

AN ASSESSMENT OF THE NEEDS AND PERCEPTIONS OF THE FLORIDA  
HORSE OWNER AND THE UF/IFAS EXTENSION ADULT HORSE PROGRAM

By

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This document is dedicated to my dad and mom for all of their continued support through my educational endeavors.

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The equine industry in Florida is a diverse and growing industry. Horse owners often have questions related to the equine species and are in need of information and programs that address these questions. The Cooperative Extension Service is one organization that can provide educational programs specific to adult horse owners' needs. Sixty-five Florida county extension agents with livestock responsibilities participated in a survey addressing their perceptions of the equine industry and their capacity to address the needs of local horse owners. Overall, most agents reported the presence of an equine industry in their county and were willing to address the needs of local horse owners through different methods. A companion mail study of Florida adult horse owners was conducted to explore the educational needs and demographic characteristics. Based on 612 completed surveys, the study found that most horse owners have horse-related questions and are willing to obtain useful information related to horses. Respondents indicated that they were most interested in the subject areas of horse health and horse

nutrition. Results also indicated that educational programs should be tailored to respondents' individual educational needs and demographic characteristics. Such programs need to use a variety of methods that correspond to those most used by Florida horse owners.

## CHAPTER 1 INTRODUCTION

The horse industry involves a wide variety of activities in all regions of the United States. The primary activities in rural areas include breeding, training, maintaining and riding horses. The more urban activities include operating horse shows and public sales. According to the American Horse Council (2005), the U.S. horse industry has an economic impact of \$102 billion. It supports approximately 1.4 million jobs throughout the United States and pays more than \$1.9 billion in taxes each year. The industry's contribution to the U.S. GDP is greater than the motion picture industry, railroad transportation, furniture and fixtures manufacturing and tobacco product manufacturing industries (American Horse Council, 1996).

There are 7.1 million Americans involved within the horse industry. Horse owners and industry suppliers, racetracks, and off-track betting operations, horse shows and other industry segments all generate discrete economic activity contributing to the vibrancy of the overall industry. By form of participation, there are currently two million owners and two million volunteers within the United States horse industry. Currently in the United States, there are approximately 9.2 million horses, both recreational and commercial (American Horse Council, 2005). The following segments of the industry have an economic impact including: showing (\$26.1 billion), recreation (\$32.0 billion), and racing (\$26.1 billion) (American Horse Council, 2005).

The state of Florida has the second largest horse industry of the 50 states (American Horse Council, 1996). It produces goods and services valued at \$2.2 billion

annually, second only to California, which produces goods and services valued at \$3.4 billion. Following Florida are Texas (\$1.7 billion), New York (\$1.7 billion), and Kentucky (\$1.2 billion) (American Horse Council, 1996).

Florida also has the third largest horse population (500,000) of the 50 states. It falls behind Texas (one million) and California (700,000) (American Horse Council, 2005). Of the Florida horses, 74% are involved in showing and recreation. Another 12% are involved in track racing. Finally 14% of Florida's horses are involved in other activities, including ranching, mounted law enforcement, and therapeutic riding (American Horse Council, 1996).

According to the 2002 Census of Agriculture, Florida has a large horse industry that is growing rapidly. In 1997, the number of horse farms in Florida was 9,812. These farms housed 70,099 head of horses. Then in 2002 the number of farms increased to 12,753 (an increase of 7.69%) and the amount of horses rose to 99,911 head (an increase of 7.02%). By looking at these numbers, it seems evident there is a growing horse industry within the state of Florida.

The horse industry is often faced with emerging issues that impact horse owners and timely, accurate information is needed. Most recently, West Nile has been one example of those emerging issues. "West Nile is a mosquito-borne virus that was first detected in the United States in 1999...The virus, which causes encephalitis, or inflammation of the brain, has been found in Africa, Western Asia, the Middle East, the Mediterranean region of Europe, and, most recently, in the United States" (United States Department of Agriculture (USDA), 2004). The Cooperative Extension system is a key organization that helps to address emerging issues in the equine industry. The

Cooperative Extension system distributes research based information to people who need the information.

Kaplan, Liu, and Radhakrishna (2003) say that the Cooperative Extension system represents a distinct approach for meeting the educational needs of citizens and helping them lead high-quality, productive lives. Extension disperses results of agricultural research to farmers to add to their own agricultural knowledge bank. The Cooperative Extension system also conducts educational programs on issues such as child and family development, consumer science, youth development, food safety, energy conservation, natural resource conservation, sustainable agriculture, and competitiveness in world markets.

The work of extension faculty is to address local concerns and needs through educational programming (Arnold, 2002). “An extension program is a plan that specifies objectives, subject content, and teaching/learning activities to be carried out over a period of time, with the goal of bringing about behavioral changes in a target group of learners” (Florida Cooperative Extension Service, 2002). It is a process that also involves evaluating the programs to measure the impact of Extensionists’ efforts. Programming is directed toward change of behavior of the individual learner or learner group. It is a decision making process. The program planning process should be a collaborative effort between the extension educator and the learners (Florida Cooperative Extension Service, 2002).

One important component of program planning is needs assessment. The assessment of the need is important because a program cannot be effective at ameliorating a social problem if there is no problem to begin with or if the program

services do not actually relate to the problem (Rossi, Freeman, & Lipsey, 1999).

Although studies have been conducted for many livestock programs, equine programs are often overlooked even though horses are classified as a livestock species. This may be due to the fact that almost all of the other livestock species produce some type of meat or dairy product for the human consumption. Therefore this may be the main issue that differentiates the equine industry from the others. As a consequence, fewer resources are devoted to equine programs, which have led to a dearth in studies. To meet the needs of current and potential clientele of adult equine educational programs, extension agents must routinely identify the needs of their clientele. This study will focus on the needs of Florida's clientele because the state has a large horse population. The study will also assess extension agents' interest in and capacity for conducting equine education programs. The latter will help determine what steps extension must take to prepare agents to respond effectively to client needs.

How will the needs of extension agents and Florida's Adult Extension Equine Programs be determined? Survey research has been commonly used to identify farmers' needs. An example of a survey study is "The 2002 Northwest Florida Beef & Forage Survey" (Mayo, Israel, Vergot, et al., 2002). One purpose of this study was to "identify perceived research and educational needs of beef cattle producers in the Panhandle of Florida" (Mayo et al, 2002).

In 1996, a survey was completed by the American Horse Council to find out the demographics of the horse industry on a national and state level (American Horse Council, 1996). Currently in the 2004/2005 year, the Council is in the process of conducting a similar survey to horse owners throughout the United States (TenBroeck,

2004). A limitation to this study is that it only identifies the demographics of horse owners and doesn't identify the educational needs of horse owners. In 1998, the USDA's National Animal Health Monitoring System (NAHMS) designed the Equine '98 study to provide both participants and equine industry with information on the United State's equine population for education and research purposes. A limitation to this study was that it only identified demographics of the horse population and not horse owners, and only looked at health related practices. Recently, the University of Minnesota conducted a survey of horse owners. This study is different from several of the previous studies because it has not only identified demographics of horse owners, but it has also helped to identify the needs of horse owners throughout that state (Wagoner and Jones, 2004).

To date, there is limited research on what educational needs horse owners have. What are the current needs of horse owners in Florida? Are horse owners in need of extension services to help educate them further about the equine species? How well are extension agents equipped to respond? Once the potential needs of extension agents and horse owners are known, programs can be adjusted and/or developed efficiently throughout the state to address these needs. State extension specialists can use information about these needs to educate county extension agents through professional in-service training programs. In turn, county agents can deliver more focused programs to horse owners.

This study will focus on the population consisting of adult Florida horse owners. A sample of the population will be surveyed by mailing a state-wide survey to identify demographic characteristics and the potential needs of adult horse owners. In summary, the purpose of this study is to identify the potential needs to improve the relevance and,

in turn, the effectiveness of Florida's Adult Extension Equine program. The objectives of this study are to

1. Assess the extension agent's capacity to respond.
2. Identify what Florida horse owners are interested in learning about.
3. Determine where horse owners are currently obtaining educational materials.
4. Identify what topics and level of education horse owners are willing to be involved in.
5. Identify demographics of horse owners and the horse population in Florida.
6. Identify possible clientele for future extension educational programs.

## CHAPTER 2 LITERATURE REVIEW

### **Introduction**

This literature review has three purposes. First an overview of the equine industry and the Cooperative Extension Service in the United States and Florida will be presented. This part of the literature review will highlight the diversity the equine industry has compared to other industries, discuss the recent issues and needs of the equine industry and explore what the Cooperative Extension system has done to provide answers to these issues and concerns. Finally, the Cooperative Extension Service is described and the types of educators involved in providing programming to address the issues and concerns that horse owners may have will be discussed.

The second purpose of the literature review is to provide a theoretical context for understanding adult education. Adults learn differently from children and it is important to understand this when developing programs for adult learners. The five learning orientations or learning styles behind adult education and the importance of knowing an audience will be discussed, so that a variety of these learning styles can be used to enhance the quality of the program. Extension educators must have an understanding of how adults learn and the different learning styles of adults in order to understand their clientele better when providing educational programming.

The third and final purpose of the literature review is to provide a theoretical context for the importance of using a needs assessment study. This type of study has been widely used by Extension educators, to determine the educational needs of their

clientele. The purpose of a needs assessment and the steps involved will be explored. How an extension educator can use the results of a needs assessment to tailor their programming to fit the needs and concerns of their primary audience will also be addressed.

### **Overview of Equine Industry**

The equine industry is unique among the livestock industries within the United States. This may be due to the fact that horses are the only livestock species not consumed for human consumption within the United States. Some people may say that horses are just pets, but the horse industry is a self-sustaining industry that has a substantial impact on the United States economy. Since horses aren't used for human consumption, there are many up-keep and maintenance concerns. Horses are valued for their companionship and use, which in return enhances their owner's quality of life. This perception of horses clouds many issues relative to animal care and use of the equine species. The equine industry faces many emerging issues that require horse owners to be well informed. Many of these issues are health and nutrition related (Tenbroeck, 2004).

Horse owners often seek information from some type of professional within the equine industry when a health problem arises. However, it is important that owners stay informed and educated about the emerging health issues for the well-being of their horse(s). Recently, a health issue that appeared was that of West Nile. West Nile is a virus that is spread by mosquitoes and results in encephalitis or inflammation of the brain. First appearing in 1996, West Nile Virus has spread across the United States rapidly. In 2002, there were more than 15,257 laboratory-confirmed West Nile Virus equine cases reported in 43 states (USDA, 2003). The two main factors that influence the occurrence of West Nile Virus in a given population of horses are: 1) the existence of

mosquitoes carrying the virus and 2) the presence of susceptible horses in geographic proximity to mosquitoes (USDA, 2003). In 2002, APHIS reported 15,000 equine cases of West Nile in the United States, with approximately thirty-three percent that either died or were euthanized.

Horse owners are often faced with nutrition issues because the horse's environment has dramatically changed (Tenbroeck, 2004). Horses are grazing animals designed to consume small frequent meals. If horses are not fed properly, the result could be poor performance and reduced market value. In today's market, there are many brands and types of feeds for which to choose. Owners should consider what to feed, in what proportion and on what schedule. There are many types of grain mixes and hay from which to choose. The owner must have a good knowledge base to choose wisely in order to meet the horses' needs in the most cost effective manner.

The average horse owner, whether new to the industry or a veteran, is faced with several other obstacles on a daily basis. Some of these issues may include: identification of poisonous weeds, horse facility design, farm management practices, liability issues, and much more. Therefore, many horse owners might need educational programs, whether workshops, seminars, or field days, to help address everyday concerns and obstacles to ensure animal health and profitable production.

The Cooperative Extension Service is an organization that addresses the educational needs of horse owners. By understanding the needs of the horse industry at a national, state, and county level, extension educators can tailor programs to better assist horse owners with these issues and concerns. In Florida, no systematic study has been conducted by extension educators at the state-level to better understand the needs of the

horse industry. Adult horse programs in Florida have generally been provided on a county-by-county basis, as requested. Historically, few county livestock agents in Florida have had a large effort in equine programming. One exception would be Marion County, which has the largest horse population in the state.

Because of the lack of systematically collected data, extension educators do not have a good idea of the statewide demographics of horse owners in Florida and what their educational needs are. Across the nation, the Cooperative Extension Service has conducted several studies to address the needs of adult horse owners. One study was conducted by the Pennsylvania Department of Agriculture, through the State Horse and Harness Racing Commissions, contracted with the Pennsylvania State University called the 2002 Economic and Population Study of the Pennsylvania Equine Industry (Swinker et al, 2003). This study examined basic economic and demographic characteristics of the state's equine industry. Some of these key demographics included: the number of the general equine population, the number of farm operations, employment, and value of horses. It also reported the number of horses and economic value of horses by counties and districts. Information about the current size and character of the Pennsylvania equine industry will be essential to help shape the future of this industry. It also will aid extension in addressing the equine industry needs specific to that state. But, the major limitation to this study is that it only identified economic and demographic characteristics of horse owners and did not identify the educational needs of horse owners within the state.

Another study that was conducted to address the needs of horse owners was a survey conducted by the University of Minnesota Extension Service. This survey was

initiated because over the course of several years, extension staff had been told that Minnesota horse owners would like to have educational programs provided by unbiased and reliable sources. The main goal of this survey was to learn about the educational needs of Minnesota horse owners, in terms of program content and format. The survey information was used to evaluate the feasibility and potential success for programs that could be offered throughout the state (Wagoner & Jones, 2004).

The Minnesota horse owner's survey helped to identify key needs and issues specific to Minnesota horse owners. It included questions regarding horse owners' general knowledge of topics related to horse care, and they were also asked to rate the importance of these topics. Horse owners were also asked what resources they generally used to obtain information. Finally, some of the key demographic questions included: number of horses owned, number of years owning horses, the amount of income derived from selected horse-related jobs, and gender.

The USDA's National Animal Health Monitoring System (NAHMS), in partnership with the Cooperative Extension Service, conducted the Equine '98 Survey. These results helped to describe both the primary function of operations with horses and the primary uses of the horses on those operations. This study reported results for specific states, however Florida was not included. It is important to take into account that this study only sampled operations where horses were present regardless of horse ownership.

All of these studies have provided useful results regarding horse owners' needs and practices. However, most of them have been conducted within only one state, addressing the horse owners concerns and needs within those specific states, or they did not address

the needs of horse owners at all. Therefore, it is difficult to generalize the findings above to Florida. Florida's horse owners' needs and practices are likely different from those of horse owners in Minnesota and Pennsylvania. One reason is that the terrain and weather conditions differ a great deal between Florida and Minnesota and Pennsylvania. Additionally, the studies listed above, surveyed either only horse owners or only commercial farms instead of the industry as a whole. One lesson that can be learned from these studies, however, is that when the study is done correctly with an accurate instrument, useful data can be collected that will be pertinent to extension in structuring future horse programs for adults.

### **Cooperative Extension Service**

Since the Cooperative Extension Service has played an important role in identifying and responding to the needs of horse owners at state and national levels, it is important to understand what this organization is and what it does. The Morrill Act of 1862 established land-grant universities to educate citizens in agriculture, home economics, mechanical arts, and other practical professions. In 1914, the Cooperative Extension Service was formalized with the Smith-Lever Act. This act established a partnership between the U.S. Department of Agriculture and the agricultural colleges to: 1) develop practical applications of research knowledge and 2) give instruction and practical demonstrations of existing or improved practices or technologies in agriculture (CSREES-USDA, 2004).

The Cooperative Extension System is one of the three arms of the Land-Grant University system. The mission of the Cooperative Extension System is to help people improve their lives through an educational process that uses scientific knowledge to address issues and needs (Peters, 1999). The philosophy is based on a belief in the

possibility of change or progress, the reliability of science, the equality of people, and the power of education (Peters, 1999). Extension provides local educational programs and is the ideal way for the Land-Grant University to maintain a viable connection with grass-roots input and involvement (Peters, 1999).

Cooperative Extension works throughout America in six major areas today. These major areas include: 1) 4-H Youth Development, 2) Agriculture, 3) Leadership Development, 4) Natural Resources, 5) Family and Consumer Sciences, and 6) Community and Economic Development (CSREES-USDA, 2004). It is important to note that there are state-to-state variations in the program structure and organization. No matter what the program topic, extension expertise is used to address public needs at the state and local levels. Nationwide, there are approximately 2,900 extension offices and over 16,000 faculty and staff (CSREES-USDA, 2004).

There are several types of extension educators in the Cooperative Extension System. Some of the educators are in charge of state needs and others are responsible for addressing local needs. State extension specialists play an important role at the state level, by providing expertise for county extension agents (Kawasaki, 1994). Specialists serve key roles in providing the technical information that support county extension programming (Warner and Christenson, 2001). Specialists help to develop and/or evaluate programs to make them more effective for the community. State specialists can provide their technical knowledge and programmatic ideas to county agents, so that agents can more easily address the needs of local clientele.

Another type of extension educator is the County Extension Director (CED). The role of the CED has expanded from having a primary focus on custodial maintenance of

the county extension office and supervision of the secretarial staff to one with responsibility for the entire county extension program (Brown, 1991). “The CED serves on the county-level as an administrative leader and coordinator for formulating, developing, implementing, and evaluating county extension programs and coordinating personnel functions” (Radhakrishna et al., 1994). The CED is also an important link between the upper levels of administration and other county-based personnel.

A third type of educator in the Cooperative Extension System is the County Agent. The agent’s role throughout the county involves a wide variety of tasks. The agent must “provide leadership for development, implementation, delivery, and evaluation of a comprehensive extension program in cooperation with local and county/state extension colleagues” (Florida Cooperative Extension Service, 2005). It is important that the agent design programs to achieve a balance reflective of the county’s population diversity and to address the unique educational needs of the county’s residents. Agents must also be able to establish relationships and common goals with local agencies, as well as, maintain an effective volunteer system to staff their programs (Florida Cooperative Extension Service, 2005). One of the primary purposes of the county agent is to have direct contact with clientele. Norman and Israel (2001) define clientele contact as “having an intent to convey educational information and classifies the following as legitimate, reportable contacts: 1) face-to-face interaction in meetings, workshops, and offices, 2) individual correspondence by letter or telephone, 3) interactive video conference, and 4) newsletters and tabloids mailed to individuals who are included on a CES list with information about race/ethnicity and gender.”

## **Extension Program Development**

State Extension specialists, County Extension Directors, and county agents contribute to the development and implementation of programs. “An extension program is a plan that specifies objectives, subject content, and teaching/learning activities to be carried out over a period of time, with the goal of bringing about behavioral changes in a target group of learners” (Florida Cooperative Extension Service, 2002.). Programming also involves evaluating the programs for impact. Programs should continuously be developed, implemented, evaluated, revised, re-implemented, re-evaluated, and revised again. By evaluating programs through a needs assessment or diagnostic evaluation (Rossi et al., 1999), it is easier for the extension educator to identify the type of program to implement.

Extension programming involves several key characteristics. Programming is directed toward changing the behavior of the individual learner or learner group and it a decision-making process. In this process, many things must be considered, such as: 1) who will be taught, 2) what will be taught, 3) when it will be taught, 4) how it will be taught, 5) who will teach it, and 6) what changes (impacts) are to be accomplished (Florida Cooperative Extension Service, 2002). Finally, programming should be a collaborative effort between the extension educator and the learners so that it meets the needs of the learners effectively (Florida Cooperative Extension Service, 2002).

A key component of extension programming is long-range planning. Long-range planning is “a process by which we envision our future and the challenges and changes facing us” (Florida Cooperative Extension Service, 2005). In order for extension to accomplish long-range planning, it needs to focus on the issues and challenges faced by clientele and agents within the counties. One way extension accomplishes this is through

the formation of programmatic teams, such as “focus area” teams or design teams.

“Literature on organizational development suggests that the self-directed work team approach is beneficial to extension-type organizations...It enhances staff motivation and retention, develops the organization's credibility with stakeholders, provides a larger pool of skills from which to draw statewide, allows programming on current issues, supplements but does not replace the role of specialists, increases networking among staff members, and increases organizational self-esteem” (Lenholm et al., 1999).

In Florida, focus area teams were created by following guidelines for creating effective teams. County listening sessions were conducted to identify issues and challenges faced by clientele and county agents. After collecting this information, seven areas were identified as state-wide goals and then teams were formed (Florida Cooperative Extension Service, 2005). These teams consist of approximately ten to twelve people. The members of the focus area teams include: state specialists, district directors, and county agents. The focus area team is self-directed and should identify issues, target audiences, and priority topics, develop curriculum for county agents to use to address the local issues and challenges, and identify outcomes and impacts associated to the focus area. The self-directed work teams place decision-making and problem-solving authority in the hands of persons closest to the product or services being created and provided (Orsburn, et al., 1990).

Although extension educators provide extension programming as part of their job, it is important that these educators understand the audience that they are going to teach. If an extension educator knows the needs of the audience they are going to teach, then they can better tailor the program to meet the needs of the clientele. One of the

Cooperative Extension Systems main target audiences for educational programming is adults. Extension educators must understand that teaching adults can be different than teaching children. Educators must also understand that adults have several different learning styles and it is important that as an educator they take this into account. By having an understanding of adult education and learning styles, an extension educator will have a greater impact by tailoring their programs to better fit the needs of their adult clientele.

### **Adult Learning Theories**

The term “adult education” first came into use in 1924 (Courtney, 1992). Shortly afterward, the American Association for Adult Education (AAAE) was founded in 1926. This organization was the first systematic effort in adult education that included lyceums, theater and art groups, libraries, museums, clubs, voluntary associations, and colleges and schools. Adult education is a “process by whereby adults (individuals of a certain age) gain knowledge or skills through organized activities involving the educators and adult learners to enhance their quality of life and the betterment of the community at large” (Courtney, 1992: pp. 10). It often involves learning problem-solving and decision-making skills.

Malcolm Knowles (1980: pp.8) defines adult education as “all experiences of mature men by which they acquire new knowledge, understanding, skills, attitudes, interests, and values.” He also states that it is a “discrete social system of all the individuals, institutions, and associations concerned with the education of adults and perceives them as working toward the common goals of improving the methods and materials of adult learning, extending the opportunities for adults to learn, and advancing the general level of our culture” (Knowles, 1980: pp.10). Sean Courtney (1992: pp. 9)

defined adult education as “an intervention into the ordinary business life—an intervention whose immediate goal is change, in knowledge or in competence.”

