

## Current Methods of Program Delivery by Virginia Cooperative Extension Agents Fail to Meet Stakeholder Needs

*C. A. Shea Porr<sup>1</sup>, Thomas W. Broyles<sup>2</sup>, R. Scott Pleasant<sup>3</sup>, Crystal E. Smith<sup>4</sup>, Ryan M. Brooks<sup>5</sup>, Rebecca K. Splan<sup>6</sup>*  
(1. Hutson School of Agriculture, Murray State University, United States; 2. Department of Agriculture and Environmental Sciences, Tennessee State University, United States; 3. Department of Large Animal Clinical Services, Virginia Tech, United States; 4. Division of Animal and Nutritional Sciences, West Virginia University, United States; 5. Department of Animal Sciences, Colorado State University, United States; 6. Middleburg Agricultural Research and Extension Center, Virginia Tech, United States)

**Abstract:** Using online survey instruments, knowledge needs and information retrieval methods in Cooperative Extension agents and horse industry stakeholders in Virginia were assessed. Data collected included: information resources used; educational methods used by agents; and stakeholders' preferred learning method. While over 50% of stakeholders used the Internet to find answers, only 20% of agents utilized online resources to answer stakeholder questions, and agents were more opposed to using online methods for teaching. Current delivery methods for Extension educational programs in Virginia fail to serve modern audiences. Targeted professional development programs aimed at familiarizing agents with online technology may increase their use in Extension programming.

**Key words:** extension education, extension, horses, program delivery

### 1. Research Background

For decades, Cooperative Extension was a major information resource used to solve problems in agriculture and livestock management. However, the paradigm for knowledge transfer has changed. While Extension continues to be a powerful tool for education and connectivity among stakeholders, it is no longer their primary resource for information (Franz, Piercy, Donaldson, Westbrook & Richard, 2010a; Park, Cho & Lee, 2007). In animal agriculture, veterinarians are often the main source of information (Martinson, Hathaway, Wilson, Gilkerson, Peterson & Del Vecchio, 2006), followed by print media, the Internet, and other industry professionals (Anderson, Greene & Martinson, 2011). Extension is often far down the list (Martinson, Hathaway, Wilson,

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C. A. Shea Porr, Ph.D., Assistant Professor, Hutson School of Agriculture, Murray State University; research areas: impact of teaching methodology. E-mail: [cporr@murraystate.edu](mailto:cporr@murraystate.edu).

Thomas W. Broyles, Ph.D., Extension Associate Professor, Department of Agriculture and Environmental Sciences, Tennessee State University; research areas: problem solving and decision making, teaching and learning. E-mail: [tbroyle1@tnstate.edu](mailto:tbroyle1@tnstate.edu).

R. Scott Pleasant, D.V.M., M.S., Diplomate, ACVS., Associate Professor, Department of Large Animal Clinical Sciences, Virginia Tech; research areas: equine lameness and large animal surgery. E-mail: [rpleasan@vt.edu](mailto:rpleasan@vt.edu).

Crystal E. Smith, M.S., Teaching Assistant Professor, Division of Animal and Nutritional Sciences, West Virginia University; research areas: equine management. E-mail: [crystal.smith@wvu.edu](mailto:crystal.smith@wvu.edu).

Ryan M. Brooks, M.S., Instructor, College of Agricultural Sciences, Colorado State University; research areas: equine reproductive physiology. E-mail: [ryan.brooks@colostate.edu](mailto:ryan.brooks@colostate.edu).

Rebecca K. Splan, Ph.D., Associate Professor, Department of Animal and Poultry Sciences, Virginia Tech; research areas: nutrition and obesity. E-mail: [rsplan@vt.edu](mailto:rsplan@vt.edu).

Gilkerson, Peterson & Del Vecchio, 2006; Wilson, TenBroeck & Israel, 2007) if it is on the list at all. Web-based programming such as extension was designed to capitalize on ways 21st century audiences seek information (Greene, Griffin, Whittle, Williams, Howard & Anderson, 2010; Park, Cho & Lee, 2007). However, online resources are often underutilized by agricultural stakeholders, who prefer hands-on learning or face-to-face interaction with experts (Anastasios, Koutsouris & Konstadinos, 2010; Franz, Piercy, Donaldson, Westbrook & Richard, 2010b). To design effective programming, Extension educators must be able to correctly determine stakeholder concerns and utilize the most effective delivery methods for dissemination of critical and relevant information (Diem, Hino, Martin & Meisenbach, 2011).

