Educational Interests, Needs and Instructional Preferences

of Minnesota Farmers and Farmers Enrolled in the Farm Business Management Education Program



|  |  |
| --- | --- |
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***Important Note:*** *On the following pages, the left pages represent the findings of a sample of producers from 404 farms of a population of 2850 farms expected to enroll in the FBM program in FY2012. The right-hand page findings are from data collected by the National Agricultural Statistics Service. The useable sample of 650 instruments was expanded (expansion factor) by income strata (levels) to represent the 73,614 farms of record for the NASS.in the fall of 2011.*

**INTRODUCTION**

Background

The FBM Education Program has invested nearly 60 years in delivering business management education to Minnesota producers. The program is designed to provide education which assists producers in meeting their business goals. Over 65 program faculty members currently teach the program to over 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 producers’ 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. 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, interest, and preferences of Minnesota farmers regarding:

1. farm business management education,
2. production management education,
3. program delivery preferences, and
4. the barriers to participation in education programs.

***Important Note:*** *Data for this working document regards separate samples of FBM students and all Minnesota farmers. The data is presented in tabular form for major topics of the study -- more tables and written findings exist and will be included in the final reports. Final report documents for each population of Minnesota farmers will be available in May 2012 on the FBM website at* [*www.fbm.mnscu.edu*](http://www.fbm.mnscu.edu)

**RESULTS**

**Demographic Characteristics of Participants**

Table 1

***Characteristics of the FBM Minnesota Producers Study Participants***

|  |  |  |
| --- | --- | --- |
| Demographic characteristics | N | % |
| No. of Respondents | 404 |  |
| Primary Operators of the Farm (Q2)1 |  |  |
| 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) |  |  |
| 8th grade | 1 | 0.24 |
| High School Graduate | 103 | 25.5 |
| 1 Yr College Degree | 51 | 12.6 |
| 2 Yr 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 |

**Table A. *Characteristics of the Minnesota Study Participants***

|  |  |  |
| --- | --- | --- |
| Demographic Characteristics | n | % |
| Primary Operators of the Farm (Q2)a | 73,614 |  |
| Respondent | 65,574 | 89.1 |
| Spouse | 10,851 | 14.7 |
| Business partner | 6,090 | 8.3 |
| Average Annual Farm Sales (Q7) |  |  |
| < $10,000 | 21,747 | 31.6 |
| 10,000-$24,999 | 8,682 | 12.6 |
| 25,000-$49,999 | 7,250 | 10.5 |
| 50,000 - $99,999 | 9,364 | 13.6 |
| 100,000-$249,999 | 9,337 | 13.5 |
| 250,000-$499,999 | 5,230 | 7.6 |
| 500,000-$999,999 | 3,945 | 5.7 |
| 1,000,000- $2,499,999 | 2,500 | 3.6 |
| >2.500,000 | 872 | 1.3 |
| Age in years |  |  |
| 20-35 | 5,054 | 7.0 |
| 36-45 | 6,904 | 9.6 |
| 46-55 | 18,631 | 26.0 |
| 56-65 | 23,045 | 32.1 |
| 66-75 | 11,726 | 16.3 |
| 76+ | 6,420 | 8.9 |
| Gender | 71,351 |  |
| Male | 62,670 | 87.8 |
| Female | 8,681 | 12.2 |
| Highest level of education completed (Q46) |  |  |
| High School Graduate | 25,652 | 35.6 |
| 2 Yr College Degree | 17,088 | 23.7 |
| Bachelor’s Degree | 12,402 | 17.2 |
| 1 Yr College Degree | 6,191 | 8.6 |
| Graduate Degree | 4,689 | 6.5 |
| Other | 3,378 | 5.2 |
| 8th grade | 2,299 | 3.2 |
| Work part-time off the farm (Q44) | 29,707 | 44.0 |
| Spanish, Hispanic or Latino background (Q47) | 140 | 0.2 |
| Race (Q48) |  |  |
| White | 69,842 | 94.9 |
| Native Hawaiian or Other Pacific Islander | 260 | 0.4 |
| American Indian or Alaskan Native | 140 | 0.2 |
| Black or African American | 140 | 0.2 |
| Asian | 0 | 0 |

Notes. aThe letter Q followed by a number represents the survey questions number (Appendix X)

**Farm Business Characteristics**

**Table 2**

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

|  |  |  |
| --- | --- | --- |
| Business Characteristics | N | % |
| No. of Farms | 404 |  |
| Form of Farm Business(Q 4) |  |  |
| 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 |

1The letter Q followed by a number represents the survey questions number (Appendix X)

**Table B1. *Farm Business Characteristics of Minnesota Farmers***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Business characteristics | N | Farm Sales (1,000s) | | | | | | |
| <$25 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 |
| No. of Farms in the Study | 73,614 | 30,429 | 7,250 | 9,364 | 9,337 | 5,230 | 3,945 | 3,371 |
| Form of Farm Business (Q4) | 68,425 | 30,111 | 7,123 | 9,364 | 9,279 | 5,231 | 3,945 | 3,372 |
| Sole Proprietorship | 85.0% | 26,118 | 6,565 | 8,583 | 8,230 | 4,254 | 2,888 | 1,505 |
| Legal Partnership | 6.4% | 1,838 | 418 | 514 | 537 | 299 | 245 | 506 |
| Corporation (LLC or C) | 6.0% | 911 | 140 | 57 | 512 | 621 | 641 | 1,247 |
| Unknown | 2.3% | 1,090 | - | 210 | - | 57 | 114 | 114 |
| Other | 0.3% | 154 | - | - | - | - | 57 | - |
| Years Involved in Farming (Q5) | 68,222 | 29,942 | 7,250 | 9,212 | 9,272 | 5,230 | 3,945 | 3,371 |
| M | 28.6 | 25.4 | 29.2 | 29.9 | 33.0 | 31.7 | 31.4 | 32.2 |
| SD | 14.881 | 14.647 | 13.512 | 17.712 | 14.323 | 12.976 | 10.286 | 13.699 |
| Years Involved in Farming Categories (Q5) | 68,223 | 29,943 | 7,250 | 9,212 | 9,271 | 5,230 | 3,945 | 3,372 |
| 10 or less | 23.4% | 9,356 | 1,425 | 2,425 | 1,070 | 843 | 304 | 549 |
| 11- 20 | 12.4 | 4,368 | 1,225 | 782 | 1,010 | 232 | 357 | 500 |
| 21 or more | 64.2 | 16,219 | 4,600 | 6,005 | 7,191 | 4,155 | 3,284 | 2,323 |
| Type of Farm Operation (Q10) | 65,827 | 27,791 | 7,250 | 9,085 | 9,210 | 5,231 | 3,944 | 3,315 |
| Crops | 41.3% | 7,568 | 2,661 | 5,386 | 4,501 | 2,989 | 2,299 | 1,807 |
| Crops and livestock | 25.2% | 4,361 | 2,732 | 2,013 | 3,346 | 1,825 | 1,350 | 937 |
| Livestock | 19.2% | 7,959 | 1,171 | 1,234 | 1,171 | 417 | 238 | 449 |
| Fruits or vegetables | 3.6% | 1,546 | 419 | 312 | - | - | - | 65 |
| Specialty crops | 1.2% | 588 | - | - | 65 | - | 57 | 57 |
| Other | 9.6% | 5,770 | 267 | 140 | 127 | - | - | - |
| Type of Production (Q11) |  |  |  |  |  |  |  |  |
| Conventional | 51,552 a | 17,979c | 6,273 | 7,665 | 8,227 | 4,882 | 3,464 | 3,062 |
| 70.0%b | 34.9%d | 12.2% | 14.9% | 16.0% | 9.5% | 6.7% | 5.9% |
| Grass-based | 6,502 | 5,504 | 292 | 450 | 256 | 0 | 0 | 0 |
| 8.8% | 84.7% | 4.5% | 6.9% | 3.9% | - | - | - |
| Sustainable | 6,016 | 2,190 | 850 | 673 | 862 | 500 | 640 | 301 |
| 8.2% | 36.4% | 14.1% | 11.2% | 14.3% | 8.3% | 10.6% | 5.0% |
| Organic-Uncertified | 2,543 | 2,485 | 0 | 0 | 58 | 0 | 0 | 0 |
| 3.5% | 97.7% | - | - | 2.3% | - | - | - |
| Organic-Certified | 941 | 154 | 0 | 405 | 140 | 115 | 127 | 0 |
| 1.3% | 16.4% | - | 43.0% | 14.9% | 12.2% | 13.5% |  |
| Organic-Transitional | 651 | 459 | 127 | 65 | 0 | 0 | 0 | 0 |
| 0.9% | 70.5% | 19.5% | 10.0% | - | - | - | - |