Malcolm Knowles (1980) has been credited with introducing the term andragogy into the adult education world. Andragogy is referred to as the art and science of helping adults learn and it is the opposite of the term pedagogy which is defined as the art and science of helping children learn (Knowles, 1980). The five assumptions that are associated with andragogy include someone who (1) has an independent self-concept and who can direct his or her own learning, (2) has accumulated a reservoir of life experiences that is a rich resource for learning, (3) has learning needs closely related to changing social roles, (4) is problem-centered and interested in immediate application of knowledge, and (5) is motivated to learn by internal rather than external factors (Merriam, 2001).

There are five major perspectives in adult education (Deshler, 1999). These perspectives help increase the understanding adult education and allow practitioners to see how learning can occur in different ways. The theories include: 1) humanist orientation, 2) behaviorist orientation, 3) social learning orientation, 4) cognitive orientation, and 5) critical reflection/constructivist orientation. By using these five orientations together, an adult educator can enhance the learning process for the participants.

The humanist orientation involves utilizing the inherent goodness and unlimited growth and development potential of the learner. It strives to have a natural progression to: increase competency, autonomy, freedom, and fulfillment. It is based on Abraham Maslow’s Hierarchy of Needs Model (Deshler, 1999). This model takes into account

self-actualization and is a process of fulfilling one's potential. It is also based on Carl Roger's theory of the freedom to learn. He states "permitting the learner to be free to engage in self-initiated, self-reliant learning that is motivated out of self-actualization tendency" (Deshler, 1999: pp. 17). Relationships between the educator and learner for this orientation are based on warmth, non-judgmental acceptance, sincerity, empathy, and caring. An educator can utilize the following methods for the humanist orientation: 1) needs-based programming, 2) group discussion and study, 3) self-directed learning, 4) interpersonal interaction and encounter, and 5) experiential learning (Deshler, 1999: pp. 16-20).

The behaviorist orientation involves viewing learning as a change in observable behavior. It was founded on the belief that "learning is a direct result of the connection between a stimulus and a response (Deshler, 1999: pp. 21). Another belief was that all "behavior is learned and therefore all behavior can be modified or changed through further learning" (Deshler, 1999: pp. 21). Behaviorists believe that learning is controlled by stimuli in the external environment and not by the individual learner. Some approaches and methods that can be utilized by educators include 1) reinforcement and incentives, 2) instructional feedback, 3) programmed instruction, and 4) games and stimulation (Deshler, 1999: pp. 21-24).

Social learning, also known as observable learning, is the third learning theory in adult learning. People learn from observation and interaction and the observer's behavior might change after viewing the behavior of a model in this orientation. It involves integrating two behaviorist concepts (reinforcement and environmental influence) with cognitive notions (internal structures and processes). One of the main theories was

developed by Miller and Dollard in the 1940's (Deshler, 1999). This theory states that by using observation and imitation together, there will be retention of knowledge by the learner. Several methods and approaches can be used by the educator with the learners. These methods and approaches include: 1) demonstrations and trials, 2) behavioral modeling, 3) apprenticeships and mentoring, 4) tutorials, 5) peer partnerships, and 6) on-the-job trainings (Deshler, 1999: pp. 24-28).

The fourth learning orientation is the cognitive learning theory. Cognition can be defined as "the act or process of knowing including both awareness and judgment" (Deshler, 1999: pp. 29). Learning is viewed as a process that occurs inside the learner. It is an attempt to make sense of the world and give meaning to experiences. It is different from the other learning orientations because it is not a change in behavior, rather it brings changes in the way the learner understands or organizes elements of the environment (Deshler, 1999). These views of the cognitive learning theory include 1) learner acts upon the environment, 2) learner understands and organizes the elements of the environment, 3) learner seeks "insight" where mental trial and error occurs, 4) learner seeks the "ah-ha" moment, and 5) "whole is greater than the sum of parts" (Deshler, 1999). Some of the approaches and methods that can be used by the educator with the learner include: 1) advance organizer (AO), 2) metaphor, analogy and simile (MAS), 3) framing, and 4) concept maps (Deshler, 1999: pp. 28-34).

The fifth and final learning orientation is the critical reflection/constructivist orientation. It is based on the educational philosophy of learning founded on the premise that, by reflecting on experience, individuals construct an understanding of the world in which they live in. Constructivists believe that 1) knowledge is individually and socially

constructed, 2) knowledge is an interconnection among ideas, 3) reality is constructed rather than discovered, 4) experiences connect learners to groups/culture, 5) the learning process should be designed to go beyond the information presented, and 6) the learning process must be concerned with experiences and contexts that motivate students (Deshler, 1999). Critical reflection is the main components involved within this learning orientation. It can be defined as the process of identifying, analyzing & evaluating our procedural, personal, & philosophical assumptions & beliefs that influence our thoughts, feelings, & actions about educational practice (Deshler, 1999). The process or methods of critical reflection process include 1) describing experience or practice, 2) identifying assumptions and beliefs, 3) evaluating assumptions and beliefs, and 4) reconstituting assumptions and beliefs (Deshler, 1999). This process is not necessarily a linear process (Deshler, 1999: pp. 34-45).

By having an understanding of the five learning orientations that Deshler (1999) described above, an extension educator will be better able to identify what type educational program is needed for the targeted audience they are addressing. Given that these orientations describe various ways adults learn, using only one type of learning orientation can limit the impact of the educator. It is important to integrate these learning orientations so that the learning experience can be more effective for the learner. The behaviorist and the social learning orientations could be combined because both learning orientations use the “learn by doing” approach.

In education, there are two other perspectives that help to lay out the framework for understanding education. These perspectives follow some of the same ideas as Deshler’s learning orientations, however, are only divided into two categories. Byrnes (1996:

pp.10-22) refers to these two philosophical perspectives as “perspectives of learning that have dominated educational thought and process.” These two perspectives are known as: objectivism and constructivism.

Byrnes (1996) states that the objectivist perspective is based on the belief that knowledge is transferred directly to the learner and that the relationships between ideas and concepts can be immediately seen by all students. It is founded on the behavioral view of teaching and learning. In a classroom setting, objectivism takes on the form of a teacher, a possessor of knowledge, passing that knowledge on to students, potential recipients of that knowledge, using standardized content, sequences, and strategies (Darling-Hammond & Sclan, 1996; Zemelman et al., 1998). Therefore, there is a close relationship between objectivism and Deshler’s behaviorist learning orientation.

The other perspective, known as constructivism, is based on a different set of assumptions about teaching and learning. It is assumed by the constructivism perspective, that individuals interpret new knowledge uniquely (Byrnes, 1996; Darling-Hammond & Sclan, 1996). It is built on the view that knowledge is a construction of the human mind, and it poses teachers as facilitators for their students’ learning. It also suggests that a student’s interpretation is mediated by preexisting knowledge and experience (Lee, 2003). Therefore, there is a strong bond between constructivism and Deshler’s critical reflection/constructivism and cognition learning orientations. All have very similar characteristics, principles, and ideas of how learning should take place for the learner.

### **Needs Assessment Models**

Adult education programs use several techniques for program planning. Boone (1985) identified needs assessment as a critical element in adult education program

planning. The assessment of the need is important because a program cannot be effective at ameliorating a social problem if there is no problem to begin with or if the program services do not actually relate to the problem (Rossi, Freeman, & Lipsey, 1999). By assessing the needs of program clientele, educators are then better able to plan an effective program and/or evaluate the existing program.

Before defining what a needs assessment is, an understanding of what a need and what an assessment is are needed. Witkin and Altschuld (1995: pp.8-24) define a need as “the gap or discrepancy between a present state (what is) and a desired end state (what should be). An assessment is defined as “the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development” (Palomba & Banta 1999: pp.4). Rossi et al. (1999: pp. 120-125) define a needs assessment as “an evaluative study that answers questions about the social conditions a program is intended to address and the need for the program. Witkin and Altschuld (1995: pp.8-24) describe a needs assessment as “a systematic set of procedures undertaken for the purposes of setting priorities and making decisions about program or organizational improvement and allocation of resources with the priorities being based upon identified needs.”

If a needs assessment is done well, it can be viewed as both a process and a method (Israel & Ilvento, 1995). Israel and Ilvento (1995) suggests that leadership, group cohesion, and a sense of local involvement can be built from this process. Focus groups and surveys are types of needs assessments that can accomplish this because they provide opportunities for clientele to express their opinions on certain issues. As a method, needs

assessments are tools that help an organization plan for and implement strategies on specific topics, in this case, horses.

Needs assessment studies can be viewed at both the micro and macro levels. At the micro-level, a needs assessment can examine a skill or knowledge deficit for an individual or group of individuals. When examined at the macro-level, a needs assessment measures the gap between a current state and some desired state that may be targeting an entire business, industry, or community (Birkenholz, 1999). A needs assessment study helps to identify 1) What people feel they need to know and 2) What people already know. The steps of this process include: 1) identifying the emerging issues and concerns of community members in the service area, 2) assessing the level of knowledge and frequency of use of existing agencies and organizations, 3) determining reasons preventing citizens from using local services, and 4) describing community members participating in the study on selected demographic characteristics (Nieto et al., 1997).

In order for a needs assessment to be useful, it is important to identify the emerging issues and concerns of community members in a service area. Recognizing these concerns is important so that all community members' questions are answered. Many types of questions should be asked to identify these concerns. The current research is based on the University of Minnesota Extension Services Horse Owner Survey (2004) and will examine knowledge on emerging issues such as: 1) basic horse care, 2) farm management, 3) horse health, 4) horse nutrition, 5) horse reproduction, 6) pasture management, and 7) training/handling of horses. Horse owners will also be asked how

important different types of horse topics/areas are to them, so that the top priorities within the horse owner community can be identified.

Assessing the level of knowledge and frequency of use of existing agencies and organizations is the next part of a needs assessment. This is important to know if extension services disperse their information out to the community in a way that is easy to find and easy to understand for the community. Lavis and Blackburn (1990) found a positive relationship between clientele satisfaction and contact with local extension offices. It was concluded that people who use extension more intensively rate it higher than people who do not use it as often. This may be due to the fact that extension tends to provide programming to current clientele more often while potential clientele in the area may remain unaware of the organization.

So from whom do “non-users” retrieve information if they are not utilizing their local extension services? A source can be defined as “an individual or an institution that originates a message” (Vergot et al., 2005). It is important to understand the sources used by clientele and the use of appropriate information channels, so that we can then facilitate a widespread coverage of the target audience (Vergot et al., 2005). The current research will examine 1) the types of people that horse owners use as resources, 2) what methods are used to obtain information, 3) what types of educational events are most useful, 3) what types of educational programs that clients have, and 4) what types of publications are currently used as resources on horses.

In Vergot, Israel, and Mayo’s (2005) study of “Sources and Channels of Information Used by Beef Cattle Producers in Twelve Counties of the Northwest Florida Extension District,” they were able to determine the characteristics that local beef

producers looked for in information sources. It was shown that these beef cattle producers more frequently gained information from other producers in the area with similar cattle operations and from local farm and feed supply dealers than from many other sources. Local beef producers also tend to seek information from close relatives who produce beef cattle, their county Cooperative Extension office, Natural Resource Conservation Service agents, local farm and feed supply dealers and private consultants.

Similarly, in 1998, a study by the USDA's National Health Monitoring System (NAHMS) was conducted to ask horse owners or operators to rate the importance of various sources of information related to health care. A representative sample of the horse operations from 28 states within the United States was used. Veterinarians were rated *very* important as sources of information for equine health by 84.1% of operations and *somewhat* important on another 12.6% of the operations. Other health care information sources that were rated as *very* important were farriers (49.2%) and feed or veterinary supply store personnel (23.2%). In total, 61.5% rated other horse owners as either a *very or somewhat* important source with which to make health care decisions.

Determining reasons preventing citizens from using local services is another part in a needs assessment. If citizens are not willing to take part in extension services because of certain reasons, then the extension service can adapt their program to better fit the needs of the local citizens. "The effectiveness of delivering extension programs can be increased by matching the information channels employed by extension to those preferred by segments of the clientele" (Israel, 1991: pp.15). A channel can be defined as "the means by which a message gets from the source to the receiver" (Vergot et al., 2005).

Current or potential extension clientele are likely to realize a greater benefit from programs when the information is relevant to their needs and channels provide detailed information or allow for the presentation of individualized information (Israel, 1991). This research will examine: how far the horse owner is willing to travel, important characteristics or skills that the educator must possess, what other organizations they would attend a workshop with (and, hence, with whom extension should form partnerships), and the time availability of potential clientele.

Vergot, Israel, and Mayo's (2005) were also able to determine what type of information channels would work best with local cattle producers. Local cattle producers preferred being able to observe the practices of other local ranchers in the area. Producers also obtained information from commercial internet sites, research center demonstrations, and farm demonstrations and they obtained information through on farm visits, telephone contact, and office visits. Overall, most local cattle producers used a combination of channels and each group of local cattle producers differed from the others' combinations.

The USDA's National Animal Health Monitoring System (NAHMS) study conducted in 1998, also examined the channels of information that horse owners use in relation to health care decisions. Horse magazines and reference books were rated *very or somewhat* important by 55.2% of the operations. Horse association meetings and newsletters were rated by 39.7 % of the horse operations as *very or somewhat important*. extension agents and university or other instructors, such as 4-H or vocational agriculture were rated by 34.4% of the horse operations as *very or somewhat* important as well. Finally, only 11.0% of operations rated the internet as a *very or somewhat* important

channel, in part because only 38.1% indicated they had access to the web/internet or that it was applicable as a source of equine health information. Most of these findings are likely still relevant today. However, the internet percentages are likely to have changed a great deal over the past seven years because of the rapid adoption of this technology by the general public.

Describing community members participating in the study on selected demographic characteristics is the last component of a needs assessment. Extension educators should look at the potential users' capabilities, needs, and resources because this will affect the probability of participation (Brown, 1981). This research will examine the following items about Florida adult horse owners: 1) the number of horses that are owned or managed, 2) horse boarding practices, 3) land tenure (owned versus rented), 4) the number of acres dedicated to keeping the horse, 5) the amount of purchased hay, 6) horse ownership experience, 7) forage availability for the horse, 8) types of disciplines the horse owners is involved or would like to be involved in with their horse, 9) membership in horse associations, 10) participation in informal horse-related social networks, 11) age, and 12) gender.

Information about demographic characteristics of the horse owner community in Florida can be used by extension to tailor programs to address the needs of specific groups of horse owners. These particular demographic characteristics were selected because they are the most common characteristics that will help an extension agent to easily understand the local equine industry within their county or state. Knowing these specific demographics can also help an agent to understand why horse owners use certain types of sources and channels.

The USDA's National Animal Health Monitoring System's Equine '98 Study included, for example, an analysis of the composition of the United States equine population. For this study, an equid was defined as horses, miniature horses, ponies, mules, donkeys, and burros. By knowing these demographic characteristics, it gave the USDA a better understanding of the primary uses of equids and the disciplines that horse owners were involved in. The primary function of more than one-half (54.7%) of the operations with equid was residential with horses maintained for personal use. These operations accounted for roughly one-third of the equid (35.9%). About 35.9% of the equid were located on farms and ranches and nearly 1.1% on race tracks. Overall, the equine population was primarily used for pleasure on nearly two-thirds (66.8%) of operations. About 15.2% of operations used equid for farm and ranch work, 6% for breeding, 6.5% for showing, and only 1.9% for racing. Smaller operations, nearly 80.0%, maintained their animals primarily for pleasure.

The Equine '98 study also measured at the number of equid in each operation and identified the breeds or types of equid. Overall, the Equine '98 study found that 44.9% of the operations out (for the 28 states) had only one or two equid. These small operations accounted for 14.5% of the total equid, while the 21.4% of the operations with six or more animals maintained 60.4% of the equid. The largest percentage of horses on operations other than racetracks was Quarter Horses (39.5%), followed by Thoroughbreds (10.2%), and Arabians (7.8%). Over 90% of the population was horses, over 5% ponies, and fewer than 3.0% were miniature horses, mules, and donkeys or burros.

In summary, the Cooperative Extension Service is an organization that can provide effective educational programs to adult horse owners. However, the potential needs of horse owners in Florida have not been identified. By using a needs assessment tool to identify these needs, horse programs for adults can be developed and/or improved within Florida to address the needs effectively. After knowing these needs, extension educators, specifically county agents, can then look at what types of adult learning styles to use when working with adult horse owners in Florida.

## CHAPTER 3 METHODOLOGY

The purpose of this study was to identify the potential needs of county livestock agents and adult horse owners in order to improve the relevance and, in turn, the effectiveness of Florida's Adult Extension Equine program. The goal was to conduct two needs assessment surveys of county livestock agents and adult horse owners in the state of Florida. The livestock agent population was defined as whichever agent was responsible for the adult livestock programs within each of the sixty-seven counties in Florida. The adult horse owner population was defined as anyone living in Florida that is eighteen years or older and owns or cares for equine species.

### **Livestock Extension Agent Equine Program Survey**

County livestock agents, in Florida, are skilled professionals that are employed by the University of Florida and provide educational programs in one or more of Florida's sixty-seven counties. In June 2004, a complete list of 77 county agents with adult livestock responsibilities was obtained from the University of Florida IFAS Livestock List-serve list (Delker, 2005). Of these 77 county agents with livestock responsibilities, only the appropriate extension agent responsible for adult livestock responsibilities was surveyed. This resulted in a total of 67 surveys being sent out. Even though this particular group of people may own horses themselves, they were considered the facilitators of Florida's Extension Livestock educational programs and therefore, were excluded from the later survey of adult horse owners.

### **Questionnaire Design and Variable Definitions**

A web-based survey was designed to measure the livestock agent's perception of the equine industry within their particular county, their attitudes towards current programs and/or providing programs in that area, the frequency of requests they receive from clientele, their level of knowledge about specific subject matter and their sources of information. This survey was constructed following the guidelines of the Tailored Design Method (Dillman, 2000). In every step of the design, from drafting questions to planning a contact sequence, care was taken to minimize the costs of responding while maximizing the response rate. It has been suggested that extension agents have developed an essential job-related skill consisting of using computers, software, and associated peripheral devices for purposes of serving clientele, research, and in support of extension's administrative infrastructure (Gregg & Irani, 2004). Therefore, most agents are capable of completing a web-based survey. The questionnaire layout was designed to be user friendly and it was web-based due to the high level of computer usage of county livestock agents on a daily basis.

The survey began with three questions asking about the agent's perception of the horse industry within their particular county (Appendix A). The first question asked the agents if they considered horses to be a major, minor, or not an industry within their particular county. This distinction of the industry was important to help classify where the higher populations of horses were within the state based on agents' perceptions. The second question asked respondents if they considered horses to be a growing industry within that particular county. Finally, the third question asked agents if they considered horses to be part of the livestock industry. These questions used a yes/no/don't know

response format and will help to measure the agent's perception of the equine industry and of the equine species as compared to other livestock animals.

The next three questions asked agents about the extent of equine programs within their county. The fourth question specifically asked if equine programs for adults were currently being offered within that particular county. A follow-up question addressed the frequency that the equine programs were being offered, using a scale ranging from none to 11 or more programs annually. The fifth question then asked about respondent's interest in developing or expanding an equine program within their county. Following this group of questions was one which asked whether respondents ever received requests from horse owners for information. A follow-up question was used to find out the frequency of these requests per week. The following scale was provided: less than 1 per week, 1-2 per week, 3-5 per week, 6-10 per week, and 11 or more per week.

Next, the questionnaire addressed the agents' level of knowledge on specific subject matter. First, the agent was asked to rate how prepared they felt to answer equine questions. This question used a rating scale with 1=not at all prepared, 2=slightly prepared, 3=somewhat prepared, 4=moderately prepared, and 5=very prepared. Then, respondents were asked how knowledgeable they were in the following subjects: basic care, nutrition, reproduction, herd health, farm management, and training/handling of horses. This question also used a 5-point rating scale of knowledge with 1=none, 2=low, 3=medium, 4=high, and 5=very high.

Question nine was concerned with the sources of information that the county livestock agents use. It used a check all that apply format. The options given for consideration were: EDIS, veterinarians, equine state faculty, non-IFAS websites, peers

in the industry, professional journals/magazines, workshops, national events, vendors, and other. Finally, an open-ended question completed the survey and asked livestock agents to name what other information or resources they needed to meet the needs of horse owners within their county. This information will be used in data analysis to inform state specialists about the concerns of the county agents so that they can be addressed in the near future.

### **Survey Implementation**

A web-based survey was conducted because it can be an efficient and cost-effective method of gathering data. Mail surveys would have been just as efficient, but not as cost effective (Dillman, 2000). Telephone surveys would have offered the advantage of individually speaking with respondents; however, it would have required more time. Personal interviews were also considered as an option, but would have required traveling to all sixty-seven counties which would have been too expensive and too time consuming. A web-based survey was ultimately chosen because it gave the agents the option of completing the survey at their convenience. It was also practical because a list of livestock agents' names and email addresses was available for sending correspondence and the link to the webpage for the survey and email usage is part of a county agent's daily routine (Gregg and Irani, 2004).

A multiple-wave mailing strategy was employed to help reduce the non-response error. Dillman (2000) suggests that using multiple contacts aid in maximizing response to surveys. Therefore, a system of four contacts for the livestock agents was utilized. The first contact, which was sent out the beginning of July, 2004, consisted of an email sent out to the county livestock agents on the list-serve representing the sixty-seven counties (Appendix A). This email informed agents that they would be receiving an

email in a few days requesting them to participate in an online survey regarding the equine programs for adults within their county.

Three days following the email pre-notice, a second letter was sent via email to the county livestock agents. This email contained a cover letter and links to access the online survey instrument (Appendix A). Each element of the online survey and procedures was designed according to the Tailored Design Method to contribute to the desired high response rate (Dillman, 2000).<sup>1</sup> The cover letter fully explained the procedures for responding and contained links to access the online survey. All correspondence was personalized, which is an integral part of Tailored Design, by providing real names instead of a general salutation and by providing several ways to contact the principal investigator and supervisor. After clicking on the link in the email message, respondents were taken to the home page of the web survey which fully explained the purpose of the survey and asked for the participants consent to participate in this study. Upon clicking “I agree,” participants were taken to the questionnaire to complete and submit.