In Virginia, the horse industry ranks 12th nationally in number of horses (USDA, 2006), and has an estimated \$1.2 billion impact on the state's economy. Virginia horse owners support over 16,000 full-time jobs in racing, showing, recreation, breeding and other industry activities (Rephann, 2011). This diversity combines all the challenges of traditional commodity groups with contemporary issues of leisure and companion animal sectors. Everyday problems faced by recreational riders differ from those of a racetrack manager or professional trainer. While the nature of the horse industry contributes significantly to its economic impact, it also creates a dilemma for Extension educators. In this study, we evaluated stakeholder needs and preferred learning methods among Extension agents and stakeholders in the Virginia horse industry.

## **2. Methodology**

### **2.1 Objectives**

While specialists and county Extension agents regularly answer questions for their clientele, there has been no centralized effort to assess the Commonwealth's overall information shortfall, discern where or how members of the horse industry obtain answers questions, or understand how equestrians prefer to learn. With this information, Extension educators would be more able to effectively generate impactful programming that delivers critical, unbiased, research-based information. Therefore, the objectives of this project were to:

- (1) determine information resources and methods used by Virginia Cooperative Extension agents to respond to equine industry stakeholder questions,
- (2) determine how stakeholders get answers to their questions,
- (3) determine and compare knowledge needs within the horse industry as perceived by agents and stakeholders, and
- (4) determine and compare methods used by agents to deliver educational programming to stakeholders' preferred method of learning.

### **2.2 Surveys**

Two online survey instruments were developed and distributed using Dillman's (2007) technique: one for Extension agents ("agents") and one for Virginia horse industry stakeholders ("stakeholders"). For both surveys, questions on preferred methods of teaching and learning were rated on a 5-point scale from strongly favored to strongly opposed. Topics of interest and perceptions of industry problems were open-ended questions.

### **2.3 Agent Survey**

The link for the survey was delivered electronically via dedicated listserv to all Virginia 4-H and Agricultural Extension agents. Data collected included demographics (gender, age, race, income, county or counties served,

and number of horses owned); resources used by agents to answer stakeholder questions; perceptions of industry needs and challenges; preferred method of program delivery; and preferred method of receiving instruction on equine-related topics. Selections for both preferred delivery and receipt of instruction included lecture, group discussion, hands-on, and online study. The agent survey also asked how topics for equine Extension educational programs were selected and how frequently equine educational programs were offered.

The initial distribution of the survey was followed up by a reminder containing the link to the survey 2 and 4 weeks later. Agents were given 6 weeks to complete the survey.

#### **2.4 Stakeholder Survey**

The link for the survey was delivered electronically via equine-related distribution lists held by extension agents and via subscriber or membership lists held by several industry businesses or organizations. It was also advertised for 2 months in a no-cost, state-wide equine magazine. Data collected included demographics (gender, age, race, income, and number of horses owned); nature of involvement in the horse industry; topics of interest; perceptions of industry problems; and preferred methods of learning, which included the same selections as in the agent survey. Stakeholders were also asked to indicate preferences relative to seminar or workshop length, cost, and traveling distance. Seminars were defined as sessions where educational material was presented primarily in lecture or discussion format; workshops were sessions involving both lecture and hands-on or demonstration methods.

No reminders of this survey were distributed, though the advertisement ran for two consecutive months. Stakeholders were given 8 weeks to submit the survey.

### **3. Results and Discussion**

#### **3.1 Statistics**

For the agent survey, a one-way analysis of variance was conducted using lecture, group discussion, demonstration and online as the dependent variables and gender, age, and focus area as the independent variables. There was no statistical difference ( $p > 0.05$ ) between gender, age, and focus area as the preferred teaching environment.