Notes: aTotal number of farmers with listed type of production regardless of gross annual sales. For example, 51,552 farmers in Minnesota use conventional farming practices.  bThe proportion (%) of total farmers who use the selected type of production practice. For example, 70.0% (55,551/73,614) of farmers in the state use conventional farming practices, regardless of gross annual sales. cThe number of farmers with the indicated gross annual sales who use the indicated type of production (i.e., 17,979 farmers who use conventional farming practices earn less than $25,000 annually). dThe proportion (%) of farmers who use the indicated type of production for the indicated gross annual sales. For example 34.9% (17,979/51,552) of growers who use conventional farming practices have annual gross sales of <$25,000.

**Selected Vendors**

Table 3

***Selected Vendors Used by the Farmers***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | | | Type of Farm | | | | | |  |
|  | Total | | | Crop | | | Livestock | | Crop & Livestock | |
|  | 404 | | % | 218 | | % | 74 | % | 99 | % |
| Farm Business Manager 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 |
| 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 |

**Table B2. *Vendors Who Assist Farmers***

| Vendors (Q3) | Total | Farm Sales (1,000s) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| <$25 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1M |
| Tax preparation service | 48,567 | **17,490** | **4,909** | **6,961** | **8,112** | **4,534** | **3,703** | **2,857** |
| 66.0%a | 36.0%b | 10.1% | 14.3% | 16.7% | 9.3% | 7.6% | 5.9% |
| Veterinary service | 26,696 | **11,007** | **4,101** | **2,976** | 3,771 | 2,250 | 1,280 | 1,310 |
| 36.3 | 41.2 | 15.4 | 11.1 | 14.1 | 8.4 | 4.8 | 4.9 |
| Bankers | 25,553 | 4,675 | 2,928 | **3,829** | **4,679** | **3,536** | **3,466** | **2,440** |
| 34.7 | 18.3 | 11.5 | 15.0 | 18.3 | 13.8 | 13.6 | 9.5 |
| Other farmers | 22,499 | **9,434** | **3,358** | 2,911 | 2,909 | 1,475 | 1,361 | 1,050 |
| 30.6 | 41.9 | 14.9 | 12.9 | 12.9 | 6.6 | 6.0 | 4.7 |
| Crop consultant | 16,328 | 1,998 | 837 | **3,143** | **3,592** | **2,771** | **2,330** | 1,656 |
| 22.2 | 12.2 | 5.1 | 19.3 | 22.0 | 17.0 | 14.3 | 10.1 |
| Lawyer | 13,059 | 2,899 | 908 | 1,469 | 2,089 | 1,768 | 2,032 | **1,894** |
| 17.7 | 22.2 | 7.0 | 11.2 | 16.0 | 13.5 | 15.6 | 14.5 |
| Crop marketing advisor(s) | 10,098 | 910 | 558 | 890 | 2,749 | 1,492 | 2,008 | 1,491 |
| 13.7 | 9.0 | 5.5 | 8.8 | 27.2 | 14.8 | 19.9 | 14.8 |
| Nutrition consultant | 8,361 | 1,940 | 679 | 1,035 | 1,575 | 1,234 | 871 | 1,028 |
| 11.4 | 23.2 | 8.1 | 12.4 | 18.8 | 14.8 | 10.4 | 12.3 |
| Retirement specialist | 6,976 | 1,533 | 851 | 858 | 1,370 | 1,063 | 477 | 824 |
| 9.5 | 22.0 | 12.2 | 12.3 | 19.6 | 15.2 | 6.8 | 11.8 |
| Business accounting service | 6,618 | 2,471 | 0 | 809 | 702 | 574 | 1,053 | 1,010 |
| 9.0 | 37.3 | - | 12.2 | 10.6 | 8.7 | 15.9 | 15.3 |
| Livestock consultant | 4,876 | 1,605 | 279 | 768 | 626 | 357 | 474 | 766 |
| 6.6 | 32.9 | 5.7 | 15.8 | 12.8 | 7.3 | 9.7 | 15.7 |
| Livestock marketing advisor(s) | 4,255 | 1,184 | 418 | 535 | 970 | 299 | 352 | 497 |
| 5.8 | 27.8 | 9.8 | 12.6 | 22.8 | 7.0 | 8.3 | 11.7 |
| FBM educator | 4,238 | 280 | 57 | 350 | 1,008 | 995 | 759 | 790 |
| 5.8 | 6.6 | 1.3 | 8.3 | 23.8 | 23.5 | 17.9 | 18.6 |
| Marketing specialist | 2,633 | 567 | 0 | 127 | 832 | 173 | 294 | 641 |
| 3.6 | 21.5 | - | 4.8 | 31.6 | 6.6 | 11.2 | 24.3 |

Notes. aThe percentage (66.0%) of all people that answered the question who selected the vendor (48,567/73,614). bThe percentage (36.0%) of people who selected the vendor and who earned less than $25,000 in farm sales (17490/48,567**).**

**Marketing Strategies**

Table 4

***Selected Marketing Strategies Used by the 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, Twitteretc.) | 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 | |

**Table B3. *Marketing Strategies Used in 2011by Farmers with Selected Farm Sales***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marketing Strategies (Q12) | Total | Farm Sales (1,000s) | | | | | | |
| <$25 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 |
| Crops – cash sales | 39,0561 | **11,0123** | **4,365** | **6,471** | **6,865** | **4,517** | **3,600** | **2,227** |
| 53.1%2 | 28.2%4 | 11.2% | 16.6% | 17.6% | 11.6% | 9.2% | 5.7% |
| Livestock – cash sales | 25,950 | **8,700** | **3,693** | **3,354** | **4,936** | **2,368** | 1,587 | 1,312 |
| 35.3 | 33.5 | 14.2 | 12.9 | 19.0 | 9.1 | 6.1 | 5.1 |
| Crops – contracts | 20,143 | 1,099 | **1,436** | **4,046** | **4,936** | **3,756** | **2,820** | **2,050** |
| 27.4 | 5.5 | 7.1 | 20.1 | 24.5 | 18.6 | 14.0 | 10.2 |
| Crops – commodity futures | 10,038 | 419 | 431 | 1,994 | 2,018 | 1,573 | **1,762** | **1,839** |
| 13.6 | 4.2 | 4.3 | 19.9 | 20.1 | 15.7 | 17.6 | 18.3 |
| Direct marketing – meat | 3,745 | 1,678 | 266 | 337 | 383 | 647 | 172 | 262 |
| 5.1 | 44.8 | 7.1 | 9.0 | 10.2 | 17.3 | 4.6 | 7.0 |
| Internet-based | 3,501 | **1,953** | 140 | 387 | 367 | 57 | 230 | 368 |
| 4.8 | 55.8 | 4.0 | 11.1 | 10.5 | 1.6 | 6.6 | 10.5 |
| Traditional–newspaper, radio, TV | 2,962 | 1,193 | 280 | 184 | 427 | 285 | 341 | 253 |
| 4.0 | 40.3 | 9.4 | 6.2 | 14.4 | 9.6 | 11.5 | 8.5 |
| Value-added approaches | 2,824 | 431 | 539 | 152 | 510 | 625 | 240 | 327 |
| 3.8 | 15.3 | 19.1 | 5.4 | 18.1 | 22.1 | 8.5 | 11.6 |
| Livestock – contracts | 2,502 | 479 | 57 | 127 | 315 | 487 | 297 | 741 |
| 3.4 | 19.1 | 2.3 | 5.1 | 12.6 | 19.5 | 11.9 | 29.6 |
| Social media (e.g., Facebook, Twitter) | 1,998 | 694 | 0 | 444 | 320 | 114 | 115 | 312 |
| 2.7 | 34.7 | - | 22.2 | 16.0 | 5.7 | 5.8 | 15.6 |
| Livestock – commodity futures | 1,297 | 279 | 58 | 0 | 57 | 242 | 115 | 546 |
| 1.8 | 21.5 | 4.5 | - | 4.4 | 18.7 | 8.9 | 42.1 |
| Direct marketing – fruits, vegetables | 1,216 | 433 | 419 | 185 | 0 | 0 | 57 | 122 |
| 1.7 | 35.6 | 34.5 | 15.2 | - | - | 4.7 | 10.0 |

