

## **ABSTRACT**

SHAEFFER, APRIL DAWN. Educational Needs and Barriers of North Carolina Women Cattle Producers. (Under the direction of Dr. Mark Kistler).

Extension educators regularly conduct needs assessment surveys to identify their clients' educational needs and preferences. This study, a descriptive design, assessed the needs of North Carolina women cattle producers in order to determine their educational needs and barriers in making their farm more successful. The study also sought to determine the preferred method of educational delivery from on-farm workshops or via the internet along with the times that best suit their schedules for optimal learning.

A purposive sample was taken from a master list of the NC Leadership and Cattle Handling for Women Producers program. Data were collected using both mailed and emailed questionnaires following procedures recommended by Dillman (2009). One-hundred nineteen participants responded to the questionnaire, for a response rate of 60.7%. The results showed that the majority of the respondents were white females under the age of 50, with less than 5 years of cattle business experience, and at least a high school education. The North Carolina women cattle producers mainly specialized in livestock farming, and majority had fewer than 50 head of cattle on their operation. The majority of the women producers had at least a part-time or full-time off-farm work and considered themselves as a farm partner (business or domestic). Over half of the respondents (54.6%) were a member of the North Carolina Cattlemen's Association.

The respondents relied on many sources of information on beef production and management problems, but used other cattlemen as their main source of information. When

needing assistance for problems, the women cattle producers use Extension personnel and their veterinarian.

The preferred program delivery method of the women cattle producers is a seminar or workshop that was conducted in the evenings 7:00 pm to 9:00 pm on the weekdays and mornings from 9:00 am to 12:00 noon on the weekends. Over half of the women would feel somewhat to much more comfortable attending educational events designed for women farmers and find programs such as the “NC Leadership & Cattle Handling for Women Producers” program greatly valuable. Respondents stated a women’s workshop would provide a supportive environment, networking opportunity and give the respondents’ confidence and empowerment.

The top five barriers faced by the North Carolina women cattle producers is the lack of education and training, the lack of money, and gender bias, physical strength and lack of time. Close to half of the North Carolina women cattle producers felt there is a moderate to considerable problem when women producers are not taken as seriously as men, the lack of women roles in the beef industry, and the need for women liaisons or contacts for management questions. The benefits of an all-women workshop would include a supportive environment for learning, the opportunity to network with peers, and provide them with confidence and empowerment to conduct daily farm duties.

Women cattle producers’ overall knowledge and skills related to cattle management varies with their age and years of farming experience. However, women cattle producers’ overall knowledge and skills did not vary with other demographic variables such as their levels of education, whether the education was related to agriculture, years in cattle business, and whether farming was full or part-time. Analysis indicated that younger women cattle

producers had relatively higher level of overall knowledge and skills compared to older women cattle producers. Women cattle producers with more years of farming experience had greater level of overall knowledge and skills related to managing cattle operations.

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Educational Needs and Barriers of North Carolina Women Cattle Producers

by  
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## **DEDICATION**

This thesis is dedicated to my family and friends. Without them I would not be where I am today. I push myself to better the life of my family and to set a good example for my children. Greg, you have supported me in every way by lending a shoulder to cry on when I was tired and then the swift kick in the butt when I wanted to give up. You are my rock and the love of my life. Thank you for helping me to achieve my goals and being by my side when I needed you the most. To my girls, Abby and Lily, I hope you will one day understand that mommy tried to be “super mommy”. I want you to realize that you can accomplish your dreams no matter how big or small. I love both of you to the moon and back! To my mother, Ruby, you may have been the first to graduate from high school in our family, but I am the first to go on to college and then graduate school. You taught me that you can overcome life’s obstacles if your heart desires. I can never thank you enough for giving me life during your senior year in high school, especially when your life was turned upside down trying to go to school and be a single parent. To my Aunt Kay, I love you more than words can ever say. You are not only my aunt, you are my everything. You have taught me that sometimes you need to “Take the Dirt Road” and not the easy road. You have taught me that through perseverance, I can do anything. To my closest friends (Brenda, Heather, Sarah Jo, Barbara, Anna, Kristy and Carrie), thanks for lending an ear and just being there for me through thick and thin. You ladies are my biggest support group and I cannot thank you enough. Last but not least, thank you to my in-laws, Pauline and Jack, for reinforcing the “don’t worry about anything you can pray about!” Lord knows that I have prayed my little heart out.