For the stakeholder survey, a one-way analysis of variance was conducted using lecture, group discussion, demonstration and online as the dependent variables and gender, age, and involvement with horses as the independent variables. There was statistical difference in mean scores between hobby involvement and business involvement. Those participants involved as a business favored lecture ( $F(1, 449) = 4.29, p = .04$ ) and group discussion ( $F(1, 453) = 5.51, p = .02$ ) as the primary methods of receiving information. There was also mean score differences between age categories. Participants whose age range was 20-29 favored lecture ( $F(1, 419) = 2.38, p = .04$ ) more than those who ages ranged from 30-39.

#### **3.2 Agent Demographics**

- The agent survey was delivered to all 463 Agricultural and 4-H Extension agents in Virginia.
- Of the 63 agent responses received, 43 (9% of the total distributed) were complete and used in data analysis.
- In general, responding agents represented 4-H (37%) or Animal Science (26%), were female (56%), white (98%), between 30-39 years old (34%), and owned no horses (70%). Of the 13 agents who owned horses, only one owned more than 5 animals.

- Responding agents represented 57% of the counties in Virginia, with the majority (37%) located in Northern Virginia, which coincides with the highest concentration of horses and people in the state.

### **3.3 Stakeholder Demographics**

- Of the 706 responses received from stakeholders, 542 (77%) were from Virginia residents. Given the methods used to distribute this survey, it was impossible to calculate the response rate.
- Stakeholders tended to be female (86%), white (97%), between 50–59 years old (36.6%), and owned between 1 and 5 horses (69%).
- The majority of horse owners were hobbyists (72%), involved in the industry as self-defined horse farm owners (43%), riders/trainers (21%), or through participation with youth (19%).
- Over 55% of stakeholders reported they were aware of Virginia Cooperative Extension.
- Stakeholders represented 81% of the counties in Virginia, with 50% residing in Northern Virginia.

The agent response rate is low compared to similar surveys conducted in other program areas, such as small-acreage management (41% response rate) (Brunson & Price, 2009) and other states, including a 97% response rate in Florida (Wilson, TenBroeck & Israel, 2007) and a 68% response rate in Ohio (Zoller & Safrit, 1999). As reminder rates and time to respond were similar to other surveys reviewed, it is possible the low response rate for this survey was due to the time of year. The agent survey distribution occurred in December and January as compared to April or May for other surveys reviewed. It is also possible that serving the horse industry is seen as a low priority for Extension agents.

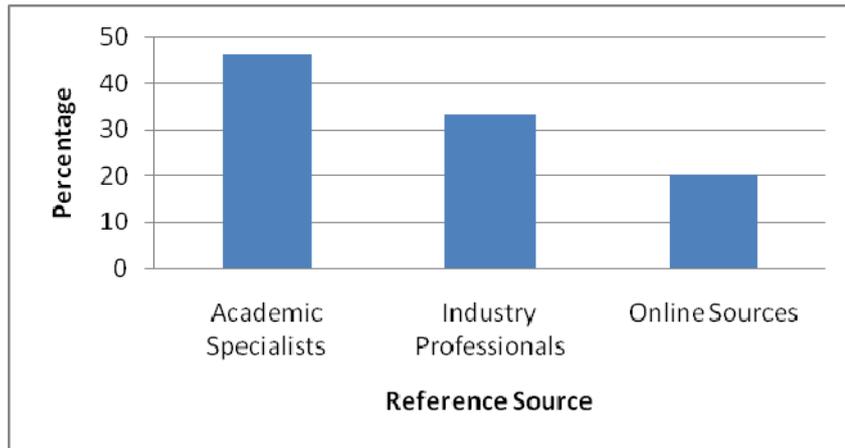
### **3.4 Agent Informational Resource Use**

- Over 76% of agents reported they routinely answered equine-related questions or conducted equine programming.
- Only 22% of agents said they answered stakeholder questions themselves; of those, 44% consulted with another extension agent or specialist if unfamiliar with the topic.
- 46% of agents reported they directed stakeholders to an academic or Extension specialists, with the remainder referring clients to an industry professional or online resource (Figure 1).
- Although 37% of agents had visited extension at least once, only 6% regularly used it as an information resource.