Notes: 1 Total respondents from all sales categories who used the marketing strategy. 2 % of total MN farmers (73,614) who used the selected marketing strategy. 3 Number of producers within corresponding sales group who used the marketing strategy. 4 Percentage of total respondents within the corresponding sales category who selected the marketing strategy.

**Business Management Education Interests and Needs**

**Table 5**

***Comparison of Foundational and Advanced Business Management Education Topics Desired***

***by FBM Students (N=404)***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | | Level of Education | | | |
|  |  | | Foundational | | Advanced | |
| Business Education Topic | n | | % | Rank | % | Rank |
| Estate planning options | | 396 | 42.9 | 1 | 38.9 | 17 |
| Retirement plans 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 |
| Create a business plan | | 396 | 34.6 | 11 | 52.5 | 10 |
| Communication 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 | | 3951 | 28.42 | 23 | 66.83 | 1 |

Note: 1 Total number of respondents to the topic. 2 % of FBM students desiring topic to be taught as foundational instruction. 3% of FBM students desiring topic to be taught as advanced instruction.

**Table B4. *Proportion of Farmers Interested in Business Management Education Topics***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Education Topics (Q13) | Total | Level of Business Management Education | | |
| Foundational | Advanced | Not interested |
| Estate planning options | 64,874 | 35.3a | 15.6b | 49.1c |
| Tax management strategies | 63,440 | 32.7 | 16.4 | 50.9 |
| Retirement plans and tax liability | 63,921 | 32.4 | 14.5 | 52.9 |
| New technologies | 63,550 | 28.6 | 15.3 | 55.9 |
| Create a business plan | 63,808 | 30.1 | 12.1 | 57.8 |
| Establishing goals | 64,082 | 29.4 | 12.3 | 58.3 |
| Recordkeeping system | 63,985 | 25.8 | 15.8 | 58.4 |
| Budgets and break-even calculations | 63,512 | 24 | 15.5 | 60.4 |
| Marketing plans | 64,035 | 25.3 | 13.4 | 61.1 |
| Commodity markets | 63,478 | 23.9 | 14.2 | 61.7 |
| Financing capital assets | 63,365 | 24.4 | 13.7 | 62 |
| Enterprise budgets for cash flow | 63,765 | 24.1 | 13.6 | 62.2 |
| Business analysis for decisions | 63,905 | 25.5 | 11.6 | 63 |
| Business structures | 63,064 | 25.8 | 11.1 | 63.1 |
| Annual business analysis | 63,800 | 23.7 | 13 | 63.3 |
| Risk management assessment | 63,174 | 25.3 | 8.8 | 65.9 |
| Capital and credit needs | 63,717 | 23.7 | 10.1 | 66.3 |
| Financial statements to secure capital | 63,378 | 21.1 | 12.1 | 66.6 |
| Business transition options | 63,354 | 20 | 11.1 | 68.9 |
| Communication skills | 63,296 | 20.6 | 9 | 70.2 |
| Farm, community organization benefits | 62,965 | 22.1 | 7.2 | 70.3 |
| Benefits of personal leadership | 62,494 | 15.7 | 7.9 | 76.2 |
| Personnel issues | 63,182 | 10.5 | 5.9 | 83.6 |

Notes: a Percentage of farmers with interest in foundational education (introductory concepts and/or skills). bPercentage of farmers with interest in advanced education (intermediate or advanced concepts and/or skills). cPercentage of farmers with no interest in the topic.

**Crop Production Management Education Needs**

Table 8

***Crop Production Management Education Needs of MN FBM Producers (N=404)***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Crops | | | | | | | | | |  | Crops |  |  |
|  | Corn | | Soybeans | | Alfalfa | | Wheat | | Sugarbeets | |
| Education Topic | n | % | n | % | n | % | n | % | n | % |
| Marketing | 2121 | 52.52 | 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: 1 No. of producers in the study (n=404) who desired production management education for the respective education topic. 2 Percentage of producers with interest in production management education. Data is for the first crop respondent selected in which they were interested in production management education.

**Table C2. *Crop Production Management Education Needs of All Producers for Major Crops***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Corn | Soybeans | Alfalfa | Wheat | Other Hay |  |
| Production Topics (Q18) | n=22,884a | 21,276 | 7,386 | 3,180 | 1,572 | M % |
| Soil fertility and management | **66.8**%b | **66.3**% | **63.7**% | **86.7**% | **53.6**% | **67.4**% |
| Variety selection | **45.0** | **48.6** | **43.7** | **68.4** | **41.0** | **49.3** |
| Planting | **43.8** | **43.8** | **40.8** | **57.6** | **44.8** | **46.2** |
| Marketing | **58.2** | **62.2** | 17.2 | **65.2** | 27.7 | **46.1** |
| Harvesting | **42.0** | 38.3 | **39.2** | **57.8** | **49.6** | **45.4** |
| Soil conservation | 38.8 | 41.8 | **28.6** | 31.3 | **56.2** | 39.3 |
| Pest management | 41.7 | **47.0** | 24.9 | 41.3 | 18.7 | 34.7 |
| Machinery selection/ maintenance | 33.6 | 31.2 | 27.3 | 42.8 | 38.2 | 34.6 |
| Handling and storage | 34.6 | 27.4 | 19.5 | 46.1 | 16.3 | 28.8 |
| Government programs | 30.7 | 29.0 | 26.8 | 38.4 | 13.5 | 27.7 |
| Precision farming | 38.5 | 40.9 | 12.0 | 23.4 | 3.7 | 23.7 |
| Water management | 25.3 | 25.6 | 21.3 | 21.8 | 21.2 | 23.0 |
| Environmental programs | 27.2 | 25.4 | 17.3 | 23.4 | 18.7 | 22.4 |
| Facilities design, management, maintenance | 21.5 | 16.5 | 17.3 | 28.7 | 20.0 | 20.8 |
| Food safety | 11.7 | 11.9 | 5.4 | 4.4 | 0.0 | 6.7 |
| Mean % | 37.3 | 37.1 | 27.0 | 42.5 | 28.2 | 30.0 |

Notes: aNumber of individuals interested in the crop. bProportion (%) of individuals interested in the topic for the corresponding crop. Data for up to two crop selections for which the respondent desired production management education.

**Livestock Production Management Education Needs**

**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. 1 No. of producers who desired production management education for the respective classes of livestock. 2 Percentage of total producers (n=404) with interest in production management for the respective classes of livestock. Data for first class of livestock selected for which the respondent desired production management education.