Two weeks after the questionnaire information was sent, a reminder letter was sent via email to all county livestock agents whose questionnaires had not been completed (Appendix A). The reminder email thanked participants for completing the survey and encouraged the non-respondents to complete the surveys in a timely fashion. The reminder also provided the participant with their participant code and links to the online questionnaire.

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<sup>1</sup> The research protocol, including all correspondence, was approved by an Institutional Review Board at the University of Florida as protocol No. 2004-U-517.

The fourth and final contact was established with only the non-respondents via telephone interviews during the months of September 2004 and October 2004. The Tailored Design Method (Dillman, 2000) suggests that a different mode of contact distinguishes each type of final contact from regular delivery. It also states that a “special” contact improves overall response to mail surveys. Telephone interviews took place long after the reminder email and due, in part, to four hurricanes coming through the state of Florida during the months of August and September as well as to the failure of some agents to return phone calls.

### **Response Rates and Coverage Issues**

Sixty-five of the sixty-seven county/livestock agents completed a questionnaire, resulting in a response rate of 97.0%. Sixteen people responded after the first wave. After the reminder letter was sent, twenty-one people completed their surveys. An additional 28 responses were obtained after following up with the telephone interviews.<sup>2</sup>

No responses were obtained from two counties. One county livestock agent was unable to be reached after several attempts via email and telephone. Another county livestock agent refused to take part in the survey after telephoning him twice. He stated that this was due to the fact that his area had severe hurricane damage and that he didn't have the time to complete the survey.

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<sup>2</sup> Since telephone interviewees had a copy of the survey in front of them and because the survey is short, this should minimize any differences in the answers due to the mode of the survey. Krosnick (1999) suggests that “when choices are presented visually, either on a show card in a face-to-face interview or in a self-administered questionnaire, weak satisficing is likely to bias respondents toward selecting choices displayed early in a list...weak satisficing seems likely to produce primacy effects under conditions of visual presentation” (pp. 549-50).

### **Data Analysis Procedures**

Data were compiled using Microsoft Excel 2000. A coding scheme, described earlier in the questionnaire design section, was created to record categorical data. The quantitative data was analyzed using SPSS for Windows, version 12. Means were calculated on continuous data. The categorical variables were subject to frequency analyses.

### **Adult Horse Owners Survey**

A second questionnaire was designed specifically for adult horse owners to address needs specific to the equine species. The Tailored Design Method guided the processes of questionnaire design and survey implementation for the adult horse owners survey (Dillman, 2000). Based on the social exchange theory, Dillman suggests aiming to reduce the costs to respondent of completing the survey (Dillman, 2000). Therefore, the questionnaire content was designed to be concise and interesting to the respondents as well as easy to navigate, while at the same time covering the conceptual domains identified in Chapter 2.

### **Questionnaire Design and Variable Definition**

An 11-page questionnaire was constructed to measure the potential educational needs, practices, and demographics of adult horse owners in Florida. This questionnaire was based on the University of Minnesota Extension Service Horse Owner Survey (Wagoner & Jones, 2004). It was based on this survey because this survey was recently conducted successfully with a response rate of 67.0% and many of the questions asked included what we wanted to identify with the Florida survey. To set the stage, horse owners were asked some simple questions. Dillman (2000) suggests that the first

question(s) needs to be salient and simple, so that everyone can successfully answer it and, in turn, be motivated to complete the instrument.

The survey began by asking horse owners the frequency of having horse-related questions that they would like answered (Appendix B). Respondents were provided with the following scale: 1=never, 2=rarely, 3=occasionally, 4=often, and 5=very often. Next it asked them to rate how interested they might be in obtaining more information in regard to horses. Horse owners were then asked to rate their level of knowledge on several horse-related topics. Level of knowledge was rated on the following scale: 1=none, 2=low, 3=medium, 4=high and 5=very high.

An array of twenty-six items on topics such as: health, nutrition, business aspects of ownership, general horse care, and horse facility design, in the fourth question, was designed to explore the importance of different horse-related topics. Respondents were asked to rate the importance of each topic using a scale as follows: 1=not at all important, 2=slightly important, 3=somewhat important, 4=moderately important, 5=very important, and 6=don't know. Question five was an open-ended question that allowed horse owners to express any other horse-related topics, not listed in question four, which interested them. This question was intended to generate new ideas that the researchers did not think about pertaining to the equine industry.

### **Resources**

The next three questions asked respondents what sources, channels, and other resources they use to obtain information about the questions concerning horses. First, respondents were asked if they had purchased any publications, in the past twelve months, about the topics listed in questions four and five. The publications listed to choose from included: book(s), magazine(s), pamphlet(s), videos/DVDs, and other.

Respondents were to answer yes or no to purchasing each specific publication, and if yes, they were asked to list the name or topic of the publication.

The next question addressed the types of people the respondents most frequently rely on as sources for information about horses. Following this, respondents were asked about the different types of methods used to retrieve information. Vergot et al. (2005) suggests that it is important to understand the sources used by clientele and the use of appropriate information channels, so that extension agents and specialists can then facilitate a widespread coverage of the target audience. For these two questions, respondents were asked to rate the frequency of use on the listed items using the following scale: 1=never use, 2=seldom use, 3=usually use, 4=usually use, and 5=always use.

Respondents were asked in the next four questions about the usefulness of programs that provide educational information and about the programs they have attended in the past. First, respondents were asked to rate a list of events that provide information for horse owners. All of these events are either university or industry related. The scale provided is as follows: 1=not at all useful, 2=slightly useful, 3=somewhat useful, 4=moderately useful and 5=very useful. Then respondents were asked if they have attended any horse educational programs in the past twelve months. If yes, they were asked to provide the program name and location. If no, the respondents were asked an open-ended question to list the reasons why they have not attended any horse educational programs. Similar responses were grouped together and counted. Finally, respondents were asked how far they usually travel to attend an educational program or

seminar. The following scale was provided: 1=less than 25 miles, 2=25 to 49 miles, 3=50 to 99 miles, 4=100 to 200 miles and 5=over 200 miles.

Following this group of questions, respondents were asked to rate the importance of a list of characteristics about individuals who may provide information about horses. Some of these characteristics included: personally owns a horse(s), provides a quick response, has college training in various areas, and have general knowledge about many horse topics. Next, horse owners were asked to rate the importance of a list of organizations that develop and present educational programming for horse owners. For these two questions, this scale was provided to rate the importance of the items listed: 1=not at all important, 2=slightly important, 3=somewhat important, 4=moderately important, 5=very important, 6=don't know.

Question fifteen asked respondents how likely they would be to obtain horse-related information from a list of resources. These resources included: internet/web pages, evening seminars, on-line classes, Saturday morning programs, all day Saturday programs, and short publications. Knowing when clientele are available can aid an educator when selecting times to hold educational programming. The next question asked horse owners to rate how likely they would be to attend an educational program, in person offered in their area, on several listed topics. These topics included: general horse care, business aspects of ownership, disaster preparedness, horse facilities, horse health, horse nutrition, marketing, and pasture management. Both questions asked respondents to rate their likelihood on the following scale: 1=not at all likely, 2=slightly likely, 3=somewhat likely, 4=moderately likely, 5=very likely and 6=don't know.

**Demographic variables: Horse ownership/practices**

Respondents were asked several questions concerning the horse(s) they own and the practices that take place with the horse(s). First, the horse owners were asked to check if they owned and/or managed or cared for horses. If so, they were asked to indicate the number of horses. Respondents also were asked about their horse boarding practices. A list of the following options was provided for them to check one: 1) Yes, all, 2) Yes, some and 3) None.

Next, respondents were asked to indicate whether or not they owned or rented the land dedicated to keeping the horse(s), followed by the number of acres dedicated to keeping the horse(s), regardless of whether or not the land is owned or rented. Question twenty then asked whether the horse owner buys hay for their horse. If yes, the respondent is asked to indicate what percentage of hay they buy.

Horse owners also were asked to report the number of years they have owned horses. After examining the distribution of responses, these numbers were then categorized into the following scale: 1-4, 5-9, 10-19, 20-29, and 30 or more years. The next question asked if during grazing season, if the horse(s) are on pasture or grassy turnout most of the time. The question following asked if the horse(s) usually receives all of its forage from pasture during the grazing season. Both of these questions used yes/no format and asked the respondent to select one of the options.

The next two questions asked respondents about the equine disciplines they are involved in. Both questions use a check-all-that-apply method. Respondents were first asked to circle, from a list of sixteen disciplines, which equine disciplines they do with their horses. Some examples of these disciplines include: cutting, english, trail riding, and western pleasure. Then they were asked to indicate which disciplines they would

like to learn about from the same list of sixteen disciplines. A third question asked horse owners if any of their income comes from a list of horse-related jobs. A check-all-that-apply method was used for this question.

### **Demographic variables: Organization ties**

Three questions asked about respondent's involvement in community activities with their horse(s), local horse association membership, and frequency of informally meeting with other horse owners. The first question was a yes/no question that asked if horse owners participated in community events with their horse(s), and if yes, they were asked to list how. The next question asked respondents if they were a member of a local horse association. If so, they were asked to list what associations and the frequency of attendance to meetings or events associated with these particular groups. Finally, respondents were asked if they meet informally with other horse owners in their area and if so, the frequency of these meetings. The following scale was provided to address how often they meet: 1=more than once per week, 2=about once per week, 3=two or three times per month, 4=about once per month and, 5=a few times per year.<sup>3</sup>

### **Demographic variables: Individual respondents**

The last three questions of the survey were used to help find out individual demographics about each respondent. First, horse owners were asked to indicate the number of children in their household who were under eighteen years of age and participated in horse-related activities. The next question measured age by asking respondents to identify the year in which they were born. The respondent age was calculated by subtracting the year from 2004 and then placed into categories. These

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<sup>3</sup> Survey instrument listed "a few times," however, which was assumed to mean "a few times per year."

categories included: 18-24, 25-34, 35-44, 45-54, 55-64, and 65 and above. This question was then followed by the next question asking the respondents to indicate their gender.

The final question offered them a chance to share any comments they might have had about educational programs that could be provided for Florida horse owners. Then a final statement on the questionnaire thanked the respondents for participating in the survey. It also gave them directions for returning the completed survey.

### **Unit of Analysis and Population Being Studied**

The population being studied for this survey is adult horse owners in Florida. For this survey, an adult horse owner is defined as a person, male or female, that is eighteen years of age or older, lives in the state of Florida, and owns an equine species. The unit of analysis will be based on individuals, not groups of people.

Lists from several resources were used to obtain the sampling frame. The resources represent several different segments of the horse industry. Approximately 4,500 names were obtained from the following resources: a Florida horse magazine with a circulation of 2009 names, a large equine hospital in Marion County with a total mailing list of 360 names, the Florida Walking & Racking Horse Association (n=129), Northeast Florida Dressage Association (n=139), Florida Miniature Horse Club (n=308), a combined list of the Florida Thoroughbred Breeders and Owners Association and the Florida Farm Managers Association (n=745). As well as county extension lists from the following counties: Marion (n=444), Okaloosa (n=265), and St. Lucie (n=25).<sup>4</sup> Though many others were contacted, these resources were the only organizations or counties that would

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<sup>4</sup> All Florida counties that indicated that the currently provided equine programs (n=22) in their county were asked for list of current clientele. However, only three counties followed through with providing clientele lists.

provide a mailing list for use in this study. After deleting duplicates and individuals not qualified to take part in the survey, there were 2,913 names remaining. Individuals not qualified included any person who was currently employed with the Florida Cooperative Extension Service.

Out of 2,913 names, a random sample of 1,000 was selected to be surveyed. The sample size of 1,000 was selected over only using 400 or 100 participants because it more precisely represents of the current horse owner population in Florida and provides more statistical power for the data analysis. The random sample was selected by using the systematic sampling procedure. Israel (1992) defines a systematic sample as one that selects the first element randomly and then every  $i^{\text{th}}$  element on the list afterwards. The sampling interval for this particular sample was three. “Systematic samples, like random samples, give each element an equal (but not independent) chance of being selected,” (Israel, 1992). This sampling procedure was used over a simple random sample because the population being studied was large. Simple random samples are usually used with smaller datasets (Israel, 1992).

### **Pilot Testing**

A pilot test of the questionnaire was conducted with masters and PhD graduate students in the Agricultural Communication and Education Department at the University of Florida in Gainesville, Florida. Participants were asked to read a cover letter and answer the survey based on previous experiences. Twenty-five people were asked to participate, with 19 people completing the survey. Their comments and suggestions were used to improve the layout of the survey and to clarify any confusing questions. The pilot test was another way of reducing measurement error because the respondents’ answers were used to judge the face validity of the questionnaire items. Ary et al.

suggests that surveys with face validity “should appear valid for its intended purpose” (2002: pp.409).

### **Survey Implementation**

A mail survey was chosen because it is an efficient and relatively inexpensive method of gathering data (Dillman, 2000). A web-based survey was considered, but it would have limited the amount of horse owners that could have been contacted. Personal interviews and telephone interviews were also considered as an option, but both would have required more time than a mail survey. A mail survey was the most practical choice because lists of horse owners’ name and address were available from various Florida organizations.

For this survey, a multi-wave mailing strategy was used. Dillman (2000) suggests that multiple contacts are essential for maximizing response to mail surveys. It has been shown that by using multiple contacts, one can increase the response rates to surveys by at least 20 percentage points over surveys that only attempt to contact the respondents once (Dillman, 2000). A system of four contacts for the horse owners was used. The first contact consisted of a pre-letter sent out to the random sample of 1,000 horse owners sent out in late January, 2005 (Appendix B). This letter informed horse owners that they would be receiving, in the mail, a request to fill out a questionnaire.

Approximately three days after the pre-letter was sent, a package was mailed via first-class mail to the 1,000 horse owners. This package contained a cover letter, questionnaire, and a business reply envelope (Appendix B). Each element of the package was designed according to the Tailored Design Method to contribute to the desired high

response rate (Dillman, 2000).<sup>5</sup> The cover letter, which fully explained the purpose of the survey and procedures for responding, was printed on university/departmental letterhead to convey a sense of importance. All correspondence was personalized and contained real signatures in order to distinguish the mailings from “junk” mail. The return envelopes were postage-paid business reply envelopes, which allowed respondents to return the completed surveys with no cost to them.

Approximately one week after the questionnaire was sent, a postcard (Appendix B) was sent to all 1,000 horse owners. The postcard thanked respondents for completing the questionnaire and encouraged non-respondents to complete their surveys and mail it back quickly.

In early February, 2005, approximately three weeks after the first questionnaire was mailed, a second package was sent to the non-respondents (n=550). Respondents were identified and tracked by an id number on the back of the questionnaire. Like the initial mailing, this package contained a cover letter, questionnaire, and a business reply envelope. The major difference was that the cover letter contained new wording to urge non-respondents to add their opinions to the data already collected from returned surveys because their input was greatly needed (Appendix B).

### **Response Rates and Coverage Issues**

A random sample of 1,000 horse owners from a list of 2,913 horse owners' names and addresses was used.<sup>6</sup> The list was obtained from various horse organizations from

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<sup>5</sup> The research protocol, including all correspondence, was approved by an Institutional Review Board at the University of Florida as protocol No. 2004-U-1018.

<sup>6</sup> However, the actual population is unknown and a complete list is unavailable (note: Census 2002 had 12,000+ horse farms). Therefore, study may be biased in unknown ways.

throughout the state. Nineteen names were dropped from the second and third mailings because the person had died or did not own horses any more. Forty-four surveys were returned because the mailing address was outdated. As of April 30, 2005, 612 people had returned a complete or mostly complete survey. The overall response rate was 612 out of 937, approximately 65.3%.

Since the sample of participants used for this study came from several different segments of the equine industry throughout Florida, it was assumed that the data was broadly representative of the horse owner population in Florida. In addition, Tourangeau (2004) cites evidence that response rates may not be a major threat when the variables of interest are unrelated to the factors that produce non-response. This suggests that as long as the sample is representative of the current population that non-response may not be a major threat.

### **Data Analysis Procedures**

The following data analysis procedure was used for the horse owner survey, which was analyzed separately from the agent survey. Data were compiled using Microsoft Excel 2000. A coding scheme to record categorical data was created using the validation function to prevent inappropriate values from being entered and to reduce data entry errors. In those instances in which respondents circled “don’t know,” responses were re-coded as missing during the analysis because all questions had less than 5% of these responses. Open-ended questions were grouped together into groups of similar responses to make data analysis closer. Responses to open-ended questions were also analyzed and grouped into common themes from all of the responses.

Quantitative data was analyzed using SPSS for Windows, version 12. Standard statistical analysis was performed to calculate means on continuous numerical data. The

categorical variables were subjected to frequency analyses. T-tests and correlations were used to look for associations between sets of variables. Data on level of knowledge about certain horse topics, people horse owners use as sources of information, methods used to obtain information and the usefulness of events that provide educational information to horse owners was subjected to principal components analysis and principal axis factor analysis with oblique rotation to test the structure of the underlying constructs.

Criteria used to fit the factor models included having an eigenvalue  $> 1.0$  and an explained variance  $> 50\%$ . Cronbach's alpha had to have a value  $> .66$  to fit the model as well (Agresti & Finlay, 1999). New variables were created by multiplying the item factor loadings by the item response and dividing by the total number of items. A multivariate regression model was created to identify the variables that could predict the likelihood of attending a program on a specific horse-related topic.

## CHAPTER 4 RESULTS

### **Introduction**

This chapter reports the results from the two surveys. The results of the Livestock Agents Survey are reported first. This survey asked county agents with livestock responsibilities about their perception of the equine industry within their specific county and their ability to respond to equine matters. Then the results are reported for the Horse Owners Survey. This survey asked Florida adult horse owners about their educational needs as related to the equine industry.

### **Results of the Livestock Agents Survey**

County livestock agents returned 65 complete or partially complete surveys out of 67. Unless otherwise noted, all percentages reported are based on a total number of 65.

The objective of this survey was to assess the extension agent's capacity to respond to clientele. County agents with livestock responsibilities were first asked about their perceptions of the equine industry within their specific county (Table 4-1). Over half of the respondents (58.5%) reported that horses were a minor industry in the county and 23.1% reported that horses were a major industry in the county. Another 16.9% said that there was not a horse industry in the county. In addition, over two-thirds of the county agents reported that horses were a growing industry within their county. Finally, almost seventy-percent of the agents said that they considered horses to be part of the livestock industry.

Table 4-1. County agents perceptions of the industry within their county.

Variable	n	%
Are horses a major or minor industry?	65	
Not an industry.....	11	16.9
Minor industry.....	38	58.5
Major industry.....	15	23.1
Don't know.....	1	1.5
Are horses a growing industry?	65	
Yes.....	48	73.8
No.....	13	20.0
Don't know.....	4	6.2
Are horses considered as part of the livestock industry?	65	
Yes.....	45	69.2
No.....	13	20.0
Don't know.....	7	10.8

Respondents were then asked about their county programming efforts for horse owners within their specific counties (Table 4-2). Approximately 65% of counties currently do not offer equine education programs for adults. Of the counties that offer programs, about 25% of them offer between 1-5 programs annually. When asked if they would be interested in developing or expanding an equine program, almost half of the respondents reported that they were interested. Cross-tabulations reported that two-thirds of the counties that do not currently offer equine programs have a major equine industry. Cross-tabulations also reported that half of the agents that currently do not offer equine programs were also interested in developing and/or expanding an equine within their county.

The frequency of requests for information about horses and the preparedness of the agents was the next section of the survey (Table 4-3). Fifty-five out of sixty-five of the county agents receive formal requests from horse owners for information. Twenty percent of the county agents receive 1-2 formal requests per week and 30% received 3 or more requests per week. Over two-thirds of the respondents feel slightly to moderately

prepared to answer equine question, while 12.3% of the respondents reported feeling not at all prepared and 18.5% reported being very well prepared.

Table 4-2. Frequency of equine programs within Florida counties.

Variable	n	%
Do you offer equine education programs for adults?	65	
Yes.....	22	33.8
No.....	42	64.6
Don't know.....	1	1.5
How many educational events are offered annually?	65	
None.....	43	66.2
1-2.....	10	15.4
3-5.....	7	10.8
6-10.....	2	3.1
11 or more.....	3	4.6
Would you be interested in developing or expanding an equine program?	65	
Yes.....	30	46.2
No.....	20	30.8
Don't know.....	15	23.1

The knowledge level of county agents with livestock responsibilities on a list of six horse-related topics was addressed next (Table 4-4). County agents perceived that they were most knowledgeable about basic care of horses. Over two-thirds of the agents reported medium to very high knowledge about basic care. Only 4.6% had no knowledge on basic care of horses. Agents also reported their knowledge of farm management fairly high. This may be due to the fact that they already know these topic areas from dealing with cattle producers on a daily basis. The topic in which county agents had the least knowledge was training/handling. Over one-fourth of the county agents had no knowledge in the training/handling of horses.

County agents were then asked to identify from a list of ten items, the resources from which they seek information about horses (Table 4-5). Respondents rated EDIS (80%) as the resource in which they most commonly seek information about horses. The

second highest percentage in the list of resources was peers in the industry (69.2%). The two lowest resources were professional magazines/journals and national events with percentages of 12.3% and 7.7% respectively.

Table 4-3. Frequency of requests for information about horses from horse owners.

Variable	n	%
Do you receive formal requests from horse owners for information?	65	
Yes.....	55	84.6
No.....	9	13.8
Don't know.....	1	1.5
How many requests per week?	65	
None.....	31	47.7
1-2.....	13	20.0
3-5.....	10	15.4
6-10.....	8	12.3
11 or more.....	3	4.6
How prepared do you feel to answer equine questions?	65	
Not at all.....	8	12.3
Slightly.....	15	23.1
Somewhat.....	15	23.1
Moderately.....	15	23.1
Very.....	12	18.5

Table 4-4. Knowledge level of county extension agents on horse-related topics.

Knowledge domain	None (%)	Low (%)	Medium (%)	High (%)	Very High (%)
Basic Care.....	4.6	21.5	40.0	26.2	7.7
Farm Management.....	10.8	20.0	32.3	23.1	13.8
Nutrition.....	9.2	26.2	40.0	21.5	3.1
Herd Health.....	12.3	27.7	44.6	12.3	3.1
Reproduction.....	16.9	29.2	44.6	4.6	4.6
Training/Handling.....	26.2	40.0	23.1	4.6	6.2

Overall, the livestock agent survey provided information about extension's ability to respond to clientele needs. It suggested that agents in the counties with an equine industry realize the presence of this industry and accept horses as part of the livestock industry. Agents had a positive attitude towards expanding current programs and/or starting new programs within their respected counties after attending training session

specific to the equine species. It also suggested that agents should partner together to offer multi-county programs throughout the state for horse owners.