### **3.5 Stakeholder Informational Resource Use**

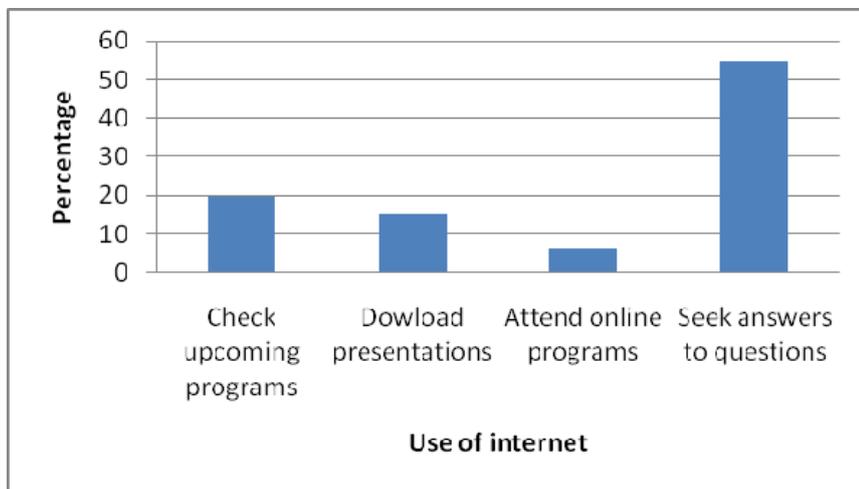
While 55% of stakeholders stated they used the Internet to find the answers for horse-related questions, only 19% had ever used extension (Figure 2).

The majority of agents reported they did not answer stakeholder questions without consulting another resource, and of those, only 20% used online sources to supplement their knowledge and only 6% used extension. Agents have been slow to adopt and utilize extension, possibly due to a widespread lack of knowledge about the resource (Harder & Lindner, 2008a) or due to a perception that, despite extension's compatibility with Extension agents' beliefs and values, extension failed to save time or effort involved with answering stakeholder questions (Harder & Lindner, 2008b). It is also possible that agents are concerned over the accuracy of online information (Brunson & Price, 2009) or fear that online resources will replace their own services to stakeholders (Diem, Hino, Martin & Meisenbach, 2011).



N = 43

**Figure 1 Information Resources Used by Virginia Cooperative Extension Agents When Not Personally Answering Equine Industry Stakeholder Questions**



N = 542

**Figure 2 Reasons Virginia Equine Industry Stakeholders Access the Internet**

However, over 50% of stakeholders used the Internet to find answers to horse-related questions, and 19% had used extension. Less than a decade ago, web pages were viewed as less trustworthy and less helpful than other asynchronous delivery methods (Brunson & Price, 2009; Park, Cho & Lee, 2007). Now, on-line resources are becoming the preferred source of information for stakeholders with questions (Anderson, Greene, & Martinson, 2011; Brunson & Price, 2009; High & Jacobson, 2005). Unfortunately, the ability of the user to distinguish objective, science-based information can vary widely. If stakeholders make changes in management based on erroneous information gained on-line from unsubstantiated opinion or propaganda, it could discourage the use of a very powerful tool. Sites such as extension were developed to meet a need by delivering quality, peer-reviewed educational materials to global clientele (Greene, Griffin, Whittle, Williams, Howard & Anderson, 2010). Continued development and support of reputable sites by Extension may aid Extension agents by giving them a current resource to answer questions posed by stakeholders as well as a resource to share with stakeholders. Suggestions on how to develop more attractive websites include structuring sites based on stakeholder needs, hiring of faculty and staff with expertise in web-based media, and improve site design and search functions for ease of use by stakeholders (Rader, 2011).

### **3.6 Agent Perceptions of Knowledge Needs**

- Over 65% of agents reported they conducted equine programming at least once annually.
- Topics for programs were often selected through collaboration with local industry stakeholders (62%) such as youth clubs and horse associations. Only 22% conducted stakeholder surveys for topic suggestions.
- Agents perceived additional programming for the horse industry was needed in business management/economics (24.7%), pasture management (22.4%), and nutrition/health care (21.2%).
- Agents desired more training on equine topics, including general health care (16%), pasture management (9%), and business management/economics (9%). Despite indicating an interest in those topics, less than 45% of agents had attended an equine educational program in the previous year.