**Table D2. *Livestock Production Topics of Interest to Minnesota Farmers for Major Classes of Livestock***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Production Management Topics (Q24) | Class of Livestock | | | | | |
| Cattle | Horses | Sheep | Hogs | Dairy | Poultry-Eggs |
| 18,249a | 3,733 | 3,526 | 2,509 | 2,098 | 821 |
| Feed management | **58.2% b** | **51.6**% | **77.3**% | **39.2**% | **58.5**% | **55.8**% |
| Health and basic veterinary care | **57.2** | **62.7** | **59.2** | **39.7** | 41.7 | **31** |
| Nutrition | **54.9** | **41.1** | 46.9 | **34.7** | **49.7** | **31** |
| Facilities | **47.5** | 25.9 | **52** | **38.9** | **69** | 24.1 |
| Breeding and selection | **46.3** | **43.4** | **58.4** | **29.4** | **54.4** | **54.2** |
| Marketing | 42.8 | 24.4 | 44.7 | 21.6 | **41.8** | **45.9** |
| Basic animal husbandry practices | 39.5 | 19.6 | **49.3** | **29.6** | 35.6 | **29.4** |
| Live animal handling | 39 | 23.6 | 34.1 | 28.2 | 29.1 | 14 |
| Government programs | 32.4 | 34 | 45.5 | 28.7 | 32.8 | 24.1 |
| Equipment selection | 27.1 | 8.5 | 40.1 | 19.3 | 26.6 | 7.1 |
| Environmental programs | 25.8 | **41** | 28.1 | 26.4 | 27.7 | 24.1 |
| Waste handling management | 16.8 | 17.7 | 24.5 | 29.4 | 38.6 | 24.1 |
| Ventilation | 14.5 | 4.8 | 23.9 | 27.2 | 38.6 | 7.1 |

Notes: a The number of individuals interested in the selected class of livestock. bThe percentage of individuals who were interested in learning more about the topic for the corresponding class of livestock. Data for first two classes of livestock selected for which the respondent desired production management education.

**Employee Education and Training Needs**

Table 13

***Categories of Education and Training Needs for Employees by Farm Types (N=404)***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Type of Farm | | |
| Employee Training Categories | Total | Crop (n=218) | Crop and Livestock (n=99) | Livestock (n=74) |
| **Employability Skills & Knowledge** | **741** | **32** | **22** | **20** |
|  | 18.3%2 | 43.2%3 | 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 |
| **Mechanics Skills & Knowledge** | **18** | **8** | **7** | **3** |
|  | 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 |
| **Livestock Care and Knowledge** | **9** | **0** | **3** | **6** |
|  | 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 |
| **Business Knowledge & Skills** | **4** | **4** | **0** | **0** |
|  | 1.0% | 100.0% | - | - |
| Develop a business plan | 1 | 1 | - | - |
| Financial Management | 1 | 1 | - | - |
| Marketing | 1 | 1 | - | - |
| Recordkeeping - Quickbooks | 1 | 1 | - | - |

*Note:* 1Total number of producers desiring respective employee education and training. 2 Percentage of total farmers in the study (N=404) who desire the respective training and education. 3 Number of producers from corresponding type of farm who desire employee training. 4 Percentage of total desiring education from corresponding type of farm. Data for first of two topics proposed for employee education.

**Table E. *Education and Training Needs for Employees by Annual Total Farm Sales***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Total | Farm Sales (1,000s) | | | | | | |
| <$25 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 |
| Themes (Q28) | 73,614a | 30,429 | 7,250 | 9,364 | 9,337 | 5,230 | 3,945 | 3,371 |
| Employability | **6,410b** | **817**d | **431** | **497** | **687** | **940** | **765** | **2273** |
| 8.7%c | 12.7%e | 6.7% | 7.8% | 10.7% | 14.7% | 11.9% | 35.5% |
| Mechanical Skills | **1,897** | **291** | **152** | 0 | **383** | **229** | **411** | **431** |
| 2.6 | 15.3% | 8.0% | - | 20.2% | 12.1% | 21.7% | 22.7% |
| Crops/Soils-related | 623 | 140 | 0 | **254** | 0 | 115 | 0 | 114 |
| 0.8 | 22.5% | - | 40.8% | - | 18.5% | - | 18.3% |
| Livestock-related | 306 | 0 | 0 | 127 | 57 | 0 | 57 | 65 |
| 0.4% | - | - | 41.5% | 18.6% | - | 18.6% | 21.2% |
| Business | 171 | 0 | 0 | 0 | 0 | 57 | 0 | 114 |
| 0.2% | - | - | - | - | 33.3% | - | 66.7% |

aTotal number of farmers . bTotal number of responses related to the topic. cPercentage of total responses related to the topic. dTotal number of responses for the topic that were listed by people reporting the corresponding annual total farms sales. e Percentage of total responses for the topic that were listed by people reporting the corresponding annual total farms sales (817/6410).

**Instructional and Delivery Preferences**

Table 14

***Education and Training Delivery Preferences of Farmers by Type of Farming Operation (N=404)***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Type of Farm | | | | ANOVA | | |
|  | Total | Crops | Livestock | Crop and Livestock | F  (dfb, dfw) | p | η2 |
|  | 391 | 218 | 74 | 99 |  | | |
| Business site | 5.431 | 5.15A | 6.01B | 5.65AB | 5.37\*  (3, 32.6) | .004\* | .037 |
| 1.882 | 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 | 3.50A | 2.50B | 3.45A | 5.13  (3, 376) | .002 | .039 |
| 1.94 | 2.01 | 1.64 | 1.86 |
| Classroom at an off-campus site | 3.88 | 4.13A | 3.25B | 3.74AB | 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: 1Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. 2 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.

**Table F1. *Education and Training Delivery Preferences of Minnesota Farmers by Farm Sales***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Delivery of instruction (Q29) | Total M  SD | Farm Sales (in 1,000s) | | | | | | | | ANOVA | | | | |
| <$10 | $10-24.9 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 | F | dfb | dfw | p | η2 |
| Off-campus classroom | 3.61 | **3.1A** | **3.3B** | **3.5BC** | **3.5C** | **3.8D** | **4.2E** | **4.6F** | **4.4G** | 414 | 7 | 17,317 | 0.00 | 0.04 | |
| 2.32 | 2.2 | 2.4 | 2.5 | 2.3 | 2.2 | 2.1 | 1.8 | 2.00 |  |  |  |  |  | |
| Host farm | 3.5 | **3.1A** | **3.1A** | **3.7B** | **3.5C** | **3.5C** | **4.2D** | **4.3D** | 3.9E | 292 | 7 | 17,271 | 0.00 | 0.03 | |
| 2.3 | 2.3 | 2.3 | 2.5 | 2.1 | 2.2 | 2.1 | 2.0 | 2.1 |  |  |  |  |  | |
| Personal/online Blend | 3.3 | **3.2A** | **3.2AB** | **3.7C** | **2.9D** | **3.4E** | 3.3BE | 3.7C | 3.9F | 143 | 7 | 17,056 | 0.00 | 0.02 | |
| 2.3 | 2.3 | 2.5 | 2.3 | 2.1 | 2.2 | 2.1 | 2.0 | 2.1 |  |  |  |  |  | |
| Farm organization meetings | 3.3 | 2.7A | 2.4B | **3.6C** | **3.3D** | **3.8E** | **4.3F** | **4.4G** | **4.0H** | 850 | 7 | 17,091 | 0.00 | 0.09 | |
| 2.1 | 2.0 | 1.8 | 2.2 | 2.2 | 2.2 | 2.0 | 1.8 | 2.0 |  |  |  |  |  | |
| Business site | 3.3 | **3.0A** | 3.0A | 3.2B | **3.3C** | 3.4C | **3.4CD** | **4.3E** | **4.2EF** | 209 | 7 | 17,360 | 0.00 | 0.03 | |
| 2.5 | 2.54 | 2.4 | 2.4 | 2.5 | 2.4 | 2.3 | 2.4 | 2.3 |  |  |  |  |  | |
| College campus | 2.9 | 2.5A | 2.5A | 3.3B | **2.9CD** | 2.9C | 3.0D | 3.9E | 3.1DF | 266 | 7 | 17,035 | 0.00 | 0.03 | |
| 2.1 | 2.1 | 2.0 | 2.5 | 2.2 | 2.0 | 1.9 | 1.9 | 2.2 |  |  |  |  |  | |
| Online only | 2.9 | 2.9A | 3.0A | 3.2B | 2.6C | 2.8D | 2.9A | 3.5E | 3.0A | 81 | 7 | 16,923 | 0.00 | 0.01 | |
| 2.2 | 2.2 | 2.4 | 2.6 | 2.2 | 2.1 | 2.1 | 2.03 | 2.0 |  |  |  |  |  | |
| Individual - video conference | 2.7 | 2.3A | 2.3A | 3.2B | 2.7C | 2.6C | 3.0D | 3.2B | 3.5E | 272 | 7 | 16,659 | 0.00 | 0.04 | |
| 2.1 | 1.9 | 2.1 | 2.3 | 2.0 | 2.2 | 1.9 | 2.00 | 2.2 |  |  |  |  |  | |

Notes: 1Mean score on a preference scale of 1(Not preferred) to 7 (Highly preferred). 2 Standard Deviation. Means with the same letter in their superscripts do not differ significantly from one another according to a Games-Howell test.