## **BIOGRAPHY**

April Dawn Shaeffer was born and raised in Kentucky, where she lived with her mother, Ruby Scolf, and younger sister, Melissa Scolf. She became an active member of FFA and became President of the Bracken County FFA. After graduating from Bracken County High School in 1995, April went on to pursue a degree in Agriculture and Natural Resources from Berea College in Berea, Kentucky. As part of the Berea College educational experience, April worked on the college farms to fulfill her labor requirements set forth by the work study college. It was on the college farm that April met the love of her life and future husband, Greg.

Following her graduation in Spring 1999, April worked as a Research Technician in the Ruminant Nutrition department at the University of Kentucky. In the fall of 2000, April moved to Raleigh with her husband because of his pursuit of graduate studies at North Carolina State University in the Animal Science department. Although April's blood is NCSU Wolfpack red, her heart beats like a Wildcat from Kentucky. April is currently a full-time Research Specialist in the NCSU Animal Science Department. April is not only a full time employee, she is a wife of sixteen years to Gregory Shaeffer and a mother of two little girls, Abigail (8) and Lillian (2).

April has been employed by the Animal Science Department under the supervision of Dr. Matt Poore for thirteen years. It is through the Extension workshops and trainings held by Dr. Matt Poore that April found her passion for Extension programming. While working with the North Carolina cattle producers, April became observant of the needs of women

cattle producers, thus developing the program “NC Leadership and Cattle Handling for Women” in 2010.

When April is not working or being a wife and parent, she is the Vice President of the Tar River Elementary School PTSO and the Banks United Methodist Church Mini Methodists (M&Ms) leader. April has a deep love for her family, serving her community and God. April feels you have not lived life until you have lived it through the eyes of a child. In her spare time, April loves to go hunting, fishing and spends time with family and friends.

## **ACKNOWLEDGMENTS**

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## CHAPTER 1

### INTRODUCTION

For decades, the public perception of women farmers has been that they are the farmer's wife. Women were considered helpers or a behind-the-scene-sidekick to the men on the farm; helping her father, husband or son. Women were often depended upon to keep up with the farm's records, making sure bills were paid, and to keep the household running, but that role is changing as more women are taking over daily activities on the farm. Outliving fathers and husbands leaves women with the task of deciding what to do with land that has been in their families for decades (Doering & Bureau, 2013).

All over the world women contribute significantly to agricultural production (Sachs, 1996). In the United States, the face of farming has changed, most notably through the steady increase of women farm operators. According to the 2007 Census of Agriculture, women comprised 30% of all farm operators. In 2007, there were 306,209 female principal operators (14% of all operations) as compared to 237,819 in 2002. This constitutes an increase of almost 30% in five years (USDA, 2009). In some parts of the U.S., the number of farms principally operated by women is increasing at the same time that the number of male-operated farms is decreasing. The 2007 Census of Agriculture shows significant changes in the characteristics of U.S. cattle producers. The number of female producers increased 18% from 2002. Women now account for 10.4% of all cattle producers. In North Carolina, women principal operators in beef cattle ranching and farming also increased from 1,091 in 2002 to 1,270 operators in 2007 (USDA, 2009).

In addition to being principal farm operators, many women farm jointly with relatives or other partners. Compared with men, women in the United States tend to operate smaller farms and are less likely to be the primary operator of farms that produce major commodities such as dairy, cotton, corn, soybean, and hogs (USDA, 2002). Some women farmers are engaged in niche or specialty production (e.g., organic or other value-added enterprises) and direct marketing that allow them to profit on small to medium sized farms (Trauger, 2004).

Whether as primary operators or co-operators, women are engaged in a wide variety of farm tasks and decision-making activities. The percentage of farm women reporting these tasks increased between 1980 and 2001 (Willits and Jolly, 2002). Women farmers report that they care for farm animals, tend the fields (plow, plant, disk, apply fertilizer, apply herbicides, apply insecticides, harvest crops) and, do fieldwork without machinery. Farm women report that they purchase major farm supplies, supervise family members, and market products (Danes, 1996; 1997).

Although the roles of women in agriculture are on the rise, there is still a notion that farming is a male occupation and that many women are not serious farmers (Leckie, 1996; Schmitt, 1998; Pini, 2002). The general stereotype of rural women is as a subordinate, entrenched in “wife-hood” and domesticity (Little & Panelli, 2003), not necessarily the farm decision maker. The perception of women’s bodies also play a role in agriculture (Weitz, 1998). Women are not viewed as having bodies that enable them to farm due to the perception of a lack in masculine attributes of physical strength, also leading to the view that women’s work on the farm is easier than the male counterpart. (Saugers, 2002)

Other evidence that farm women perform a wide variety of farm tasks is the farm injury reports (Lee, 1992). Farm injury data from 31 states confirm that women, age 15 years or older, sustain injury or death from work in grain and dairy operations (NSC, 1982), from work with animals and in barns (Stueland, Lee, & Layde, 1991), from being hit or crushed by tractors or other farm vehicles directly or by vehicles rolling over them (Gunderson et al., 1990), and other farm fatalities (Stallones, 1990; Stueland et al., 1991).