### **3.7 Stakeholder Perceptions of Knowledge Needs**

When asked what problems were faced in the owning or managing of horses in Virginia, stakeholders focused on the top three issues of expenses (19.8%), nutrition/health (18%), and pasture management (15.9%).

Interestingly, agents and stakeholders independently arrived at the same topics as those requiring the greatest investment from a programming standpoint: business concepts and economics, nutrition and health, and pasture management. Responses from surveys conducted in Minnesota (Martinson, Hathaway, Wilson, Gilkerson, Peterson & Del Vecchio, 2006) and Florida (Wilson, TenBroeck & Israel, 2007) showed similar topics of interest to stakeholders in those states. In a positive light, this means that Extension agents are aware of the educational needs and wants of horse owners. However, the recurring theme also suggests that either the needs of the industry are not being met with current programming methods, or perhaps there is a steady influx of new horse owners into the industry who consistently need the same information.

### **3.8 Agent Preferred Learning and Teaching Methods**

- Agents preferred to learn through hands-on methods (38%) (Figure 3).
- When it came to presenting information to stakeholders, 70% of agents strongly or somewhat favored hands-on teaching methods while only 30% felt the same about online programming (Figure 4). Conversely, 28% somewhat or strongly opposed online methods while none opposed hands-on or lecture.

### **3.9 Agent Preferred Learning and Teaching Methods**

- The majority of stakeholders (35%) indicated they preferred hands-on methods for learning. Only 18% favored online programs (Figure 3), and 7% actually opposed online methods.
- Less than 40% of stakeholders said they had attended an equine Extension program in the previous year. Reasons for not attending equine Extension programs included lack of awareness of such programs (45%) or lack of local programming (30%) (Table 1).
- Over 85% of stakeholders who participated in an equine Extension program reported they were satisfied with the event they attended.

Despite increasing availability and use of online resources by horse owners, Virginia Cooperative Extension agents are slow to utilize this method of information delivery for their equine stakeholders. Agents were split on preferences for using online methods, with 30% favoring the method but 28% opposed. This is possibly due to the type of information being presented to stakeholders; agents may be unfamiliar with how to transfer traditionally hands-on topics into an online format. On the other hand, since most educators tend to teach as they learned (Dunn & Dunn, 1979), it is possible agents are unfamiliar with and uncomfortable using newer educational

methods. While previous studies have suggested Extension agents need professional development to strengthen computer skills, agents perceived themselves to be competent in the use of the Internet in finding information (Harder & Lindner, 2008). However, educational programs aimed at familiarizing agents with online technology and information delivery to aid in programming efforts may increase the use of on-line tools in equine Extension programming (Franz, Piercy, Donaldson, Westbrook & Richard, 2010b).

