – newspaper, radio, or TV   |
| <input type="checkbox"/> <sup>0062</sup> Livestock – contracts                     |  |
| <input type="checkbox"/> <sup>0064</sup> Direct marketing of fruits and vegetables |  |
| <input type="checkbox"/> <sup>0065</sup> Other(s) (Please specify): _____          |  |

## Section 2. Farm Business Management Education Interests and Needs

13. Indicate your interest in education or training for the following business management topics by selecting FOUNDATIONAL if you have interest in learning or re-learning introductory concepts and skills. Select ADVANCED for learning intermediate or advanced concepts and skills. Select NI if you do not have interest in education or training for this topic.

		Foundational	Advanced	NI
Establishing business, family, and personal goals	0066	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Evaluating and selecting the best business structure model(s) for your business	0067	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Implementing a comprehensive recordkeeping system (i.e., business records, finance, livestock and crop production records, equipment records, environmental records)	0068	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Complete an annual farm business analysis that provides liquidity, solvency, profitability, efficiency, production information and other measures of your farm with benchmark data	0069	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Using the annual farm business analysis reports for making farm business decisions	0070	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Developing current crop &/or livestock enterprise budgets which include break even calculations	0071	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Using the current crop &/or livestock enterprise budgets to develop an annual cash flow plan	0072	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Determining the capital and corresponding credit needs of the business (i.e., buildings, land, and equipment)	0073	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Selecting the best options for acquiring and financing farm capital assets (land, buildings, equipment, livestock, etc.)	0074	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Preparing financial statement and other documents commonly used for securing capital (i.e., balance sheets, cash flow, income statements, planning documents)	0075	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Creating a farm business plan	0076	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Exploring estate planning options	0077	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Exploring business transition options (e.g., changing or adding enterprises, etc.)	0078	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Hiring, managing, evaluating, and terminating the employment of business employees	0079	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Creating a marketing plan	0080	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Using the commodity markets to increase profits and minimize risk	0081	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Evaluating tax management strategies	0082	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Evaluating the impact of personal retirement plans on tax liability	0083	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Implementing a comprehensive risk management assessment plan for the farm and non-farm operations (i.e., marketing, insurance, environmental, etc.)	0084	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Identifying new technologies needed to remain competitive	0085	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Developing written and verbal skills for communicating with business and family members, agricultural suppliers, lenders, and other professionals	0086	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Identifying the business benefits of membership in farm and community organizations	0087	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Evaluating the benefits of serving in leadership positions of farm and community organizations	0088	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

14. Selected from the above list or elsewhere, list up to three "Hot" BUSINESS MANAGEMENT TOPICS for which you have the greatest education need.

a. \_\_\_\_\_ 0089 b. \_\_\_\_\_ 0090 c. \_\_\_\_\_  
 \_\_\_\_\_ 0091

### Section 3. Crops Production Management Education Interests and Needs

First of all, if you have an interest in learning more about crop production, indicate so in the next question. Then insert the name of the top two crops (Crop Title I and Crop Title II) you would like to learn more about in production management classes, workshops, or other events.

15. Do you currently grow or plan on growing crops on your farm: 0092  
☐ 1 Yes ☐ 2 No, please proceed to Section 4 on page 5.

16. Insert the name of the first crop you would like to learn more about as  
 CROP TITLE I. (For Example, Crop Title I is soybeans)----->

17. Insert the title of the second crop you would like to learn more about as  
 CROP TITLE II. (For Example, Crop Title II may be wheat)----->

18. INSTRUCTIONS: Mark the boxes under Crop I and Crop II for the listed  
 production management topics for which you would like additional education.

		Crop Title I ↓	Crop Title II ↓
		0093	0094
		→	→
PRODUCTION MANAGEMENT TOPICS:		↓	↓
Facilities Design, Management &/or Maintenance	0095	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Food Safety	0096	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Handling and Storage	0097	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Harvesting	0098	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Machinery Selection and Maintenance	0099	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Marketing	0100	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Pest Management	0101	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Planting	0102	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Precision Farming	0103	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Soil Conservation	0104	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Soil Fertility and Management	0105	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Variety Selection	0106	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Water Management	0107	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Government Programs (i.e., FSA & NRCS, Labor Regulations, etc.)	0108	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Environmental Programs (i.e., EPA, MPCA, NRCS, etc.)	0109	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Other: (Please specify) _____	0110	<input type="checkbox"/> 1	<input type="checkbox"/> 2

19. Selected from the above list or elsewhere (research, farm magazines, guest speakers, etc.) list up to two PRODUCTION MANAGEMENT "Hot" topics you need to be informed about for your Crop Title I (See Question 16).

\_\_\_\_\_ 0111 b. \_\_\_\_\_ 0112

20. Selected from the above list or elsewhere list up to two PRODUCTION MANAGEMENT "Hot" topics you need to be informed about for your Crop Title II (See Question 17).

0113 b.

0114

## Section 4. Livestock Production Management Education Interests and Needs

First, if you have an interest in learning more about livestock production, indicate so in the next question. Then insert the name of the top two species or classes of livestock (Livestock I and Livestock II) you would like to learn more about in production management classes, workshops, or other events.

21. Do you currently raise or plan on raising livestock on your farm? <sup>0115</sup>  
☐ <sup>1</sup> Yes ☐ <sup>2</sup> No, please proceed to Section 5, Question 27

22. Insert the name of your first LIVESTOCK SPECIES OR CLASS of LIVESTOCK for which you would like to learn more as Livestock I. (An example may be "dry cows" or "gestating sows", etc.) ----->

23. Insert the title of the second LIVESTOCK SPECIES OR CLASS of LIVESTOCK you would like to learn more about as Livestock II.----->

24. INSTRUCTIONS: Mark the boxes under Livestock I and Livestock II for the listed production management topic for which you would like additional education.

		Species or Class of Livestock I ↓	Species or Class of Livestock I ↓
		0116	0117
		↓	↓
PRODUCTION MANAGEMENT TOPICS:			
Basic Animal Husbandry Practices	0118	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Breeding and Selection	0119	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Equipment Selection	0120	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Facilities Selection, Design, Management and/or Maintenance	0121	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Feed Selection, Formulation, and Management	0122	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Health and Basic Veterinary Care and Practices	0123	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Live Animal Handling	0124	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Marketing	0125	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Nutrition	0126	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Ventilation	0127	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Waste Handling Systems and Management	0128	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Government Programs (i.e., FSA & NRCS, Labor Regulations, etc.)	0129	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Environmental Programs (i.e., EPA, MPCA, NRCS, etc.)	0130	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Other: (please Please specify) _____	0131	<input type="checkbox"/> 1	<input type="checkbox"/> 2

25. Selected from the above list or elsewhere for your Class of Livestock I, list up to two PRODUCTION MANAGEMENT "Hot" topics you need to be informed about in the near future. (See Question 22)

a. \_\_\_\_\_ 0132 b. \_\_\_\_\_ 0133

26. Selected from the above list or elsewhere for your Class of Livestock or Species II, list up to two PRODUCTION MANAGEMENT "Hot" topics you need to be informed about in the near future. (See Question 23)

a. \_\_\_\_\_ 0134 b. \_\_\_\_\_ 0135

## Section 5. Employee Education Interests and Needs

27. Do you have hired employees on your farm? 0136 ☐ <sup>1</sup> Yes ☐ <sup>2</sup> No, please proceed to Question 29.



28. Insert the names of the education and training topics your paid or unpaid employees need to learn in order to be more effective employees. Examples include workplace safety or workplace behaviors (punctuality, attention to detail, cleanliness, communication skills, safety and health, equipment maintenance, etc.)

a. \_\_\_\_\_ 0137 b. \_\_\_\_\_ 0138

## Section 6. Producer Preferences for the Delivery of Education and Training Programs

29. Place a mark on the response which indicates your level of preference for the delivery of education and training programs.

Delivery Preferences		Highly Preferred					Not Preferred	
		7	6	5	4	3	2	1
Delivered at my business site	0139	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delivered at a host farm to a small group of farmers with similar educational needs	0140	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delivered on a college or university campus	0141	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delivered in a traditional classroom setting at an off-campus site (i.e., local community setting, business, government building)	0142	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delivered as a blend of face-to-face and online delivery	0143	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delivered as individualized instruction using video conferencing (Skype, or similar technology)	0144	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delivered totally online	0145	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delivered at farm organization meetings (i.e., commodity meetings)	0146	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify) _____	0147	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Section 7. Producer Preferences for Different Instructional Methods and Strategies

30. Select your level of preference for the listed approaches, strategies and methods of instruction.

Instructional Approaches and Methods		Highly Preferred					Not Preferred	
		7	6	5	4	3	2	1
Field trips	0148	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question and answer sessions	0149	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrations	0150	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conferences specifically designed for producers	0151	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hands-on learning activities	0152	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Individualized in-person instruction with an instructor	0153	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guest speakers	0154	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Events at a central location with featured speakers/industry experts	0155	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Webinar with one or more featured speakers (Note: a webinar is a presentation delivered over the internet to individual computers)	0156	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
One-to-one conversations with other farmers	0157	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Case studies guided by instructor &/or facilitator	0158	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Events which feature a number of instructors with specialty knowledge &/or skills (Farm business management and/or production)	0159	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Delivered by representatives of agriculture supply companies (feed, machinery, chemical, seed, facilities, etc.)	0160	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: (please Please specify)	0161	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Section 8. Preferred Instructional Media and Aids for Learning

31. Select your level of preference for the following instructional media and aids when you are in a learning situation.

Instructional Media and Aids		Highly Preferred					Not Preferred	
		7	6	5	4	3	2	1
Print materials (e.g., newsletters, research articles, market reports, fact sheets, etc.)	0162	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electronic (or digital) materials delivered via e-mail or the internet (e.g., newsletters, research articles, market reports, fact sheets, data summaries)	0163	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication with instructor by telephone	0164	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Farm demonstration plots	0165	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample problems and/or simulations	0166	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The internet for information and class instruction	0167	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E-mail communications from instructor	0168	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Informative newspaper columns prepared by instructor	0169	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online video library of presentations by featured speakers	0170	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online library of information provided by instructors	0171	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: (please Please specify) _____	0172	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

32. What are the primary reasons you do not participate in education and training and training opportunities sponsored by your local college and universities? (i.e., workshops, college courses, special speakers, etc.) *Please mark all that apply.*

- |  |   |
|--|---|
| <input type="checkbox"/> 0173 I am too busy to attend  | <input type="checkbox"/> 0174 The instruction does not meet my needs  |
| <input type="checkbox"/> 0175 The cost of registration is too high                             | <input type="checkbox"/> 0176 I do not have time to complete related assignments  |
| <input type="checkbox"/> 0177 The distance to attend the events is too far                     | <input type="checkbox"/> 0178 The instruction does not provide for my preferred ways of learning                        |
| <input type="checkbox"/> 0179 I am not aware of the education events                           | <input type="checkbox"/> 0181 I do not have time to complete related assignment   |
| <input type="checkbox"/> 0180 The time of day of the events often conflicts with my schedule   | <input type="checkbox"/> 0183 I learn what I need to from family, friends, and other producers                          |
| <input type="checkbox"/> 0182 Agricultural suppliers already provide the education             | <input type="checkbox"/> 0185 Similar events in the past have not provided sufficient information to justify attendance |
| <input type="checkbox"/> 0184 The education programs are not designed for my type of operation | <input type="checkbox"/> 0187 Other: (Please Specify):  |
| <input type="checkbox"/> 0186 I can usually find what I need to know on the internet           |   |

## Section 9. Related Information

33. Given an education program is applicable and relevant to you, how many total miles are you willing to travel? <sup>0188</sup>

34. Do you use the internet in your home or farm business office? <sup>0189</sup> ☐ 1 Yes ☐ 2 No

35. Do you have HIGH-SPEED internet in your home or farm business office? <sup>0190</sup> ☐ 1 Yes ☐ 2 No ☐ 3 I don't know

36. The amount of money I am willing to pay for a year-around education program (i.e., Mn FBM Program) which focuses upon the concepts, knowledge and skills which help me to better manage my farm is <sup>191</sup> \_\_\_\_\_ dollars.
37. The amount of money I am willing to pay for the registration fee for a quality 3 hour (1/2 day) workshop is <sup>0192</sup> \_\_\_\_\_ dollars.
38. The amount of money I am willing to pay for the registration fee for a quality 6-8 hour (full day) workshop is <sup>0193</sup> \_\_\_\_\_ dollars.
39. Do you currently plan on enrolling or re-enrolling in a year-around Farm Business Management Education Program such as offered through the Minnesota State Colleges and Universities? <sup>0194</sup> ☐<sup>1</sup> Yes ☐<sup>2</sup> No
40. An estimate of the number of workshops or seminars offered by colleges, universities, Extension Service and/or agricultural supply companies that you plan to attend from August 2011 through June 2012 is:  
<sup>195</sup> ☐<sup>1</sup> 0 ☐<sup>2</sup> 1-3 ☐<sup>3</sup> 4-6 ☐<sup>4</sup> 7-9 ☐<sup>5</sup> >9
41. Which institution, agencies and/or businesses will be the providers of agricultural education and training for you and your employees in the upcoming year? Please mark all that apply.

☐ <sup>0196</sup> Minnesota State Colleges and Universities

☐ <sup>0197</sup> Extension Service

☐ <sup>0198</sup> University of MN

☐ <sup>0199</sup> Crop &/or Livestock Commodity Organization(s)

☐ <sup>0200</sup> Agricultural Suppliers (Credit, feed, seed, insurance, equipment, etc.)