Table 4-5. Resources commonly used by county extension agents to answer horse-related questions.

Resource	n	%
EDIS.....	52	80.0
Peers in the industry.....	45	69.2
Equine State Faculty.....	38	58.5
Veterinarians.....	27	41.5
Non-IFAS websites.....	20	30.8
Workshops.....	20	30.8
Vendors.....	16	24.6
Other.....	14	21.5
Professional magazines/journals.....	8	12.3
National events.....	5	7.7

### Results of the Horse Owners Survey

Florida horse owners returned 612 complete or partially complete surveys out of 1,000. Unless otherwise noted, percentages are based on a total number of 612.

Horse owners were first asked to report how often they have horse-related questions (Table 4-6). Over ninety percent of horse owners (92.4%) reported that they occasionally to very often have horse related questions. Only a small percentage of horse owners (7.6%) either rarely or never have horse related questions. Similarly, most horse owners were very interested (67.7%) in obtaining more information about horses and another 23.6% were moderately interested (Table 4-7).

Table 4-6. Frequency of horse-related questions.

	Frequency	%
Very Often	45	7.4
Often	44	29.2
Occasionally	338	55.8
Rarely	177	7.3
Never	2	.30
Total	606	100.0

Table 4-7. Frequency of interest about obtaining more information about horses.

Item	Frequency	%
Very Interested	410	67.7
Moderately Interested	143	23.6
Slightly Interested	40	6.6
Not at all Interested	13	2.1
Total	606	100.0

### Learning Interests

The second objective was to identify what Florida horse owners are interested in learning about. Horse owners were first asked to indicate their current knowledge on a list of horse related topics (Table 4-8). Horse owners reported basic horse care as the topic that they had the highest level of knowledge with  $m=4.25$ <sup>1</sup>. It also has the least variation ( $SD=.754$ ). Following this, horse health was the second topic in which horse owners were most knowledgeable ( $m=3.76$ ,  $SD=.846$ ). The topic in which horse owners had the least knowledge was horse reproduction ( $m=2.81$ ,  $SD=1.114$ ). Overall, the majority of horse owners had at least medium knowledge level in all topics listed.

Next, a principal-component factor analysis of seven items about respondents' knowledge of horses was conducted (Table 4-9). The high eigenvalue and percent of variance explained suggest that the items form a unidimensional construct. The Cronbach's Alpha also is significant with a value=.878. This construct is then referred to as the knowledge index. The factor loadings suggest that the strength of the relationships between overall equine knowledge and the observed measures is very strong because all of the factor loadings are .66 or higher. Horse health and farm management are the two measures that have the strongest association with the knowledge index because they have

<sup>1</sup> All means are calculated with "don't know" responses excluded. For most variables, the number of such responses was small.

a factor loading  $>.80$ , while horse reproduction has a lower factor loading of  $.66$ . Then, a new variable was created by multiplying the data reduction scores to the current item responses and dividing by the total amount of items.

One-way ANOVA's were run between the knowledge index and several demographic variables. These demographic variables included: gender, age, and number of horses owned. The only association that had a significant relationship was between number of horses owned and the knowledge index ( $F=48.463$ ,  $p\text{-value}=.000$ ) (Table 4-10). The relationship between gender and the knowledge index was insignificant ( $F=.805$ ,  $p\text{-value}=.864$ ). There was also no significant relationship between age and the knowledge index ( $F=.029$ ,  $p\text{-value}=.547$ ).

The association between the knowledge index and number of horses owned is clearly shown in the difference between the means. The least significant difference test indicated that the mean knowledge level of horse owners with one horse and 2 – 4 horses were different from each other. The mean values for 5 – 9 horses and 10 or more horses had different means from horse owners with one horse and 2 – 4 horses. However, there was no significant difference between the means of horse owners owning 5 – 9 horses and 10 or more horses. All of the mean differences were small.

Table 4-8. Mean scores of how knowledgeable horse owners are on horse-related topics.

Item	<i>M</i>	<i>SD</i>
Basic Horse Care.....	4.25	.754
Horse Health.....	3.76	.846
Training/Handling.....	3.68	.938
Horse Nutrition.....	3.49	.905
Farm Management.....	3.34	1.108
Pasture Management.....	2.94	1.001
Horse Reproduction.....	2.81	1.114

*Note.* Level of knowledge was scored on a 5-point scale (1=None, 5=Very high).

Table 4-9. Factor loadings and explained variance for items comprising the equine knowledge index.

	Component 1
Eigenvalue	4.152
Percent Variance	59.307%
Item	Factor Loadings
Horse Health.....	.870
Farm Management.....	.819
Horse Nutrition.....	.786
Basic Horse Care.....	.758
Training/Handling.....	.742
Pasture Management.....	.737
Horse Reproduction.....	.660

Table 4-10. Analysis of variance mean scores on knowledge index and number of horses owned.

---Number of Horses---	<i>n</i>	<i>M</i>	<i>SD</i>
<b>1</b>	<b>121</b>	<b>2.28<sup>a</sup></b>	<b>.495</b>
<b>2 – 4</b>	<b>254</b>	<b>2.63<sup>b</sup></b>	<b>.501</b>
<b>5 – 9</b>	<b>136</b>	<b>2.92<sup>c</sup></b>	<b>.513</b>
<b>10 or more</b>	<b>69</b>	<b>2.67<sup>c</sup></b>	<b>.558</b>

Note. <sup>a, b, c</sup> Indicates a significant difference between the means.

Respondents were then asked to rate importance of specific horse-related topics from a list of twenty-six items (Table 4-11). Across the board, all of the topics had an average rating of at least “somewhat important.” The topic with the highest importance, colic, was rated to be moderately to very important by most of the respondents. With a *SD* of .573, there was little variation in the respondent’s responses for this topic.

The topic with the least importance, breeding/foaling, was rated to be somewhat important by respondents. With a *SD* of 1.548, there was a greater degree of variation in the answers from the respondents for this item. Therefore, it can be suggested that the importance of breeding/foaling is highly important to some of the respondents, but not for others. Other topics, such as: hoof care, vaccinations, poisonous plants, fly and pest control, when to call a vet, buying horse hay, equine behavior, and equine dentistry were

all rated to be moderately to very important to most of the respondents. All of these items listed have a  $SD < 1.0$ , which suggests less variation among respondents. A common pattern throughout the data shows that most of the respondents rated the importance of horse health and nutrition topics highest. On the other hand, topics related to horse reproduction, pasture management, farm management, and training/handling were rated lower by respondents.

Table 4-11. Mean scores of how important each of the following topics is to horse owners.

Item	<i>M</i>	<i>SD</i>
Colic.....	4.74	.573
Hoof care.....	4.70	.625
Vaccinations.....	4.58	.766
Poisonous plans.....	4.56	.831
Fly and pest control.....	4.45	.839
When to call a vet.....	4.45	.882
Buying horse hay.....	4.43	.964
Equine behavior.....	4.41	.856
Ethical care of horses.....	4.41	.971
Equine dentistry.....	4.39	.810
Proper tack fitting.....	4.37	.978
Liabilities for horse owners.....	4.27	.999
Basic training.....	4.19	1.063
Weed control.....	4.18	1.016
Minerals and vitamins.....	4.17	.886
Storing hay and grain.....	4.12	1.110
Supplements.....	4.08	.968
Pasture establishment.....	4.00	1.087
Land use or zoning regulations.....	3.99	1.163
Property taxes.....	3.95	1.230
Fencing options.....	3.94	1.129
Manure management.....	3.92	1.185
Grazing habits.....	3.92	1.060
Environmental impact of horses.....	3.90	1.128
Horse facility design.....	3.77	1.215
Breeding/Foaling.....	3.10	1.548

*Note.* Importance was scored on a 5-point scale (1=*Not at all important*, 5=*Very important*).

Cross-tabulations were run to measure the association between number of horses owned and the importance of each horse related topics with the following showing significant associations: fly and pest control, when to call a vet, buying horse hay, proper tack fitting, weed control, pasture establishment, land use or zoning regulations, property taxes, fencing options, manure management, horse facility design, and breeding/foaling (Table 4-12). Fly and pest control, when to call a vet, buying horse hay, and proper tack fitting all had the highest percentage of horse owners considering those topics as very important, regardless of how many horses they owned. In all, most horse owners felt all of these topics to have some importance.

Cross-tabulations indicated that there was a significant relationship between the number of horses owned and the importance of fly and pest control (Chi-Square=35.794, p-value=.000). It was reported by horse owners that fly and pest control is very important to all of them, regardless of the number of horses owned. Over two-thirds of horse owners with 2-4 horses and 5-9 horses reported fly and pest control to be very important to them, while only one-half of horse owners owning one horse or ten or more horses reported fly and pest control to be very important.

The importance of when to call a vet and the number of horses owned also had a strong association (Chi-Squared=22.881, p-value=.029). Over seventy-five percent of the horse owners reported when to call a vet to be moderately to very important to them, regardless of the amount of horses owned. However, horse owners with ten or more horses are less likely to report when to call a vet as very important. Over two-thirds of horse owners with 1 to 9 horses reported this as very important to them.

A strong relationship was found between the importance of buying horse hay and the number of horses owned (Chi-Squared=36.748, p-value=.000). The highest percentages were reported by horse owners with 2-4 (71.7%) and 5-9 horse owners (75.9%), indicating that buying horse hay was very important. Only 60% of horse owners with ten or more horses indicated buying horse hay was very important, and fewer (52.9%) with one horse rated this topic as very important.

The number of horses owned and proper tack fitting also had a significant association (Chi-Squared=23.712, p-value=.022). Proper tack fitting was very important to horse owners with one horse (71.1%). As the number of horses owned increased, proper tack fitting was less important to horse owners. Less than half of the horse owners owning 10 or more horses reported proper tack fitting as very important to them.

There was a significant association between weed control and the number of horses owned (Chi-Squared=38.963, p-value=.000). The highest percentages with “very important” responses were reported by horse owners owning 2-4 (52.1%) and 5-9 (58.4%) horses. Only 36.1% of the horse owners with one horse reported weed control to be very important. Over eighty-percent of horse owners with 2 or more horses indicated weed control to be moderately to very important to them.

Cross-tabulations also indicated that there was a strong relationship between number of horses owned and the importance of pasture establishment (Chi-Square=29.162, p-value=.004). About three-fourths of the horse owners with 2 or more horses reported pasture establishment to be moderately to very important, while less than 60% of those with one horse rated this as moderately or very important.

The importance of land use or zoning regulations and number of horses owned also had a strong association (Chi-Square=25.028, p-value=.015). Over 50% of horse owners, regardless of the amount of horses owned, indicated that land use or zoning regulations was moderately to very important to them. But those with only one horse were less likely to rate this topic as moderately or very important in comparison to owners with two or more horses.

A significant relationship was found between the importance of property taxes and the number of horses owned (Chi-Square=53.379, p-value=.000). Over fifty percent of the horse owners in each category indicated that property taxes was moderately to very important to them, but horse owners with 2-4 and 5-9 horses had the highest percentages at 47.3% and 56.3% respectively. In contrast, just over 30% of owners with one horse reported property taxes to be slightly or not at all important to them.

The number of horses owned and the importance of fencing options also had a strong association (Chi-Square=24.361, p-value=.018). Horse owners with 2-4 (42.1%) and 5-9 (45.6%) horse reported fencing options as very important to them. Over 20% of horse owners with one horse reported fencing options as slightly to not at all important. Horse owners with one horse or ten and more horses reported this topic to be less important to them as owners with 2-9 horses.

There was a significant relationship between number of horses owned and the importance of manure management (Chi-Square=26.674, p-value=.009). Horse owners with two or more horses reported this topic as more important than those with one horse. Over 65% of horse owners with two or more horses indicated manure management as

moderately to very important to them. Only 55% of horse owners with one horse rated manure management as moderately to very important.

Cross-tabulations also showed a significant association between the importance of horse facility design and the number of horses owned (Chi-Square=29.770, p-value=.003). The larger the amount of horses owned, the more important horse facility design was to horse owners. Over eighty percent of horse owners with 2-9 horses reported horse facility design to be somewhat to very important. Approximately 25% of horse owners with one horse indicated that horse facility design was slightly to not at all important to them.

Finally, it was shown that there was a very strong association between number of horses owned and the importance of breeding/foaling (Chi-Square=189.251, p-value=.000). It was reported to be very important by over seventy-five percent of owners with ten or more horses. Almost fifty percent of horse owners with 5 – 9 horses also indicated it as being very important. Almost fifty percent of the horse owners with one horse and 2 – 4 horses found breeding/foaling to be slightly to not at all important.

It seems there were different priorities to the horse owners based on the number of horses owned. Horse owners with two or more horses were more concerned with items such as: weed control, pasture establishment, land use or zoning regulations, property taxes, and manure management. This may be due to the fact that horse owners with one horse may not own their own land and therefore do not have a higher priority to gain information about these topics. More basic topics such as proper tack fitting and when to call a vet were more important to horse owners with one horse. However, when to call a

vet was also very important to horse owners with 2 – 9 horses as well. Also, topics such as “breeding and foaling” were more important to horse owners with ten or more horses.

### Educational Materials

The third objective was to determine where horse owners are currently obtaining educational materials. Respondents were asked if they had purchased any publications about horse-related topics, from a list of items, within the past twelve months (Table 4-13). Over two-thirds of horse owners reported that they had purchased magazines about horse related topics. Nearly half (46.7%) of the respondents had purchased books in the past twelve months. Over two-thirds of the horse owners also reported that they had not purchased pamphlets and videos/DVDs in the past twelve months about horse topics.

Table 4-12. Importance of a specific horse-related topic by the number of horses owned.

		----- Amount of Horses Owned -----			
		1 (%)	2 – 4 (%)	5 – 9 (%)	10 or more (%)
Fly and Pest Control	Very Important	50.8	67.6	71.5	50.7
	Moderately Important	32.8	21.6	19.0	30.4
	Somewhat Important	12.3	9.3	6.6	10.1
	Slightly Important	3.38	1.5	2.2	2.9
	Not at All Important	0.8	0.0	0.7	5.8
When to Call a Vet	Very Important	69.7	68.6	64.0	48.6
	Moderately Important	14.8	20.2	22.1	25.7
	Somewhat Important	13.1	7.4	10.3	21.4
	Slightly Important	1.6	3.5	2.2	1.4
	Not at All Important	0.8	0.4	1.5	2.9
Buying Horse Hay	Very Important	52.9	71.7	75.9	59.2
	Moderately Important	19.8	17.8	13.9	28.2
	Somewhat Important	13.2	7.0	6.6	7.0
	Slightly Important	9.1	2.3	2.9	1.4
	Not at All Important	5.9	1.2	0.7	4.2
Proper Tack Fitting	Very Important	71.1	62.0	59.9	48.6
	Moderately Important	14.9	23.6	25.5	22.9
	Somewhat Important	5.8	10.9	7.3	18.6
	Slightly Important	5.0	2.3	5.8	5.7
	Not at All Important	3.3	1.2	1.5	4.3

Table 4-12 Continued.

Topic		----- Amount of Horses Owned -----			
		1 (%)	2 – 4 (%)	5 – 9 (%)	10 or more (%)
Weed Control	Very Important	36.1	52.1	58.4	47.1
	Moderately Important	26.9	27.8	27.0	35.7
	Somewhat Important	23.5	13.5	12.4	11.4
	Slightly Important	5.9	5.4	1.5	0.0
	Not at All Important	7.6	1.2	0.7	5.7
Pasture Establishment	Very Important	32.2	40.9	49.6	44.3
	Moderately Important	25.6	33.2	31.1	31.4
	Somewhat Important	22.3	16.2	13.3	18.6
	Slightly Important	10.7	7.3	4.4	1.4
	Not at All Important	9.1	2.3	1.5	4.3
Land Use or Zoning Regulations	Very Important	33.9	47.5	52.2	40.0
	Moderately Important	24.8	25.9	28.7	27.1
	Somewhat Important	20.7	17.0	11.8	14.3
	Slightly Important	10.7	6.6	4.4	12.9
	Not at All Important	9.9	3.1	2.9	5.7
Property Taxes	Very Important	34.7	47.3	56.3	43.7
	Moderately Important	15.3	24.4	25.2	28.2
	Somewhat Important	17.8	18.2	11.1	15.5
	Slightly Important	14.4	6.6	4.4	8.5
	Not at All Important	17.8	3.5	3.0	4.2
Fencing Options	Very Important	35.2	42.1	45.6	32.9
	Moderately Important	23.0	31.3	27.2	28.6
	Somewhat Important	19.7	17.4	20.6	22.9
	Slightly Important	13.9	6.9	5.1	8.6
	Not at All Important	8.2	2.3	1.5	7.1
Manure Management	Very Important	31.1	46.1	47.4	39.4
	Moderately Important	23.5	27.1	27.7	25.4
	Somewhat Important	22.7	17.4	12.4	19.7
	Slightly Important	11.8	6.6	8.8	5.6
	Not at All Important	10.9	2.7	3.6	9.9
Horse Facility Design	Very Important	27.3	39.5	36.5	33.8
	Moderately Important	28.1	23.3	31.4	32.4
	Somewhat Important	17.4	23.3	21.2	12.7
	Slightly Important	13.2	10.1	8.0	14.1
	Not at All Important	14.0	3.9	2.9	7.0
Breeding/ Foaling	Very Important	7.40	18.1	48.2	77.5
	Moderately Important	5.70	14.3	16.8	12.7
	Somewhat Important	14.8	17.8	14.6	8.5
	Slightly Important	29.5	22.8	13.9	0.0
	Not at All Important	42.6	27.0	6.6	1.4

Horse owners were then asked to rate, from a list of items, the types of people that they most frequently use on as sources of information for horse-related questions (Table 4-14). Veterinarians were rated the highest with an  $m=4.19$  and  $SD=.806$ , meaning that horse owners usually or always use this source. Following this item, a group of sources was rated as sources that horse owners moderately use. These included farrier ( $m=3.37$ ,  $SD=.905$ ), other horse owners in area ( $m=3.34$ ,  $SD=.994$ ), and trainer ( $m=3.27$ ,  $SD=1.287$ ). The sources that were never to seldom used included: private consultant, county extension agent, and close relatives who own horses.

Table 4-13. Types of publications purchased by horse owners in the past 12 months.

Variable	n	%
Magazine(s)	611	
Yes.....	447	73.2
No.....	164	26.8
Book(s)	610	
Yes.....	285	46.7
No.....	325	53.3
Videos/DVDs	612	
Yes.....	182	29.7
No.....	430	70.3
Pamphlet(s)	609	
Yes.....	121	19.9
No.....	488	80.1
Other	605	
Yes.....	81	13.4
No.....	524	86.6

Next, principal-component analysis and factor analysis with a varimax rotation was conducted on twelve items about how useful specific sources were to respondents (Table 4-15). A varimax rotation was used to systematically group the factor loading scores. The low eigenvalue and percent of variance suggests that the items form four constructs.

The first and strongest variance component has three sources that load .40 or higher in the oblique model (using the rotated component matrix). These factor loadings

include: local feed store (.794), tack store owners (.779), and other horse owners in the area (.709). All of these factor loadings are all local in nature. They represent the local network that horse owners rely on as sources of information. The second component includes factor loadings that represent external ties that horse owners may use as sources of information. All of the external ties have credibility because of educational backgrounds. These factor loadings include: university specialists (.758), regional company sales representatives (.645), private consultants (.638), and county extension agents (.522).

Table 4-14. Mean scores of the types of people horse owners most frequently rely upon as sources for information.

Item	<i>M</i>	<i>SD</i>
Veterinarian.....	4.19	.806
Farrier.....	3.37	.905
Other horse owners in area.....	3.34	.994
Trainer.....	3.27	1.287
Local feed store owners.....	2.55	1.012
Tack store owners.....	2.28	1.023
University specialist.....	2.17	1.217
Regional company sales representatives (feed, animal health, etc.).....	2.07	1.027
Private consultants.....	1.82	1.170
County extension agent.....	1.76	.917
Close relatives who own horses.....	1.73	1.119
Other.....	1.34	.979

*Note.* Use was scored on a 5-point scale (1=*Never use*, 5=*Always use*)

The third component represents the sources of information that the recreational or basic type horse owners might use. Its factor loadings include: veterinarian (.671), farrier (.571), and close relatives who own horses (.466). All of these sources would be able to answer any basic type question that a horse owner might have. The final component represented in the construct represents a unique segment of the horse industry. It includes services that horse owners would pay for. The factor loadings include: trainer

(.791) and veterinarian (.377). These two factor loadings represent sources that possibly horse owners who have higher valued horses or a larger number of horses might use. It could also represent sources of information that horse owners on the competitive circuit use more often.

The oblique factor model implies several things about this study. Horse owners scoring the first component high, could also score any of the other three factors high. This holds to be true with the second and third components as well. However, if a horse owner scores component four high, then they are not likely to score components one, two, and three high as well.

Respondents were then asked what methods or channels of information they use to obtain information about horses from a list of sixteen items (Table 4-16). Respondents rated equine magazines ( $m=3.75$ ,  $SD=.908$ ) and horse or farm magazines ( $m=3.57$ ,  $SD=1.002$ ) the as methods that they use most frequently. Items at the bottom of the list included: local newspapers, university internet web sites, county extension web sites, and horse field days at Research Centers. Horse owners reported that they seldom use the specific methods of extension channels. However, the extension channels used most by horse owners included: bulletins/fact sheets and county newsletters.

Again, a principal-component analysis and factor analysis with a varimax rotation was conducted on fourteen methods that respondents use to obtain information about horses (Table 4-17). A varimax rotation was used to systematically group the factor loading scores. The low eigenvalue and percent of variance suggests that the items form a five-way construct. The five components within the construct all represent specific methods that horse owners use to obtain information about horses.

Table 4-15. Factor loadings and explained variance for items comprising the sources of information index.