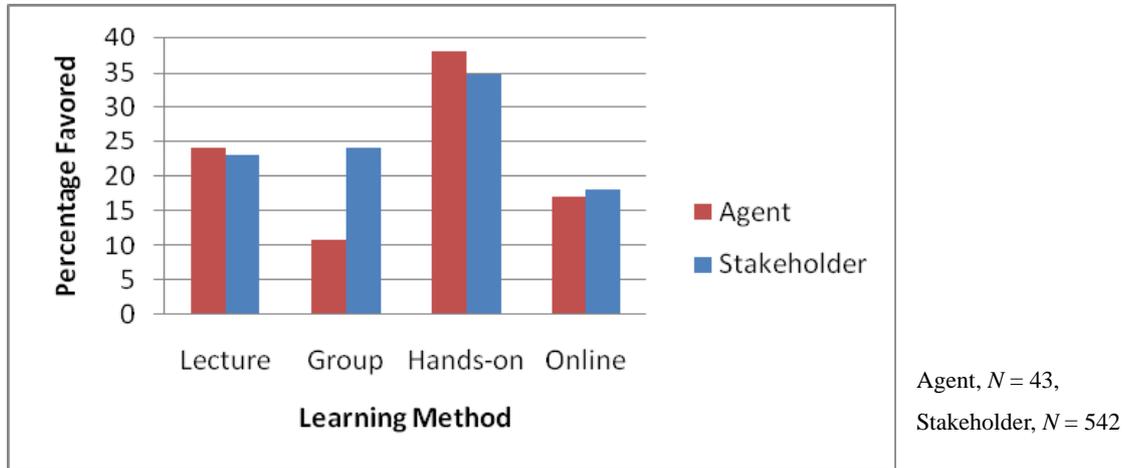


Figure 3 Preferred Learning Environment by Virginia Extension Agents and Equine Industry Stakeholders When Attending Educational Programs

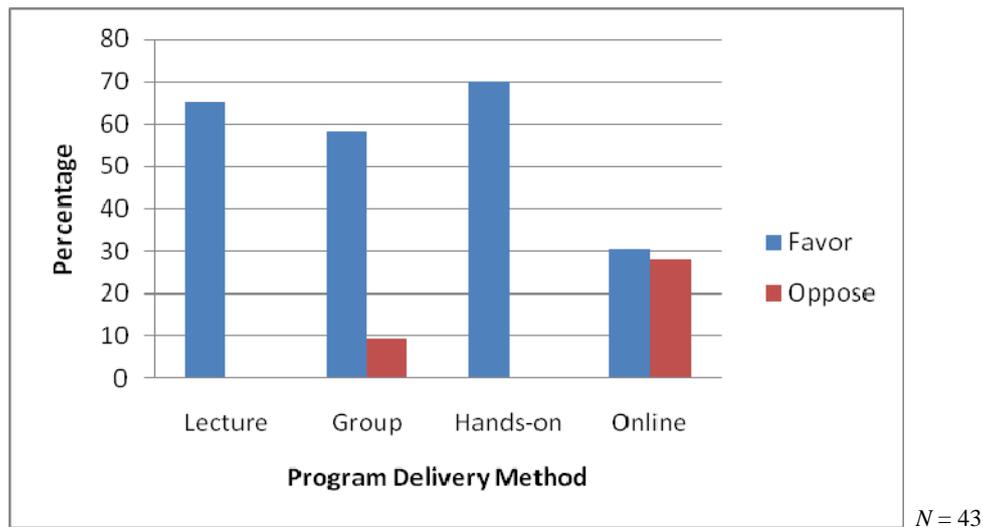


Figure 4 Virginia Extension Agent Preferred Method for Information Delivery When Conducting Extension Programs

Table 1 Reasons for Lack of Equine Extension Program Attendance by Virginia Equine Industry Stakeholders

Reason	Percentage
Unaware of program	44
Schedule conflict	26
Not local to program	29
Not interested in topic	1

N = 542

Although agents indicated they would be interested in receiving training in a variety of topics, less than 45% had attended an equine educational program the previous year. The reason for this is unknown, but it is possible that, since over 65% conducted at least one equine program annually, they were not considering their own attendance at such programs as an educational opportunity for themselves.

### 3.10 Other Programmatic Factors for Stakeholders

- Relative to seminars and workshops, stakeholders indicated they were willing to travel the same distance, 25–50 miles, for either style of program (Figure 5).
- Stakeholders preferred both to occur during the day.
- They expected a workshop to last longer (Figure 6).
- Stakeholders were willing to pay more for a workshop (Figure 7).
- Seminars were preferred on the weekend (68%) and workshops on weekdays (80%).
- When given a choice of attending an 8-hour program in one day versus four, 2-hour sessions in the evening, 89% preferred the one-day program.