☐ <sup>0201</sup> Government Agencies (FSA, NRCS, MPCA, etc)

☐ <sup>0202</sup> Private Agricultural

☐ <sup>0203</sup> Other (Please \_\_\_\_\_)

## Section 10. Participant Information

42. What is the year of your birth? <sup>0204</sup> 19 \_\_\_\_\_
43. What is your sex? <sup>0205</sup> ☐<sup>1</sup> Male ☐<sup>2</sup> Female
44. Do you currently work part-time off the farm? <sup>0206</sup> ☐<sup>1</sup> Yes ☐<sup>2</sup> No
45. Do you work off the farm more than 20 hours per week? <sup>0207</sup> ☐<sup>1</sup> Yes ☐<sup>2</sup> No
46. Which is the highest level of education you completed? <sup>0208</sup>  
☐<sup>1</sup> 8<sup>th</sup> grade ☐<sup>2</sup> High School Graduate  
☐<sup>3</sup> 1 Yr College Degree, Diploma or Certificate ☐<sup>4</sup> 2 Yr College Degree, Diploma or Certificate  
☐<sup>5</sup> Bachelor's Degree (B.A./B.S.) ☐<sup>6</sup> Graduate Degree (Master's, Ph.D., Ed.D, J.D.)  
☐<sup>7</sup> Other (Please specify): \_\_\_\_\_
47. Are you of Spanish, Hispanic, or Latino origin or background, such as Mexican, Cuban or Puerto Rican, regardless of race? <sup>0209</sup> ☐<sup>1</sup> Yes ☐<sup>2</sup> No
48. What is your racial background? (select one or more):  
☐ <sup>0210</sup> American Indian or Alaskan Native ☐ <sup>0211</sup> Native Hawaiian or Other Pacific Islander ☐ <sup>0212</sup> White  
☐ <sup>0213</sup> Black or African American ☐ <sup>0214</sup> Asian

THANK YOU VERY MUCH FOR COMPLETING THIS ASSESSMENT!  
 Please enclose the questionnaire in the envelope and place in it the mail.  
 Richard M. Joerger, PhD, Minnesota State Colleges and Universities  
 St. Paul MN

## **APPENDIX B - TABLES - B1-B36**

# Appendix B1

Table 1. Characteristics of the Participants by Region and Farm Type

Example	Region of MN					Farm Type		
	Total	RRV	North	Central	South	Crops	Lvstk	Crops & Lvstk
No. of Farms	404	37	74	71	222	218	74	99
Primary Operators of the Farm	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Respondent	355	34	58	66	197	197	60	87
Spouse of Respondent	109	3	24	18	64	46	26	34
Partner	62	8	17	6	31	19	19	20
Other	22	1	6	6	9	10	6	5
Primary Role of the Respondent	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Owner and operator	320	30	54	57	179	190	48	75
Spouse of the primary owner and operator	32	0	6	9	17	10	11	10
Business partner-family member	43	5	12	4	22	12	15	12
Business partner – non –family member	3	1	2	0	0	2	0	0
Other:	4	0	0	0	4	3	0	1
Age								
M/SD	46.9/12.3	44.8/13.0	43.3/13.1	46.5/11.6	48.7/11.8	47.5/12.1	45.6/13.0	46.2/12.4
Sex	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Male/Female	387	34/2	61/9	61/9	184/27	210	69	96
Highest level of education completed	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
8 <sup>th</sup> grade	1	0	0	0	1	0	1	0
High School Graduate	103	7	23	15	58	52	23	24
1 Yr College Degree, Diploma or Certificate	51	2	13	5	31	27	10	12
2 Yr College Degree, Diploma or Certificate	145	15	25	33	72	78	22	39
Bachelor's Degree (B.A./B.S.)	70	12	6	14	38	42	12	16
Graduate Degree (M.A./M.S./M.Ed./PHD/EdD/I.D.)	4	0	2	1	1	4	0	0
Other	0	0	0	0	0	0	0	0
Work part-time off the farm	99	11	12	17	59	61	7	28
Work off the farm more than 20 hours per week	81	8	12	9	52	43	11	24
Spanish, Hispanic or Latino origin or background	1	0	0	0	1	0	0	1
Racial background	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
American Indian or Alaskan Native	2	1	1	0	0	2	0	0
Native Hawaiian or Other Pacific Islander	1	0	1	0	0	1	0	0
White	383	35	68	70	210	206	69	96
Black or African American	1	1	0	0	0	1	0	0
Asian	0	0	0	0	0	0	0	0

# Appendix B2

Table 2. Farm Business Characteristics

	Total	Region of MN				Farm Type			
		RRV	North	Central	South	Crops	Livestock	Crops & Livestock	
No. of Farms	404	37	74	71	222	218	74	99	
Form of Farm Business	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	
Sole Proprietorship	304	28	51	54	171	179	50	67	
Corporation (LLC or C)	44	4	5	9	26	20	9	15	
Legal Partnership	41	3	15	6	17	12	13	15	
Other:	9	1	3	1	4	4	2	2	
Years Involved in Ownership in Farming									
M	24.1	24.3	19.6	24.0	25.7	25.1	20.3	26.0	
SD	12.1	11.1	11.8	12.6	11.9	11.9	13.2	10.7	
Average Annual Farm Sales	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	
<\$10,000	1	0	0	0	1	0	0	0	
\$10,000-\$24,999	2	0	2	0	0	0	1	1	
\$25,000-\$49,999	7	0	1	0	6	5	0	1	
\$50,000-\$99,999	21	1	10	1	9	12	4	4	
\$100,000-\$249,999	73	4	14	15	40	36	16	19	
\$250,000-\$499,999	117	7	24	22	64	60	31	23	
\$500,000-\$999,999	105	11	10	21	63	68	12	25	
\$1,000,000-\$2,499,999	60	12	10	11	27	32	7	21	
>\$2,500,000	9	1	1	0	7	2	3	4	
Type of Farm Operation ( $\leq$ 70% of income)	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	
Crops	218	36	31	39	112	218	0	0	
Crops and Livestock	99	1	11	19	68	0	0	99	
Livestock	74	0	29	12	33	0	74	0	
Other	8	0	2	0	6	0	0	0	
Type of Production on Your Farm	<i>n</i>	<i>N</i>	<i>N</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	
Conventional	372	37	66	65	204	209	63	92	
Certified Organic	14	0	4	1	9	3	5	6	
Organic Transitional	2	0	1	1	0	0	1	1	
Sustainable	13	0	1	4	8	3	6	3	
Grass-based	7	0	2	3	2	1	4	2	
Organic (uncertified organic procedures)	0	0	0	0	0	0	0	0	

# Appendix B3

Table 3. Selected Vendors Used By the Farmer

	Type of Farm			Gross Sales (in \$000)							Region of MN			
	Total N=404	Crop n=218	Livestock n=74	Crop & Livestock n=99	\$ 0- 99.9K n=31	\$100- 249.99K n=73	\$250- 499.99K n=117	\$500 - 999.99K n=105	\$1M - 2.499K n=60	>\$2.5 M n=9	RRV n=37	North n=74	Central n=71	South n=222
Farm Business Manager Educator(s)	386	205	73	96	30	71	111	100	58	8	36	69	68	213
Tax preparation service	346	183	66	87	26	55	106	90	54	8	27	63	66	190
Bankers	342	187	63	79	24	59	103	91	51	8	34	59	61	188
Crop consultant	248	134	36	72	8	32	69	81	50	4	25	39	51	133
Crop marketing advisor(s)	181	117	7	52	10	22	43	64	35	5	18	19	32	112
Veterinary service	178	27	70	76	14	39	59	36	21	7	2	38	32	106
Other farmers who have similar operations	144	65	32	43	14	29	39	36	20	5	10	29	31	74
Nutrition consultant	138	11	59	65	5	24	46	35	22	5	2	30	31	75
Lawyer	128	65	19	40	6	16	29	33	35	6	12	21	22	73
Business accounting service	66	40	12	14	5	4	15	23	18	1	10	13	9	34
Livestock consultant	53	3	20	30	1	12	10	18	8	4	0	5	9	39
Livestock marketing advisor(s)	49	4	13	29	2	8	9	14	11	5	1	6	2	40
Retirement specialist	40	13	7	16	2	4	9	17	7	0	4	2	7	27
Marketing specialist for value-added functions	23	13	3	7	1	2	5	8	6	0	3	1	6	13
Other(s )	11	4	3	2	1	3	1	3	2	0	0	4	3	4

# Appendix B4

Table 4. Selected Marketing Strategies

	Type of Farm			Gross Sales						Region of MN			
	Crops n=218	Livestock n=74	Crops & Livestock n=99	\$0- 99.9K n=31	\$100- 249.99K n=73	\$250- 499.99 n=117	\$500 - \$999.9 n=105	\$1M - 2.49M n=60	>\$2.5 M n=9	RRV n=37	North n=74	Central n=71	South n=222
Vendors	Total n=404												
Crops – cash sales	336 n=204	35	91	21	56	98	94	57	7	36	52	60	188
Direct marketing of meat	23	4	10	6	5	3	4	4	1	0	3	3	17
Crops – commodity futures	158	3	38	6	13	35	58	37	7	23	20	23	92
Value-added approaches to marketing (i.e., processed meats, milk, grains, and other produce for food and/or energy)	14	4	8	1	1	4	6	2	0	1	1	2	10
Crops – contracts	284	185	74	20	45	77	85	48	4	29	35	48	172
Livestock – cash sales	178	31	76	11	43	59	36	22	7	3	38	27	110
Internet-based product marketing	8	4	0	2	1	0	4	1	0	0	3	0	5
Livestock – commodity futures market	32	1	17	0	3	5	12	9	3	0	5	3	24
Product marketing using social media (i.e., Facebook, Twitter, e-mail, etc.)	7	2	1	1	1	3	2	0	0	0	2	1	4
Livestock – contracts	61	5	29	3	7	16	16	13	5	1	9	11	40
Traditional advertising – newspaper, radio, or TV	6	0	2	1	2	3	0	0	0	0	2	0	4
Direct marketing of fruits and vegetables	4	3	1	0	2	1	0	1	0	0	1	0	3
Other:	9	2	4	0	0	2	4	2	0	0	1	2	6



## Appendix B5

Table 5. Foundational and Advanced Farm Business Management Education Needs of Minnesota Producers By Type of Farm and Farming Experience

		Type of Farm									Years of Farming Experience											
		Crops (N= 218)			Livestock (N= 74)			Crops & Livestock (N= 99)			1-10 (N= 72)			11-20 (N= 85)			21 and Above (N= 240)					
Education Topics		Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested			
	n	85	97	36	34	32	6	38	50	10	38	26	7	35	40	10	88	116	35			
Establishing goals	%	39.0	44.5	16.5	45.9	43.2	8.1	38.4	50.5	10.1	52.8	36.1	9.7	41.2	47.1	11.8	36.7	48.3	14.6			
Business structure	n	66	97	53	31	24	16	26	50	22	31	26	14	32	38	15	62	110	64			
	%	30.3	44.5	24.3	41.9	32.4	21.6	26.3	50.5	22.2	43.1	36.1	19.4	37.6	44.7	17.6	25.8	45.8	26.7			
Recordkeeping system	n	73	120	22	23	44	4	30	63	5	22	44	4	34	47	4	72	140	24			
	%	33.5	55.0	10.1	31.1	59.5	5.4	30.3	63.6	5.1	30.6	61.1	5.6	40.0	55.3	4.7	30.0	58.3	10.0			
Annual business analysis	n	67	137	13	17	53	1	24	70	4	22	46	1	23	57	5	65	161	12			
	%	30.7	62.8	6.0	23.0	71.6	1.4	24.2	70.7	4.0	30.6	63.9	1.4	27.1	67.1	5.9	27.1	67.1	5.0			
Business analysis	n	72	135	10	22	49	1	24	71	3	25	43	3	26	54	5	70	159	9			
	%	33.0	61.9	4.6	29.7	66.2	1.4	24.2	71.7	3.0	34.7	59.7	4.2	30.6	63.5	5.9	29.2	66.3	3.8			
Budgets, breakeven calculations	n	66	137	14	20	46	5	24	71	3	26	42	2	22	60	3	66	154	18			
	%	30.3	62.8	6.4	27.0	62.2	6.8	24.2	71.7	3.0	36.1	58.3	2.8	25.9	70.6	3.5	27.5	64.2	7.5			
Enterprise budgets- cash flow	n	69	130	17	20	47	4	24	71	3	25	43	2	21	59	5	70	150	17			
	%	31.7	59.6	7.8	27.0	63.5	5.4	24.2	71.7	3.0	34.7	59.7	2.8	24.7	69.4	5.9	29.2	62.5	7.1			
Capital and credit needs	n	65	131	19	21	45	5	24	70	3	32	34	4	23	58	4	58	157	20			
	%	29.8	60.1	8.7	28.4	60.8	6.8	24.2	70.7	3.0	44.4	47.2	5.6	27.1	68.2	4.7	24.2	65.4	8.3			
Financing capital assets	n	64	127	23	26	37	9	28	65	4	27	40	4	23	55	6	72	137	26			
	%	29.4	58.3	10.6	35.1	50.0	12.2	28.3	65.7	4.0	37.5	55.6	5.6	27.1	64.7	7.1	30.0	57.1	10.8			
Financial statements to secure capital	n	70	131	16	22	44	5	26	68	4	31	37	2	23	59	3	66	151	21			
	%	32.1	60.1	7.3	29.7	59.5	6.8	26.3	68.7	4.0	43.1	51.4	2.8	27.1	69.4	3.5	27.5	62.9	8.8			
Create a business plan	n	63	120	34	37	31	3	33	52	13	32	34	4	32	49	4	73	123	42			
	%	28.9	55.0	15.6	50.0	41.9	4.1	33.3	52.5	13.1	44.4	47.2	5.6	37.6	57.6	4.7	30.4	51.3	17.5			
Estate planning options	n	88	92	37	37	17	17	41	40	18	32	22	16	38	29	17	100	101	38			
	%	40.4	42.2	17.0	50.0	23.0	23.0	41.4	40.4	18.2	44.4	30.6	22.2	44.7	34.1	20.0	41.7	42.1	15.8			
Business transition options	n	69	86	62	30	18	22	38	37	23	31	24	15	29	29	27	78	93	66			
	%	31.7	39.4	28.4	40.5	24.3	29.7	38.4	37.4	23.2	43.1	33.3	20.8	34.1	34.1	31.8	32.5	38.8	27.5			
Personnel issues	n	54	48	115	25	16	30	39	20	39	30	19	21	25	18	42	66	50	122			

	%	24.8	22.0	52.8	33.8	21.6	40.5	39.4	20.2	39.4	41.7	26.4	29.2	29.4	21.2	49.4	27.5	20.8	50.8
Marketing plan	n	72	117	26	30	22	19	38	49	10	34	28	8	33	38	13	77	123	36
	%	33.0	53.7	11.9	40.5	29.7	25.7	38.4	49.5	10.1	47.2	38.9	11.1	38.8	44.7	15.3	32.1	51.3	15.0
Commodity markets	n	67	121	27	31	19	21	36	52	11	30	30	10	32	40	12	75	124	39
	%	30.7	55.5	12.4	41.9	25.7	28.4	36.4	52.5	11.1	41.7	41.7	13.9	37.6	47.1	14.1	31.3	51.7	16.3
Tax management strategies	n	83	119	14	34	32	5	32	61	4	35	31	4	34	45	6	83	140	13
	%	38.1	54.6	6.4	45.9	43.2	6.8	32.3	61.6	4.0	48.6	43.1	5.6	40.0	52.9	7.1	34.6	58.3	5.4
Retirement plans on tax liability	n	88	88	39	37	16	18	39	38	21	29	20	21	35	30	20	102	98	36
	%	40.4	40.4	17.9	50.0	21.6	24.3	39.4	38.4	21.2	40.3	27.8	29.2	41.2	35.3	23.5	42.5	40.8	15.0
Risk management assessment	n	79	93	43	40	18	13	39	47	12	37	23	10	36	35	14	89	105	42
	%	36.2	42.7	19.7	54.1	24.3	17.6	39.4	47.5	12.1	51.4	31.9	13.9	42.4	41.2	16.5	37.1	43.8	17.5
New technologies	n	83	109	24	32	36	4	37	54	7	38	31	2	35	45	5	80	128	29
	%	38.1	50.0	11.0	43.2	48.6	5.4	37.4	54.5	7.1	52.8	43.1	2.8	41.2	52.9	5.9	33.3	53.3	12.1
Communication skills	n	63	83	68	29	24	18	35	33	28	27	28	15	30	29	25	75	85	74
	%	28.9	38.1	31.2	39.2	32.4	24.3	35.4	33.3	28.3	37.5	38.9	20.8	35.3	34.1	29.4	31.3	35.4	30.8
Farm, community organization benefits	n	73	55	88	36	12	23	38	26	33	35	18	17	38	20	27	77	57	102
	%	33.5	25.2	40.4	48.6	16.2	31.1	38.4	26.3	33.3	48.6	25.0	23.6	44.7	23.5	31.8	32.1	23.8	42.5
Personal leadership benefits	n	61	57	96	35	8	27	29	28	40	35	15	20	29	22	34	65	58	110
	%	28.0	26.1	44.0	47.3	10.8	36.5	29.3	28.3	40.4	48.6	20.8	27.8	34.1	25.9	40.0	27.1	24.2	45.8