**Table 15**

***Instructional Preferences of Farmers by Type of Operation***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Type of Farm | | | ANOVA | | |
|  |  | Total | Crop | Livestock | Crop and Livestock | F  (dfb, dfw) | p | η2 |
|  |  | 391 | 218 | 74 | 99 |  |  |  |
| Field trips |  | 4.681 | 4.69 | 4.63 | 4.66 | .14  (3, 375) | .94 |  |
|  | 1.582 | 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 instruction |  | 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 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: 1Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. 2 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.

**Table F2. *Instructional Methods and Strategies Preferences of Farmers with Selected Levels of Farm Sales***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Instructional preferences (Q30) | Total | Farm Sales (1,000s) | | | | | | | | ANOVA | | | | |
| <$10 | $10-24.9 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 | F | dfb | dfw | p | η2 |
| Hands-on activities | 4.3 | **3.8A** | **3.7B** | **4.7C** | **4.4D** | **4.4D** | **4.8E** | **5.3F** | **4.7CE** | 408 | 7 | 17172 | .00 | 0.04 |
| 2.3 | 2.42 | 2.40 | 2.24 | 2.28 | 2.20 | 1.80 | 1.60 | 1.76 |
| Demonstrations | 4.2 | **3.9A** | **3.4B** | **4.6C** | **4.3D** | **4.4E** | **4.9F** | **4.9F** | 4.4E | 347 | 7 | 17237 | .00 | 0.04 |
| 2.21 | 2.44 | 2.27 | 2.13 | 2.16 | 1.99 | 1.82 | 1.64 | 1.99 |
| Farmers | 4.1 | 3.7A | **3.5B** | 4.0C | **4.4D** | **4.5E** | **4.6E** | **5.0F** | 4.4DE | 359 | 7 | 17428 | .00 | 0.04 |
| 2.23 | 2.39 | 2.36 | 2.21 | 2.10 | 2.01 | 1.87 | 1.90 | 1.94 |
| Speakers/industry experts | 4.0 | **3.5A** | 3.3B | 4.1C | 4.1CD | 4.2D | 4.5E | **5.0F** | **4.8G** | 503 | 7 | 16928 | .00 | 0.06 |
| 2.18 | 2.21 | 2.48 | 2.08 | 2.21 | 2.01 | 1.79 | 1.63 | 1.93 |
| Field trips | 3.91 | 3.8A | **3.5B** | 3.9C | 3.7A | 4.2D | 4.3D | 4.6E | 4.1D | 162 | 7 | 17514 | .00 | 0.02 |
| 2.27 | 2.49 | 2.31 | 2.32 | 2.24 | 2.08 | 1.92 | 1.71 | 2.17 |
| Conferences for farmers | 3.9 | 3.3A | 3.0B | 4.2C | 3.8D | 4.3E | **4.8F** | **5.3G** | 4.4E | 938 | 7 | 16869 | .00 | 0.08 |
| 2.23 | 2.33 | 2.07 | 2.18 | 2.21 | 2.14 | 1.78 | 1.39 | 2.08 |
| Question - answer sessions | 3.8 | 3.3A | 3.2B | **4.3CD** | 3.9E | 3.9E | 4.4C | 4.5F | 4.2D | 412 | 7 | 17465 | .00 | 0.05 |
| 2.14 | 2.34 | 2.21 | 2.02 | 2.11 | 1.94 | 1.92 | 1.44 | 1.79 |
| Guest speakers | 3.8 | 3.4A | 3.1B | 3.6C | 3.8D | 4.0E | 4.5F | 4.8G | **5.0H** | 650 | 7 | 17484 | .00 | 0.07 |
| 2.11 | 2.26 | 2.16 | 1.96 | 2.09 | 1.98 | 1.62 | 1.67 | 1.71 |
| Instructor events | 3.8 | 3.5A | 3.1B | 4.0C | 3.8D | 4.0C | 4.4E | 4.9F | 4.5G | 408 | 7 | 17153 | .00 | 0.05 |
| 2.16 | 2.27 | 2.24 | 2.07 | 2.18 | 1.99 | 1.79 | 1.90 | 1.87 |
| Agricultural suppliers | 3.7 | 3.3A | 3.1B | 3.6C | 3.9D | 3.7C | 4.3E | 4.4E | 4.3E | 344 | 7 | 17195 | .00 | 0.04 |
| 2.11 | 2.16 | 2.27 | 2.13 | 2.16 | 1.96 | 1.86 | 1.54 | 1.98 |
| Individualized in-person | 3.6 | 3.3A | 2.9B | 3.7C | 3.7C | 3.5D | 4.1E | 4.5F | 4.4F | 345 | 7 | 16861 | .00 | 0.04 |
| 2.23 | 2.37 | 2.11 | 2.18 | 2.27 | 2.17 | 1.88 | 1.85 | 2.04 |
| Case study with instructor | 3.3 | 2.9A | 3.0B | 3.4C | 3.3C | 3.5D | 3.9E | 4.1F | 3.7G | 300 | 7 | 16338 | .00 | 0.03 |
| 2.06 | 2.03 | 2.29 | 1.90 | 2.16 | 2.11 | 1.70 | 1.69 | 1.79 |
| Speaker(s) webinar | 2.9 | 2.8A | 2.4B | 3.1C | 3.0CE | 2.8A | 3.1C | 3.8D | 3.4E | 172 | 7 | 16769 | .00 | 0.02 |
| 2.11 | 2.17 | 1.99 | 2.17 | 2.10 | 1.91 | 1.98 | 2.02 | 2.25 |

Notes: 1Mean score on a preference scale of 1(Not preferred) to 7 (Highly preferred). Means with the same letter in their superscripts do not differ significantly from one another according to a Games-Howell test.

Table 16

***Instructional Media Preferences of Farmers by Type of Farm***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Type of Farm | | | ANOVA | | |
|  | Total | Crop | Livestock | Crop and Livestock | F  (dfb, dfw) | p | η2 |
|  | 391 | 218 | 74 | 99 |  |  |  |
| Printed materials | 5.551 | 5.60 | 5.40 | 5.51 | .45  (3, 383) | .72 |  |
| 1.262 | 1.22 | 1.40 | 1.26 |
| Electronic (or digital) materials delivered via e-mail or the internet | 4.78 | 4.88A | 4.12B | 5.04A | 4.21  (3, 381) | .006 | .032 |
| 1.79 | 1.77 | 1.91 | 1.65 |
| Communication with instructor by telephone | 5.01 | 4.94 | 5.01 | 5.16 | .41  (3, 380) | .74 |  |
| 1.62 | 1.69 | 1.66 | 1.44 |
| Farm demonstration plots | 4.96 | 5.09 | 4.70 | 4.85 | 1.67  (3, 383) | .17 |  |
| 1.44 | 1.41 | 1.63 | 1.38 |
| Sample problems and/or simulations | 4.23 | 4.25 | 4.19 | 4.25 | .15  (3, 376) | .93 |  |
| 1.64 | 1.67 | 1.70 | 1.59 |
| The internet for information and class instruction | 4.08 | 4.15 | 3.64 | 4.18 | 2.07  (3, 376) | .10 |  |
| 1.83 | 1.85 | 1.86 | 1.74 |
| E-mail communications from instructor | 4.74 | 4.74AB | 4.17A | 5.10B | 4.01  (3, 378) | .008 | .031 |
| 1.83 | 1.78 | 2.01 | 1.76 |
| Informative newspaper columns prepared by instructor | 4.55 | 4.50 | 4.43 | 4.64 | 1.60  (3, 378) | .19 |  |
| 1.55 | 1.53 | 1.60 | 1.56 |
| Online video library - presentations | 3.67 | 3.67 | 3.58 | 3.65 | .65  (3, 372) | .59 |  |
| 1.78 | 1.75 | 1.87 | 1.79 |
| Online library of general information | 3.79 | 3.78 | 3.62 | 3.85 | .52  (3, 375) | .67 |  |
|  | 1.82 | 1.77 | 1.85 | 1.90 |

Notes: 1Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. 2 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.