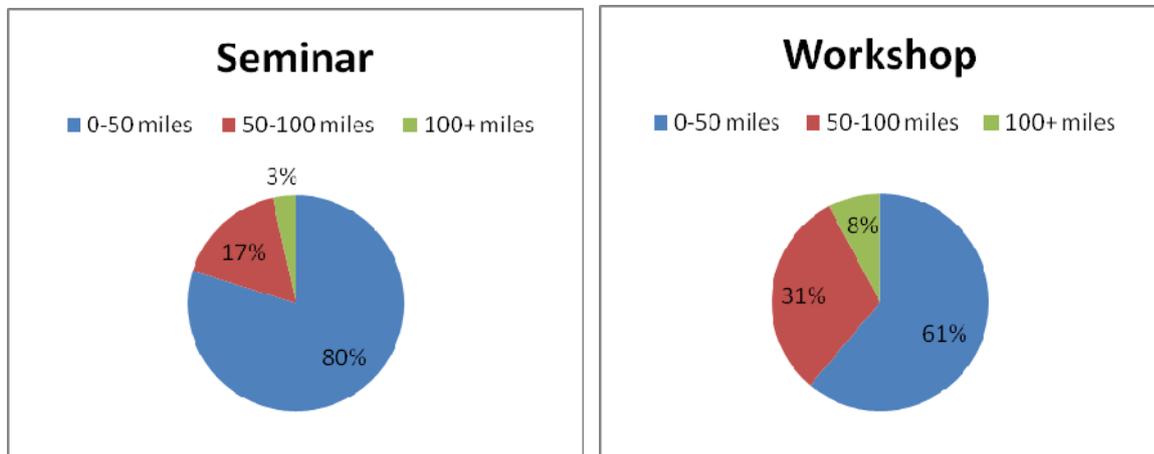


Figure 5 Distance Virginia Equine Industry Stakeholders Were Willing to Travel for an Educational Program

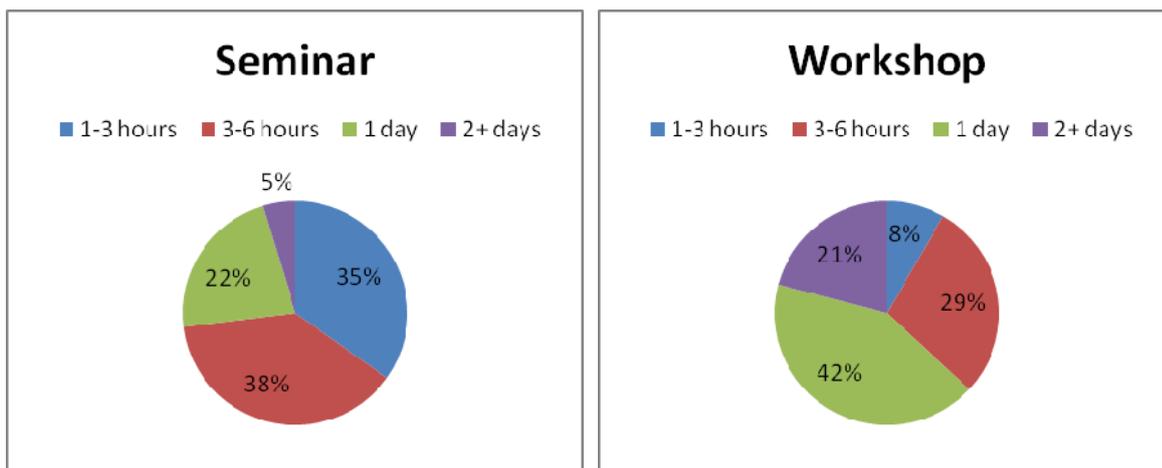


Figure 6 Virginia Equine Industry Stakeholder Preference for Length of Program When Comparing Seminars and Workshops