Note: Percentages reflect the number of respondents that selected Foundational, Advanced, or Not Interested from the total number of farmers for each Type of Farm/Years of Farming Experience Category

## Appendix B6

*Table 6. Foundational and Advanced Farm Business Management Education Needs of Minnesota Producers By Region of the State*

Education Topics		RRV (N= 37)			North (N= 74)			Central (N= 71)			South (N= 222)		
		Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested	Foundational	Advanced	Not Interested
Establishing goals	n	10	20	7	34	31	7	31	34	5	88	97	34
	%	27.0	54.1	18.9	45.9	41.9	9.5	43.7	47.9	7.0	39.6	43.7	15.3
Business structure	n	11	20	6	26	27	19	22	35	13	66	94	56
	%	29.7	54.1	16.2	35.1	36.5	25.7	31.0	49.3	18.3	29.7	42.3	25.2
Recordkeeping system	n	12	21	2	21	47	4	23	39	8	74	125	18
	%	32.4	56.8	5.4	28.4	63.5	5.4	32.4	54.9	11.3	33.3	56.3	8.1
Annual business analysis	n	8	27	2	20	49	3	19	48	3	65	140	11
	%	21.6	73.0	5.4	27.0	66.2	4.1	26.8	67.6	4.2	29.3	63.1	5.0
Business analysis	n	7	28	2	23	45	4	19	50	1	73	135	10
	%	18.9	75.7	5.4	31.1	60.8	5.4	26.8	70.4	1.4	32.9	60.8	4.5
Budgets, breakeven calculations	n	8	29	0	27	39	6	20	46	4	61	143	13
	%	21.6	78.4	0.0	36.5	52.7	8.1	28.2	64.8	5.6	27.5	64.4	5.9
Enterprise budgets- cash flow	n	8	27	1	23	44	5	20	44	6	68	137	12
	%	21.6	73.0	2.7	31.1	59.5	6.8	28.2	62.0	8.5	30.6	61.7	5.4
Capital and credit needs	n	9	27	1	29	38	5	20	42	8	57	142	15
	%	24.3	73.0	2.7	39.2	51.4	6.8	28.2	59.2	11.3	25.7	64.0	6.8
Financing capital assets	n	8	28	1	28	37	7	20	39	11	66	130	18
	%	21.6	75.7	2.7	37.8	50.0	9.5	28.2	54.9	15.5	29.7	58.6	8.1
Financial statements to secure capital	n	8	29	0	28	40	4	19	43	8	68	135	14
	%	21.6	78.4	0.0	37.8	54.1	5.4	26.8	60.6	11.3	30.6	60.8	6.3
Create a business plan	n	10	24	3	29	37	6	28	35	7	70	112	35
	%	27.0	64.9	8.1	39.2	50.0	8.1	39.4	49.3	9.9	31.5	50.5	15.8
Estate planning options	n	10	21	6	43	16	13	33	29	8	84	88	45
	%	27.0	56.8	16.2	58.1	21.6	17.6	46.5	40.8	11.3	37.8	39.6	20.3
Business transition options	n	6	17	14	36	17	19	22	25	22	75	88	54
	%	16.2	45.9	37.8	48.6	23.0	25.7	31.0	35.2	31.0	33.8	39.6	24.3
Personnel issues	n	7	18	12	22	14	36	19	21	29	73	35	110
	%	18.9	48.6	32.4	29.7	18.9	48.6	26.8	29.6	40.8	32.9	15.8	49.5

Marketing plan	<i>n</i>	9	25	2	33	26	13	25	27	17	79	112	25
	%	24.3	67.6	5.4	44.6	35.1	17.6	35.2	38.0	23.9	35.6	50.5	11.3
Commodity markets	<i>n</i>	9	24	2	27	24	21	26	32	12	77	115	26
	%	24.3	64.9	5.4	36.5	32.4	28.4	36.6	45.1	16.9	34.7	51.8	11.7
Tax management strategies	<i>n</i>	10	22	4	38	32	2	25	41	4	80	123	13
	%	27.0	59.5	10.8	51.4	43.2	2.7	35.2	57.7	5.6	36.0	55.4	5.9
Retirement plans on tax liability	<i>n</i>	10	20	6	35	17	19	31	29	10	90	83	44
	%	27.0	54.1	16.2	47.3	23.0	25.7	43.7	40.8	14.1	40.5	37.4	19.8
Risk management assessment	<i>n</i>	5	26	5	37	19	16	29	29	12	92	89	35
	%	13.5	70.3	13.5	50.0	25.7	21.6	40.8	40.8	16.9	41.4	40.1	15.8
New technologies	<i>n</i>	7	26	3	32	36	4	34	33	3	81	111	26
	%	18.9	70.3	8.1	43.2	48.6	5.4	47.9	46.5	4.2	36.5	50.0	11.7
Communication skills	<i>n</i>	8	19	8	26	24	22	27	25	18	71	76	67
	%	21.6	51.4	21.6	35.1	32.4	29.7	38.0	35.2	25.4	32.0	34.2	30.2
Farm, community organization benefits	<i>n</i>	10	15	11	29	18	25	25	17	28	86	47	83
	%	27.0	40.5	29.7	39.2	24.3	33.8	35.2	23.9	39.4	38.7	21.2	37.4
Personal leadership benefits	<i>n</i>	6	17	13	28	16	28	21	17	31	74	47	93
	%	16.2	45.9	35.1	37.8	21.6	37.8	29.6	23.9	43.7	33.3	21.2	41.9

Note: Percentages reflect the number of respondents that selected Foundational, Advanced, or Not Interested from the total number of farmers for each Region

## Appendix B7

*Table 7. Foundational and Advanced Farm Business Management Education Needs of Minnesota Producers By Gross Sales*

	\$0-99.9K (N= 31)				\$100-249.99K (n= 73)				\$250-\$499.99K (n= 117)				\$500 – \$999.9K (n= 105)				\$1M – 2.49M (n= 60)				>2.5M (n= 9)			
Education Topics		Foundational	Advanced	Not Interested		Foundational	Advanced	Not Interested		Foundational	Advanced	Not Interested		Foundational	Advanced	Not Interested		Foundational	Advanced	Not Interested		Foundational	Advanced	Not Interested
	n	16	11	4	32	27	14	15	41	51	12	18	35	7	2	6	1							
Establishing goals	%	51.6	35.5	12.9	43.8	37.0	19.2	12.8	39.0	48.6	11.4	30.0	58.3	11.7	22.2	66.7	11.1							
	n	14	10	7	23	26	23	28	33	49	20	13	33	14	3	4	2							
Business structure	%	45.2	32.3	22.6	31.5	35.6	31.5	23.9	31.4	46.7	19.0	21.7	55.0	23.3	33.3	44.4	22.2							
	n	10	18	3	27	40	6	9	32	62	8	15	38	6	5	4	0							
Recordkeeping system	%	32.3	58.1	9.7	37.0	54.8	8.2	7.7	30.5	59.0	7.6	25.0	63.3	10.0	55.6	44.4	0.0							
	n	8	21	2	25	42	5	5	26	72	5	18	40	2	1	8	0							
Annual business analysis	%	25.8	67.7	6.5	34.2	57.5	6.8	4.3	24.8	68.6	4.8	30.0	66.7	3.3	11.1	88.9	0.0							
	n	10	19	2	27	41	5	6	32	68	3	16	43	1	2	7	0							
Business analysis	%	32.3	61.3	6.5	37.0	56.2	6.8	5.1	30.5	64.8	2.9	26.7	71.7	1.7	22.2	77.8	0.0							
	n	8	19	4	25	42	6	5	32	66	5	15	42	3	1	8	0							
Budgets, breakeven calculations	%	25.8	61.3	12.9	34.2	57.5	8.2	4.3	30.5	62.9	4.8	25.0	70.0	5.0	11.1	88.9	0.0							
	n	7	22	2	30	38	5	4	29	65	9	17	38	4	0	9	0							
Enterprise budgets- cash flow	%	22.6	71.0	6.5	41.1	52.1	6.8	3.4	27.6	61.9	8.6	28.3	63.3	6.7	0.0	100.0	0.0							
	n	7	20	4	25	38	9	7	32	60	9	15	45	0	0	9	0							
Capital and credit needs	%	22.6	64.5	12.9	34.2	52.1	12.3	6.0	30.5	57.1	8.6	25.0	75.0	0.0	0.0	100.0	0.0							
	n	10	18	3	26	34	12	11	35	59	8	12	45	3	1	8	0							
Financing capital assets	%	32.3	58.1	9.7	35.6	46.6	16.4	9.4	33.3	56.2	7.6	20.0	75.0	5.0	11.1	88.9	0.0							
	n	9	20	2	29	37	7	5	35	59	9	13	44	3	1	8	0							
Financial statements to secure capital	%	29.0	64.5	6.5	39.7	50.7	9.6	4.3	33.3	56.2	8.6	21.7	73.3	5.0	11.1	88.9	0.0							
	n	11	16	4	25	33	15	12	38	53	12	11	41	8	2	7	0							
Create a business plan	%	35.5	51.6	12.9	34.2	45.2	20.5	10.3	36.2	50.5	11.4	18.3	68.3	13.3	22.2	77.8	0.0							
	n	17	9	5	32	26	15	22	41	44	18	15	36	9	3	3	3							
Estate planning options	%	54.8	29.0	16.1	43.8	35.6	20.5	18.8	39.0	41.9	17.1	25.0	60.0	15.0	33.3	33.3	33.3							

Business transition options	<i>n</i>	14	8	9	31	19	23	43	34	37	35	42	26	14	35	11	2	4	3
	%	45.2	25.8	29.0	42.5	26.0	31.5	36.8	29.1	31.6	33.3	40.0	24.8	23.3	58.3	18.3	22.2	44.4	33.3
Personnel issues	<i>n</i>	8	5	18	23	7	43	36	20	59	34	24	45	18	23	19	1	5	3
	%	25.8	16.1	58.1	31.5	9.6	58.9	30.8	17.1	50.4	32.4	22.9	42.9	30.0	38.3	31.7	11.1	55.6	33.3
Marketing plan	<i>n</i>	13	14	4	27	30	15	48	50	17	35	53	14	15	38	7	5	3	0
	%	41.9	45.2	12.9	37.0	41.1	20.5	41.0	42.7	14.5	33.3	50.5	13.3	25.0	63.3	11.7	55.6	33.3	0.0
Commodity markets	<i>n</i>	11	12	8	27	30	16	46	51	18	34	53	15	15	40	4	3	6	0
	%	35.5	38.7	25.8	37.0	41.1	21.9	39.3	43.6	15.4	32.4	50.5	14.3	25.0	66.7	6.7	33.3	66.7	0.0
Tax management strategies	<i>n</i>	13	17	1	31	38	3	54	58	3	37	57	9	13	40	6	4	4	1
	%	41.9	54.8	3.2	42.5	52.1	4.1	46.2	49.6	2.6	35.2	54.3	8.6	21.7	66.7	10.0	44.4	44.4	11.1
Retirement plans on tax liability	<i>n</i>	10	13	8	28	19	25	58	39	18	50	37	16	18	31	10	2	5	2
	%	32.3	41.9	25.8	38.4	26.0	34.2	49.6	33.3	15.4	47.6	35.2	15.2	30.0	51.7	16.7	22.2	55.6	22.2
Risk management assessment	<i>n</i>	16	11	4	35	20	18	57	40	17	37	47	19	14	36	9	3	5	1
	%	51.6	35.5	12.9	47.9	27.4	24.7	48.7	34.2	14.5	35.2	44.8	18.1	23.3	60.0	15.0	33.3	55.6	11.1
New technologies	<i>n</i>	11	17	3	33	32	8	52	52	12	43	53	7	11	43	5	3	5	1
	%	35.5	54.8	9.7	45.2	43.8	11.0	44.4	44.4	10.3	41.0	50.5	6.7	18.3	71.7	8.3	33.3	55.6	11.1
Communication skills	<i>n</i>	11	9	11	20	24	27	48	40	26	35	36	31	15	27	17	3	3	3
	%	35.5	29.0	35.5	27.4	32.9	37.0	41.0	34.2	22.2	33.3	34.3	29.5	25.0	45.0	28.3	33.3	33.3	33.3
Farm, community organization benefits	<i>n</i>	9	7	15	23	14	35	50	25	40	43	28	32	22	16	21	2	3	4
	%	29.0	22.6	48.4	31.5	19.2	47.9	42.7	21.4	34.2	41.0	26.7	30.5	36.7	26.7	35.0	22.2	33.3	44.4
Personal leadership benefits	<i>n</i>	10	6	15	23	12	35	42	25	48	35	27	40	16	19	24	2	4	3
	%	32.3	19.4	48.4	31.5	16.4	47.9	35.9	21.4	41.0	33.3	25.7	38.1	26.7	31.7	40.0	22.2	44.4	33.3

Note: Percentages reflect the number of respondents that selected Foundational, Advanced, or Not Interested from the total number of farmers for each Gross Sales Category

## Appendix B8

Table 8. Proportion of Foundational and Advanced Business Management Education Topics Desired by FBM Students by College