### **Statement of the Problem**

In international development literature, improving the status of women farmers is often seen as a crucial element to improving the well-being of women, their families, and their communities. However, Rivera and Corning (1990) suggested that in comparison to male farmers, women farmers lack access to and are not well served by Extension. They suggested that specific strategies be developed to reach women farmers with educational programming including both the development of educational programs based on needs assessment data disaggregated by gender and the involvement of women farmers in Extension program development and planning.

Extension conducts periodic needs assessments among potentially new audiences, as well as, among historically typical audiences for the purpose of setting programming priorities and allocating resources. An educational need is considered a discrepancy between an audience's current status and some desired result in which education lends itself to the result (Witkin & Altshuld, 1995).

Knowles et.al., (2005) introduced the concept of learning climate, which broadened the awareness of how the environment affects learning. Creating learning environments for diverse audiences by utilizing appropriate strategies for teaching and learning is a trend in adult education (Imel, 1995). Imel also raises the issue of whether or not a special program should be created based on race and/or gender when it comes to separate approaches related to teaching and learning styles. Some adult educators support separate approaches (Imel, 1995), while others are advocates for “restructuring learning environments to empower all kinds of learners” (Kerka, 1993, p.2).

### **Purpose of the Study**

The purpose of the study is to examine the educational needs and barriers of women cattle producers in North Carolina. Through a quantitative study, the following research questions were addressed:

1. What are the demographic characteristics of women cattle producers in North Carolina?
2. What are the educational needs of women cattle producers in North Carolina?
3. What are the barriers/challenges women cattle farmers face when farming?
4. What are the preferred communication channels of educational information for women cattle producer?
5. What program delivery method(s) best suits women cattle producers in North Carolina?

6. Does knowledge and skills vary with demographic characteristics, such as farming experience, age and education?

### **Importance of the Study**

This study aimed to better understand the educational needs of women cattle producers in North Carolina and to discover barriers preventing them from having a more successful farm. Because this study focused on educational needs and barriers, the results can help organizations, including the North Carolina Cooperative Extension Service and the North Carolina Cattlemen’s Association, in developing educational programs aimed to serve this population.

### **Delimitations**

The study was delimited to the master list of women cattle producers who attended, applied or were interested in the “NC Leadership and Cattle Handling of Women Cattle Producers” program.

### **Limitations**

Due to the nature of this study, there were some inherent limitations that could not be controlled. The researcher used the contact list from the “NC Leadership and Cattle Handling for Women Producers” program in which the researcher is the program coordinator. This list could have created bias among the respondents for their educational programming preferences because they previously had contact with the North Carolina Cooperative Extension Service in some sort of capacity. Because the sample representing the

women cattle producers of North Carolina was purposive, the results can only be generalized to the study population and not to the beef cattle industry of North Carolina as a whole.

### **Assumptions**

The researcher assumed the participants of the study understood the questions being asked on the questionnaire. The researcher also assumed that they knew the answers to the questions being asked. It was furthermore assumed that the study participants answered the questions truthfully.

### **Definition of Terms**

To provide a clear understanding of the study, the following terms were defined.

Agricultural production: includes the value of all crop and livestock products originating within an area for a particular base period.

Agriculture: The science of cultivating the soils, producing crops, raising livestock, and the preparation of these products for market.

Decision-making: Refers to the making of a choice among often competing alternatives; a rational decision-making process is the process whereby the different alternatives are evaluated in function of the objectives and the most suitable option is chosen.

Family farm: A farm in which a family provides most of the labor, management decisions, and operating capital. The land may be owned, partly owned, or rented. Some economists estimate that most family farms would have annual sales between \$40,000 and \$300,000 (USDA, 1990).

Farm: Starting in 1978, the Census Bureau defined a farm as any place that has or would have had \$1,000 in gross sales of farm products.

Farm woman: Woman farming either independently or together with her spouse/partner and living on a farm.

Socioeconomic: A set of variables related to a farmer's social status (level of education, age, etc.) and economic status (land farmed, farming system, etc.)