	Eigenvalue	Percent Variance (%)	Cumulative Percent (%)	
Component 1.....	2.682	22.350	22.350	
Component 2.....	1.524	12.699	35.048	
Component 3.....	1.201	10.007	45.055	
Component 4.....	1.130	9.420	54.476	

Item	Factor Loadings (Component Matrix)			
	F1	F2	F3	F4
Close relatives who own horses.....	.118	-.030	-.318	.433
County extension agent.....	.422	.312	-.503	.014
Farrier.....	.542	-.203	.014	.386
Local feed store owners.....	.669	-.366	-.352	-.134
Other horse owners in area.....	.461	-.514	.067	-.266
Private consultants.....	.455	.463	.232	-.084
Regional company sales representatives (feed, animal health, etc).....	.568	.364	-.139	-.124
Tack store owners.....	.695	-.307	-.013	-.293
Trainer.....	.374	-.069	.734	-.031
University specialists.....	.409	.651	.025	.113
Veterinarian.....	.456	-.024	.304	.584
Other.....	.088	.330	.103	-.491

Item	Factor Loadings (Rotated Component Matrix)			
	F1	F2	F3	F4
Local feed store owners.....	<b>.794</b>	.137	.191	-.203
Tack store owners.....	<b>.779</b>	-.193	.017	.134
Other horse owners in area.....	<b>.709</b>	-.117	.001	.190
University specialists.....	-.132	<b>.758</b>	.109	.040
Regional company sales representatives (feed, animal health, etc).....	.264	<b>.645</b>	.009	-.069
Private consultants.....	.047	<b>.638</b>	-.037	.267
County extension agent.....	.201	<b>.522</b>	.150	-.447
Farrier.....	.347	.148	<b>.571</b>	.123
Close relatives who own horses.....	-.010	.039	<b>.466</b>	-.291
Veterinarian.....	.058	.217	<b>.671</b>	<b>.377</b>
Trainer.....	.186	.146	.055	<b>.791</b>
Other.....	.039	.342	-.498	.089

The first and strongest variance component has seven methods that load .40 or higher in the oblique model (using the rotated component matrix). The factor loadings for each item are as follows: farm demonstrations (.770), extension bulletins/fact sheets

(.712), horse field days at research centers (.704), Equine Allied Trade Show (.669), county extension newsletters (.573), county extension internet sites (.386), and local newspapers (.384). All of these factor loadings have one common theme that relates to traditional programmatic delivery. Whether the delivery is directly from an instructor or through literature, they are all very similar in nature. All of these traditional programmatic delivery methods are also tied to the Cooperative Extension System and the University of Florida.

Table 4-16. Mean scores of the methods horse owners use to obtain information about horses.

Method	<i>M</i>	<i>SD</i>
Equine magazines.....	3.75	.908
Horse or farm magazines.....	3.57	1.002
Commercial internet web sites.....	2.83	1.183
One on one consultation by farm visit.....	2.37	1.295
Television programs.....	2.37	1.099
One on one consultation by phone.....	2.17	1.200
Extension bulletins/fact sheets.....	1.96	1.057
County extension newsletters.....	1.91	1.056
Equine Allied Trade Show.....	1.91	1.034
One on one consultation by office visit.....	1.84	1.103
Farm demonstrations.....	1.77	.911
Local newspapers.....	1.67	.920
University internet web sites.....	1.67	.958
County extension internet web sites.....	1.57	.852
Horse field days at Research Centers.....	1.49	.863
Other.....	1.19	.717

*Note.* Use was scored on a 5-point scale (1=*Never use*, 5=*Always use*)

The second component includes items that involve individual consultation between a source and the horse owner. These factor loadings include: one-on-one consultation by office visit (.807), one-on-one consultation by phone (.797), and one-on-one consultation by farm visit (.790). The third component has factor loadings that represents using websites as a method of information, complimented by the use of newsletters. The factor

loadings include: university internet web sites (.726), county extension internet sites (.725), commercial internet web sites (.708), and county extension newsletters (.397).

Table 4-17. Factor loadings and explained variance for items comprising the methods to obtain information index.

	Eigenvalue	Percent Variance (%)	Cumulative Percent (%)			
Component 1.....	4.408	27.552	27.552			
Component 2.....	1.811	11.321	38.873			
Component 3.....	1.574	9.839	48.711			
Component 4.....	1.197	7.483	56.195			
Component 5.....	1.027	6.419	62.613			
Factor Loadings (Component Matrix)						
Item	F1	F2	F3	F4	F5	
Commercial internet web sites.....	.328	.073	.396	.546	-.210	
County extension newsletters.....	.635	-.422	.047	-.082	-.176	
County extension internet sites.....	.645	-.349	.118	.329	-.222	
Equine magazines.....	.365	.475	.651	-.117	.100	
Equine Allied Trade Show.....	.570	-.104	.042	-.131	.411	
Extension Bulletins/Fact Sheets.....	.686	-.387	-.010	-.166	.010	
Farm demonstrations.....	.687	-.172	-.133	-.214	.267	
Horse or farm magazines.....	.433	.465	.612	-.182	.089	
Horse field days at Research Centers.....	.642	-.147	-.200	-.125	.258	
Local newspapers.....	.480	-.054	-.050	-.400	-.281	
One-on-one consultation by phone.....	.501	.491	-.378	.101	-.175	
One-on-one consultation by office visit.....	.498	.456	-.476	.081	-.061	
One-on-one consultation by farm visit.....	.402	.564	-.382	.034	-.113	
Television programs.....	.453	.097	.152	-.222	-.344	
University internet web sites.....	.576	-.215	.018	.532	-.033	
Other.....	.229	.163	-.054	.349	.576	
Factor Loadings (Rotated Component Matrix)						
Item	F1	F2	F3	F4	F5	
Farm demonstrations.....	<b>.770</b>	.177	.067	.079	.031	
Extension Bulletins/Fact Sheets.....	<b>.712</b>	.011	.272	.012	.258	
Horse field days at Research Centers.....	<b>.704</b>	.226	.093	.011	-.025	
Equine Allied Trade Show.....	<b>.669</b>	.058	.058	.218	-.149	
County extension newsletters.....	<b>.573</b>	-.025	<b>.397</b>	-.018	<b>.367</b>	

Table 4-17. Continued

Item	Factor Loadings (Rotated Component Matrix)				
	F1	F2	F3	F4	F5
County extension internet sites.....	<b>.386</b>	.038	<b>.725</b>	-.005	.181
Local newspapers.....	<b>.384</b>	.197	.003	.108	<b>.526</b>
One on one consultation by phone.....	.108	<b>.797</b>	.131	.081	.064
One on one consultation by office visit.....	.189	<b>.807</b>	.062	.006	-.019
One on one consultation by farm visit.....	.056	<b>.790</b>	-.003	.110	.020
Commercial internet web sites.....	-.118	.051	<b>.708</b>	.304	-.047
University internet web sites.....	.312	.148	<b>.726</b>	-.040	-.121
Television programs.....	.190	.200	.159	.293	<b>.467</b>
Equine magazines.....	.062	.063	.086	<b>.889</b>	.008
Horse or farm magazines.....	.136	.102	.064	<b>.885</b>	.062
Other.....	.243	.174	.122	.125	-.645

The fourth component represents commercial magazines as a method horse owners use to obtain information. The factor loadings for this component include: equine magazines (.889) and horse or farm magazines (.885). The fifth and final component represented in the construct represents the use of mass media as a form of information dissemination. The factor loadings include: local newspapers (.526), television programs (.467), and county extension newsletters (.367). Overall, based on the oblique factor model, many horse owners used methods from two or more sets. Even though extension methods were ranked low, some of the more popular extension methods listed included: farm demonstrations, extension bulletins/fact sheets, county extension internet sites, and county extension newsletters,

From a list of ten events, horse owners were asked to report how useful the events were in terms of providing educational information (Table 4-18). Horse organization events were reported at the top of the list as somewhat or moderately useful ( $m=3.64$ ,

SD=1.096). The item ranked the lowest was University of Florida Extension Service events with an  $m=2.03$ . All of the items had a  $SD > 1.0$ , indicating that there is great variation in the responses, except for "other" with a  $SD=.580$ . The implications of this data suggest that county agents should conduct their county programs in partnership with other events occurring in their area.

Table 4-18. Mean scores of how useful the selected events are in terms of providing educational information to horse owners.

Item	<i>M</i>	<i>SD</i>
Horse organization events.....	3.64	1.096
Industry-sponsored events.....	3.37	1.229
Local horse shows.....	3.14	1.239
Community education events.....	2.97	1.297
Florida State Fair.....	2.64	1.301
County fairs.....	2.43	1.147
Regional horse trade shows.....	2.41	1.161
University of Florida Veterinary Medicine events.....	2.16	1.236
University of Florida Extension Service events.....	2.03	1.159
Other.....	1.13	.580

*Note.* Use was scored on a 5-point scale (1=*Not at all useful*, 5=*Very useful*)

A principal-component analysis and factor analysis with a varimax rotation was conducted on a list of ten items that represent events that provide educational information to horse owners (Table 4-19). The eigenvalues and percent variance suggest that items measure two constructs. The first and strongest component included every event except University of Florida Cooperative Extension Service and University of Florida Veterinary School events. All of the factor loadings that explain this component are .40 or higher in the oblique model (using the rotated component matrix). These factor loadings include: local horse shows (.788), horse organization events (.771), county fairs (.764), Florida State Fair (.759), industry sponsored events (.711), community education events (.644), and regional horse trade shows (.427). The second component represents educational

events associated with the University of Florida and regional trade shows. These factor loadings include: University of Florida Extension Service events (.871), University of Florida Veterinary Medicine Events (.857), and regional trade shows (.504). The overall oblique model suggests that some horse owners find both sets of events useful for obtaining educational information.

Horse owners were asked about their attendance to horse educational programs and how far they were willing to travel to these programs (Table 4-20). Almost sixty-percent (57.7%) of horse owners reported that they had not attended a horse educational program in the past twelve months. Of those who had attended a program, two-thirds of the respondents had only attended one or two programs in the past twelve months. Over two-thirds also indicated that they were willing to travel 50 or more miles to an educational program or seminar.

Many survey participants gave qualitative responses in regards to why they had not attended a program in the past twelve months (n=323). Responses from this open-ended question were grouped into several categories. These categories included: being unaware of such programs (28.0%), time constraints (24.0%), location of the program (17.3%), not being interested in programs offered (11.5%), personal reasons (7.4%), other (6.5%), cost of the program (3.1%), and hurricanes (2.2%).

### **Topics and Levels of Education**

The fourth objective was to identify topics and levels of education horse owners are willing to be involved in. First, respondents were asked to report the importance of certain characteristics of individuals who may provide information about horses from a list of fifteen items (Table 4-21). All of the items were rated to be at least “somewhat important” to a majority of respondents. Having quick access to specialists when needed

was ranked the highest, followed by: has college training in veterinarian medicine, provides a quick response, and has general knowledge about many horse topics, as being moderately important to horse owners.

Table 4-19. Factor loadings and explained variance for items comprising the educational events information index.

	Eigenvalue	Percent Variance (%)	Cumulative Percent (%)
Component 1.....	4.052	40.522	40.522
Component 2.....	1.538	15.375	55.897

Item	Factor Loadings (Component Matrix)	
	F1	F2
Community education events.....	.693	-.049
County fairs.....	.713	-.282
Horse organization events.....	.747	-.227
Industry-sponsored events.....	.753	-.079
Local horse shows.....	.673	-.417
Florida State Fair.....	.697	-.303
Regional horse trade shows.....	.606	.265
University of Florida Extension Service events.....	.575	.689
University of Florida Veterinary Medicine events.....	.544	.688
Other.....	.079	.338

Item	Factor Loadings (Rotated Component Matrix)	
	F1	F2
Local horse shows.....	<b>.788</b>	-.078
Horse organization events.....	<b>.771</b>	.125
County fairs.....	<b>.764</b>	.061
Florida State Fair.....	<b>.759</b>	.034
Industry-sponsored events.....	<b>.711</b>	.261
Community education events.....	<b>.644</b>	.261
Regional horse trade shows.....	<b>.427</b>	<b>.504</b>
University of Florida Extension Service events.....	.213	<b>.871</b>
University of Florida Veterinary Medicine events.....	.186	<b>.857</b>
Other.....	-.078	.338

“Shows/exhibits horses” was ranked as the least important characteristic by horse owners. However, it was still ranked as somewhat important to many respondents. A high  $SD=1.378$ , indicates that there is much variation between the responses of the horse owners.

Table 4-20. Frequency of attendance to horse-related educational programs by horse owners.

Variable	N	%
Have you attended a program in the past 12 months	608	
Yes.....	257	42.3
No.....	351	57.7
Number of programs attended	244	
1.....	79	32.4
2.....	81	33.2
3.....	39	16.0
4 or more.....	45	18.4
How far you are willing to travel		
Non-attendees	123	
Less than 25 miles.....	12	9.8
25 to 49 miles.....	16	13.0
50 to 99 miles.....	34	27.6
100 to 200 miles.....	36	29.3
Over 200 miles.....	25	20.3
Attendees	253	
Less than 25 miles.....	34	13.4
25 to 49 miles.....	33	13.0
50 to 99 miles.....	70	27.7
100 to 200 miles.....	64	25.3
Over 200 miles.....	52	20.6

Based on a list of nine items, horse owners were asked to rate the importance of organizations that develop and present educational programs to horse owners (Table 4-22). Overall, all items were rated as somewhat to very important by respondents. Means scores for the items varied from a low of 2.62 “tack stores” to a high score of 4.32 “veterinarians.” All of the items had a  $SD>1.0$ , which indicates that there was great variation in the responses from horse owners. Four out of the top five represent statewide

organizations. The Cooperative Extension Service was probably ranked higher here than in table 4-14 because this question asked about the importance of where organizations get their information to present information and instead of only asking about an event that a horse owner would attend. The university system might be perceived as having more credible information than a local feed store or tack store.

Table 4-21. Mean scores of important characteristics of individuals who may provide horse owners with information about horses.

Item	<i>M</i>	<i>SD</i>
Has quick access to specialists when needed.....	4.30	.990
Has college training in veterinarian medicine.....	4.24	1.107
Provides a quick response.....	4.09	1.258
Has general knowledge about many horse topics.....	4.07	1.023
Has specialized knowledge about a few horse topics.....	3.77	1.103
Will visit your farm.....	3.67	1.397
Knows your farm and your horses.....	3.65	1.365
Personally owns a horse(s).....	3.53	1.400
Is located close to your farm.....	3.39	1.350
Has college training in equine management or related discipline.....	3.37	1.380
Is affiliated with an equine business.....	3.19	1.310
Is affiliated with a horse organization.....	2.96	1.264
Is affiliated with a university.....	2.91	1.334
Shows/exhibits horses.....	2.69	1.378
Other.....	1.20	.827

*Note.* Importance was scored on a 5-point scale (1=*Not at all important*, 5=*Very important*).

Next, horse owners were asked to indicate the likelihood of obtaining horse-related information from a list of seven items (Table 4-23). All of the listed items were rated as somewhat to very likely. However, all of the items had a  $SD > 1.0$ , indicating that there is great variation among the responses from horse owners. Horse owners rated “short publications” as the most likely method that they would use to obtain horse related information. “All day Saturday programs” and “Saturday morning programs” were reported as the methods that horse owners would least likely use. Horse owners reported

that they would be more likely to use internet/web pages instead of on-line courses. This suggests that there may be an issue of time commitment when it comes to obtaining horse-related information.

Table 4-22. Mean scores of the importance of organizations that develop and present educational programs to horse owners.

Item	<i>M</i>	<i>SD</i>
Veterinarians.....	4.32	1.004
U of F College of Veterinary Medicine.....	3.91	1.247
U of F Animal Sciences Department.....	3.75	1.249
U of F County Extension Office.....	3.57	1.348
Florida horse associations.....	3.54	1.241
Breed organizations.....	3.33	1.441
Local feed stores.....	2.94	1.270
Tack stores.....	2.62	1.235
Other.....	1.14	.707

*Note.* Importance was scored on a 5-point scale (1=*Not at all important*, 5=*Very important*).

Table 4-23. Mean scores of the likelihood of a horse owner obtaining horse-related information from the listed methods.

Item	<i>M</i>	<i>SD</i>
Short publications.....	4.00	1.152
Internet/web pages.....	3.84	1.377
Evening seminars.....	3.35	1.327
On-line courses.....	3.16	1.514
Saturday morning programs.....	3.09	1.415
All day Saturday programs.....	3.02	1.403
Other.....	1.22	.883

*Note.* Importance was scored on a 5-point scale (1=*Not at all likely*, 5=*Very likely*).

Horse owners were asked the likelihood of attending a program, offered in their area, on a list of eight items (Table 4-24). Six out of the eight topics were rated as somewhat likely or higher by most of the respondents. The topic with the highest likelihood of them attending a program on that specific topic, horse health, was rated to be very likely by 58.7% of the respondents. Following horse health, the second highest topic, horse nutrition, was also rated to be very likely by 51.7% of the respondents.

These are the only two items in which respondents rated more than 75.0% for moderately to very likely to attend a program on that specific topic.

The topic with the least likelihood, marketing, was rated to be not at all to slightly likely by 49.0% of the respondents. Similarly, 43.3% of the respondents rated business aspects of ownership as a topic that they would not at all to slightly likely to attend a program on. The pattern of percentages suggests that horse owners have specific topics that they are interested in attending a program on, instead of attending programs on all of the horse-related topics listed above.

Table 4-24. Likelihood of horse owners attending a program on each of the following topics.

Item	Not At All Likely (%)	Slightly Likely (%)	Somewhat Likely (%)	Moderately Likely (%)	Very Likely (%)
Horse health.....	4.2	3.5	11.0	22.7	58.7
Horse nutrition.....	4.5	5.0	13.7	25.2	51.7
Disaster preparedness.....	9.0	11.7	20.5	21.2	37.7
Pasture management.....	11.3	9.8	16.7	24.8	37.3
Horse facilities.....	12.6	13.3	23.7	24.4	26.0
General horse care.....	17.9	15.4	18.9	20.2	27.7
Business aspects of ownership.....	24.4	18.9	20.9	15.0	20.9
Marketing.....	28.2	20.8	17.6	15.8	17.5

A principal-component analysis and factor analysis with a varimax rotation was conducted on eight items (Table 4-25). The purpose was to identify the structure of likelihood of attendance among the program topics. Even though component one has a high eigenvalue (4.354) and a percent variance above fifty percent (54.4%), the relationship between the factor loadings suggest that there two components.

The first and strongest component has six factor loadings that are .40 or higher in the oblique model (using the rotated component matrix). The factor loadings included are: horse health (.879), horse nutrition (.872), disaster preparedness (.752), general horse

care (.751), horse facilities (.613), and pasture management (.535). These factor loadings represent program topics that the average horse person might attend. It also may represent horse owners that own a fewer amount of horses.

The second component has four factor loadings that are .40 or higher in the oblique model (using the rotated component matrix). All of these factor loadings represent more business oriented program topics that a more seasoned horse owner or a horse owner with several head of horses might attend. These factors include: horse facilities (.572), pasture management (.499), business aspects of ownership (.869), and marketing (.900).

Table 4-25. Factor loadings and explained variance for items comprising the likeliness of attending a program index.

	Eigenvalue	Percent Variance (%)	Cumulative Percent (%)
Component 1.....	4.354	54.419	54.419
Component 2.....	1.290	16.123	70.543

Item	Factor Loadings (Component Matrix)	
	F1	F2
General horse care.....	.686	-.327
Business aspects of ownership.....	.680	.589
Disaster preparedness.....	.742	-.247
Horse facilities.....	.829	.127
Horse health.....	.822	-.355
Horse nutrition.....	.821	-.345
Marketing.....	.558	.709
Pasture management.....	.723	.111

Item	Factor Loadings (Rotated Component Matrix)	
	F1	F2
Horse health.....	<b>.879</b>	.170
Horse nutrition.....	<b>.872</b>	.178
Disaster preparedness.....	<b>.752</b>	.214
General horse care.....	<b>.751</b>	.117
Horse facilities.....	<b>.613</b>	<b>.572</b>
Pasture management.....	<b>.535</b>	<b>.499</b>
Business aspects of ownership.....	.230	<b>.869</b>
Marketing.....	.061	<b>.900</b>

Cross-tabulations were run to measure the association between the number of horses owned and the likelihood of a horse owner attending a program on the following horse-related topics: general horse care, business aspects of ownership, disaster preparedness, horse facilities, horse health, horse nutrition, marketing, and pasture management (Table 4-26). Horse health and horse nutrition had the highest percentages of horse owners being very likely to attend a program on those specific topics, no matter how many horses they owned. Horse owners, regardless of how many horses they own, are also interested in programs on disaster preparedness and pasture management. On the other hand, horse owners with fewer horses are more likely to attend a program on general horse care, whereas horse owners with a larger number of horses are more likely to attend a program on very specific topics such as marketing and business aspects of ownership.

Cross-tabulations indicated that there was a significant relationship between likelihood of attending a program on horse health and the number of horses owned (Chi-Square=23.903, p-value=.020). It was reported by horse owners that horse health is important to all of them, regardless of the number of horses owned. All respondents rated going to a program on horse health very likely with their highest percentage. Two-thirds of the horse owners with 10 or more horses reported to be moderately to very likely to attend a program on horse health, while even more (85%) of owners with one or to nine horses reported being as likely to attend.

The likelihood of attending a program on horse nutrition and number of horses owned also had a strong association (Chi-Square=58.922, p-value=.003). Over two-thirds of the horse owners in each category indicated that they would be moderately to

very likely to attend a program on horse nutrition. And, horse owners with 1 to 9 horses had percentages above 50% who were very likely to attend.

Table 4-26. Likelihood of attending a program on a specific horse-related topic by the number of horses owned.