Total				College					
Topic	N= 404	Level	N	Central Lakes	MnWest	Northland	Ridgewater	Riverland	South Central
Establishing goals	398	Foundational	163	5	24	39	31	21	43
			41.00%	1.30%	6.00%	9.80%	7.80%	5.30%	10.80%
		Advanced	182	6	26	45	34	18	53
			45.70%	1.50%	6.50%	11.30%	8.50%	4.50%	13.30%
Business structure	395	Foundational	125	1	18	36	22	20	28
			31.60%	0.30%	4.60%	9.10%	5.60%	5.10%	7.10%
		Advanced	176	5	25	42	35	15	54
			44.60%	1.30%	6.30%	10.60%	8.90%	3.80%	13.70%
Recordkeeping system	394	Foundational	130	3	12	30	23	20	42
			33.00%	0.80%	3.00%	7.60%	5.80%	5.10%	10.70%
		Advanced	232	9	38	59	39	21	66
			58.90%	2.30%	9.60%	15.00%	9.90%	5.30%	16.80%
Complete a farm business analysis	395	Foundational	112	6	14	22	19	17	34
			28.40%	1.50%	3.50%	5.60%	4.80%	4.30%	8.60%
		Advanced	264	7	40	69	48	26	74
			66.80%	1.80%	10.10%	17.50%	12.20%	6.60%	18.70%
Business analysis for decision making	397	Foundational	122	6	17	24	19	17	39
			30.70%	1.50%	4.30%	6.00%	4.80%	4.30%	9.80%
		Advanced	258	7	38	66	50	26	71
			65.00%	1.80%	9.60%	16.60%	12.60%	6.50%	17.90%
Budgets and break-even	396	Foundational	116	8	15	27	20	14	32

analyses											
		29.30%	2.00%	3.80%	6.80%	5.10%	3.50%	8.10%			
Advanced		257	4	39	64	46	28	76			
		64.90%	1.00%	9.80%	16.20%	11.60%	7.10%	19.20%			
Enterprise budgets & cash flow	395	119	7	17	24	20	14	37			
	Foundational	30.10%	1.80%	4.30%	6.10%	5.10%	3.50%	9.40%			
	Advanced	252	5	36	66	44	28	73			
Capital and credit needs		63.80%	1.30%	9.10%	16.70%	11.10%	7.10%	18.50%			
	Foundational	115	5	16	33	20	11	30			
	Advanced	29.30%	1.30%	4.10%	8.40%	5.10%	2.80%	7.60%			
Financing capital assets		249	8	36	57	42	30	76			
	Foundational	63.40%	2.00%	9.20%	14.50%	10.70%	7.60%	19.30%			
	Advanced	122	6	13	30	20	20	33			
Financial statements to secure capital		0.3	1.50%	3.30%	7.60%	5.10%	5.10%	8.40%			
	Foundational	234	6	38	59	39	21	71			
	Advanced	59.50%	1.50%	9.70%	15.00%	9.90%	5.30%	18.10%			
Create a business plan		123	7	15	29	19	19	34			
	Foundational	31.10%	1.80%	3.80%	7.30%	4.80%	4.80%	8.60%			
	Advanced	247	6	38	63	43	22	75			
Estate planning options		62.40%	1.50%	9.60%	15.90%	10.90%	5.60%	18.90%			
	Foundational	137	8	15	31	28	17	38			
	Advanced	34.60%	2.00%	3.80%	7.80%	7.10%	4.30%	9.60%			
Business transition options		208	3	34	58	35	24	54			
	Foundational	52.50%	0.80%	8.60%	14.60%	8.80%	6.10%	13.60%			
	Advanced	170	5	26	48	33	16	42			
		42.90%	1.30%	6.60%	12.10%	8.30%	4.00%	10.60%			
	Foundational	154	3	23	34	29	21	44			
	Advanced	38.90%	0.80%	5.80%	8.60%	7.30%	5.30%	11.10%			
		139	4	17	38	22	18	40			
	Foundational	35.20%	1.00%	4.30%	9.60%	5.60%	4.60%	10.10%			



		Advanced	147	4	26	30	25	19	43
			37.20%	1.00%	6.60%	7.60%	6.30%	4.80%	10.90%
Personnel issues	396	Foundational	121	2	18	27	19	17	38
			30.60%	0.50%	4.50%	6.80%	4.80%	4.30%	9.60%
		Advanced	88	3	6	29	21	10	19
			22.20%	0.80%	1.50%	7.30%	5.30%	2.50%	4.80%
Marketing plan	393	Foundational	146	8	14	34	25	17	48
			37.20%	2.00%	3.60%	8.70%	6.40%	4.30%	12.20%
		Advanced	190	2	38	49	27	21	53
			48.30%	0.50%	9.70%	12.50%	6.90%	5.30%	13.50%
Commodity markets	395	Foundational	139	5	19	31	26	17	41
			35.20%	1.30%	4.80%	7.80%	6.60%	4.30%	10.40%
		Advanced	195	1	32	47	32	22	61
			49.40%	0.30%	8.10%	11.90%	8.10%	5.60%	15.40%
Tax management strategies	394	Foundational	153	8	22	40	25	16	42
			38.80%	2.00%	5.60%	10.20%	6.30%	4.10%	10.70%
		Advanced	218	4	31	50	41	26	66
			55.30%	1.00%	7.90%	12.70%	10.40%	6.60%	16.80%
Retirement plans on tax liability	394	Foundational	166	4	19	41	31	19	52
			42.10%	1.00%	4.80%	10.40%	7.90%	4.80%	13.20%
		Advanced	149	1	29	36	29	20	34
			37.80%	0.30%	7.40%	9.10%	7.40%	5.10%	8.60%
Risk Management strategies	394	Foundational	163	7	26	35	29	18	48
			41.40%	1.80%	6.60%	8.90%	7.40%	4.60%	12.20%
		Advanced	163	1	26	44	29	20	43
			41.40%	0.30%	6.60%	11.20%	7.40%	5.10%	10.90%
New Technologies	396	Foundational	154	6	18	33	34	17	46
			38.90%	1.50%	4.50%	8.30%	8.60%	4.30%	11.60%
		Advanced	206	5	32	57	33	26	53
			52.00%	1.30%	8.10%	14.40%	8.30%	6.60%	13.40%

Communication skills	391	Foundational	132	1	16	33	27	17	38
			33.80%	0.30%	4.10%	8.40%	6.90%	4.30%	9.70%
			144	6	24	37	25	15	37
			36.80%	1.50%	6.10%	9.50%	6.40%	3.80%	9.50%
Farm community organization benefits	394	Advanced	150	3	22	36	25	18	46
			38.10%	0.80%	5.60%	9.10%	6.30%	4.60%	11.70%
			97	2	15	31	17	9	23
			24.60%	0.50%	3.80%	7.90%	4.30%	2.30%	5.80%
Personal leadership benefits	391	Foundational	33.00%	0.30%	4.30%	8.40%	5.40%	4.60%	10.00%
			97	2	15	31	17	7	25
			24.80%	0.50%	3.80%	7.90%	4.30%	1.80%	6.40%

## Appendix B9

Table 9. Instructional Needs and Preferences

		Central Lakes			Mn West			Northland			Ridgewater			Riverland			South Central			Total			Mn Farmers		
		N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD	Diff		
Delivery Preferences																									
	Instructional Needs and Preferences	13	6.8	0.6	55	4.5	2.0	91	5.2	2.0	67	5.7	1.7	45	5.4	1.9	112	5.7	1.7	383	5.4	1.9	3.3	2.5	2.1
	Host farm	13	2.6	2.2	55	4.1	1.8	90	4.2	1.9	68	4.0	1.8	41	4.4	1.7	113	4.3	1.9	380	4.1	1.9	3.5	2.3	0.6
	Farm Organizations	13	2.8	2.0	56	4.3	1.7	88	4.5	1.8	66	3.7	1.9	43	4.1	1.6	112	3.9	1.8	378	4.1	1.8	3.3	2.1	0.8
	Blend of face to face and online	13	3.5	2.5	55	3.9	1.9	91	4.0	2.0	68	3.8	2.0	44	3.5	1.9	113	4.4	1.9	384	4.0	2.0	3.3	2.3	0.7
	Traditional classroom off campus	12	1.9	1.5	56	4.3	1.9	89	3.8	2.0	68	4.0	2.0	46	4.3	1.8	110	3.8	1.9	381	3.9	1.9	3.6	2.3	0.3
	College of university campus	13	1.8	1.5	55	3.8	1.9	90	3.6	2.0	68	3.2	1.9	45	2.9	1.8	113	3.3	2.0	384	3.3	1.9	2.9	2.1	0.4
	Individualized instruction using video conferencing	13	2.2	1.2	54	3.4	1.8	88	3.0	1.9	67	3.0	1.9	44	3.0	1.9	110	3.4	2.0	376	3.1	1.9	2.7	2.1	0.4
	Online	13	1.5	1.2	53	2.5	1.9	89	2.5	1.8	68	2.1	1.5	44	2.8	1.8	108	2.7	1.7	375	2.5	1.7	2.9	2.2	-0.4
Instructional Preferences																									
	Individualized in-person instruction with an instructor	13	6.9	0.3	52	5.4	1.3	90	5.9	1.5	71	6.0	1.5	46	5.3	1.7	111	5.9	1.4	383	5.8	1.5	3.6	2.2	2.2
	Hands-on learning activities	12	4.6	2.2	53	5.2	1.3	86	5.4	1.3	68	5.4	1.6	44	5.0	1.6	108	5.3	1.5	371	5.3	1.5	4.3	2.3	1.0
	Demonstrations	12	4.7	1.4	54	4.8	1.5	89	5.1	1.3	69	4.9	1.6	46	5.0	1.4	107	5.1	1.6	377	5.0	1.5	4.2	2.2	0.8
	Instructors teaching a specialty	12	4.9	1.6	55	5.2	1.3	90	4.7	1.4	71	5.2	1.4	47	4.8	1.8	110	5.1	1.4	385	5.0	1.5	3.8	2.2	1.2
	Farmers	12	5.8	1.6	54	4.3	1.6	90	5.1	1.6	71	5.2	1.7	48	4.9	1.7	111	5.0	1.5	386	5.0	1.6	4.1	2.2	0.9
	Conferences specifically designed for producers	11	4.2	1.8	54	5.0	1.4	88	4.9	1.7	69	5.0	1.6	42	4.8	1.6	110	4.8	1.6	374	4.9	1.6	3.9	2.2	1.0
	Guest speakers	12	4.7	1.4	55	4.9	1.3	89	4.8	1.5	71	5.1	1.5	46	4.6	1.6	110	4.8	1.5	383	4.9	1.4	3.8	2.1	1.1
	Question and answer session	12	4.9	1.4	54	4.8	1.3	89	4.7	1.4	71	4.9	1.4	45	4.5	1.5	109	4.9	1.5	380	4.8	1.4	3.8	2.1	1.0
	Featured speakers &/or industry experts	12	4.5	1.2	54	4.9	1.4	90	4.6	1.6	68	5.1	1.6	45	4.3	1.7	108	4.7	1.5	377	4.7	1.6	4	2.2	0.7
	Field Trips	12	4.2	1.5	55	4.5	1.7	89	4.8	1.4	70	4.7	1.6	48	4.8	1.6	109	4.7	1.7	383	4.7	1.6	3.9	2.3	0.8

Ag supply company presenters	12	4.7	1.1	54	4.0	1.5	91	4.5	1.7	69	4.6	1.5	46	4.2	1.6	110	4.5	1.5	382	4.4	1.5	3.7	2.1	0.7
Case studies guided by instructor &/or facilitator	12	3.2	1.9	54	4.0	1.6	88	4.3	1.7	70	4.4	1.6	44	4.0	1.7	110	4.6	1.6	378	4.3	1.7	3.3	2.1	1.0
Webinar	12	2.3	1.4	54	3.9	2.0	88	3.2	1.9	69	3.6	1.9	46	3.5	2.0	108	3.7	1.9	377	3.5	1.9	2.9	2.1	0.6

#### Instructional Media and Aids

Print materials	13	5.6	1.4	55	5.5	1.2	94	5.5	1.3	70	5.5	1.3	46	5.5	1.3	113	5.6	1.3	391	5.5	1.3	4.8	2.2	0.7
Telephone with the instructor	12	4.7	2.1	54	4.7	1.5	93	5.1	1.6	71	5.2	1.7	46	5.0	1.4	112	4.9	1.7	388	5.0	1.6	2.9	1.9	2.1
Farm demonstration plots	12	4.1	1.2	54	4.7	1.4	93	5.2	1.4	71	4.8	1.5	48	4.9	1.5	113	5.0	1.4	391	5.0	1.4	4.1	2.2	0.9
Electronic materials delivered via the internet or email	13	2.8	1.7	54	5.3	1.5	93	4.8	1.8	71	4.6	1.8	46	4.6	1.8	112	5.0	1.8	389	4.8	1.8	3.8	2.3	1.0
Email communications from the instructor	13	4.0	1.7	54	4.6	1.7	92	4.7	1.9	71	4.8	1.7	46	4.5	2.2	110	5.0	1.7	386	4.7	1.8	3.2	2.2	1.5
Newspaper articles prepared by the instructor	12	4.4	1.5	54	4.5	1.5	93	4.3	1.6	71	4.7	1.6	45	4.2	1.6	111	4.8	1.5	386	4.6	1.6	2.9	2.1	1.7
Sample problems and simulations	13	2.8	1.9	54	4.0	1.9	91	4.4	1.5	71	4.3	1.5	45	3.7	1.6	110	4.6	1.6	384	4.2	1.6	3.4	2	0.8
Internet	13	2.8	1.7	54	4.1	1.9	91	3.8	1.8	70	3.9	1.8	45	4.4	1.8	111	4.4	1.8	384	4.1	1.8	3.5	2.3	0.6
Online library of information provided by the instructor	13	2.5	1.7	54	4.1	1.8	91	3.6	1.7	70	3.9	2.0	45	3.8	1.8	110	3.9	1.8	383	3.8	1.8	3.3	2.2	0.5
Online video library	13	2.5	1.7	53	4.1	1.9	90	3.5	1.6	69	3.7	2.0	45	3.9	1.7	110	3.7	1.7	380	3.7	1.8	3.4	2.2	0.3

# Appendix B10

Table 10. Percentage of Producers Interested in Farm Business Management Education Hot Topics

Education Topics		Farm Type			Total (N= 395)	\$0-99.9K (n= 31)	\$100- 249.99K (n= 73)	\$250- \$499.99K (n= 117)	\$500 – \$999.9K (n= 105)	\$1M – 2.49M (n= 60)	>2.5M (n= 9)
		Crops (n= 218)	Livestock (n= 74)	Crops & Livstck (n= 99)							
Establishing goals	n	9 <sup>1</sup>	4 <sup>3</sup>	3	11 <sup>5</sup>	1 <sup>7</sup>	1	1	3	5	0
	%	2.3 <sup>2</sup>	1.0 <sup>4</sup>	0.8	2.8 <sup>6</sup>	0.3 <sup>8</sup>	0.3	0.3	0.8	1.3	0.0
Business structure	n	5	1	1	5	0	1	3	0	1	0
	%	1.3	0.3	0.3	1.3	0.0	0.3	0.8	0.0	0.3	0.0
Recordkeeping system	n	37	17	8	38	5	6	11	10	6	0
	%	9.5	4.3	2.0	9.6	1.3	1.5	2.8	2.5	1.5	0.0
Annual business analysis	n	15	9	4	15	0	4	2	5	3	1
	%	3.8	2.3	1.0	3.8	0.0	1.0	0.5	1.3	0.8	0.3
Business analysis	n	21	10	6	22	0	6	7	7	2	0
	%	5.4	2.6	1.5	5.6	0.0	1.5	1.8	1.8	0.5	0.0
Budgets, breakeven calculations	n	6	2	0	6	1	0	2	1	2	0
	%	1.6	0.8	0.0	1.5	0.3	0.0	0.5	0.3	0.5	0.0
Enterprise budgets- cash flow	n	11	6	4	11	3	1	4	2	1	0
	%	2.8	1.5	1.0	2.8	0.8	0.3	1.0	0.5	0.3	0.0
Capital and credit needs	n	9	5	3	9	0	4	2	2	1	0
	%	2.3	1.3	0.8	2.3	0.0	1.0	0.5	0.5	0.3	0.0
Financing capital assets	n	9	4	1	9	2	1	3	1	2	0
	%	2.3	1.0	0.3	2.3	0.5	0.3	0.8	0.3	0.5	0.0
Financial statements to secure capital	n	8	7	0	7	0	1	3	1	2	0
	%	2.0	1.8	0.0	1.8	0.0	0.3	0.8	0.3	0.5	0.0
Create a business plan	n	26	11	5	27	1	5	11	5	5	0
	%	6.6	2.8	1.3	6.8	0.3	1.3	2.8	1.3	1.3	0.0