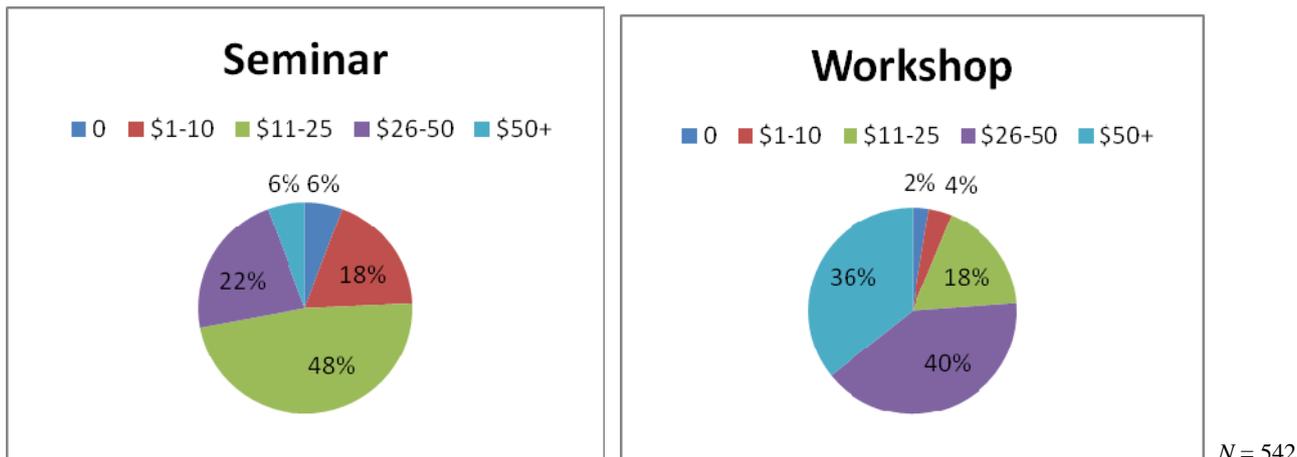


Figure 7 Virginia Equine Industry Stakeholder Willingness to Pay Registration Fees for Seminars and Workshops

There were some differences in the distances stakeholders would travel for a program: over 75% of Florida horse owners would travel in excess of 50 miles (Wilson, TenBroeck, & Israel, 2007), while the majority in Minnesota (Martinson, Hathaway, Wilson, Gilkerson, Peterson, & Del Vecchio, 2006) and Virginia preferred to travel less than 50 miles. The fact that 30% of Virginia horse owners did not attend an equine Extension event due to a lack of proximity (not a local event) is important and should be a consideration for equine Extension programming nationally. In tighter economic times, Extension agents are being encouraged to conduct more regional-type events, consolidating efforts and expenses (Franz, Piercy, Donaldson, Westbrook, & Richard, 2010b); however, horse owners are not willing to travel as far, and so may choose not to attend the event. Another reason for lack of attendance could be related to timing: while Minnesota horse owners preferred evening seminars (Martinson, Hathaway, Wilson, Gilkerson, Peterson, & Del Vecchio, 2006), Virginia horse owners preferred daytime programming. When given a choice of attending an 8-hour program in one day versus four, 2-hour evening sessions, 89% of Virginia stakeholders preferred the one-day event.

There is also an implication that horse owners in general seem unaware of Extension efforts for their industry. Many of the nation’s horse owners are unfamiliar with Extension’s missions and available resources (Martinson, Hathaway, Wilson, Gilkerson, Peterson, & Del Vecchio, 2006; Wilson, TenBroeck, & Israel, 2007). The Virginia survey suggested a better understanding of Extension efforts, with only 45% of Virginia horse owners being unaware of equine Extension efforts. However, as the information about the survey was released through Extension networks as well as popular press, it is possible the distribution of responses was skewed in favor of those who were familiar with Extension programs.

#### 4. Conclusions and Implications for Extension

Although this study evaluated preferred methods of knowledge transfer and learning in Virginia Cooperative Extension agents and equine industry stakeholders, the methodology and general conclusions can be applied to the consideration of other commodity groups and locations around the United States. In this study, Extension agents’ preference for program delivery tended to compliment stakeholders’ preference for receiving information—via hands-on methods. However, in the modern economic climate, hands-on methods are often more expensive in terms of agent time, facilities, and materials required to conduct the program. Although stakeholders are shifting to finding answers on the Internet, changing to a completely on-line programming system is not the answer when

nearly 30% of agents and 7% of stakeholders actually oppose this method. With the increasing availability of information and educational materials on-line, Extension educators will have to modify their programming methods to meet the changing expectations of stakeholders and how they are participating in learning opportunities. Otherwise, stakeholders will utilize other resources to meet their needs. Adaptations will require Extension agents to use newer technology, possibly blending hands-on methods with on-line methods, necessitating professional development opportunities for agents to become familiar with these tools and methods.

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