Topic		----- Amount of Horses Owned -----			
		1 (%)	2 – 4 (%)	5 – 9 (%)	10 or more (%)
Horse Health	Very Likely	66.7	61.2	59.1	39.1
	Moderately Likely	18.3	23.6	21.2	29.0
	Somewhat Likely	7.5	8.9	11.7	23.2
	Slightly Likely	3.3	3.1	4.4	1.4
	Not at All Likely	4.2	3.1	3.6	7.2
Horse Nutrition	Very Likely	57.5	54.1	51.8	36.2
	Moderately Likely	27.5	26.5	18.2	30.4
	Somewhat Likely	5.8	11.7	21.2	18.8
	Slightly Likely	5.0	4.3	5.8	4.3
	Not at All Likely	4.2	3.5	2.9	10.1
Disaster Preparedness	Very Likely	44.2	39.0	39.0	21.7
	Moderately Likely	20.0	24.3	16.2	23.2
	Somewhat Likely	18.3	21.2	22.8	18.8
	Slightly Likely	9.2	10.8	12.5	14.5
	Not at All Likely	8.3	4.6	9.6	21.7
Pasture Management	Very Likely	26.7	42.0	41.6	31.4
	Moderately Likely	23.3	24.9	26.3	25.7
	Somewhat Likely	14.2	19.1	16.1	14.3
	Slightly Likely	15.8	7.0	9.5	10.0
	Not at All Likely	20.0	7.0	6.6	18.6
General Horse Care	Very Likely	42.1	28.0	21.9	14.7
	Moderately Likely	19.0	23.3	19.0	14.7
	Somewhat Likely	19.8	17.1	20.4	22.1
	Slightly Likely	8.3	19.8	13.9	13.2
	Not at All Likely	10.7	11.7	24.8	35.3
Business Aspects of Ownership	Very Likely	15.7	17.4	28.7	27.5
	Moderately Likely	12.4	12.4	19.9	20.3
	Somewhat Likely	19.0	20.2	21.3	21.7
	Slightly Likely	20.7	24.0	12.5	13.0
	Not at All Likely	32.2	26.0	26.0	14.4
Marketing	Very Likely	9.2	14.5	27.4	26.1
	Moderately Likely	10.8	11.0	23.0	27.5
	Somewhat Likely	15.8	17.3	17.0	15.9
	Slightly Likely	28.3	22.7	15.6	13.0
	Not at All Likely	35.8	34.5	17.0	17.4

A strong relationship was found between the number of horses owned and the likelihood of attending a program on disaster preparedness (Chi-Square=30.008, p-value=.003). Approximately half of the horse owners reported that they were moderately to very likely to attend a program on disaster preparedness. The smaller number of horses owned seemed to increase the likelihood of a horse owner attending a program such a program.

The number of horses owned and the likelihood of attending a program on pasture management also had a significant association (Chi-Square=33.569, p-value=.003). Across the board, the largest percentage of horse owners indicated that they would be very likely to attend a program on pasture management. Horse owners with 2 – 4 and 5 – 9 horses had the highest percentages at 42.0% and 41.6% respectively. Over fifty percent of the horse owners in each category indicated they would be moderately to very likely to attend a pasture management program. Horse owners with 2 – 9 horses seemed to be the most likely, while people with one horse or 10 or more reported they were less likely.

There was a significant association between the likelihood of attending a program on general horse care and the number of horses owned (Chi-Square=50.864, p-value=.000). The largest percentage of horse owners with one horse (42.1%) reported that they are very likely to attend an equine program on general horse care, while only 1 in 10 reported no likelihood of attending such a program. On the other hand, three times as many horse owners with ten or more horses (35.3%) reported that he/she was not at all likely to attend an equine program on general horse care as those with one horse.

Business aspects of ownership and number of horses owned also had a fairly strong relationship (Chi-Square=28.779, p-value=.004). Nearly one-third of horse owners with

one horse (32.2%) were not at all likely to attend a program on business aspects of ownership. And horse owners with 2 – 4 horses were 50% slightly to not at all likely to attend a program on this specific topic. However, horse owners with 5 – 9 horses (28.7%) and 10 or more horses (27.5%) were very likely to attend a program on business aspects of ownership.

Finally, marketing and number of horses owned had a very strong association (Chi-Square=54.501, p-value=.000). Three-fourths of horse owners with one to four horses are somewhat to not at all likely to attend a program on marketing. On the other hand, over fifty percent of horse owners with five or more horse are moderately to very likely to attend a program on marketing. Therefore, as the number of horses owned increases, the likelihood of attending such a program will also increase.

A series of linear regression models was estimated to explore the possible relationships between the likelihood of attending a program on a specific horse-related topic, the number of horses owned, the knowledge index, the frequency of having questions, the motivation to obtain information, and the importance of specific horse-related topics (Table 4-27). Other demographic variables such as age and gender had no significant effect on the likelihood of attending a program on any of the specific horse-related topics. The first model predicts the likeliness of attending a program on general horse care, based on the number of horses owned, the knowledge index, the frequency of having questions, the motivation to obtain information, and the importance of general

horse care index<sup>2</sup> ( $F=44.568$ ,  $p\text{-value}=.000$ ). This model explained a large portion of the variation in the likelihood of attending a program on general horse care ( $R^2=.281$ ).

As the level of knowledge increases by one unit, the likelihood of attending a program on general health care will decrease by .615 units ( $b=-.615$ ). As the number of horses owned increases, the likelihood of attending a program on general horse care will decrease by .170 units ( $b=-.170$ ). However, if the frequency of having questions increases by one unit, the likelihood of attending a program on general horse care will increase by .194 units ( $b=.194$ ). As the motivation to obtain information increases, the likelihood of attending a program on general horse care will also increase by .421 units ( $b=.421$ ).

Finally, as the importance of general horse care increases by one unit, the likelihood of attending a program on general horse care will increase by .453 units ( $b=.453$ ). Therefore, the higher the knowledge level and the greater the amount of horses owned, the less likely horse owners are to attend a program on general horse care. However, as the frequency of having questions, the motivation to obtain information, and the importance of the topic increases, the more likely horse owners are to attend a program on this particular topic.

The second model predicts the likelihood of attending a program on business aspects of ownership, based on the knowledge index, the number of horses owned, the frequency of having questions, the motivation to obtain information, and the importance

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<sup>2</sup> General horse care index is based on the importance of the following items: basic training, equine behavior, proper tack fitting, and ethical care of horses (Eigenvalue=2.918, Percent Variance=72.962%, Cronbach's Alpha=.874).

of business aspects of ownership index<sup>3</sup> ( $F=23.481$ ,  $p\text{-value}=.000$ ). This particular model explained a modest portion of the variation in the likelihood of attending a program on business aspects of ownership ( $R^2=.170$ ). As the number of horses owned increases by one unit, the likelihood of attending a program on business aspects of ownership increases by .246 units ( $b=.246$ ). When the motivation to obtain information increases, the likelihood of attending a program on business aspects of ownership increases .246 units ( $b=.246$ ).

Finally, as the importance of business aspects of ownership increases by one unit, the likelihood of attending a program on business aspects of ownership will increase by .832 units ( $b=.832$ ). The  $p$ -values of level of knowledge ( $p\text{-value}=.250$ ) and the frequency of having questions ( $p\text{-value}=.166$ ) are  $>.05$ , suggesting that the relationship between each of these items and the likelihood of attending a program on business aspects of ownership is insignificant. Therefore, the higher the number of horses owned, the greater the motivation to obtain information, and the greater the importance of business aspects of ownership, the more likely they are to attend a program on this particular topic.

The third model predicts the likelihood of attending a program on disaster preparedness, based on the knowledge index, the number of horses owned, the frequency of having questions, and the motivation to obtain information ( $F=18.999$ ,  $p\text{-value}=.000$ ). A moderate portion of the variation in the likelihood of attending a program on horse

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<sup>3</sup> The business aspects of ownership index is based on the importance of following items: breeding/foaling, liabilities for horse owners, environmental impact of horses, land use or zoning regulations, and property taxes (Eigenvalue=2.237, Percent Variance=46.538%, Cronbach's Alpha=.658).

facilities was explained by this model ( $R^2=.119$ ). This model suggests that there is no significant relationship between the likelihood of attending a program on disaster preparedness and the level of knowledge of horse owners (p-value=.395).

As the number of horses owned increases by one unit, the likelihood of attending a program on disaster preparedness will decrease by .180 units ( $b=-.180$ ). However, the frequency of having questions increases, the likelihood of attending a program on disaster preparedness will increase by .158 units ( $b=.158$ ). And as the motivation to information increases by one unit, the likelihood of attendance on this particular topic will increase by .464 units ( $b=.464$ ). Therefore, the greater the frequency of having questions and the motivation to obtain information, the more likely a horse owner is to attend a program on disaster preparedness.

The fourth model predicts the likeliness of attending a program on horse facilities, based on the knowledge index, the number of horses owned, the frequency of having questions, the motivation to obtain information, and the importance of horse facility index<sup>4</sup> ( $F=49.749$ , p-value=.000). A large portion of the variation in the likelihood of attending a program on horse facilities was explained by this model ( $R^2=.302$ ). When level of knowledge increases by one unit, the likeliness of attending a program on horse facilities will decrease by .241 units ( $b=-.241$ ). There is no significant relationship between likelihood of attending a program on horse facilities and the number of horses owned (p-value=.401).

As the frequency of having questions increases by one unit, the likelihood of attending a program on horse facilities will increase by .159 units ( $b=.159$ ). And when

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<sup>4</sup> Horse facility index is based on the importance of following items: fencing options, horse facility design, and manure management (Eigenvalue=2.244, Percent Variance=74.794, Cronbach's Alpha=.831).

the motivation to obtain information increases, the likelihood will increase by .338 units (b=.338). Finally, as the importance of horse facilities increases by one unit, the likelihood of attending will also increase by .671 units (b=.671). Therefore, the greater the frequency of having questions, motivation to obtain information and the importance of horse facilities, the more likely horse owners are to attend a program on horse facilities within their area.

The fifth model predicts the likelihood of attending a program on horse health, based on the knowledge index, the number of horses owned, the frequency of having questions, the motivation to obtain information, and the horse health index<sup>5</sup> (F=50.827, p-value=.000). This particular model explained a large portion of the variation in the likeliness of attending a program on horse health ( $R^2=.309$ ). The model found no association between the likelihood of attending a program on horse health and the level of knowledge (p-value=.116). The same was found between likelihood of attending and the number of horses owned (p-value=.077).

When the frequency of having questions and motivation to obtain information increase by one unit each, the likelihood of attending a program on horse health increases by .131 units (b=.131) and .522 units (b=.522) respectively. Finally, as the importance of horse health increases, the likelihood of attending a program on horse health increases by .609 units (b=.609). Therefore, the greater the frequency of having questions, the greater

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<sup>5</sup> The horse health index is based on the importance of the following items: fly and pest control, colic, hoof care, when to call a vet, vaccinations, and equine dentistry (Eigenvalue=3.265, Percent Variance=54.419, Cronbach's Alpha=.819).

the motivation to obtain information, and the greater the importance of horse health is to horse owners, the more likely they are to attend a program on this particular topic.

The sixth model predicts the likelihood of attending a program on horse nutrition, based on the knowledge index, the number of horses owned, the frequency of having questions, the motivation to obtain information, and the importance of the horse nutrition index1<sup>6</sup> and the horse nutrition index2<sup>7</sup> ( $F=39.810$ ,  $p\text{-value}=.000$ ). This particular model explained a large portion of the variation in the likeliness of attending a program on horse nutrition ( $R^2=.293$ ). As the level of knowledge increases by one unit, the likelihood of attending a program on horse nutrition will also decrease by .250 units ( $b=-.250$ ). The model found no significant association between likelihood of attending a program on horse nutrition and the number of horses owned.

However, as the frequency of having questions increases by one unit, the likelihood of attending increases by .135 ( $b=.135$ ). And as the motivation to obtain information increases, the likelihood of attending increases .426 units ( $b=.426$ ). Finally, as the importance of horse nutrition on components and bulk feeding increases by one unit each, the likelihood of attending a program on horse nutrition will increase by .122 ( $b=.122$ ) and .337 ( $b=.377$ ) units respectively. Therefore, the greater the frequency of having questions, the motivation to obtain information, and the importance of the components and bulk feeding aspects of nutrition, the more likely horse owners are to attend a program on horse nutrition.

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<sup>6</sup> The horse nutrition index1 is based on the following items: storing hay and grain, and buying horse hay. These items represent the bulk feeding aspect of nutrition (Eigenvalue=1.331, Percent Variance=33.276, Cronbach's Alpha=.819).

<sup>7</sup> The horse nutrition index2 is based on the following items: supplements and minerals and vitamins. These items represent the components of nutrition (Eigenvalue=2.190, Percent Variance=54.740, Cronbach's Alpha=.899).

The seventh model predicts the likelihood of attending a program on marketing, based on the level of knowledge, the number of horses owned, the frequency of having questions, and the motivation to obtain information ( $F=23.250$ ,  $p\text{-value}=0.000$ ). This model explained a modest portion in the variance in the likelihood of attending a program on marketing ( $R^2=.143$ ). As the level of knowledge increases by one unit, the likelihood of attending a program on marketing will increase by .322 units ( $b=.322$ ). When the number of horses owned increases, the likelihood of attending a program on marketing will also increase by .337 units ( $b=.337$ ).

As the motivation to obtain information about marketing increases, the likelihood to attend a program on marketing will increase by .473 units. This model found no significant relationship between the likelihood to attend a program on marketing and the frequency of questions ( $p\text{-value}=.088$ ). Therefore, the higher the level of knowledge, the more horses owned, and the greater the motivation to obtain information, the more likely horse owners are to attend a program on marketing.

The eighth and final model predicts the likelihood of attending a program on pasture management, based on the knowledge index, the number of horses owned, the frequency of having questions, the motivation to obtain information, and the pasture management index<sup>8</sup> ( $F=42.974$ ,  $p\text{-value}=.000$ ). A large portion in the variation in the likelihood of attending a program on pasture management was explained by this model ( $R^2=.274$ ). This particular model found no significant association between the likelihood

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<sup>8</sup> The pasture management index is based on the following items: pasture establishment, grazing habits, poisonous plants, and weed control. (Eigenvalue=2.852, Percent Variance=71.297, Cronbach's Alpha=.865)

of attending a program on pasture management and the level of knowledge (p-value=.566) and number of horses owned (p-value=.463) respectively.

As frequency of having questions and motivation to obtain information increase by one unit each, the likelihood of attending a program on pasture management increases by .167 units (b=.167) and .288 (b=.288) respectively. Finally, as the importance of pasture management increases by one unit, the likelihood of attending a program on pasture management increases by .799 units (b=.799). Therefore, the greater the frequency of having questions, motivation to obtain information, and the greater the importance of pasture management is to horse owners, the more likely they are to attend a program on this topic.

### **Demographics**

The fifth objective was to identify demographics of horse owners and the horse population. Various demographic type questions were asked about the practices used by horse owners (Table 4-28). Out of 609 respondents, 97.9% owned horses. However, only 36.1% cared for or managed horses. When asked about horse boarding practices, most horse owners (63.7%) did not board their horses. Whereas, 36.3% of horse owners either boarded all or some of the horses they own.

Horse owners indicated that 86.2% of the respondents owned the land dedicated to keeping their horses, and 13.8% said that the land was rented. Of 612 respondents, over eighty percent of them bought hay for their horses and almost ninety percent of the respondents' horses are kept on pasture or grassy turnout during grazing season. However, 82.1% of the respondents indicated that their horse(s) does not receive all of its forage from pasture during grazing season.

Table 4-27. Multiple regression models for likelihood of attending a program on a specific horse-related topic.

<b>Variable</b>	<b>General Horse Care</b>	<b>Business Aspects of Ownership</b>	<b>Disaster Preparedness</b>	<b>Horse Facilities</b>	<b>Horse Health</b>	<b>Horse Nutrition</b>	<b>Marketing</b>	<b>Pasture Management</b>
<b>Intercept.....</b>	<b>1.463</b>	<b>-.723</b>	<b>2.162</b>	<b>.160</b>	<b>.334</b>	<b>1.073</b>	<b>-.1092</b>	<b>-.623</b>
<b>Knowledge index.....</b>	<b>-.615</b>	<b>-.136</b>	<b>-.091</b>	<b>-.241</b>	<b>-.120</b>	<b>-.250</b>	<b>.322</b>	<b>-.057</b>
<b>Number of horses owned.....</b>	<b>-.170</b>	<b>.246</b>	<b>-.180</b>	<b>-.049</b>	<b>-.081</b>	<b>-.053</b>	<b>.337</b>	<b>.044</b>
<b>Frequency of questions.....</b>	<b>.194</b>	<b>.122</b>	<b>.158</b>	<b>.159</b>	<b>.131</b>	<b>.135</b>	<b>.152</b>	<b>.167</b>
<b>Motivation to obtain information....</b>	<b>.421</b>	<b>.246</b>	<b>.464</b>	<b>.338</b>	<b>.522</b>	<b>.426</b>	<b>.473</b>	<b>.288</b>
<b>Importance of the topic.....</b>	<b>.453</b>	<b>.832</b>	<b>n/a</b>	<b>.671</b>	<b>.609</b>	<b>.122<sup>a</sup> .337<sup>b</sup></b>	<b>n/a</b>	<b>.799</b>
<b>Adjusted R<sup>2</sup></b>	<b>.281</b>	<b>.170</b>	<b>.119</b>	<b>.302</b>	<b>.309</b>	<b>.293</b>	<b>.143</b>	<b>.274</b>

Note. <sup>a</sup> and <sup>b</sup> Indicate the values for Nutrition Index1 and Nutrition Index2 respectively.

n/a indicates that no items were used to measure the importance of the specific topic.

From a list of sixteen disciplines, horse owners were asked to indicate which disciplines they did with their horse(s) by circling all that apply (Table 4-29). Nearly two-thirds of the respondents reported that “trail riding” was a discipline that they participated in. Following this, “english” was the second highest discipline reported by horse owners (39.5%). Disciplines indicated by participants with percentages <10% include: ranch work, endurance, eventing, reining, cutting, team penning, and rodeo.

Table 4-28. Practices used by Florida horse owners.

Variable	n	%
Do you own horses?	609	
Yes.....	596	97.9
No.....	13	2.1
Do you manage or care for horses?	609	
Yes.....	220	36.1
No.....	389	63.9
Do you board horses?	606	
Yes, all.....	144	23.8
Yes, some.....	76	12.5
No.....	386	63.7
Do you rent or own land dedicated to keeping horses?	556	
Own.....	479	86.2
Rent.....	77	13.8
Do you buy hay for the horses?	604	
Yes.....	524	86.8
No.....	80	13.2
During grazing season, are the horses on pasture or grassy turnout a lot at any time?	604	
Yes.....	537	88.9
No.....	67	11.1
Does the horse(s) usually receive all of its forage from pasture during grazing season?	605	
Yes.....	108	17.9
No.....	497	82.1

Next, horse owners were asked to identify disciplines that they would like to learn about by circling them (Table 4-30). There was no discipline that was much higher than the others. The more popular disciplines with percentages >20% include: dressage

(26.0%), trail riding (24.7%), reining (20.3%), and driving (20.1%). The discipline that horse owners are least interested in learning about is “rodeo” because only 3.8% of the respondents indicated interest in learning more about this discipline.

Table 4-29. Disciplines 612 horse owners indicated they did with their horses.

Variable	n	%
Trail riding.....	399	65.2
English.....	242	39.5
Western pleasure.....	193	31.5
Dressage.....	172	28.1
Halter.....	138	22.5
Other.....	134	21.9
Hunter/Jumper.....	123	20.1
Driving.....	107	17.5
Games.....	65	10.6
Ranch work.....	51	8.3
Endurance.....	50	8.2
Eventing.....	44	7.2
Reining.....	39	6.4
Cutting.....	26	4.2
Team penning.....	23	3.8
Rodeo.....	21	3.4

Table 4-30. Disciplines 612 horse owners indicated they would like to learn about.

Variable	n	%
Dressage.....	159	26.0
Trail riding.....	151	24.7
Reining.....	124	20.3
Driving.....	123	20.1
Cutting.....	95	15.5
Western pleasure.....	94	15.4
Endurance.....	77	12.6
English.....	77	12.6
Ranch work.....	75	12.3
Team penning.....	69	11.3
Hunter/Jumper.....	65	10.6
Games.....	57	9.3
Halter.....	53	8.7
Eventing.....	48	7.8
Other.....	39	6.4
Rodeo.....	23	3.8

Horse owners were then asked to indicate if any of their sources of income came from a list of horse-related jobs (Table 4-31). All of the items listed had percentages below twenty-percent. The highest percentage was boarding as a source of income (18.1%). The lowest percentage was equine dentistry as a source of income (0.3%). Cross-tabulations reported that 59% of horse owners had no income from horse-related jobs.

Table 4-31. Sources of income from horse-related jobs of 612 horse owners.

Variable	n	%
Boarding.....	111	18.1
Breeding.....	107	17.5
Horse sales.....	104	17.0
Lessons/training.....	83	13.6
Other.....	50	8.2
Horse hauling.....	38	6.2
Judging.....	16	2.6
Veterinarian.....	12	2.0
Hay/straw sales.....	11	1.8
Tack sales.....	11	1.8
Farrier.....	9	1.5
Feed/supplement sales.....	6	1.0
Equine massage.....	4	0.7
Equine dentistry.....	2	0.3

A series of demographic questions were asked to respondents to identify specific characteristics about them (Table 4-32). Over eighty percent (82.7%) of the horse owners were identified as female. Over 75% of the respondents reported having no children under the age of eighteen. Ages were widely distributed. The largest age category included horse owners between the ages of 45 to 54. The lowest age category was horse owners between the ages of 18 to 24.

Horse owners were asked to write in the amount of horses that they own. Responses were grouped into categories including: one horse, 2-4 horses, 5-9 horses, and

10 or more horses. Out of 592 respondents, 44.3% of the horse owners reported having 2-4 horses. Only 12% had ten or more horses, making this the lowest category. Then horse owners were asked how long they had owned their horses. Responses were then grouped into the following categories: 1-4, 5-9, 10-19, 20-29, and 30 or more years. Approximately forty percent of the horse owners had owned their horses for thirty or more years. Only 9% of the respondents have had horses for 1-4 years.

Respondents were asked to write the amount of acres dedicated to keeping their horses. The amount of horse owners responding was 563, which was lower than other demographic items. Responses were grouped into categories including: 1-9, 10-19, 20-49, and 50 and over acres. Over fifty percent of horse owners indicated that they owned between 1 and 9 acres (52.6%). Only 6.4% of them owned fifty or more acres.