**Table F3. *Instructional Media Preferences of Minnesota Farmers by Farm Sales***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Instructional Media (Q31) | Total | Farm Sales (1,000s) | | | | | | | | ANOVA | | | | |
| <$10 | $10-24.9 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 | F | dfb | dfw | p | η2 |
| Print materials | 4.81 | **4.6A** | **3.9B** | **5.4C** | **4.9D** | **4.9D** | **5.2E** | **5.4C** | **5.1E** | 259 | 7 | 17,231 | 0.00 | 0.04 |
| 2.162 | 2.38 | 2.57 | 2.07 | 2.00 | 1.94 | 1.68 | 1.48 | 1.71 |
| Demonstration plots | 4.1 | 3.5A | **3.3B** | **4.3C** | **4.3C** | **4.5D** | **5.0E** | **5.1F** | **4.5D** | 663 | 7 | 17,478 | 0.00 | 0.07 |
| 2.16 | 2.26 | 2.21 | 2.14 | 2.10 | 2.02 | 1.72 | 1.63 | 1.75 |
| Newspaper | 3.9 | **3.8A** | **3.7A** | 3.7A | **4.1B** | **3.9C** | **4.4D** | 4.0B | 4.4D | 111 | 7 | 17,426 | 0.00 | 0.01 |
| 2.09 | 2.34 | 2.40 | 1.94 | 2.01 | 1.95 | 1.65 | 1.74 | 1.62 |
| Electronic materials | 3.8 | **3.6AD** | 3.2B | **4.2C** | 3.7A | 3.5D | 3.9E | **4.6F** | **4.6F** | 259 | 7 | 17,231 | 0.00 | 0.03 |
| 2.33 | 2.37 | 2.46 | 2.44 | 2.30 | 2.21 | 2.13 | 2.13 | 1.95 |
| Internet | 3.5 | 3.4A | 3.1B | 3.8C | 3.3D | 3.3AD | 3.4A | 4.2E | 3.9C | 139 | 7 | 17,008 | 0.00 | 0.02 |
| 2.26 | 2.30 | 2.49 | 2.45 | 2.11 | 2.26 | 1.99 | 1.87 | 2.02 |
| Sample problems or simulations | 3.4 | 3.1A | 2.9B | 3.9C | 3.5D | 3.4E | 4.1F | 4.1F | 3.8C | 363 | 7 | 17,042 | 0.00 | 0.04 |
| 1.99 | 1.98 | 2.02 | 1.99 | 2.09 | 2.03 | 1.68 | 1.69 | 1.61 |
| Online video library-speakers | 3.35 | 3.2A | 2.8B | 3.9C | 3.3D | 3.0E | 3.4F | 4.3G | 4.0C | 304 | 7 | 16,783 | 0.00 | 0.03 |
| 2.19 | 2.33 | 2.15 | 2.18 | 2.15 | 2.07 | 1.96 | 1.95 | 1.88 |
| Online library-instructors | 3.3 | 3.2A | 3.1B | 3.8C | 3.2A | 2.9D | 3.4E | 4.1F | 3.7C | 201 | 7 | 16,911 | 0.00 | 0.02 |
| 2.23 | 2.38 | 2.28 | 2.19 | 2.22 | 2.04 | 2.04 | 2.02 | 1.94 |
| Email from instructor | 3.2 | 2.8A | 3.0B | 3.9C | 2.9B | 3.0B | 3.3D | 4.0CE | 4.1E | 369 | 7 | 16,886 | 0.00 | 0.04 |
| 2.20 | 2.16 | 2.39 | 2.48 | 2.03 | 2.13 | 1.97 | 1.83 | 2.02 |
| Telephone - instructor | 2.9 | 2.6A | 2.1B | 2.9C | 3.2D | 2.9C | 3.2D | 3.4E | 3.5E | 387 | 7 | 16,887 | 0.00 | 0.04 |
| 1.87 | 1.82 | 1.54 | 1.95 | 2.05 | 1.75 | 1.74 | 1.84 | 2.00 |

Notes: 1 Mean 2 Standard Deviation. Means with the same letter in their superscripts do not differ significantly from one another according to a Games-Howell test.

**Related Factors Influencing Program Participation**

**Barriers to Participation**

Table 17

***Barriers to Participation in Education and Training Provided by Farm Type (n=404****)*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | Type of Farm | | | | | |
|  | Total | | Crops | | Livestock | | Crop and Livestock | |
|  | 4041 | % | 218 | % | 74 | % | 100 | % |
| I am too busy to attend | 2722 | 67.33 | 1434 | 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:* 1Total number of producers. 2 Percentage of total farmers in the study (N=404) who desire the respective training and education. 3 Number of producers from corresponding type of farm. 4 Percentage of total desiring education from corresponding type of farms.

**Table G1. *Barriers to Participation in Education and Training Sponsored by Local Colleges and Universities***

|  | Total | Farm Sales (1,000s) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| <$25 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 |
| Barriers (Q32) | 73,614a | n=30,429 | 7,250 | 9,364 | 9,337 | 5,230 | 3,945 | 3,371 |
| Too busy | 33,759b | **10,989d** | **3,996** | **5,730** | **5,173** | **3,071** | **2,600** | **2,200** |
| 45.9%c | 32.6%e | 11.8% | 17.0% | 15.3% | 9.1% | 7.7% | 6.5% |
| Schedule conflicts | 22,990 | **7,134** | **3,815** | **3,424** | **3,449** | **2,282** | **1,592** | **1,294** |
|  | 31.2 | 31.0 | 16.6 | 14.9 | 15.0 | 9.9 | 6.9 | 5.6 |
| Unaware of events | 22,469  30.5 | **9,152**  40.7 | **2,491**  11.1 | **3,138**  14.0 | 3,007  13.4 | **2,045**  9.1 | **1,6667**.4 | **970**  4.3 |
| Distance to the events | 21,552 | **7,879** | 2,189 | **3,211** | **3,531** | **2,135** | **1,704** | **903** |
|  | 29.3 | 36.6 | 10.2 | 14.9 | 16.4 | 9.9 | 7.9 | 4.2 |
| Family, friends, other farmers provide needed information | 18,259  24.8 | **6,934**  38.0 | **2,247**  12.3 | **3,513**  19.2 | **2,824**  15.5 | **1,592**  8.7 | 718  3.9 | 432  2.4 |
| Registration cost | 12,739 | 4,940 | **2,685** | 1,747 | 1,438 | 1,050 | 405 | 474 |
| 17.3 | 38.8 | 21.1 | 13.7 | 11.3 | 8.2 | 3.2 | 3.7 |
| Agricultural suppliers provide needed information | 11,773  16.0 | 1,889  16.0 | 1,548  13.1 | 2,305  19.6 | **2,833**  24.1 | 1,630  13.8 | 702  6.0 | **865**  7.3 |
| Programs not designed for my type of operation | 10,741 | 5,267 | 991 | 1,500 | 1,307 | 715 | 417 | 544 |
| 14.6 | 49.0 | 9.2 | 14.0 | 12.2 | 6.7 | 3.9 | 5.1 |
| Internet provides needed information | 10,732 | 3,776 | 1,511 | 1,179 | 2,161 | 770 | 788 | 547 |
| 14.6 | 35.2 | 14.1 | 11.0 | 20.1 | 7.2 | 7.3 | 5.1 |
| Time needed for assignments1 | 10,620 | 3,888 | 1,881 | 1,597 | 1,687 | 520 | 608 | 440 |
| 14.4 | 36.6 | 17.7 | 15.0 | 15.9 | 4.9 | 5.7 | 4.1 |
| Instruction does not meet my needs | 10,268 | 4,076 | 991 | 1,067 | 2,039 | 642 | 718 | 736 |
| 13.9 | 39.7 | 9.7 | 10.4 | 19.9 | 6.3 | 7.0 | 7.2 |
| Past experience with educational events | 7,373 | 1,056 | 304 | 1,429 | 1,565 | 1,167 | **1,168** | 685 |
| 10.0 | 14.3 | 4.1 | 19.4 | 21.2 | 15.8 | 15.8 | 9.3 |
| Instruction does not match how I learn | 5,760  7.8 | 2,031  35.3 | 685  11.9 | 755  13.1 | 1,125  19.5 | 475  8.2 | 444  7.7 | 245  4.3 |