Estate planning options	<i>n</i>	41	20	6	15	41	4	8	14	11	3	1
	%	10.5	5.1	1.5	3.8	10.4	1.0	2.0	3.5	2.8	0.8	0.3
Business transition options	<i>n</i>	11	5	3	3	11	0	2	6	1	1	1
	%	2.8	1.3	0.8	0.8	2.8	0.0	0.5	1.5	0.3	0.3	0.3
Personnel issues	<i>n</i>	9	2	4	3	9	1	0	1	3	2	2
	%	2.3	0.5	1.0	0.8	2.3	0.3	0.0	0.3	0.8	0.5	0.5
Marketing plan	<i>n</i>	51	37	4	10	51	6	9	15	9	11	1
	%	13.0	9.5	1.0	2.6	12.9	1.5	2.3	3.8	2.3	2.8	0.3
Commodity markets	<i>n</i>	15	10	2	3	16	1	4	2	7	1	1
	%	3.8	2.6	0.5	0.8	4.1	0.3	1.0	0.5	1.8	0.3	0.3
Tax management strategies	<i>n</i>	15	10	2	3	15	3	2	4	5	1	0
	%	3.8	2.6	0.5	0.8	3.8	0.8	0.5	1.0	1.3	0.3	0.0
Retirement plans on tax liability	<i>n</i>	5	2	1	2	5	0	0	2	1	2	0
	%	1.3	0.5	0.3	0.5	1.3	0.0	0.0	0.5	0.3	0.5	0.0
Risk management assessment	<i>n</i>	6	2	2	2	6	0	0	2	4	0	0
	%	1.5	0.5	0.5	0.5	1.5	0.0	0.0	0.5	1.0	0.0	0.0
New technologies	<i>n</i>	12	8	2	2	13	1	4	3	3	2	0
	%	3.1	2.0	0.5	0.5	3.3	0.3	1.0	0.8	0.8	0.5	0.0
Communication skills	<i>n</i>	3	2	0	1	3	0	2	0	1	0	0
	%	0.8	0.5	0.0	0.3	0.8	0.0	0.5	0.0	0.3	0.0	0.0

Note: Note and example: Of the total Number of Crops Farmers, what percentage is interested in the education topic? <sup>1</sup> Total responses <sup>2</sup> Percentage of total (391) <sup>3</sup> number of corresponding farm type with interest in business management topic <sup>4</sup> percentage of total responses (391). <sup>5</sup> Total responses <sup>6</sup> Percentage of total (395) <sup>7</sup> number of corresponding farm type with interest in business management topic <sup>8</sup> percentage of total responses (395).

# Appendix B11

Table 11. Crop Enterprises in the Fall of 2011 by Type of Farm and Average Annual Total Farm Sales

		Type of Farm			Farm Sales					
	Total N= 404	Crop n= 218	Livestock n= 74	Crop and Livestock n= 99	\$0-99.9K n= 31	\$100-249.9K n= 73	\$250-499.9K n= 117	\$500 – 999.9K n= 105	\$1M – 2.49K n= 60	>\$2.5 M n= 9
Corn	351 86.9%	189 86.7%	60 81.1%	95 96.0%	20 64.5%	66 90.4%	107 91.5%	94 89.5%	53 88.3%	8 88.9%
Soybeans	319 79.0%	209 95.9%	21 28.4%	84 84.8%	21 67.7%	53 72.6%	86 73.5%	96 91.4%	54 90.0%	6 66.7%
Alfalfa and/or mixed hay	175 43.3%	44 20.2%	61 82.4%	67 67.7%	17 54.8%	42 57.5%	55 47.0%	37 35.2%	19 31.7%	5 55.6%
Wheat	102 25.2%	80 36.7%	3 4.1%	19 19.2%	9 29.0%	10 13.7%	24 20.5%	32 30.5%	24 40.0%	2 22.2%
Oats	47 11.6%	8 3.7%	21 28.4%	16 16.2%	6 19.4%	12 16.4%	19 16.2%	8 7.6%	2 3.3%	0 0.0%
Other Crops and Vegetables:	46 11.4%	31 14.2%	7 9.5%	7 7.1%	2 6.5%	8 11.0%	8 6.8%	16 15.2%	10 16.7%	1 11.1%
Sugar beets	27 6.7%	25 11.5%	0 0.0%	2 2.0%	0 0.0%	1 1.4%	5 4.3%	7 6.7%	13 21.7%	1 11.1%
Barley	23 5.7%	5 2.3%	10 13.5%	8 8.1%	2 6.5%	5 6.8%	7 6.0%	4 3.8%	5 8.3%	0 0.0%
Vegetables	19 4.7%	10 4.6%	0 0.0%	9 9.1%	1 3.2%	2 2.7%	5 4.3%	5 4.8%	4 6.7%	1 11.1%
Canola	7 1.7%	7 3.2%	0 0.0%	0 0.0%	0 0.0%	1 1.4%	1 0.9%	4 3.8%	1 1.7%	0 0.0%
Fruits	1 0.2%	1 0.5%	0 0.0%	0 0.0%	0 0.0%	1 1.4%	0 0.0%	0 0.0%	0 0.0%	0 0.0%

## Appendix B12

*Table 12. Crop Production Education Needs of All FBM Producers (N= 404)*

Production Management Topics	Crops											
	Corn		Soybeans		Alfalfa		Wheat		Sugarbeets			
	n	%	n	%	n	%	n	%	n	%	n	%
Marketing	212 <sup>1</sup>	52.5 <sup>2</sup>	189	46.8	9	2.2	21	5.2	5	1.2		
Soil Fertility and Management	201	49.8	155	38.4	36	8.9	19	4.7	12	3.0		
Precision Farming	164	40.6	144	35.6	11	2.7	15	3.7	7	1.7		
Variety Selection	143	35.4	120	29.7	30	7.4	19	4.7	9	2.2		
Planting	137	33.9	112	27.7	22	5.4	6	1.5	7	1.7		
Handling and Storage	131	32.4	74	18.3	29	7.2	5	1.2	3	0.7		
Pest Management	129	31.9	135	33.4	28	6.9	15	3.7	8	2.0		
Government Programs (i.e., FSA & NRCS, Labor Regulations, etc.)	126	31.2	102	25.2	16	4.0	9	2.2	4	1.0		
Harvesting	121	30.0	81	20.0	29	7.2	5	1.2	9	2.2		
Machinery Selection and Maintenance	120	29.7	81	20.0	23	5.7	9	2.2	7	1.7		
Facilities Design, Management &/or Maintenance	103	25.5	45	11.1	10	2.5	6	1.5	3	0.7		
Soil Conservation	97	24.0	71	17.6	15	3.7	8	2.0	3	0.7		
Environmental Programs (i.e., EPA, MPCA, NRCS, etc.)	97	24.0	71	17.6	17	4.2	6	1.5	2	0.5		
Water Management	69	17.1	56	13.9	11	2.7	6	1.5	7	1.7		
Food Safety	22	5.4	23	5.7	4	1.0	1	0.2	1	0.2		
Total	1872		1459		290		150		87			

Note: <sup>1</sup> No. of **producers** who desired production management education for the respective topic. <sup>2</sup> percentage of total producers (N= 404) with interest in production management education.



## Appendix B13

Table 13. Hot Topic Crop Production Education Needs of All Producers (N= 404)

Production Management Topics	Corn		Soybeans		Alfalfa		Wheat		Sugar Beets	
	n	%	N	%	n	%	n	%	n	%
Marketing	69 <sup>1</sup>	17.1 <sup>2</sup>	63	15.6	2	0.5	6	1.5	0	0.0
Soil Fertility and Management	37	9.2	24	5.9	12	3.0	7	1.7	2	0.5
Variety Selection	19	4.7	23	5.7	4	1.0	4	1.0	2	0.5
Precision Farming	17	4.2	21	5.2	0	0.0	1	0.2	0	0.0
Planting	14	3.5	8	2.0	1	0.2	0	0.0	1	0.2
Pest Management	10	2.5	19	4.7	7	1.7	2	0.5	0	0.0
Handling and Storage	9	2.2	3	0.7	6	1.5	0	0.0	0	0.0
Water Management	9	2.2	5	1.2	1	0.2	1	0.2	2	0.5
Government Programs (i.e., FSA & NRCS, Labor Regulations, etc.)	7	1.7	5	1.2	1	0.2	0	0.0	0	0.0
Facilities Design, Management &/or Maintenance	5	1.2	2	0.5	0	0.0	0	0.0	0	0.0
Soil Conservation	5	1.2	3	0.7	1	0.2	0	0.0	0	0.0
Harvesting	4	1.0	3	0.7	3	0.7	0	0.0	0	0.0
Machinery Selection and Maintenance	2	0.5	0	0.0	1	0.2	0	0.0	0	0.0
Environmental Programs (i.e., EPA, MPCA, NRCS, etc.)	1	0.2	1	0.2	0	0.0	0	0.0	0	0.0
Food Safety	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Note: Percentage of Farmers who desired production management education. <sup>1</sup> No. of producers who desired production management Hot Topics for the respective Crop. <sup>2</sup> percentage of total producers (n=404) with interest in production management Hot Topics for the respective Crop.

# Appendix B14

Table 14. Livestock Enterprises in the Fall of 2011 by Type of Farm and Average Annual Total Farm Sales

	Type of Farm				Farm Sales				
	Crop n= 218	Livestock n= 74	Crop and Livestock n= 99	\$0-99.9K n= 31	\$100-249.99K n= 73	\$250- \$499.99K n= 117	\$500- \$999.9K n= 105	\$1M - 2.49M n= 60	>\$2.5 M n= 9
Beef	Total N= 404								
	105	34	17	49	25	30	19	13	2
	26.0%	15.6%	23.0%	49.5%	34.2%	25.6%	18.1%	21.7%	22.2%
	102	4	58	38	24	39	18	13	4
Dairy	25.2%	1.8%	78.4%	38.4%	32.9%	33.3%	17.1%	21.7%	44.4%
	66	17	7	40	9	16	21	13	3
Hogs	16.3%	7.8%	9.5%	40.4%	6.5%	13.7%	20.0%	21.7%	33.3%
	21	8	5	7	4	6	5	2	0
	5.2%	3.7%	6.8%	7.1%	12.9%	5.1%	4.8%	3.3%	0.0%
Other Livestock and Poultry	13	3	3	7	0	3	7	1	0
	3.2%	1.4%	4.1%	7.1%	0.0%	2.6%	6.7%	1.7%	0.0%
	12	4	2	6	2	3	2	1	1
Chickens	3.0%	1.8%	2.7%	6.1%	4.1%	2.6%	1.9%	1.7%	11.1%
	10	1	3	5	1	6	0	0	0
	2.5%	0.5%	4.1%	5.1%	1.4%	5.1%	0.0%	0.0%	0.0%
Sheep	5	4	0	1	3	1	0	0	0
	1.2%	1.8%	0.0%	1.0%	4.1%	0.9%	0.0%	0.0%	0.0%
Geese	1	1	0	0	1	0	0	0	0
	0.2%	0.5%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%
Turkeys	0	0	0	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

# Appendix B15

Table 15. Livestock Production Management Education Topics By Enterprise for All Producers

	Dairy Cows		Beef Cows		Hogs		Finishing Hogs		Breeding Hogs		Heifers/Steers		Sheep	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Nutrition	64	15.8	30	7.4	10	2.5	4	1.0	8	2.0	29	7.2	4	1.0
Facilities Selection, Design, Management and/or Maintenance	63	15.6	24	5.9	12	3.0	10	2.5	8	2.0	28	6.9	3	0.7
Feed Selection, Formulation, and Management	58	14.4	28	6.9	10	2.5	5	1.2	7	1.7	29	7.2	5	1.2
Health and Basic Veterinary Care and Practices	51	12.6	26	6.4	10	2.5	4	1.0	5	1.2	27	6.7	3	0.7
Breeding and Selection	46	11.4	20	5.0	3	0.7	0	0.0	7	1.7	14	3.5	2	0.5
Ventilation	42	10.4	8	2.0	13	3.2	8	2.0	8	2.0	17	4.2	1	0.2
Waste Handling Systems and Management	41	10.1	11	2.7	15	3.7	12	3.0	6	1.5	17	4.2	2	0.5
Marketing	37	9.2	32	7.9	14	3.5	7	1.7	6	1.5	16	4.0	4	1.0
Basic Animal Husbandry Practices	33	8.2	18	4.5	7	1.7	4	1.0	6	1.5	14	3.5	2	0.5
Government Programs (i.e., FSA & NRCS, Labor Regulations, etc.)	32	7.9	14	3.5	10	2.5	3	0.7	7	1.7	11	2.7	2	0.5
Environmental Programs (i.e., EPA, MPCA, NRCS, etc.)	30	7.4	17	4.2	11	2.7	6	1.5	7	1.7	11	2.7	1	0.2
Equipment Selection	28	6.9	16	4.0	12	3.0	5	1.2	8	2.0	13	3.2	2	0.5
Live Animal Handling	26	6.4	15	3.7	9	2.2	4	1.0	7	1.7	11	2.7	1	0.2
Other:	3	0.7	1	0.2	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0

Note: Percentage of Farmers who desired production management education. <sup>1</sup> No. of producers who desired production management Hot Topics for the respective Livestock. <sup>2</sup> percentage of total producers (n=404) with interest in production management Hot Topics for the respective Livestock.