Horse owners were then asked about their participation in community activities, local horse associations, and meeting informally with other horse owners in the area. Approximately 44% of the respondents indicated that they did participate in community activities with their horses. Some of the more popular community activities included: 4-H, trail rides, parades, demonstrations/events, horse shows, and sheriff's mounted posse. In addition, two-thirds of the horse owners were members of local horse associations. Several of these local horse associations included: trail riding clubs, local horse show associations, local dressage clubs, local Paso Fino horse associations, and Florida Walking and Racking Horse Association, Florida Quarter Horse Association, Florida Paint Horse Association, and Florida Thoroughbred Breeders and Owners Association.

Over seventy-five percent of the horse owners indicated that they met with other horse owners informally. Approximately 40% of these met at least once per week.

Cross-tabulations reported that horse owners who meet informally with other horse owners in their area are also more likely to use horse owners in their area as a source for obtaining horse-related information.

Table 4-32. Demographic characteristics of 612 horse owners.

Variable	n	%
Gender	607	
Male.....	105	17.3
Female.....	502	82.7
Age (years)	592	
18-24.....	23	3.9
25-34.....	33	5.6
35-44.....	103	17.4
45-54.....	224	37.8
55-64.....	159	26.9
65 and over.....	50	8.4
Number of children under 18	607	
0.....	462	76.1
1.....	96	15.8
2.....	34	5.6
3.....	11	1.8
4.....	4	0.7
Amount of horses owned	592	
1.....	122	20.6
2-4.....	262	44.3
5-9.....	137	23.1
10 or more.....	71	12.0
Number of years owned horses	598	
1-4.....	56	9.4
5-9.....	69	11.5
10-19.....	112	18.7
20-29.....	117	19.6
30 and over.....	244	40.8
Acres dedicated to keeping their horse(s)	563	
1-9.....	296	52.6
10-19.....	136	24.2
20-49.....	95	16.9
50 and over.....	36	6.4
Participation in community activities with horse(s)	609	
Yes.....	268	44.0
No.....	341	56.0

Table 4-32. Continued.

Variable	n	%
Member of a local horse association	611	
Yes.....	412	67.4
No.....	199	32.6
Meet informally with other horse owners in the area	606	
Yes.....	463	76.4
No.....	143	23.6
Frequency of meeting informally with other horse owners in the area	462	
More than once per week.....	95	20.5
About once per week.....	99	21.4
Two or three times per month.....	65	14.1
About once per month.....	100	21.6
A few times per year.....	103	22.3

The final question solicited comments about educational programs that could be provided for Florida horse owners. Horse owners indicated that they often do not attend programs because of the cost, time, and location the program is being offered. Horse owners suggested advertising programs in advance and using a variety of advertising techniques, offering programs during different times of the week, and holding programs in location other than only where the largest horse populations currently are. The suggestions also included using websites, email list-serves, pamphlets, and newsletters as methods for sending out information.

Horse owners were interested in programs that separated basic and advanced topic areas. The topic areas they reported interest in included: training/handling, hurricane preparedness, marketing, horse facilities and barn building, nutrition issues, health issues, pasture management and weed control, alternative medicine, safety, and information for beginner riders and new horse owners. Horse owners also liked attending programs offered by accredited sources such as veterinarians and state specialists. Overall, Florida

horse owners have positive attitudes towards programs being offered. They would like more programs offered throughout the state and look forward to attending new programs being offered. Several owners reported that they felt this survey covered everything that they were interested in very well.

In summary, the county agents could identify the size of an equine industry within their county and most felt that this industry was growing. The majority of Florida horse owner's interest in programs on certain horse-related topics seemed to be affected by several factors. These factors included: current level of knowledge, number of horses owned, the frequency of needing for information, their motivation to obtain information, and the importance of the topic related directly to them. Overall, horse owners were most interested in programs in the areas of horse health and horse nutrition.

## CHAPTER 5 DISCUSSION

The horse industry contains a wide variety of horse owners with different experiences and knowledge levels. The primary goal of this study was to identify the potential needs of county agents and adult horse owners in order to improve the relevance and, in turn, the effectiveness of Florida's Adult Extension Equine program. The focus of this study was in the following six areas: 1) to assess the extension agent's capacity to respond, 2) to identify what Florida horse owners are interested in learning about, 3) to determine where horse owners are currently obtaining educational materials, 4) to identify what topics and level of education horse owners are willing to be involved in, 5) to identify demographics of horse owners and the horse population in Florida, and 6) to identify possible clientele for future extension educational programs.

First, significant results from the two surveys conducted will be addressed. Then implications of the results for the Florida Cooperative Extension Service (FCES) adult equine program will be discussed. Based on the results gathered, recommendations will be offered on how the FCES can tailor the programs at both county and state levels to better address the needs of county agents and Florida horse owners. Finally, topics for future research will be suggested.

### **Agent's Perception and Capacity to Respond**

The first objective of this study was to assess the extension agent's capacity to respond to the needs of equine clientele. A previous perception among county agents with livestock responsibilities is that they do not classify horses as a livestock species.

This might be because horses are not consumed for meat and all other livestock species are. Therefore, several county agents tend to not address the issues and concerns of horse owners within their counties. The livestock agent survey was conducted to help identify the county agent's perceptions of the local equine industry and to identify how well they are prepared to respond to the owners' educational needs.

The results of this survey helped to give the bigger picture of county extension equine programs throughout the state. Approximately half of the county agents suggested that they currently had a major or minor horse industry within their specific counties. Surprisingly, over seventy-five percent of the agents said that they considered horses as part of the livestock industry. It was evident that most of the agents, 55 out of 65, received formal requests for information from horse owners on a weekly basis. However, only twenty-five percent of the counties offer at least one program annually.

Most county agents are currently limited in their knowledge about the equine species. It seems that most of their current knowledge is very basic, except for pasture management, which is closely related to the larger cattle industry. However, they did indicate that they do know where to find the information for questions that local horse owners might have. The agents reported that they rely mostly upon university affiliated resources and other peers in the industry.

Overall, county agents with livestock responsibilities indicated a positive attitude towards the equine industry. They identified that there was an industry within their county that needed to be addressed. Most agents were not very prepared to answer questions that horse owners might have. However, approximately half of the agents reported that they would be interested in learning more, so that they could expand or start

new equine programs within their county (assuming that these did not have the more active equine programs already).

### **Learning Interests**

Results from the horse owner survey indicated that ninety-two percent of horse owners in Florida occasionally to very often had horse-related questions. Similarly, ninety-one percent of horse owners indicated that they were interested in obtaining more information about horses. Therefore, it is important to identify which are topics of interest to horse owners.

Although Florida horse owners are moderately knowledgeable in several horse-related topics, their knowledge level varied depending on the number of horses they owned. Horse owners were most knowledgeable in basic horse care and horse health. However, when it came to more specific topics such as horse reproduction, the knowledge level was slightly lower.

Horse owners indicated that almost any topic related to horses was at least somewhat important to them. The most important topics included horse health and horse nutrition. Overall, Florida horse owners appeared to be willing to obtain new information about topics that interested them.

The results of the Florida survey are very similar to the University of Minnesota Extension Service Survey of Horse Owners (Wagoner and Jones, 2004). Respondents to the latter also suggested that they very often have horse related questions and were interested in obtaining more information about horses. Horse owners were also most knowledgeable in more general horse topics. Minnesota horse owners also indicated that several health topics were most important to them. However, general horse care topics

were of great importance to them as well, which differs from the Florida horse owner survey.

### **Educational Materials**

The third objective of this study was to determine where horse owners are currently obtaining educational materials. The horse owner survey strove to determine types of resources Florida horse owners are using to retrieve information on selected topics. The most common publication purchased within the past twelve months by horse owners were magazines. This may be due to the fact that the sample was selected from a frame that included subscribers to a large equine magazine that is distributed throughout the state. Respondents typically rely on veterinarians, farriers, other horse owners in the areas, and trainers as their most frequent source of information. The Minnesota horse owners also indicated these sources as their top four people that they rely on as sources of information (Wagoner and Jones, 2004). Similar results were found in the 2002 Northwest Florida Beef and Forage Survey as well (Vergot et al., 2005). Respondents of this survey also relied upon other cattle producers and the veterinarian as sources of information. However, it differed because cattle producers also relied heavily upon their county extension agent and local farm & feed supply dealers as sources of information.

The methods or channels of information used by Florida horse owners indicated a unique pattern. Respondents tended to use methods in groups such as: traditional programmatic delivery, one-on-one consultations, internet websites, magazines, and mass media. However, horse owners overall used a variety of channels of information and tended to use several groups of methods. Similarly respondents of both the Florida horse owner survey and the Northwest Florida Beef & Forage Survey reported magazines as their number one channel of information. Therefore, it is important for extension

educators to use a variety of methods to deliver educational programs. Using only traditional programmatic delivery methods, in today's world, will not be sufficient for reaching a wide cross-section of the equine industry.

Owners reported that horse organization events were most useful for providing educational information. University of Florida Extension events were rated, however, at the bottom of the list. This suggests that Florida CES should partner with other organizations when providing equine programs throughout the state. Many owners are currently attending horse educational programs and three-fourths of the respondents are willing to travel 50 miles or more to an educational program or seminar offered. This suggests that most horse owners may be willing to travel outside of their county of residence to attend educational programs and that county agents could partner together to offer multi-county equine programs.

Well over half of the respondents of the University of Minnesota Extension Service Survey of Horse Owners indicated that all of the events listed, specific to the state of Minnesota, were somewhat to very useful to them (Wagoner and Jones, 2004). The majority of the Minnesota horse owners (52.0%) were willing to travel 50 miles or more to an educational program or seminar offered.

### **Topics and Level of Education**

Next, the study identified topics and levels of education horse owners are willing to be involved in. Horse owners are willing to contact individuals who may not have specialized educational training themselves, but know where to get the right answers quickly for clients. Respondents were willing to contact individuals that are located close to their operations, are familiar with the local horse population, and are willing to make

farm calls. All of these individual characteristics are representative of local county agents with livestock responsibilities that are familiar with their local horse population.

Similar results were indicated by Minnesota horse owners (Wagoner and Jones, 2004). Minnesota horse owners indicated that the following characteristics of individuals that may provide educational programs are important: has quick access to specialists when needed, has college training in veterinary medicine, has general knowledge about many horse topics, and provides a quick response. These are the same top four characteristics that Florida horse owners reported as well. Minnesota horse owners similarly valued certain organizations developing and presenting educational programs. These organizations for both studies included: veterinarians, university-associated College of Veterinary Medicine, and university-associated extension services.

Given that Florida horse owners are interested in receiving educational programs from veterinarians, University of Florida departments, and Florida horse organizations, educational programs need to come from accredited organizations. Besides attending programs, Florida horse owners are most interested in obtaining resources that do not require a large amount of time out of their busy lives. Respondents are most interested in “at home” resources that are easy to access such as short-publications and internet/web pages. Similar results were found within the University of Minnesota Extension Service Survey of Horse Owners (Wagoner and Jones, 2004).

Florida horse owners reported the highest likelihood for attending a program on the topics of horse health and horse nutrition. Similar results were reported from Minnesota horse owners, except that horse nutrition was ranked higher than horse health (Wagoner and Jones, 2004). More specialized topics such as business aspects of ownership and

marketing were at the bottom of the list. However, the likelihood of attending a program on a specific topic was influenced by the number of horses owned. Owners with fewer horses were more interested in the general topics and owners with several horses were more interested in more specialized topics.

After conducting a multiple regression analysis, several variables were identified that affected what horse-related topics would draw horse owners. The horse owner's current level of knowledge on specific topics and the number of horses owned were two of the variables that heavily affected this. Number of horses directly affected the program topics in the areas of aspects of ownership and marketing. Other variables that affected the likelihood of attending included their: frequency of having questions, motivation to obtain information, and the importance of the topic. If a horse owner needed information on a specific topic that was important to them and they were motivated enough to find the resources to answer their questions, then they were more likely to say that they would attend a program on that specific horse-related topic.

### **Demographic Characteristics**

The fifth objective was to identify demographics of horse owners and the horse population in Florida. In all, the respondents represented the average horse owner in many ways. There was a very similar pattern between the responses of the Florida horse owners and the Minnesota horse owners. First, the practices of horse owners with their horses were evaluated. The majority of horse owners did not board their horses and they owned the land dedicated to taking care of their horses. Most horse owners bought hay for their horses and kept their horses out on grass during grazing season. Over eighty percent of the horses did not receive all of its forage from pasture during grazing season.

Florida horse owners reported being heavily involved in disciplines such as: trail riding, english, western pleasure, dressage, and halter. The diverse array of disciplines reported suggests that several different segments of the horse owner population were reached through this survey. The American Horse Council (1996) suggests that over seventy percent of the Florida horse population is involved in showing or recreation. Therefore, both studies provide similar results. The USDA's Animal Health Monitoring System's Equine '98 Study suggests that nearly two thirds of the equine population in the United States was primarily used for pleasure. About 15.2% of operations used equid for farm and ranch work, 6.5% for showing, and only 1.9% for racing. Over forty percent of the respondents of the Florida horse owner survey indicated participating in community events with their horses. And over two-thirds reported being a member of a local association and meeting informally with other horse owners in the area. This is important for extension agents so that they know that there are informal networks that can be tapped as a resource to share information with.

Next, the individual demographic characteristics for each respondent were identified. The majority of the respondents (82.7%) were female. The equine industry is female dominated, while most other livestock industries are male dominated. A large percentage of the horse owner's age ranged between the ages of 35 to 65 years of age. About seventy-five percent of the owners did not have any children under the age of eighteen. Over two-thirds of the respondents owned between 1 and 4 horses and approximately forty percent of the owners had owned horses for 30 or more years.

### **Identification of Possible Clientele**

The last objective was to identify possible clientele for future extension educational programs. After understanding all of the factors involved with the previous five

objectives, state equine faculty should be able to determine possible clientele for future equine programs. However, this will only be based on the educational needs and demographic characteristics of horse owners.

A large segment of Florida horse owners are primarily interested subjects in the topic areas of horse health and horse nutrition for programs. However, this can differ when considering the amount of horses they own. Horse owners with several horses were more interested in subjects in the topic areas of business aspects of ownership and marketing. However, many horse owners with few horses may not be interested business aspects of ownership and marketing at all. Respondents indicated that they are interested in receiving information through educational programs as well as publications and one-on-one consultations. It is important to use a variety of these methods, instead of only using one. Adults can also have a variety of different learning styles and by using a variety of teaching methods when offering equine programs, more people will leave and use the information.

This study differed greatly from the Pennsylvania Equine Survey conducted in 2002 (Swinker, *et al.*, 2003), which focused on characteristics of the horse population, such as breeds and the economic values of the horses, by county and state levels. The Pennsylvania Equine Survey also asked some different questions about horse owners. These questions included their level of education and more specific questions about income from horse related jobs.

### **Implications for the Florida Cooperative Extension Service**

During the data collection process, several of the horse owners throughout the state expressed the concern that they did not know what the Cooperative Extension Service (CES) was or that it even existed. CES staff in the state equine program may want to

investigate this perception in greater detail. People who work for or have had the chance to work with the CES sometimes refer to it as “the best kept secret.” CES is an organization that could be very beneficial to horse owners throughout the state to use as a resource for horse-related questions. Therefore, something must be done to bridge the gap between the CES and the Florida horse industry.

State equine faculty often rely upon the county agents responsible for livestock programs to reach the equine industry in each county. Therefore, one option for state faculty would be to train county agents to more easily work with the equine industry within their county, so that they feel better prepared for questions from horse owners. Another option would be to better advertise programs on both a state and county levels. County agents often send out information about specific county programs to a mailing list of current extension clientele, which excludes new, potential clientele. Though CES may have limitations to specific advertising procedures, simple advertising techniques could help to reach more horse owners throughout the state. These might include using: flyers in local feed and tack stores, advertising in the local newspapers, in local horse association newsletters, and other supplemental techniques.

Horse owners that were familiar with CES felt that there was a problem with the location of the programs being concentrated in one area of the state. Many of the respondents reported that they were willing to travel 50 or more miles to a program. Therefore, it is suggested that CES identify where there are large populations of horses and owners in the state, other than Marion County. Then county agents can partner together to offer multi-county equine programs throughout various locations in Florida.

### **Recommendations**

The following is a list of recommendations for the CES, state equine faculty, county agents with livestock responsibilities, and hundreds of Florida horse owners who participated in this study.

**Train county agents with livestock responsibilities.** State equine faculty should schedule in-service training sessions and/or workshops to train county agents about the different areas of the equine industry. These trainings could either take place in various places in the state as several one or two day sessions, or they could be held in a central location of the state for a longer period of time. Some of the different subject areas could include: general horse care, disaster preparedness, business aspects of ownership, horse facilities, horse health, horse nutrition, marketing programs, and pasture management. Each county will have different programming needs, but by giving county agents a general perspective of several different areas of the equine industry, it will better prepare them to teach programs on all aspects of the industry.

**Provide a state-wide website on horse-related topics.** State equine faculty should keep a website with up-to-date horse related topics that county agents and horse owners can easily access. Though horse owners identified web sites as one of their primary channels for obtaining information, there currently is no “user-friendly” website offered by the Animal Sciences Department or College of Veterinary Medicine at the University of Florida that has up-to-date information for public use. This website should include articles and/or short publications that can easily be obtained. It should also be updated weekly or monthly, so that potential users can rely on having the latest information. The website should also include an area for users to provide contact information if they are interested in learning about future equine programs.

**Identify target audience within specific counties.** Provide county agents with an instrument to assess the equine population within their specific counties. County agents could replicate the Horse Owner Survey on a smaller scale within their specific counties to determine the educational needs and the demographic characteristics of local horse owners. Agents can then tailor their equine programs to topics that will interest local horse owners more. By knowing these characteristics, county agents can also use different combinations of methods to better fit the adult learning styles of the audience they will be addressing. Statewide results indicated that horse owners, regardless of the amount of horses owned, were interested in attending programs on horse health, nutrition, and pasture management. Results also suggested that agents should teach more specific topics such as business aspects of ownership and marketing to horse owners with larger numbers of horses. Finally, results also suggested that more general topics such as general horse care and training/handling were more important to horse owners with fewer amounts of horses.

**Use existing clientele to recruit new ones.** Most horse owners can be expected to recruit someone else to take part in equine programs if they are satisfied with the current programs being offered. Results of this survey indicated that horse owners already have local networks of horse owners that they rely on as sources of information. Other methods, such as flyers in local feed and tack stores, advertising in the local newspapers and in local horse association newsletters, can be used as supplemental techniques if needed.

**Hold statewide programs in partnership with other horse organization.** Since most horse owners are unfamiliar with the CES or seldom use extension as a source,

holding statewide equine programs in partnership with other statewide organizations could attract clientele that would otherwise not be reached. For example, if a statewide extension program on horse nutrition is being held, then the CES could partner with Seminole Feed (who already sponsors these types of events) to offer the program.

### **Limitations of This Study**

The horse owner survey strove to evaluate a representative sample of the statewide population of adult horse owners in Florida. However, it was limited by several factors. One of the major limitations of this study was an inability to obtain a complete list of names and addresses of potential participants. This study used lists from state horse organizations and county extension offices. A number of horse organizations and county extension offices were contacted, but only a small number provided mailing lists.

Therefore, a large portion of the statewide horse owner population was omitted because several organizations did not submit mailing lists. However, an abundance of names were obtained from sources that represent different segments of the equine industry, which decreases the coverage error. Non-response error also was a relatively small concern for this study. The high response rate of the livestock agent survey (97.0%) and the horse owner survey (65.3%) gives confidence that the small fraction of respondents that did not respond are not significantly different in their educational needs and demographic characteristics from their peers who did return the survey.

Mail surveys tend to restrict the ability of the respondents to clarify confusing questions that they may not understand. Pilot testing the questionnaires aided in making the questionnaire layout easier to understand and in rephrasing confusing items. Measurement error was reduced by creating indexes to reduce the effect of the variation of responses. Measurement error also was reduced by giving respondents the opportunity

to contact the project coordinator by telephone or email on several occasions. In several instances, the researcher answered respondents' questions to clarify what information was being sought.

The last limitation to this study, due to time constraints, was the inability to merge the results of the livestock agent survey and the horse owner survey. This would have provided the opportunity to identify the specific educational needs of horse owners specific to each of the sixty-seven counties of Florida. Therefore, county agents with livestock responsibilities would be able to then tailor their county equine programs easier. It would be easier because agents would already know what the specific educational needs of horse owners in their county.

### **Directions for Future Research**

Replicating this study over time to investigate trends could provide confirmation of the results. It would also give the opportunity to encompass other areas of the Florida horse owner population. A future survey would allow new county agents and horse owners an opportunity to identify their educational needs specific to the equine species. Other states with large populations of horses would be possible sites for future mail surveys. Some of these states include: California, Texas, and Kentucky (American Horse Council, 2005). While results from each state may vary, understanding the educational needs of county agents and horse owners may result in useful suggestions for adult equine programs in these states.

Qualitative methods could be used to offer a better picture of how horse owners establish and prioritize their educational needs over time. The constraints of written questionnaires limit the respondent's ability to provide detail answers about topics that are important to them. Focus groups could be very useful in gathering in-depth

information from county agents about their perception of the equine industry within their specific county and their level of knowledge about horse-related topics. Personal interviews would allow horse owners to elaborate on their experiences to questions they would not be able to on a questionnaire.

APPENDIX A  
LIVESTOCK AGENT SURVEY AND CORRESPONDENCE

July 2005

Dear Livestock Agents,

In a few days you will receive by e-mail a request to fill out a questionnaire, the 2004 Florida Livestock Extension Agent Equine Program Survey. This instrument is online and will require no mailing.

My study is focusing on what the needs of Florida's livestock extension agents are, in regards to Florida's Adult Extension Equine Program. This survey will ask about the current situation of Adult Extension Equine Programs in the county and your level of experience and knowledge about horses. Your responses will help us to make Florida's Adult Extension Equine Program more effective.

I am sending this out in advance because we found many people like to know ahead of time that they will be contacted. This study is important and your input will provide valuable information about ways we can improve this program.

Thank you for your time and consideration. It's only with the generous help of people like you that our research can be successful. If you have any questions about this study, you can contact Kristen Spahn at (352) 392-0502, ext. 244 or at [kmspahn@ifas.ufl.edu](mailto:kmspahn@ifas.ufl.edu) or Glenn Israel, Professor at (352) 392-0502, ext. 246 or [gdi@ifas.ufl.edu](mailto:gdi@ifas.ufl.edu).