### **Chapter Summary**

The increasing diversity of farm operators presents a new audience that Extension personnel and administration need to recognize and for whom programs should be developed according to their unique educational needs and opportunities. However, there has been limited research on the specific content, format, and context of Extension programming that will effectively meet the needs of women farmers. The study reported here contributes to filling the knowledge gap by which Taylor and Fransman (2004) suggest that programs provide different kinds of learning and encourage dialogue and exploration of different experiences are likely to create appropriate environments for women to learn. The study reported here investigates how women cattle producers in North Carolina prefer to learn, what educational topics are needed and the barriers they face that prevents them from becoming more successful cattle producers.

## CHAPTER 2

### CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

In a traditionally male dominated field, like agriculture, the concept of the “glass ceiling” or “grass ceiling” is real (Doering & Bureau, 2013). Barriers inhibiting women in nontraditional fields are complex. According to a 1999 survey by Catalyst, the barriers to women’s advancement as seen by successful women included male stereotyping and preconceptions about women, exclusion from informal networks of communication and lack of significant experience (Catalyst, 2001).

#### *Conceptual Framework*

Taylor and Fransman (2004) suggest that programs that provide different kinds of learning and that encourages dialogue provide an appropriate environment for women to learn. A set of values needed by educators to increase female participation include: valuing different kinds of learning styles and creating a “learning environment” to allow the participant’s full potential to shine, encourage dialogue and exploration, break down traditional barriers, and foster leadership (Taylor & Fransman, 2004). In order to gain a better understanding of the barriers inhibiting farm women and their educational needs, we must first understand the history of the farm family, the recent status of women in farming, Extension Service and the underserved farm women, and the barriers faced by women farmers.

### *History of the Family Farm*

Women have always been an integral part of the agricultural production system, but society in general has greatly undervalued and often completely ignored the role of women in agriculture production (Findesi & Swaminathan, 2003; Tanner, 1999). Women have been described as the “invisible work force” because they were identified as helpers and wives, not partners or farmers who contributed towards the viability of the family farm (Sachs, 1983; Findeis, 2003; Haney & Knowles, 1988). Their work toward farming largely went unnoticed although they kept the record books of the farm and participated in other farming activities. Still, society’s perception of the family farm is primarily focused on men. It is viewed that the woman’s place is best suited for nurturing, bearing of children, and the maintenance of the household, and not as part of the production activity on the farm (Tanner & Cockerill, 1999). Thus, most of the idea about the farmer being male and the woman being in the domestic setting came from the male conception of farming and the female contributions were unknown and devalued (Boserup, 1970).

It is difficult to trace changes in the work roles of farm women. Historically, the government decided not to report women’s farm works in census data collection so farm women were not registered as farmers until the early 1970s (USDA-NASS, 2002). Because scholars and the government have not considered women as farmers, there is limited information about what they did in the past. With that being said, the observed trend in history of farm women was their ability to adapt to changes in technology. This change was imperative and an economic necessity in order to sustain the family farms. In the past, farm women devoted their time to household chores, gardening, preserving food, and caring of the

family until the 1970s when increased mechanization steered them onto tractors (Haney & Knowles, 1988). Women began to gain respect during World War II. As the men left the farm to serve in the military, women had to take over some of the men's responsibilities and duties on the farm and in the workforce. Though the role of women was crucial during war time, the women's wages would only be half of their male counterparts (History.com Staff, 2010).

### *Recent Status of Women in Farming*

Although the farm sizes are smaller and have lower sales, women have been more likely to own their own operations (USDA-NASS, 1997). Most of these farm women are involved in beef cattle cow/calf operations with additional poultry, goats, or rabbit enterprise because of the flexibility of labor requirements. Many women require a farm that is compatible with off-farm work, retirement and household income.

Although traditionally men have had control of land for agriculture production, women's roles have been evolving from helpers and unpaid laborers to partners or equals both on and off the farm (Geisler et al., 1985). In 1978, about 128,000 or 5.2% of all U.S. farmers were women; whereas in 2007, there were 306,209 female principal operators or 14% of all operations (USDA, 2009). They tend to operate smaller farms and earn less than their male counterparts, and the majority of these women are older and owners of the land they farm. Such changes in agricultural production have affected the lives of millions of men and women.

Not only has the face of farming changed, so has the responsibilities of the farming women. Farm women are under a tremendous amount of stress with juggling multiple job responsibilities such as farm work, household chores and off-farm work (Giesen et al., 1989; Labao & Meyer, 1995). Some of the predictors of farm stress include general frustrations, equity between the spouses, off-farm work, life events, children on the farm, role conflict, age, and spouse support. (Gray & Lawrence, 1996). Women farmers are faced with so many challenges and time is not on their side given their many hats they must wear. Participation in off-farm work does not reduce the work load a woman does; it only disrupts and reduces her leisure time (Jayaraman et al., 2004). Walker and Walker (1986) stated higher stress scores were reported in women having too many tasks in too little time.