# Appendix B16

Table 16. Hot Topics for Livestock Production Management Education Topics for All Producers

	Dairy Cows		Beef Cows		Hogs		Finishing Hogs		Breeding Hogs		Heifers/Steers		Sheep	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Nutrition	17 <sup>1</sup>	4.2 <sup>2</sup>	4	1.0	1	0.2	0	0.0	1	0.2	5	1.2	1	0.2
Facilities Selection, Design, Management and/or Maintenance	15	3.7	3	0.7	6	1.5	4	1.0	3	0.7	8	2.0	0	0.0
Health and Basic Veterinary Care and Practices	14	3.5	6	1.5	2	0.5	0	0.0	1	0.2	4	1.0	1	0.2
Breeding and Selection	12	3.0	8	2.0	1	0.2	0	0.0	1	0.2	2	0.5	0	0.0
Marketing	9	2.2	9	2.2	0	0.0	4	1.0	0	0.0	9	2.2	0	0.0
Feed Selection, Formulation, and Management	5	1.2	7	1.7	0	0.0	1	0.2	1	0.2	3	0.7	2	0.5
Basic Animal Husbandry Practices	4	1.0	2	0.5	0	0.0	1	0.2	2	0.5	2	0.5	2	0.5
Equipment Selection	2	0.5	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0	0	0.0
Waste Handling Systems and Management	2	0.5	2	0.5	1	0.2	3	0.7	0	0.0	2	0.5	0	0.0
Environmental Programs (i.e., EPA, MPCA, NRCS, etc.)	2	0.5	0	0.0	1	0.2	2	0.5	0	0.0	0	0.0	0	0.0
Ventilation	1	0.2	1	0.2	1	0.2	1	0.2	0	0.0	2	0.5	0	0.0
Live Animal Handling	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0
Government Programs (i.e., FSA & NRCS, Labor Regulations, etc.)	0	0.0	1	0.2	1	0.2	0	0.0	0	0.0	1	0.2	0	0.0
Other:	3	0.7	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Note: Percentage of Farmers who desired production management education. <sup>1</sup> No. of producers who desired production management Hot Topics for the respective Livestock. <sup>2</sup> percentage of total producers (n=404) with interest in production management Hot Topics for the respective Livestock.

## Appendix B17

Table 17. Education and Training Needs for Employees by Average Annual Total Farm Sales

	Total N= 395	Farm Sales					
		\$0-99.9K n= 31	\$100-249.99K n= 73	\$250-499.99K n= 117	\$500 – 999.99K n= 105	\$1M – 2.49 n= 60	>\$2.5 M n= 9
Employability Skills/Knowledge	139	7	15	42	32	33	10
Mechanics Skills/Knowledge	38	0	8	10	9	9	2
Livestock Care/Knowledge	14	1	2	2	7	1	1
Business Skills/Knowledge	6	0	2	2	0	2	0

## Appendix B18

Table 18. Education and Training Delivery Preferences of Farmers by Age

	Total N= 386	Age					ANOVA		
		<30 n= 40	30-39 n= 68	40-49 n= 98	50-59 n= 119	+60 n= 61	F (df <sub>b</sub> , df <sub>w</sub> )	p	$\eta^2$
Business site	5.43 <sup>1</sup>	5.78	5.36	5.36	5.36	5.40	.40 (4, 360)	.81	
	1.88 <sup>2</sup>	1.86	2.14	1.99	1.80	1.80			
Host farm	4.13	4.05	4.18	3.95	4.19	4.30	.40 (4, 361)	.81	
	1.88	1.85	2.04	2.06	1.73	1.67			
College or university campus	3.32	3.03	3.51	3.47	3.25	3.21	.60* (4, 146.3)	.66*	
	1.94	1.70	2.03	2.19	1.88	1.75			
Classroom at an off-campus site	3.88	3.54	4.03	3.80	3.94	3.96	.47 (4, 358)	.76	
	1.92	1.91	2.02	2.11	1.85	1.76			
Blend of face-to-face and online delivery	3.99	4.00	3.90	3.93	4.04	4.05	.08 (4, 365)	.99	
	1.99	2.13	2.10	1.99	1.99	1.79			
Individualized instruction using video conferencing (Skype, or similar technology)	3.14	2.69	2.98	3.20	3.19	3.20	.64 (4, 353)	.64	
	1.90	1.70	1.94	1.99	1.93	1.72			
Total online delivery	2.46	2.41	2.18	2.55	2.57	2.42	.60 (4, 352)	.66	
	1.73	1.79	1.80	1.89	1.73	1.37			
Farm organization meetings	4.05	4.08	4.08	4.16	3.95	4.14	.19 (4, 355)	.94	
	1.82	1.78	1.82	1.84	1.88	1.61			

Notes: <sup>1</sup> Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

## Appendix B19

Table 19. Education and Training Delivery Preferences of Farmers by Region

	Region				ANOVA		
	Total N= 404	RRV n= 37	North n= 74	Central n= 71	South n= 222	F (df <sub>b</sub> , df <sub>w</sub> )	p  $\eta^2$
Business site	5.43 <sup>1</sup>	4.73 <sup>A</sup>	5.77 <sup>B</sup>	5.66 <sup>AB</sup>	5.35 <sup>AB</sup>	2.81 (3, 379)	.04  .022
Host farm	1.88 <sup>2</sup>	2.17	1.80	1.71	1.89		
	4.13	3.91	4.04	4.00	4.24		
	1.88	2.13	1.99	1.82	1.83	.54 (3, 376)	.65
College or university campus	3.32	4.09	3.06	3.16	3.34		
	1.94	2.02	1.90	1.94	1.93	2.34 (3, 380)	.07
Classroom at an off-campus site	3.88	4.31 <sup>A</sup>	3.20 <sup>B</sup>	3.99 <sup>AB</sup>	4.00 <sup>A</sup>	3.83 (3, 377)	.01  .030
	1.92	1.86	1.97	1.95	1.87		
Blend of face-to-face and online delivery	3.99	4.39	3.69	3.79	4.09	1.42 (3, 380)	.24
	1.99	2.08	2.01	2.00	1.95		
Individualized instruction using video conferencing (Skype, or similar technology)	3.14	3.06	2.83	3.03	3.29	1.18 (3, 372)	.32
	1.90	1.87	1.85	1.92	1.91		
Total online delivery	2.46	2.84	2.13	2.09	2.63	3.40* (3, 106.7)	.02  .025
	1.73	1.82	1.64	1.47	1.80		
Farm organization meetings	4.05	4.78	4.01	3.70	4.07	2.60 (3, 374)	.052
	1.82	2.09	1.70	1.93	1.76		

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

## Appendix B20

*Table 20. Education and Training Delivery Preferences of Farmers by Type of Farming Operation*

	Type of Farm				ANOVA		
	Total N= 391	Crops n= 218	Livestock n= 74	Crop and Livestock n= 99	F (df <sub>b</sub> , df <sub>w</sub> )	p	$\eta^2$
Business site	5.43 <sup>1</sup>	5.15 <sup>A</sup>	6.01 <sup>B</sup>	5.65 <sup>AB</sup>	5.37* (3, 32.6)	.004*	.037
	1.88 <sup>2</sup>	2.04	1.47	1.67			
Host farm	4.13	3.98	4.28	4.32	.97 (3, 372)	.41	
	1.88	1.87	2.05	1.81			
College or university campus	3.32	3.50 <sup>A</sup>	2.50 <sup>B</sup>	3.45 <sup>A</sup>	5.13 (3, 376)	.002	.039
	1.94	2.01	1.64	1.86			
Classroom at an off-campus site	3.88	4.13 <sup>A</sup>	3.25 <sup>B</sup>	3.74 <sup>AB</sup>	3.99 (3, 373)	.008	.031
	1.92	1.97	1.87	1.82			
Blend of face-to-face and online delivery	3.99	4.11	3.65	3.87	2.16 (3, 377)	.09	
	1.99	2.00	2.03	1.90			
Individualized instruction using video conferencing (Skype, or similar technology)	3.14	3.13	2.88	3.23	2.16 (3, 368)	.09	
	1.90	1.94	1.71	1.86			
Total online delivery	2.46	2.53	2.00	2.49	3.65* (3, 32.1)	.02*	.038
	1.73	1.72	1.51	1.72			
Farm organization meetings	4.05	4.23	3.74	3.82	1.93 (3, 370)	.12	
	1.82	1.88	1.75	1.71			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.



## Appendix B21

*Table 21. Education and Training Delivery Preferences of Farmers by Farm Sales*

	Farm Sales							ANOVA		
	Total N= 395	\$0-99.9K n= 31	\$100- 249.99K n= 73	\$250- 499.99K n= 117	\$500 - 999.99K n= 105	\$1M - 2.49 n= 60	>\$2.5 M n= 9	F (df <sub>b</sub> , df <sub>w</sub> )	p	$\eta^2$
Business site	5.43 <sup>1</sup>	6.00	5.64	5.52	5.12	5.11	6.00	1.80 (5, 371)	.11	
	1.88 <sup>2</sup>	1.41	1.89	1.90	1.96	1.92	1.07			
Host farm	4.13	3.70	4.37	3.82	4.26	4.39	4.25	1.45 (5, 368)	.20	
	1.88	2.12	1.88	1.98	1.77	1.72	2.12			
College or university campus	3.32	2.80	3.33	3.14	3.49	3.47	4.11	1.14 (5, 371)	.34	
	1.94	1.73	2.12	2.00	1.95	1.71	1.97			
Classroom at an off-campus site	3.88	3.00 <sup>A</sup>	3.67 <sup>AB</sup>	3.78 <sup>AB</sup>	4.21 <sup>B</sup>	4.14 <sup>AB</sup>	4.56 <sup>AB</sup>	2.55 (5, 368)	.03	.033
	1.92	1.97	2.00	1.88	1.95	1.78	1.24			
Blend of face-to-face and online delivery	3.99	4.00	3.89	3.68	4.05	4.53	4.78	1.74 (5, 373)	.13	
	1.99	2.05	1.94	2.05	2.04	1.77	1.09			
Individualized instruction using video conferencing (Skype, or similar technology)	3.14	2.93	3.16	2.84	3.29	3.53	4.11	1.70 (5, 364)	.13	
	1.90	2.18	1.98	1.70	1.98	1.88	1.45			
Total online delivery	2.46	2.70	2.46	2.10	2.59	2.79	3.00	1.74 (5, 363)	.12	
	1.73	1.99	1.76	1.52	1.78	1.79	1.80			
Farm organization meetings	4.05	3.67	4.17	3.85	4.35	3.96	3.89	1.18 (5, 365)	.32	
	1.82	1.65	1.75	1.92	1.81	1.85	1.83			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

## Appendix B22

Table 22. Education and Training Delivery Preferences of Farmers by Years in Farming

	Total <i>N</i> = 397	Years in Farming			ANOVA		
		1-10 <i>n</i> = 72	11-20 <i>n</i> = 85	21+ <i>n</i> = 240	<i>F</i> ( <i>df</i> <sub>b</sub> , <i>df</i> <sub>w</sub> )	<i>p</i>	$\eta^2$
Business site	5.43 <sup>1</sup>	5.72	5.37	5.34	1.14 (2, 375)	.32	
	1.88 <sup>2</sup>	1.71	1.85	1.95			
Host farm	4.13	4.03	4.25	4.11	.26 (2, 372)	.77	
	1.88	2.07	1.92	1.83			
College or university campus	3.32	3.38	3.05	3.40	.99 (2, 376)	.37	
	1.94	2.01	1.96	1.94			
Classroom at an off-campus site	3.88	3.52	3.64	4.06	2.85 (2, 374)	.06	
	1.92	1.99	1.92	1.89			
Blend of face-to-face and online delivery	3.99	3.79	3.77	4.13	1.42 (2, 377)	.24	
	1.99	1.86	2.06	1.99			
Individualized instruction using video conferencing (Skype, or similar technology)	3.14	3.04	3.24	3.14	.190 (2, 368)	.83	
	1.90	1.93	1.90	1.90			
Total online delivery	2.46	2.61	2.30	2.49	.64 (2, 367)	.53	
	1.73	1.99	1.66	1.68			
Farm organization meetings	4.05	4.25	4.27	3.92	1.53 (2, 370)	.22	
	1.82	1.86	1.84	1.81			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1 = Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation

## Appendix B23

*Table 23. Instructional Preferences of Farmers by Age*

	Total <i>N</i> = 386	Age					ANOVA		
		<30 <i>n</i> = 40	30-39 <i>n</i> = 68	40-49 <i>n</i> = 98	50-59 <i>n</i> = 119	+60 <i>n</i> = 61	<i>F</i> ( <i>df<sub>b</sub></i> , <i>df<sub>w</sub></i> )	<i>p</i>	$\eta^2$
Field trips	4.68 <sup>1</sup>	4.55	4.68	4.55	4.73	4.78	.29 (4, 361)	.88	
	1.58 <sup>2</sup>	1.59	1.44	1.61	1.64	1.63			
Question and answer sessions	4.79	4.77	4.63	4.83	4.84	4.81	.24 (4, 358)	.91	
	1.43	1.58	1.53	1.36	1.40	1.48			
Demonstrations	5.01	5.00	5.06	4.89	5.07	4.97	.22 (4, 355)	.93	
	1.48	1.34	1.32	1.67	1.40	1.68			
Conferences for producers	4.88	4.74	5.05	4.84	4.89	4.88	.27 (4, 352)	.90	
	1.59	1.45	1.63	1.61	1.61	1.57			
Hands on learning activities	5.28	5.11	5.36	5.23	5.32	5.36	.25 (4, 350)	.91	
	1.47	1.61	1.40	1.58	1.37	1.51			
Individualized in-person with an instructor	5.80	6.15	5.88	5.85	5.60	5.77	1.14 (4, 360)	.34	
	1.47	1.29	1.43	1.54	1.51	1.48			
Guest Speakers	4.86	5.08	4.97	4.74	4.84	4.79	.50 (4, 361)	.74	
	1.44	1.15	1.51	1.47	1.43	1.55			
Events at a central location with featured speakers & experts	4.74	4.78	5.02	4.40	4.86	4.77	1.51* (4, 145.8)	.20*	
	1.56	1.27	1.54	1.75	1.54	1.49			
Webinar	3.52	3.41	3.46	3.24	3.62	3.67	.65 (4, 355)	.63	
	1.93	1.98	2.03	1.91	1.95	1.83			
Farmers	4.98	5.10	5.25	5.01	4.68	4.97	1.48 (4, 364)	.21	
	1.61	1.59	1.62	1.53	1.66	1.61			
Case study guided by instructor	4.30	3.87	4.27	4.38	4.45	4.25	.94 (4, 355)	.44	
	1.66	1.61	1.69	1.59	1.63	1.69			
FBM instructors with specialty knowledge	5.00	4.62	5.09	5.06	5.04	5.02	.81 (4, 363)	.52	
	1.46	1.68	1.41	1.44	1.46	1.40			
Representatives of agriculture supply companies	4.43	4.87	4.35	4.31	4.35	4.48	1.11 (4, 359)	.35	
	1.53	1.58	1.67	1.55	1.48	1.34			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. *Means with the same letter in their superscripts do not differ significantly from one another.*