Sincerely,

Kristen Spahn  
Agricultural Education and Communication, University of Florida

**Proceed to Equine Survey**

Dear <<Name>>:  
Participant Number <<Participant\_Number>>

Thank you for taking this opportunity to participate in the 2004 Florida Livestock Extension Agent Equine Program Survey. Your input is valued and appreciated. The survey is entirely online and will require no mailing. To access the study, click on the link "Proceed to Equine Survey" and your Internet browser will direct you directly to the web page. Before submitting your ideas, you will need to enter a participant number (your participant number is <<Participant\_Number>>) in the box on the web page.

Once again, thank you for your time and consideration. If you have any questions about this study, you can contact Kristen Spahn at (352) 392-0502, ext. 244 or at [kmspahn@ifas.ufl.edu](mailto:kmspahn@ifas.ufl.edu) or Glenn Israel, Professor at (352) 392-0502, ext. 246 or [gdi@ifas.ufl.edu](mailto:gdi@ifas.ufl.edu). Should you have any questions about your rights as a research participant, please contact the University of Florida Institution Review Board at (352) 392-0433 or PO Box 112250, Gainesville, FL 32611.

Thank you,

Kristen Spahn  
Agricultural Education and Communication, University of Florida

**Proceed to Equine Survey**

You are participant number <<Participant\_Number>>

**Proceed to Equine Survey**

Dear <<Name>>:  
Participant Number <<Participant\_Number>>

About a week ago you received an email in regards to the 2004 Florida Livestock Extension Agent Equine Program Survey. However, as of today, we have not received a response. Your input is valued and appreciated. The survey is entirely online and will require no mailing. To access the study, click on the link "Proceed to Equine Survey" and your Internet browser will direct you directly to the web page. Before submitting your ideas, you will need to enter a participant number (your participant number is <<Participant\_Number>>) in the box on the web page.

Once again, thank you for your time and consideration. If you have any questions about this study, you can contact Kristen Spahn at (352) 392-0502, ext. 244 or at [kmspahn@ifas.ufl.edu](mailto:kmspahn@ifas.ufl.edu) or Glenn Israel, Professor at (352) 392-0502, ext. 246 or [gdi@ifas.ufl.edu](mailto:gdi@ifas.ufl.edu). Should you have any questions about your rights as a research participant, please contact the University of Florida Institution Review Board at (352) 392-0433 or PO Box 112250, Gainesville, FL 32611.

Thank you,

Kristen Spahn  
Agricultural Education and Communication, University of Florida

**Proceed to Equine Survey**

You are participant number <<Participant\_Number>>

**2004 Florida Livestock Extension Agent Equine Program Survey****Enter Participant Code Here (Required) (Found in Email):** 

1. Would you consider horses to be a major or minor industry in your county?

- Major Industry
- Minor Industry
- Not an Industry
- Don't Know

2. Do you consider horses to be a growing industry in your county?

- Yes
- No
- Don't Know

3. Do you consider horse owners to be part of the livestock industry?

- Yes
- No
- Don't Know

4. Do you currently offer equine education programs for adults?

- Yes
- No
- Don't Know

4a. If yes, how many educational activities are offered annually?

- None
- 1 - 2
- 3 - 5
- 6 - 10
- 11 or more

5. Would you be interested in developing or expanding an equine program in your county?

- Yes
- No
- Don't Know

6. Do you receive requests from horse owners for information?

- Yes
- No
- Don't Know

6a. If yes, how many per week?

- Less than 1 per week
- 1 - 2 per week
- 3 - 5 per week
- 6 - 10 per week
- 11 or more per week

7. How prepared do you feel to answer equine questions?

- Not at all prepared
- Slightly prepared
- Somewhat prepared
- Moderately prepared
- Very prepared

8. How knowledgeable are you on the following subjects?

	<b>--Level of Knowledge--</b>				
	<b>None</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Very High</b>
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
<b>Basic Care</b> .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Nutrition</b> .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Reproduction</b> .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Herd Health</b> .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Farm Management</b> .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Training/Handling</b> .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Where do you seek information to answer equine questions? (check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> EDIS                  | <input type="checkbox"/> Professional Magazines/Journals  |
| <input type="checkbox"/> Veterinarians         | <input type="checkbox"/> Workshops  |
| <input type="checkbox"/> Equine State Faculty  | <input type="checkbox"/> National Events  |
| <input type="checkbox"/> Non-IFAS websites     | <input type="checkbox"/> Vendors  |
| <input type="checkbox"/> Peers in the industry | <input type="checkbox"/> Other (please specify): <input style="width: 150px; height: 20px;" type="text"/> |

10. What other information or resources do you need to meet the needs of horse owners in your county?

APPENDIX B  
HORSE OWNER SURVEY AND CORRESPONDENCE

January 2005

Dear Florida horse owner:

A few days from now you will receive in the mail a request to fill out a brief questionnaire for horse owners. The survey is being conducted by the University of Florida to find out about the needs and concerns of horse owners, as well as preferences for getting information from Cooperative Extension experts.

I am writing in advance because we have found many people like to know ahead of time that they will be contacted. The study is an important one that will help the Cooperative Extension Service to provide information that better meets your needs.

Thank you for your time and consideration. It's only with the generous help of people like you that our survey can be successful.

Sincerely,

Kristen Spahn

January 2005

Dear Florida horse owner:

We are conducting a study in cooperation with the Animal Sciences Department at the University of Florida to find out about adult horse owners current equine practices and needs. Your input is greatly appreciated. The survey will take about 15 minutes to complete.

You are one of a small number of adult horse owners randomly chosen to participate in this study. Since your responses will also represent others who were not selected, we hope that you will complete the survey as soon as possible. Your participation is voluntary. You do not have to answer any question that you do not wish to answer. We believe that there are no risks to you from participating in this study. There are no direct benefits or compensation to you for participating in this study. Should you have any questions about your rights as a research participant, please contact the UFIRB office at (352) 392-0433 or PO Box 112250, Gainesville, FL 32611.

We will keep answers confidential to the extent provided by law. Your name will not be used in any report. We will only use your answers after they have been combined with the other respondents' answers. Please note that the number on the questionnaire will be used only to check off your name off the mailing list when your survey is returned.

If you have any questions or concerns regarding this study, please contact Kristen Spahn at (352) 392-0502, ext. 244 or at [kmspahn@ifas.ufl.edu](mailto:kmspahn@ifas.ufl.edu) or Glenn Israel, Professor at (352) 392-0502, ext. 246 or [gdi@ifas.ufl.edu](mailto:gdi@ifas.ufl.edu).

Sincerely,

Kristen Spahn

Dear Florida Horse Owner:

A few days ago, we sent you a questionnaire asking about horse related needs and concerns. If you have completed and returned the questionnaire, please accept our sincere thanks. If you have not returned the survey yet, please fill it out and mail it back today.

Because a random sample of horse owners were asked to participate, it is important that each person completes the survey. If you have misplaced your questionnaire or have any questions about this study, please call me at (352) 392-0502, ext 244 or email me at [kmspahn@ifas.ufl.edu](mailto:kmspahn@ifas.ufl.edu). Thank you for helping.

Sincerely,

Kristen Spahn  
Agriculture Education & Communications  
University of Florida



University of Florida  
Department of Agricultural Education and Communications  
408 Rolfs Hall  
PO Box 110540  
Gainesville, FL 32611

January 2005

Dear Florida horse owner:

A few weeks ago, I sent you a survey asking about your current equine practices and needs. As of today, however, I have not received your completed survey.

Many people have already responded. Your answers are important to getting accurate results. Although I sent questionnaires to people across Florida, I need to hear from nearly everyone in the sample to be sure that the results are truly representative.

Your participation is voluntary. You do not have to answer any question that you do not wish to answer. I believe that there are no risks to you participating in this study. It will take about 15 minutes to complete. There are no direct benefits or compensation to you for participating in this study. Should you have any questions about your rights as a research participant, please contact the UFIRB office at (352) 392-0433 or PO Box 112250, Gainesville, FL 32611.

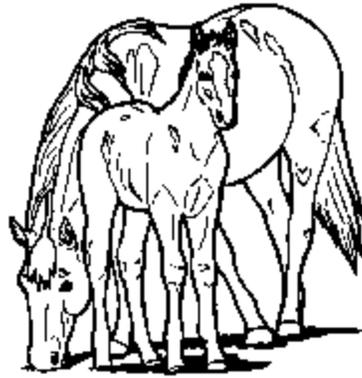
Please note that the number on the questionnaire will be used only to check your name off the mailing list when your survey is returned. I will keep your answers confidential to the extent provided by law and I will not use your name in any report. Protecting the confidentiality of people's answers is important to me.

A postage paid envelope is enclosed for mailing your completed survey. If you have any questions or concerns regarding this study, please contact Kristen Spahn at (352) 392-0502, ext. 244 or at [kmspahn@ifas.ufl.edu](mailto:kmspahn@ifas.ufl.edu) or Glenn Israel, Professor at (352) 392-0502, ext. 246 or [gdi@ifas.ufl.edu](mailto:gdi@ifas.ufl.edu).

Sincerely,

Kristen Spahn

# Florida Adult Extension Education Equine Survey



UNIVERSITY OF  
**FLORIDA**

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IFAS EXTENSION

Q1. How often do you have horse-related questions that you would like answered? (*Mark one.*)

- ' Never
- ' Rarely
- ' Occasionally
- ' Often
- ' Very Often

Q2. How interested are you in obtaining more information about horses? (*Mark one.*)

- ' Not at all interested
- ' Slightly interested
- ' Moderately interested
- ' Very interested
- ' Don't know

Q3. How knowledgeable are you about the following topics? (*Circle one answer for each topic.*)

	-----LEVEL OF KNOWLEDGE-----				
	None	Low	Medium	High	Very High
a. Basic Horse Care	1	2	3	4	5
b. Farm Management	1	2	3	4	5
c. Horse Health	1	2	3	4	5
d. Horse Nutrition	1	2	3	4	5
e. Horse Reproduction	1	2	3	4	5
f. Pasture Management	1	2	3	4	5
g. Training/Handling	1	2	3	4	5

Q4. How important to you is each of the following topics? *(Circle one answer for each topic.)*

	<b>Not At All Important</b>	<b>Slightly Important</b>	<b>Somewhat Important</b>	<b>Moderately Important</b>	<b>Very Important</b>	<b>Don't Know</b>
a. Breeding/ Foaling	1	2	3	4	5	6
b. Storing hay and grain	1	2	3	4	5	6
c. Buying horse hay	1	2	3	4	5	6
d. Liabilities for horse owners	1	2	3	4	5	6
e. Environmental impact of horses	1	2	3	4	5	6
f. Fencing options	1	2	3	4	5	6
g. Horse facility design	1	2	3	4	5	6
h. Manure management	1	2	3	4	5	6
i. Fly and pest control	1	2	3	4	5	6
j. Colic	1	2	3	4	5	6
k. Hoof care	1	2	3	4	5	6
l. When to call a vet	1	2	3	4	5	6
m. Vaccinations	1	2	3	4	5	6
n. Equine dentistry	1	2	3	4	5	6
o. Supplements	1	2	3	4	5	6
p. Minerals and vitamins	1	2	3	4	5	6
q. Pasture establishment	1	2	3	4	5	6
r. Grazing habits	1	2	3	4	5	6
s. Poisonous plants	1	2	3	4	5	6
t. Weed control	1	2	3	4	5	6
u. Basic training	1	2	3	4	5	6
v. Equine behavior	1	2	3	4	5	6
w. Proper tack fitting	1	2	3	4	5	6
x. Ethical care of horses	1	2	3	4	5	6
y. Land use or zoning regulations	1	2	3	4	5	6
z. Property taxes	1	2	3	4	5	6

Q5. What **other** horse-related topics that are **not** listed in Question 4 would you like to learn more about?

Q6. In the past 12 months, have you purchased any of the following types of publications about the topics listed in Q4 and Q5? If yes, what was the title or topic that you purchased?

	YES	NO	IF YES: What was the title or topic?
a. Book(s)	1	2	
b. Magazine(s)	1	2	
c. Pamphlet(s)	1	2	
d. Videos/DVDs	1	2	
e. Other ( <i>Specify</i> ):	1	2	

Q7. What type of people do you most frequently rely on as sources of information for information about horses, listed in alphabetical order? (*Circle one answer for each item.*)

	Never Use	Seldom Use	Sometimes Use	Usually Use	Always Use
a. Close relatives who own horses	1	2	3	4	5
b. County extension agent	1	2	3	4	5
c. Farrier	1	2	3	4	5
d. Local feed store owners	1	2	3	4	5
e. Other horse owners in area	1	2	3	4	5
f. Private consultants	1	2	3	4	5
g. Regional company sales representatives (feed, animal health, etc.)	1	2	3	4	5
h. Tack store owners	1	2	3	4	5
j. Trainer	1	2	3	4	5
k. University specialists	1	2	3	4	5
l. Veterinarian	1	2	3	4	5
m. Other ( <i>Specify</i> ):	1	2	3	4	5

Q8. How often do you obtain information about horses from the following methods, listed in alphabetical order? (*Circle one answer for each item.*)

	Never Use	Seldom Use	Sometimes Use	Usually Use	Always Use
a. Commercial internet web sites	1	2	3	4	5
b. County extension newsletters	1	2	3	4	5
c. County extension internet web sites	1	2	3	4	5
d. Equine magazines	1	2	3	4	5
e. Equine Allied Trade Show	1	2	3	4	5
f. Extension Bulletins/Fact Sheets	1	2	3	4	5
g. Farm demonstrations	1	2	3	4	5
h. Horse or farm magazines	1	2	3	4	5
i. Horse field days at Research Centers	1	2	3	4	5
j. Local newspaper	1	2	3	4	5
k. One on one consultation by phone	1	2	3	4	5
l. One on one consultation by office visit	1	2	3	4	5
m. One on one consultation by farm visit	1	2	3	4	5
n. Television Programs	1	2	3	4	5
o. University internet web sites	1	2	3	4	5
p. Other ( <i>Specify</i> ):	1	2	3	4	5

Q9. How useful are the following events in terms of providing educational information for horse owners? (*Circle one answer for each item.*)

	Never Use	Seldom Use	Sometimes Use	Usually Use	Always Use
a. Community education events	1	2	3	4	5
b. County fairs	1	2	3	4	5
c. Horse organization events	1	2	3	4	5
d. Industry-sponsored events	1	2	3	4	5
e. Local horse shows	1	2	3	4	5
f. Florida State Fair	1	2	3	4	5

Q9. Continued (*Circle one answer for each topic.*)

	Never Use	Seldom Use	Sometimes Use	Usually Use	Always Use
g. Regional horse trade shows	1	2	3	4	5
i. University Veterinary Medicine events	1	2	3	4	5
j. Other ( <i>Specify</i> ):	1	2	3	4	5

Q10. In the past 12 months, have you attended any horse educational programs?

(*Circle one.*)

' No → →

' Yes



If Yes, how many?

\_\_\_\_\_ Number of programs

Q10a. **If no**, what are the reasons you have not attended any programs?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**(PLEASE SKIP TO Q13)**

Q11. What was the best horse education program or seminar that you attended in the last year? (*Please list the name of the program and location.*)

Program: \_\_\_\_\_

Location: \_\_\_\_\_

Q12. How far do you usually travel to attend an educational program or seminar? (*Circle one.*)

- ' Less than 25 miles
- ' 25 to 49 miles
- ' 50 to 99 miles
- ' 100 to 200 miles
- ' Over 200 miles

Q13. Thinking about individuals who may provide you with information about horses, how important are the following characteristics? (*Circle one answer for each item.*)

	<b>Not At All Important</b>	<b>Slightly Important</b>	<b>Somewhat Important</b>	<b>Moderately Important</b>	<b>Very Important</b>	<b>Don't Know</b>
a. Has college training in equine management or related discipline	1	2	3	4	5	6
b. Has college training in veterinarian medicine	1	2	3	4	5	6
c. Has general knowledge about many horse topics	1	2	3	4	5	6
d. Has quick access to specialists when needed	1	2	3	4	5	6
e. Has specialized knowledge about a few horse topics	1	2	3	4	5	6
f. Is affiliated with an equine business	1	2	3	4	5	6
g. Is affiliated with a horse organization	1	2	3	4	5	6
h. Is affiliated with a university	1	2	3	4	5	6
i. Is located close to your farm	1	2	3	4	5	6
j. Knows your farm and your horses	1	2	3	4	5	6
k. Personally owns a horse(s)	1	2	3	4	5	6
l. Provides a quick response	1	2	3	4	5	6
m. Shows/exhibits horses design	1	2	3	4	5	6
n. Will visit your farm	1	2	3	4	5	6
o. Other ( <i>Specify</i> ): _____	1	2	3	4	5	6

Q14. How important is it that the following organizations develop and present educational programs to you? (Circle one answer for each item.)

	Not At All Important	Slightly Important	Somewhat Important	Moderately Important	Very Importa nt	Don't Know
a. Breed organizations	1	2	3	4	5	6
b. Local feed stores	1	2	3	4	5	6
c. Florida horse associations	1	2	3	4	5	6
d. Tack Stores	1	2	3	4	5	6
e. U of F Animal Sciences Department	1	2	3	4	5	6
f. U of F College of Veterinarian Medicine	1	2	3	4	5	6
g. U of F County Extension Office	1	2	3	4	5	6
h. Veterinarians	1	2	3	4	5	6
i. Other (Specify): _____	1	2	3	4	5	6

Q15. How likely would you be to obtain horse-related information from the following resources? (Circle one answer for each item.)

	Not At All Likely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Don't Know
a. Internet/web pages	1	2	3	4	5	6
b. Evening seminars	1	2	3	4	5	6
c. On-line courses	1	2	3	4	5	6
d. Saturday morning programs	1	2	3	4	5	6
e. All day Saturday programs	1	2	3	4	5	6
f. Short publications	1	2	3	4	5	6
g. Other (Specify): _____ _____	1	2	3	4	5	6

Q16. If Educational programs that you could attend in person were offered in you area, how likely would you be to attend a program about the following topics? (*Circle one answer for each topic.*)

	Not At All Likely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Don't Know
a. General horse care	1	2	3	4	5	6
b. Business aspects of ownership	1	2	3	4	5	6
c. Disaster preparedness	1	2	3	4	5	6
d. Horse facilities	1	2	3	4	5	6
e. Horse health	1	2	3	4	5	6
f. Horse nutrition	1	2	3	4	5	6
g. Marketing	1	2	3	4	5	6
h. Pasture management	1	2	3	4	5	6

Q17. How many horses do you own?

\_\_\_\_\_ Horse(s)

Q18. Do you board your horse(s)?

- ' Yes, all
- ' Yes, some
- ' No

Q19a. Do you rent or own the land dedicated to keeping your horse(s)? (*Circle one.*)

- ' Own
- ' Rent

Q19b. How many acres are dedicated to keeping your horse(s)?

\_\_\_\_\_ Acres

Q20. Do you buy hay for your horses?

' Yes → If Yes, what percentage?  
\_\_\_\_\_ %

' No – I board my horse(s)

Q21. How long have you owned horses?

\_\_\_\_\_ Year(s)

Q22. During grazing season, is your horse on pasture or a grassy turnout lot at any time?

- ' Yes
- ' No

Q23. Does your horse usually receive all of its forage from pasture during grazing season?

- ' Yes
- ' No

Q24. Which of the following disciplines **do you do with your horse(s)**? (*Circle all that apply.*)

- a. Cutting
  - b. Dressage
  - c. Driving
  - d. Endurance
  - e. English
  - f. Eventing
  - g. Games
  - h. Halter
  - i. Hunter/Jumper
  - j. Ranch work
  - k. Reining
  - l. Rodeo
  - m. Team penning
  - n. Trail riding
  - o. Western pleasure
  - p. Other (*Specify*):
- 

Q25. Which of the following disciplines **would you like to learn about**? (*Circle all that apply.*)

- a. Cutting
- b. Dressage
- c. Driving
- d. Endurance
- e. English
- f. Eventing
- g. Games
- h. Halter
- i. Hunter/Jumper
- j. Ranch work
- k. Reining

Q25. Continued. (*Circle all that apply.*)

- l. Rodeo
  - m. Team penning
  - n. Trail riding
  - o. Western pleasure
  - p. Other (*Specify*):
- 

Q26. Does any of your income come from the following horse-related jobs?

(*Circle all that apply.*)

- a. Boarding
  - b. Breeding
  - c. Equine dentistry
  - d. Equine massage
  - e. Farrier
  - f. Feed/supplement sales
  - g. Hay/straw sales
  - h. Horse hauling
  - i. Horse sales
  - j. Judging
  - k. Lessons/training
  - l. Tack sales
  - m. Veterinarian
  - n. Other (*Specify*):
- 

Q27. Do you participate in community activities with your horse(s)?

' No

' Yes



If Yes, how? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Q28. Are you a member of a local horse association?

- ' No
- ' Yes



a. If yes, please list the name of each one:

---



---



---

b. How often do you attend a meeting or event of these group(s)?

---



---

Q29. Do you meet informally with other horse owners in your owners?

- ' No
- ' Yes



If yes, how often do you meet? (*Circle one.*)

- ' A few times
- ' About once per week
- ' More than once per week
- ' About once per month
- ' Two or three times per month

Q30. How many children in your household who are under 18 years of age participate in horse related activities? (*Please write in a number; if none, please write "0"*)

\_\_\_\_\_ Children

Q31. In what year were you born? **19** \_\_\_

Q32. What is your gender? (*Check one.*)

- ' Male
- ' Female

Q33. What comments do you have about educational programs that could be provided for Florida horse owners?

**Thank you very much for your help!**  
**Please fold your completed survey. Then put in the provided envelope and drop it in the mail!**

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## BIOGRAPHICAL SKETCH

Kristen M. Spahn was born on March 16, 1983, in Annapolis, Maryland. She lived in Maryland until the age of nine and then moved to Palm City, Florida. She first became interested in horses at the age of nine when she had her first riding lesson. She graduated from the University of Florida with a Bachelor of Science degree in animal sciences with an emphasis in equine sciences in 2003. Immediately after graduating, Kristen started to pursue a graduate degree at the University of Florida in Gainesville, FL. Her Master of Science focused on a major in extension education and a minor in youth development. She hopes to pursue a career as a county extension agent or extension educator within the 4-H and livestock fields.