Notes: a Total number of people who responded to the question. b Total number of people who selected the barrier as a response. c Percentage of the population of farmers who selected the barrier as a response (e.g., 33,759 / 73,614 = 45.9%) . dThe number of people who selected the barrier as a response and who reported earning the corresponding annual total farm sales. eThe percentage of people who selected the barrier as a response and who reported earning the corresponding annual total farm sales (e.g., 10,989 / 33,759 = 32.6%)

**Related Information**

Table 18

Related Information by Type of Farm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Type of Farm | | | ANOVA | | |
|  | Total | Crop | Livestock | Crop and Livestock | F  (dfb, dfw) | p |  |
|  | 391 | 218 | 74 | 99 |  |  |  |
| Total miles willing to travel to meeting | 56.51 | 57.9 | 54.6 | 53.1 | .57  (3, 368) | .64 |  |
| 63.22 | 76.7 | 41.1 | 33.2 |
| Amount ($) willing to pay for a year-around FBM Program | 1305.4 | 1294.3 | 1211.64 | 1445.0 | 2..12  (3, 339) | .10 |  |
| 704.8 | 665.9 | 744.08 | 753.4 |
| Amount ($) willing to pay for a 1/2 day workshop | 59.7 | 60.1 | 51.6 | 64.3 | .70  (3, 345) | .55 |  |
| 59.4 | 65.2 | 44.4 | 56.8 |
| Amount ($) willing to pay for a full day workshop | 99.2 | 98.7 | 87.5 | 106.2 | .96  (3, 339) | .41 |  |
| 87.5 | 88.1 | 89.2 | 85.7 |

Notes: 1Scale - Mean score on a scale of 1= Not preferred to 7 = Highly preferred. 2 Standard Deviation. \* Welch’s weighted-variance ANOVA (Significant Levene’s Test of Homogeneity); Games-Howell Post Hoc.

Table G2. Mean *distance in miles farmers were willing to travel for education and training programs by amount of annual total farm sales (N=48,670)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Farm sales group # | Farm Sales (in 1,000s) | N | M | SD |
| 1 | less than $10 | 14,552 | **34.4A** | 27.7 |
| 3 | $25-49.9 | 5,773 | **51.1B** | 49.5 |
| 6 | $250-499.9 | 4,283 | **54.6C** | 32.4 |
| 4 | $50-99.9 | 6,385 | **61.0D** | 91.4 |
| 2 | $10-24.9 | 4,381 | **65.5D** | 87.0 |
| 5 | $100-249.9 | 6,966 | **69.2D** | 108.7 |
| 7 | 500-999.9 | 3,534 | **78.7E** | 54.5 |
| 8 | More than $1,000 | 2,796 | **128.3F** | 209.9 |
|  | **Total** | **48,670** | **58.1** | **85.7** |

Means with the same letter in their superscripts do not differ significantly from one another according to a Games-Howell test.

Table G3. *Amount ($) Farmers Indicated They Are Willing To Pay For A Year-Round Farm Business Management Education Program* *By Annual Total Farms Sales*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Farm sales group | Farm sales (in 1,000s) | N | M | SD |
| 1 | less than $10 | 11,132 | **95.4A** | 207.87 |
| 2 | $10-24.9 | 4,117 | **147.0B** | 298.69 |
| 3 | $25-49.9 | 4,458 | **311.1C** | 381.24 |
| 5 | $100-249.9 | 5,889 | **324.5C** | 432.24 |
| 4 | $50-99.9 | 5,768 | **326.4C** | 488.20 |
| 6 | $250-499.9 | 3,275 | **384.8D** | 649.06 |
| 7 | 500-999.9K | 2,706 | **684.2E** | 808.27 |
| **8** | **greater than $1,000** | **1,949** | **840.4F** | **1065.72** |
|  | Total | 39,294 | **295.1** | 526.48 |

Note: Means with the same letter in their superscripts do not differ significantly from one another according to a Games- Howell test.

Table G4. *Amount ($) Farmers Are Willing To Pay To Register For A Half-Day Workshop By* *Farms Sales*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Farm sales group | Farm Sales (1,000s) | N | **M** | SD |
| 1 | less than $10 | 13,886 | **22.0A** | 25.95 |
| 2 | $10-24.9 | 4,575 | **27.1B** | 27.43 |
| 5 | $100-249.9 | 6,510 | **36.2C** | 38.06 |
| 6 | $250-499.9 | 3,865 | **43.6D** | 51.60 |
| 4 | $50-99.9 | 6,802 | **44.2D** | 50.11 |
| 3 | $25-49.9 | 5,029 | **45.7D** | 37.12 |
| 7 | 500-999.9K | 3,239 | **70.2E** | 97.47 |
| 8 | greater than $1,000 | 2,503 | **111.8F** | 145.25 |
|  | **Total** | **46,409** | **40.3** | **59.01** |

Note: Means with the same letter in their superscripts do not differ significantly from one another according to a Games-Howell test.

Table 19

*Related Information by Type of Farm*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Type of Farm | | | | | | |
|  | Total | | Crop | | Livestock | | Crop & Livestock | | |
| 404 | % | 218 | % | 74 | % | 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 | 261 | 64.6 | 135 | 61.9 | 47 | 63.5 | 70 | 70.0 |
| Agricultural Suppliers (Credit, feed, seed, insurance, equipment, etc.) | 253 | 62.6 | 138 | 63.3 | 40 | 54.1 | 66 | 66.0 |
| Extension Service | 137 | 33.9 | 76 | 34.9 | 20 | 27.0 | 35 | 35.0 |
| 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 | 64.6 | 60 | 33.9 | 16 | 23.0 | 29 | 34.0 |
|  |  |  |  |  |  |  |  |  | |

**Table G6. *Use of the Internet in the Home or Farm Business Office by Farm Sales (Q34)***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Response |  | Farm Sales (1,000s) | | | | | | |
| Total | <$25 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 |
|  | 61,648 | n=30,429 | 7,250 | 9,364 | 9,337 | 5,230 | 3,945 | 3,371 |
| Yes | 44,445 | 17,580 | 4,883 | 6,125 | 6,043 | 3,916 | 3,357 | 2,541 |
| 72.1%a | 69.5%b | 75.5% | 66.7% | 68.5% | 79.5% | 87.7% | 81.4% |

**Table G7. *Numbers of Farmers with* *High Speed Internet in the Home or Farm Business Office (Q35)***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Farm sales (1,000s) | | | | | | |
| Response | Total | <$25 | $25-49.9 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 |
| Yes | 37,538 | 14,496 | 3,285 | 5,182 | 5,404 | 3,375 | 3,304 | 2,492 |
|  | 61.7%a | 57.0%b | 52.4% | 59.5% | 62.5% | 68.5% | 86.3% | 83.0% |