## Appendix B24

**Table 24. Instructional Preferences of Farmers by Region**

	Total N= 404	Region				ANOVA		
		RRV n= 37	North n= 74	Central n= 71	South n= 222	F (df <sub>b</sub> , df <sub>w</sub> )	p	$\eta^2$
Field trips	4.68 <sup>1</sup>	4.41	4.86	4.69	4.67	.60 (3, 379)	.62	
	1.58 <sup>2</sup>	1.50	1.34	1.60	1.66			
Question and answer sessions	4.79	4.41	4.87	4.87	4.80	.92 (3, 376)	.43	
	1.43	1.54	1.28	1.44	1.46			
Demonstrations	5.01	5.13	5.03	4.94	5.00	.12 (3, 373)	.95	
	1.48	1.54	1.24	1.59	1.52			
Conferences for producers	4.88	5.03	4.69	5.03	4.87	.63 (3, 370)	.60	
	1.59	2.01	1.54	1.61	1.53			
Hands on learning activities	5.28	5.23	5.37	5.38	5.22	.33 (3, 367)	.81	
	1.47	1.67	1.31	1.56	1.46			
Individualized in-person with an instructor	5.80	5.67	6.14	6.01	5.64	2.71 (3, 379)	.045	.021
	1.47	1.67	1.39	1.46	1.45			
Guest Speakers	4.86	4.79	4.75	5.13	4.82	1.02 (3, 379)	.38	
	1.44	1.58	1.39	1.45	1.44			
Events at a central location with featured speakers & experts	4.74	4.81	4.53	5.15	4.66	2.18 (3, 373)	.09	
	1.56	1.84	1.43	1.63	1.52			
Webinar	3.52	3.44 <sup>AB</sup>	2.90 <sup>A</sup>	3.57 <sup>AB</sup>	3.72 <sup>B</sup>	3.15 (3, 373)	.025	.025
	1.93	1.80	1.86	1.94	1.94			
Farmers	4.98	4.64 <sup>AB</sup>	5.45 <sup>A</sup>	5.20 <sup>AB</sup>	4.82 <sup>B</sup>	3.70 (3, 382)	.012	.028
	1.61	1.87	1.35	1.71	1.58			
Case study guided by instructor	4.30	4.29	4.10	4.44	4.33	.52 (3, 374)	.67	
	1.66	1.64	1.86	1.59	1.62			
FBM instructors with specialty knowledge	5.00	4.97	4.61	5.20	5.07	2.28 (3, 381)	.08	
	1.46	1.53	1.42	1.43	1.46			
Representatives of agriculture supply companies	4.43	4.82	4.41	4.57	4.32	1.23 (3, 378)	.30	
	1.53	1.85	1.46	1.48	1.51			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. *Means with the same letter in their superscripts do not differ significantly from one another.*

## Appendix B25

Table 25. Instructional Preferences of Farmers by Type of Operation

	Type of Farm				ANOVA		
	Total N= 391	Crop n= 218	Livestock n= 74	Crop and Livestock n= 99	F (df <sub>b</sub> , df <sub>w</sub> )	p	$\eta^2$
Field trips	4.68 <sup>1</sup>	4.69	4.63	4.66	.14 (3, 375)	.94	
	1.58 <sup>2</sup>	1.58	1.66	1.49			
Question and answer sessions	4.79	4.85	4.75	4.73	.75 (3, 372)	.52	
	1.43	1.42	1.49	1.47			
Demonstrations	5.01	5.13	4.69	4.96	1.58 (3, 369)	.19	
	1.48	1.43	1.71	1.38			
Conferences for producers	4.88	5.02	4.47	4.91	2.70 (3, 366)	.046	.022
	1.59	1.57	1.77	1.42			
Hands on learning activities	5.28	5.19	5.30	5.40	.63 (3, 363)	.60	
	1.47	1.52	1.55	1.34			
Individualized in-person with an instructor	5.80	5.76	6.13	5.69	1.51 (3, 375)	.21	
	1.47	1.54	1.29	1.43			
Guest Speakers	4.86	4.93	4.64	4.91	1.97* (3, 33.6)	.14*	
	1.44	1.43	1.71	1.29			
Events at a central location with featured speakers & experts	4.74	4.88	4.51	4.61	1.41 (3, 369)	.24	
	1.56	1.57	1.60	1.57			
Webinar	3.52	3.52	3.13	3.67	1.77 (3, 369)	.15	
	1.93	1.96	1.90	1.86			
Farmers	4.98	4.86	5.30	4.99	1.62 (3, 378)	.18	
	1.61	1.66	1.67	1.48			
Case study guided by instructor	4.30	4.35	4.34	4.20	.27 (3, 370)	.85	
	1.66	1.66	1.84	1.57			
FBM instructors with specialty knowledge	5.00	5.08	4.78	4.98	.73 (3, 377)	.54	
	1.46	1.47	1.66	1.35			
Representatives of agriculture supply companies	4.43	4.55	4.15	4.28	4.54* (3, 38.2)	.008*	.016
	1.53	1.65	1.43	1.36			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

## Appendix B26

*Table 26. Instructional Preferences of Farmers by Average Annual Total Sales*

Farm Sales										ANOVA	
	Total	\$0-99.9K	\$100-249.99K	\$250-499.99K	\$500 – 999.99K	\$1M – 2.49	>\$2.5 M	F (df <sub>b</sub> , df <sub>w</sub> )	p	η <sup>2</sup>	
	N= 395	n= 31	n= 73	n= 117	n= 105	n= 60	n= 9				
Field trips	4.68 <sup>1</sup>	4.97	4.92	4.63	4.57	4.50	4.67	.78 (5, 370)	.56		
	1.58 <sup>2</sup>	1.38	1.55	1.67	1.58	1.54	1.8				
Question and answer sessions	4.79	4.87	4.89	4.99	4.62	4.47	5.22	1.53 (5, 368)	.18		
	1.43	1.17	1.48	1.35	1.55	1.47	1.39				
Demonstrations	5.01	4.90	5.07	5.02	5.02	4.90	5.44	.27 (5, 365)	.93		
	1.48	1.47	1.65	1.43	1.48	1.48	1.51				
Conferences for producers	4.88	4.66	4.84	4.84	4.97	4.80	5.78	.80 (5, 362)	.55		
	1.59	1.74	1.57	1.59	1.60	1.56	1.72				
Hands on learning activities	5.28	5.29	5.61	5.32	5.03	5.11	5.67	1.52 (5, 359)	.18		
	1.47	1.44	1.31	1.49	1.57	1.55	1.00				
Individualized in-person with an instructor	5.80	5.97	6.08	5.83	5.57	5.67	6.11	1.36* (5, 66.4)	.25		
	1.47	1.40	1.22	1.46	1.61	1.58	1.05				
Guest Speakers	4.86	4.63	4.83	4.80	5.04	4.76	5.33	.74 (5, 370)	.59		
	1.44	1.61	1.41	1.47	1.41	1.52	.71				
Events at a central location with featured speakers & experts	4.74	4.38 <sup>A</sup>	4.69 <sup>A</sup>	4.45 <sup>A</sup>	5.06 <sup>AB</sup>	4.84 <sup>AB</sup>	5.67 <sup>B</sup>	4.45* (5, 70.9)	.001*	.035	
	1.56	1.68	1.41	1.71	1.50	1.52	.71				
Webinar	3.52	3.13	3.35	3.29	3.64	3.97	4.56	1.89 (5, 365)	.10		
	1.93	2.13	1.84	2.02	1.89	1.85	1.42				
Farmers	4.98	5.43	5.34	5.00	4.72	4.80	4.67	1.94 (5, 374)	.09		
	1.61	1.38	1.47	1.61	1.75	1.57	2.00				
Case study guided by instructor	4.30	3.90	4.37	4.39	4.25	4.36	4.00	.52 (5, 366)	.76		
	1.66	1.84	1.62	1.74	1.70	1.47	1.50				
FBM instructors with specialty knowledge	5.00	4.73	4.86	4.87	5.16	5.14	5.89	1.50 (5, 372)	.19		
	1.46	1.60	1.51	1.52	1.46	1.33	.60				
Representatives of agriculture supply companies	4.43	4.27	4.51	4.34	4.52	4.41	4.22	.29 (5, 370)	.92		
	1.53	1.55	1.52	1.47	1.66	1.52	1.20				

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

## Appendix B27

*Table 27. Instructional Preferences of Farmers by Years in Farming*

	Years in Farming				ANOVA		
	Total N= 397	1-10 n= 72	11-20 n= 85	21+ n= 240	F (df <sub>b</sub> , df <sub>w</sub> )	p	$\eta^2$
Field trips	4.68 <sup>1</sup> 1.58 <sup>2</sup>	5.10 <sup>A</sup> 1.46	4.71 <sup>AB</sup> 1.63	4.54 <sup>B</sup> 1.58	3.39 (2, 375)	.04	.018
Question and answer sessions	4.79 1.43	4.96 1.35	4.82 1.56	4.71 1.41	.79 (2, 372)	.45	
Demonstrations	5.01 1.48	5.15 1.35	5.01 1.63	4.96 1.48	.44 (2, 369)	.65	
Conferences for producers	4.88 1.59	5.03 1.49	4.71 1.84	4.90 1.53	.77 (2, 366)	.46	
Hands on learning activities	5.28 1.47	5.52 1.25	5.50 1.49	5.12 1.51	3.17 (2, 364)	.04	.017
Individualized in-person with an instructor	5.80 1.47	5.97 1.14	5.65 1.59	5.81 1.51	.89 (2, 375)	.41	
Guest Speakers	4.86 1.44	4.93 1.35	4.79 1.58	4.86 1.43	.16 (2, 375)	.85	
Events at a central location with featured speakers & experts	4.74 1.56	4.85 4.72	1.528 1.74	4.85 4.72	.25 (2, 369)	.78	
Webinar	3.52 1.93	3.49 3.60	1.787 1.87	3.49 3.60	.10 (2, 369)	.90	
Farmers	4.98 1.61	5.16 1.64	5.18 1.66	4.85 1.58	1.81 (2, 378)	.17	
Case study guided by instructor	4.30 1.66	4.35 1.70	4.26 1.60	4.30 1.68	.06 (2, 370)	.95	
FBM instructors with specialty knowledge	5.00 1.46	5.07 1.32	4.88 1.62	5.02 1.46	.40 (2, 377)	.67	
Representatives of agriculture supply companies	4.43 1.53	4.41 1.38	4.41 1.72	4.43 1.51	.01 (2, 374)	.99	

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. *Means with the same letter in their superscripts do not differ significantly from one another.*

## Appendix B28

*Table 28. Instructional Media Preferences of Farmers by Age*

	Age						ANOVA		
	Total	<30 <i>n</i> = 40	30-39 <i>n</i> = 68	40-49 <i>n</i> = 98	50-59 <i>n</i> = 119	+60 <i>n</i> = 61	<i>F</i> (df <sub>b</sub> , df <sub>w</sub> )	<i>p</i>	η <sup>2</sup>
Printed materials	<i>N</i> = 386								
	5.55 <sup>1</sup>	5.40	5.53	5.70	5.49	5.49	.56 (4, 368)	.69	
	1.26 <sup>2</sup>	1.482	1.372	1.056	1.289	1.311			
Electronic (or digital) materials delivered via e-mail or the internet	4.78	4.55	4.60	4.82	4.80	5.12	.98* (4, 147.1)	.42*	
	1.79	2.183	1.675	1.802	1.783	1.536			
Communication with instructor by telephone	5.01	5.10	5.37	4.71	4.86	5.34	2.82* (4, 147.7)	.027*	.027
	1.62	1.889	1.496	1.678	1.664	1.264			
Farm demonstration plots	4.96	4.84	5.12	4.94	4.95	5.02	.29 (4, 369)	.88	
	1.44	1.516	1.474	1.405	1.419	1.408			
Sample problems and/or simulations	4.23	3.82	4.53	4.20	4.25	4.21	1.16 (4, 362)	.33	
	1.64	1.658	1.671	1.714	1.545	1.655			
The internet for information and class instruction	4.08	3.68	4.05	3.86	4.25	4.33	1.26* (4, 143.8)	.29*	
	1.83	2.081	1.764	1.887	1.844	1.562			
E-mail communications from instructor	4.74	4.53	4.58	4.64	4.92	4.89	.70* (4, 142.6)	.60*	
	1.83	2.202	1.859	1.935	1.710	1.543			
Informative newspaper columns prepared by instructor	4.55	4.68	4.55	4.54	4.57	4.50	.09 (4, 364)	.99	
	1.55	1.579	1.611	1.612	1.470	1.547			
Online video library - presentations	3.67	3.49	3.55	3.60	3.81	3.80	.48* (4, 143.3)	.75*	
	1.78	1.835	1.501	1.975	1.833	1.580			
Online library of general information by the instructor	3.79	3.54	3.64	3.79	3.89	3.93	.47 (4, 362)	.76	
	1.82	1.862	1.646	1.939	1.874	1.693			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.