**Table X. *Providers of Education and Training***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Farms sales (1,000s) | | | | | | |
|  | Total | <$25 | $25-50 | $50-99.9 | $100-249.9 | $250-499.9 | $500-999.9 | >$1,000 |
|  | 73,614 | 30,429 | 7,250 | 9,364 | 9,337 | 5,230 | 3,945 | 3,371 |
| Agricultural Suppliers | 25,324b | **4,999** | **2,888** | **3,869** | **5,292** | **3,478** | **2,899** | **1,899** |
|  | 34.4%c | 19.7%d | 11.40% | 15.30% | 20.90% | 13.70% | 11.40% | 7.50% |
|  |  | 16.4%e | 39.8% | 41.3% | 56.7% | 66.5% | 73.5% | 56.3% |
| Extension Service | 22,772 | **8,551** | **2,508** | **3,375** | **2,925** | **1,942** | **1,945** | **1,526** |
|  | 30.9 | 37.6 | 11 | 14.8 | 12.8 | 8.5 | 8.5 | 6.7 |
|  |  | 28.1 | 34.6 | 36.0 | 31.3 | 37.1 | 49.3 | 45.3 |
| Government Agencies | 12,800 | **4,631** | **1,352** | **2,172** | **1,994** | 1,190 | 714 | 748 |
| (FSA, NRCS, MDA, etc.) | 17.4 | 36.2 | 10.6 | 17 | 15.6 | 9.3 | 5.6 | 5.8 |
|  |  | 15.2 | 18.6 | 23.2 | 21.4 | 22.8 | 18.1 | 22.2 |
| Commodity Organizations | 10,271 | 2,321 | 1,105 | 1,023 | 1,693 | **1,401** | **1,856** | 871 |
|  | 14 | 22.6 | 10.8 | 10 | 16.5 | 13.6 | 18.1 | 8.5 |
|  |  | 7.6 | 15.2 | 10.9 | 18.1 | 26.8 | 47.0 | 25.8 |
| University of Minnesota | 10,138 | 2,126 | 1,246 | 1,492 | 1,554 | 1,229 | 1,377 | **1,115** |
|  | 13.8 | 21 | 12.3 | 14.7 | 15.3 | 12.1 | 13.6 | 11 |
|  |  | 7.0 | 17.2 | 15.9 | 16.6 | 23.5 | 34.9 | 33.1 |
| MnSCUa | 9,001 | 2,138 | 1,112 | 1,419 | 1,070 | 1,133 | 1,012 | **1,117** |
|  | 12.2 | 23.8 | 12.4 | 15.8 | 11.9 | 12.6 | 11.2 | 12.4 |
|  |  | 7.0 | 15.3 | 15.2 | 11.5 | 21.7 | 25.7 | 33.1 |
| Agricultural Consultants | 6,216 | 587 | 140 | 1,212 | 1,224 | 923 | 1,011 | **1,119** |
|  | 8.4 | 9.4 | 2.3 | 19.5 | 19.7 | 14.8 | 16.3 | 18 |
|  |  | 1.9 | 1.9 | 12.9 | 13.1 | 17.6 | 25.6 | 33.2 |
|  | M | 11.9% | 20.4% | 22.2% | 24.1% | 30.9% | 39.2% | 35.6% |

Notes. aMnSCU = Minnesota State Colleges and Universities. bTotal number of people who answered the question. cPercentage of all people who selected *agricultural suppliers* (25,324 / 73,614 = 34.4%). dPercentage of farmers who selected agricultural suppliers who earn less than $25,000 from annual total farms sales (4,999 / 25,324 = 19.7%). Means with the same letter in their superscripts do not differ significantly from one another according to a Games-Howell test. ePercentage of total within the farm sales category (i.e., 4,999/30,429).

**APPENDIX - FBM COLLEGE INFORMATION**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table X |  | |  |  | |  |  |  |  |  |  |
| *Proportion of Foundational and Advanced Business Management Education Topics Desired by FBM Students by College* | | | | | | | | | | | |
|  | |  |  | |  |  |  |  | College |  |  |
|  | | Total |  | |  | Central Lakes | MnWest | Nrthland | Rdgewter | Rverland | South Central |
| Topic | | 404 | Level | | N | 14 | 56 | 97 | 71 | 50 | 116 |
| 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 analyses | | 396 | Foundational | | 116 | 8 | 15 | 27 | 20 | 14 | 32 |
|  | 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 | Foundational | | 119 | 7 | 17 | 24 | 20 | 14 | 37 |
|  | 30.10% | 1.80% | 4.30% | 6.10% | 5.10% | 3.50% | 9.40% |
|  | Advanced | | 252 | 5 | 36 | 66 | 44 | 28 | 73 |
|  | 63.80% | 1.30% | 9.10% | 16.70% | 11.10% | 7.10% | 18.50% |
| Capital and credit needs | | 393 | Foundational | | 115 | 5 | 16 | 33 | 20 | 11 | 30 |
|  | 29.30% | 1.30% | 4.10% | 8.40% | 5.10% | 2.80% | 7.60% |
|  | Advanced | | 249 | 8 | 36 | 57 | 42 | 30 | 76 |
|  | 63.40% | 2.00% | 9.20% | 14.50% | 10.70% | 7.60% | 19.30% |
| Financing capital assets | | 393 | Foundational | | 122 | 6 | 13 | 30 | 20 | 20 | 33 |
|  | 0.3 | 1.50% | 3.30% | 7.60% | 5.10% | 5.10% | 8.40% |
|  | Advanced | | 234 | 6 | 38 | 59 | 39 | 21 | 71 |
|  | 59.50% | 1.50% | 9.70% | 15.00% | 9.90% | 5.30% | 18.10% |
| Financial statements to secure capital | | 396 | Foundational | | 123 | 7 | 15 | 29 | 19 | 19 | 34 |
|  | 31.10% | 1.80% | 3.80% | 7.30% | 4.80% | 4.80% | 8.60% |
|  | Advanced | | 247 | 6 | 38 | 63 | 43 | 22 | 75 |
|  | 62.40% | 1.50% | 9.60% | 15.90% | 10.90% | 5.60% | 18.90% |
| Create a business plan | | 396 | Foundational | | 137 | 8 | 15 | 31 | 28 | 17 | 38 |
|  | 34.60% | 2.00% | 3.80% | 7.80% | 7.10% | 4.30% | 9.60% |
|  | Advanced | | 208 | 3 | 34 | 58 | 35 | 24 | 54 |
|  | 52.50% | 0.80% | 8.60% | 14.60% | 8.80% | 6.10% | 13.60% |
| Estate planning options | | 396 | Foundational | | 170 | 5 | 26 | 48 | 33 | 16 | 42 |
|  | 42.90% | 1.30% | 6.60% | 12.10% | 8.30% | 4.00% | 10.60% |
|  | Advanced | | 154 | 3 | 23 | 34 | 29 | 21 | 44 |
|  | 38.90% | 0.80% | 5.80% | 8.60% | 7.30% | 5.30% | 11.10% |
| Business transition options | | 395 | Foundational | | 139 | 4 | 17 | 38 | 22 | 18 | 40 |
|  | 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% |
|  | Advanced | | 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 | Foundational | | 150 | 3 | 22 | 36 | 25 | 18 | 46 |
|  | 38.10% | 0.80% | 5.60% | 9.10% | 6.30% | 4.60% | 11.70% |
|  | Advanced | | 97 | 2 | 15 | 31 | 17 | 9 | 23 |
|  | 24.60% | 0.50% | 3.80% | 7.90% | 4.30% | 2.30% | 5.80% |
| Personal leadership benefits | |  | Foundational | | 33.00% | 0.30% | 4.30% | 8.40% | 5.40% | 4.60% | 10.00% |
|  | Advanced | | 97 | 2 | 15 | 31 | 17 | 7 | 25 |
|  | 24.80% | 0.50% | 3.80% | 7.90% | 4.30% | 1.80% | 6.40% |