## Appendix B29

*Table 29. Instructional Media Preferences of Farmers by Region*

	Total N= 404	Region				ANOVA		
		RRV n= 37	North n= 74	Central n= 71	South n= 222	F (df <sub>b</sub> , df <sub>w</sub> )	p	$\eta^2$
Printed materials	5.55 <sup>1</sup>	5.57	5.53	5.53	5.56	.02 (3, 387)	.99	
	1.26 <sup>2</sup>	1.48	1.18	1.26	1.25			
Electronic (or digital) materials delivered via e-mail or the internet	4.78	5.17 <sup>B</sup>	4.20 <sup>A</sup>	4.58 <sup>AB</sup>	4.98 <sup>B</sup>	4.38 (3, 385)	.005	.033
	1.79	1.77	1.82	1.82	1.73			
Communication with instructor by telephone	5.01	4.83	5.21	5.24	4.89	1.38 (3, 384)	.25	
	1.62	1.76	1.63	1.66	1.57			
Farm demonstration plots	4.96	5.17	5.07	4.80	4.93	.69 (3, 387)	.56	
	1.44	1.40	1.41	1.50	1.45			
Sample problems and/or simulations	4.23	4.31	4.10	4.28	4.24	.20 (3, 380)	.90	
	1.64	1.53	1.66	1.49	1.71			
The internet for information and class instruction	4.08	4.00 <sup>AB</sup>	3.59 <sup>A</sup>	3.91 <sup>AB</sup>	4.32 <sup>B</sup>	3.16 (3, 380)	.025	.024
	1.83	1.74	1.82	1.79	1.83			
E-mail communications from instructor	4.74	5.15	4.32	4.83	4.79	1.91 (3, 382)	.13	
	1.83	1.71	1.90	1.74	1.85			
Informative newspaper columns prepared by instructor	4.55	4.57	4.24	4.70	4.60	1.24 (3, 382)	.30	
	1.55	1.52	1.57	1.57	1.54			
Online video library - presentations	3.67	3.94 <sup>AB</sup>	3.03 <sup>A</sup>	3.68 <sup>AB</sup>	3.83 <sup>B</sup>	3.84 (3, 376)	.01	.030
	1.78	1.61	1.62	1.96	1.76			
Online library of general information by the instructor	3.79	4.03 <sup>AB</sup>	3.16 <sup>A</sup>	3.94 <sup>AB</sup>	3.91 <sup>B</sup>	3.52 (3, 379)	.015	.027
	1.82	1.58	1.77	1.96	1.79			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. *Means with the same letter in their superscripts do not differ significantly from one another.*

## Appendix B30

*Table 30. Instructional Media Preferences of Farmers by Type of Farm*

	Type of Farm				ANOVA		
	Total <i>N</i> = 391	Crop <i>n</i> = 218	Livestock <i>n</i> = 74	Crop and Livestock <i>n</i> = 99	<i>F</i> ( <i>df</i> <sub>b</sub> , <i>df</i> <sub>w</sub> )	<i>p</i>	$\eta^2$
Printed materials	5.55 <sup>1</sup> 1.26 <sup>2</sup>	5.60 1.22	5.40 1.40	5.51 1.26	.45 (3, 383)	.72	
Electronic (or digital) materials delivered via e-mail or the internet	4.78 1.79	4.88 <sup>A</sup> 1.77	4.12 <sup>B</sup> 1.91	5.04 <sup>A</sup> 1.65	4.21 (3, 381)	.006	.032
Communication with instructor by telephone	5.01 1.62	4.94 1.69	5.01 1.66	5.16 1.44	.41 (3, 380)	.74	
Farm demonstration plots	4.96 1.44	5.09 1.41	4.70 1.63	4.85 1.38	1.67 (3, 383)	.17	
Sample problems and/or simulations	4.23 1.64	4.25 1.67	4.19 1.70	4.25 1.59	.15 (3, 376)	.93	
The internet for information and class instruction	4.08 1.83	4.15 1.85	3.64 1.86	4.18 1.74	2.07 (3, 376)	.10	
E-mail communications from instructor	4.74 1.83	4.74 <sup>AB</sup> 1.78	4.17 <sup>A</sup> 2.01	5.10 <sup>B</sup> 1.76	4.01 (3, 378)	.008	.031
Informative newspaper columns prepared by instructor	4.55 1.55	4.50 1.53	4.43 1.60	4.64 1.56	1.60 (3, 378)	.19	
Online video library - presentations	3.67 1.78	3.67 1.75	3.58 1.87	3.65 1.79	.65 (3, 372)	.59	
Online library of general information by the instructor	3.79 1.82	3.78 1.77	3.62 1.85	3.85 1.90	.52 (3, 375)	.67	

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. *Means with the same letter in their superscripts do not differ significantly from one another.*

# Appendix B31

Table 31. Instructional Media Preferences of Farmers by Average Annual Total Farm Sales

	Farm Sales							ANOVA	
	Total N= 395	\$0-99.9K n= 31	\$100- 249.99K n= 73	\$250- 499.99K n= 117	\$500 - 999.99K n= 105	\$1M - 2.49 n= 60	>\$2.5 M n= 9	F (df <sub>b</sub> , df <sub>w</sub> )	p
Printed materials	5.55 <sup>1</sup>	5.60	5.74	5.58	5.42	5.42	5.78	.74 (5, 378)	.60
	1.26 <sup>2</sup>	1.19	1.29	1.17	1.32	1.37	.97		
Electronic (or digital) materials delivered via e-mail or the internet	4.78	4.58 <sup>AC</sup>	4.77 <sup>AC</sup>	4.46 <sup>A</sup>	4.83 <sup>AC</sup>	5.37 <sup>BC</sup>	6.00 <sup>B</sup>	6.39* (5, 74.2)	.000*
	1.79	1.95	1.91	1.93	1.71	1.38	.71		
Communication with instructor by telephone	5.01	4.94	5.17	5.12	4.79	4.93	5.33	.71 (5, 376)	.62
	1.62	1.97	1.56	1.66	1.58	1.54	1.50		
Farm demonstration plots	4.96	5.23	4.93	4.89	5.06	4.83	4.78	.48 (5, 379)	.79
	1.44	1.45	1.67	1.42	1.29	1.35	2.11		
Sample problems and/or simulations	4.23	4.43	4.37	4.27	4.10	4.10	4.44	.41 (5, 372)	.84
	1.64	1.79	1.78	1.67	1.58	1.44	2.13		
The internet for information and class instruction	4.08	4.40 <sup>AB</sup>	4.17 <sup>AB</sup>	3.58 <sup>A</sup>	4.22 <sup>AB</sup>	4.48 <sup>B</sup>	5.00 <sup>AB</sup>	3.15 (5, 372)	.01
	1.83	1.91	1.73	1.82	1.86	1.75	1.50		
E-mail communications from instructor	4.74	4.38 <sup>A</sup>	4.59 <sup>A</sup>	4.46 <sup>A</sup>	4.90 <sup>A</sup>	5.21 <sup>AB</sup>	6.22 <sup>B</sup>	5.52* (5, 68.7)	.000*
	1.83	1.88	1.86	1.98	1.74	1.58	.97		
Informative newspaper columns prepared by instructor	4.55	4.23	4.65	4.56	4.57	4.47	4.78	.40 (5, 374)	.85
	1.55	1.54	1.71	1.51	1.55	1.46	1.79		
Online video library - presentations	3.67	3.53	3.60	3.44	3.85	3.86	4.67	1.33 (5, 368)	.25
	1.78	1.87	1.73	1.81	1.79	1.71	1.66		
Online library of general information by the instructor	3.79	3.73	3.96	3.50	3.90	3.88	4.89	1.48 (5, 371)	.20
	1.82	1.91	1.95	1.79	1.79	1.76	1.17		

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

# Appendix B32

Table 32. Instructional Media Preferences of Farmers by Years in Farming

	Years in Farming				ANOVA		
	Total N= 397	1-10 n= 72	11-20 n= 85	21+ n= 240	F (df <sub>tr</sub> , df <sub>w</sub> )	p	$\eta^2$
Printed materials	5.55 <sup>1</sup>	5.55	5.51	5.55	.03 (2, 383)	.97	
	1.26 <sup>2</sup>	1.13	1.37	1.25			
Electronic (or digital) materials delivered via e-mail or the internet	4.78	4.96	4.70	4.76	.44 (2, 381)	.65	
	1.79	1.83	1.79	1.78			
Communication with instructor by telephone	5.01	4.88	4.94	5.07	.44 (2, 380)	.65	
	1.62	1.65	1.69	1.60			
Farm demonstration plots	4.96	5.07	5.12	4.87	1.21 (2, 383)	.30	
	1.44	1.39	1.55	1.42			
Sample problems and/or simulations	4.23	4.62	4.19	4.12	2.45 (2, 376)	.09	
	1.64	1.43	1.70	1.67			
The internet for information and class instruction	4.08	4.38	4.05	4.00	1.19 (2, 376)	.31	
	1.83	1.72	1.84	1.85			
E-mail communications from instructor	4.74	4.87	4.67	4.72	.24 (2, 378)	.79	
	1.83	1.73	1.89	1.85			
Informative newspaper columns prepared by instructor	4.55	4.76	4.45	4.52	.87 (2, 378)	.42	
	1.55	1.42	1.53	1.60			
Online video library - presentations	3.67	3.81	3.83	3.58	.78 (2, 372)	.46	
	1.78	1.70	1.69	1.84			
Online library of general information by the instructor	3.79	4.07	3.85	3.68	1.30 (2, 375)	.27	
	1.82	1.80	1.73	1.85			

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

### Appendix B33

Table 33. Barriers to Participation in Education and Training Provided by Farm Sales and Farm Type

		Farm Sales					
		\$0-99.9K	\$100-249.99K	\$250-499.99K	\$500 – 999.99K	\$1M – 2.499K	>\$2.5 M
Total							
N= 395		n= 31	n= 73	n= 117	n= 105	n= 60	n= 9
272		22	43	82	74	38	7
68.9%		71.0%	58.9%	70.1%	70.5%	63.3%	77.8%
49		4	11	20	7	6	4
12.4%		12.9%	15.1%	17.1%	6.7%	10.0%	44.4%
116		9	22	38	27	14	3
29.4%		29.0%	30.1%	32.5%	25.7%	23.3%	33.3%
74		6	13	20	21	11	2
18.7%		19.4%	17.8%	17.1%	20.0%	18.3%	22.2%
187		18	36	50	49	27	3
47.3%		58.1%	49.3%	42.7%	46.7%	45.0%	33.3%
61		1	7	20	21	9	1
15.4%		3.2%	9.6%	17.1%	20.0%	15.0%	11.1%
50		5	9	12	14	8	2
12.7%		16.1%	12.3%	10.3%	13.3%	13.3%	22.2%
27		5	5	3	8	6	0
6.8%		16.1%	6.8%	2.6%	7.6%	10.0%	0.0%
31		2	3	10	5	9	2
7.8%		6.5%	4.1%	8.5%	4.8%	15.0%	22.2%
40		4	10	18	4	4	0
10.1%		12.9%	13.7%	15.4%	3.8%	6.7%	0.0%
18		1	5	5	3	4	0
4.6%		3.2%	6.8%	4.3%	2.9%	6.7%	0.0%
24		3	4	7	7	3	0
6.1%		9.7%	5.5%	6.0%	6.7%	5.0%	0.0%
34		3	1	11	10	7	2
8.6%		9.7%	1.4%	9.4%	9.5%	11.7%	22.2%
I am too busy to attend							
The cost of registration is too high							
The distance to attend the events is too far							
I am not aware of the education events							
The time of day the events often conflicts with my schedule							
Agricultural suppliers already provide the education							
The education programs are not designed for my type of operation							
I can usually find what I need to know on the internet							
The instruction does not meet my needs							
I do not have time to complete related assignments							
The instruction does not provide for my preferred ways of learning							
I learn what I need to from family, friends, and other producers							
Similar events in the past have not provided sufficient information to justify attendance							

# Appendix B34

Table 34. Related Information by Average Annual Total Farm Sales

	Total N= 395	Farm Sales							F (df <sub>b</sub> , df <sub>w</sub> )	ANOVA	
		\$0-99.9K n= 31	\$100- 249.99K n= 73	\$250- 499.99K n= 117	\$500 - 999.99K n= 105	\$1M -2.49 n= 60	>\$2.5 M n= 9			p	$\eta^2$
Total miles willing to travel	56.49 <sup>1</sup> 63.18 <sup>2</sup>	44.07 26.42	59.72 118.36	50.30 39.72	59.83 46.58	61.23 44.92	85.56 41.87		.96 (5, 365)	.44	
Amount (\$) willing to pay for a year-around FBM Program	1305.37 704.88	889.29 <sup>A</sup> 526.58	1186.70 <sup>AB</sup> 630.31	1236.32 <sup>B</sup> 568.43	1351.80 <sup>B</sup> 563.38	1482.00 <sup>B</sup> 832.24	2683.33 <sup>AB</sup> 1515.34		5.50* (5, 60.7)	.00*	.147
Amount (\$) willing to pay for a 1/2 day workshop	59.79 59.43	57.32 53.88	46.77 37.96	63.21 79.72	55.49 44.35	78.54 60.76	73.75 60.46		2.26* (5, 56.5)	.06*	
Amount (\$) willing to pay for a full day workshop	99.24 87.56	97.50 100.45	77.62 74.23	99.21 98.92	97.17 69.38	124.57 91.02	139.44 140.79		1.94 (5, 333)	.09	

Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

# Appendix B35

Table 35. Related Information by Region

	Region				ANOVA		
	Total	RRV	North	Central	South	F (df <sub>b</sub> , df <sub>w</sub> )	p
Total miles willing to travel	N= 404	n= 37	n= 74	n= 71	n= 222		
	56.49 <sup>1</sup>	60.44	59.65	56.17	54.83	.15	.93
	63.18 <sup>2</sup>	44.34	33.31	48.06	75.86	(3, 372)	
Amount (\$) willing to pay for a year-around FBM Program	1305.37	1304.84 <sup>AB</sup>	1052.94 <sup>A</sup>	1232.44 <sup>AB</sup>	1419.05 <sup>B</sup>	4.92	.002
	704.88	620.80	662.14	545.23	753.17	(3, 343)	
Amount (\$) willing to pay for a 1/2 day workshop	59.79	66.56	55.15	51.33	62.81	.84	.47
	59.43	62.60	54.29	42.03	64.85	(3, 349)	
Amount (\$) willing to pay for a full day workshop	99.24	106.09	89.59	90.42	103.88	.70	.56
	87.56	90.50	86.17	85.89	88.23	(3, 343)	

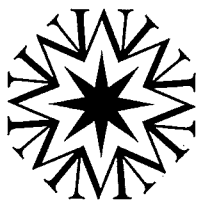
Notes: <sup>1</sup>Mean of Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. <sup>2</sup> Standard Deviation. \* Welch's weighted-variance ANOVA (Significant Levene's Test of Homogeneity); Games-Howell Post Hoc. Means with the same letter in their superscripts do not differ significantly from one another.

# Appendix B36

Table 36. Related Information by Average Annual Total Farm Sales and Type of Farm

Farm Sales							
	Total N= 404	\$0-99.9K n= 31	\$100-249.99K n= 73	\$250-499.99K n= 117	\$500 – 999.99K n= 105	\$1M – 2.499K n= 60	>\$2.5 M n= 9
Internet	360	28	63	96	97	60	9
High-speed internet	317	24	54	80	93	55	8
Will enroll in the Minnesota FBM Program	375	28	67	111	101	52	9
No. workshops in next 10 months							
0	48	6	7	15	11	6	2
1-3	192	13	38	63	46	26	2
4-6	83	4	16	20	24	15	3
7-9	20	0	6	4	7	1	0
>9	11	1	1	2	3	3	0
Providers of agricultural education:							
MN State Colleges and Universities	261	20	52	74	66	38	4
Agricultural Suppliers (Credit, feed, seed, insurance, equipment, etc.)	253	16	51	74	62	37	6
Extension Service	137	9	25	38	37	20	5
Crop &/or Livestock Commodity Orgs.	135	8	22	40	39	18	4
Private Agricultural Consultants	127	7	21	37	34	26	0
Government Agencies (FSA, NRCS, MPCA, etc)	109	6	15	36	32	15	2
University of MN	75	5	9	22	21	14	1





**Minnesota**  
**STATE COLLEGES**  
**& UNIVERSITIES**

WELLS FARGO PLACE  
30 7<sup>TH</sup> ST. E., SUITE 350  
ST. PAUL, MN 55101-7804

ph 651.201-1660  
fx 651.296-3214  
[www.mnscu.edu](http://www.mnscu.edu)

ACADEMIC AND  
STUDENT AFFAIRS  
JUNE 2012

The Minnesota State Colleges and Universities system is an Equal Opportunity educator and employer.  
For TTY communication, contact Minnesota Relay Service at 7-1-1 or 1-800-627-3529.  
This document can be made available in alternate formats upon request.