#### *Extension Service and Underserved Farm Women*

Morolong (2000) described Agricultural Extension as an educational process in which the farmers are equipped with information, knowledge, and skills to enable them to function effectively in the areas of production and use of farm inputs and outputs. Traditionally, the underserved populations are women, individuals, groups, populations or communities that the Extension Service has not effectively reached, supported, or promoted in the delivery of programs and services on a fair and equal basis (Liepins & Schick, 1998).

When the Morrill Act of 1862 was signed by President Lincoln, the land-grant universities and colleges were established which paved the way for adults learning about agricultural practices. In 1863, the first Farmer's Institutes held programs conducted by the experimental station staff as part of their job to extend the information of the laboratory and

experimental field available to everyone including women and youth (Jayaratne, 2013). In 1890, women speakers were taking part in the Farmer's Institute programs such as cooking schools in Minnesota. In 1885, a separate section for women was organized in Michigan and by 1889, the women of Illinois had formed a domestic science association and worked with the men in planning and carrying out the institutes which taught various aspects of agricultural practices (Seevers & Foster, 2003).

It was not until almost 20 years later in 1902 that A.B. Graham and O.J. Kern originated the first boys and girls clubs, now known as 4-H clubs. Progress was being made on agricultural education programs for the youth which then in turn attracted the attention of the mothers. Farm wives enjoyed attending farmer club and agricultural society meeting and as early as 1903, more than fifteen states were offering "institutes" especially for women. Early organizations for women were called neighborhood study clubs, homemaker clubs, farm women clubs and home bureaus (Seevers & Foster, 2003), but in 1906 a separate Women's Institute program was started and the NC Women's Institutes claim to be the first in the nation (Moore, 2009).

Pioneer Jane S. McKimmon served as the North Carolina State Director of the women's division of the Farmers Institutes from 1908-1911 and later became the first N.C. State home demonstration agent, one of only five in the nation at the time (Eure, 2009). In 1910, a Federal (USDA) sponsored program for girls was established in South Carolina called the "Girls Canning Clubs". This program taught girls about safe food preservation to help decrease incidents of food poisoning. Even though the success of the girls canning club was evident in the decrease in food poison incidents, the Federal government was reluctant to

start the “Girls Sewing Clubs” in the 1920s (Jayaratne, 2013). McKimmon opened the eyes of many county commissioners who had refused to see the necessity for such “frills” as home demonstration work when the Tomato Club Girls grew and canned quality products to sell on the market (Eure, 2009).

University researchers estimate that more than 200 million acres of farmland in the United States will change hands by 2027, with majority of the owners being women. The trend of women becoming more active in agriculture also goes hand in hand with the number of women across the country who are becoming members of different agriculture groups, such as the National FFA organization (former name Future Farmers of America), which first allowed women to join in 1969. Today, the FFA is made up of 44% women, compared to 20% in 1988 (Doering & Bureau, 2013).

Extension educators are positioned to help meet the needs of farm women, but the question remains whether specific programs should be developed for women farmers. Joseph (2013) stated Cooperative Extension Service was the most preferred communication channel and source of information for beef cattle producers of the three regions of North Carolina.

Giles (1982) stated that most Extension programs do not adequately serve women. Agricultural Extension programs tend to be oriented toward the male farm operator rather than to other members of the farm family, so while women are free to attend the programs, attendance remains predominately male (Giles, 1982). Giles further believed program direction and local traditions and customs are some of the problems that discourage female participation. A few constraints farm women face are a lack of understanding of women’s

responsibilities, abilities, and needs; restrictions in terms of family commitment; and unbalanced distribution of resources under which women must operate (USDA, 2002).

Today, many women's agricultural groups and Extension educators are helping their women break through some of the barriers through education and networking. A program called Annie's Project teaches classes in 27 states to help with the skills of problem solving, recordkeeping and decision-making. Women's agricultural groups in North Carolina are also on the rise, with programs such as the NC Leadership & Cattle Handling for Women Producers which started programs exclusively for women cattle producers in 2011 in order to teach women about safety, money management and time saving practices that can improve the bottom line of their family farms (Brown & Sorrells, 2013).

The NC Leadership & Cattle Handling for Women Producers program introductory training offers hands-on workshops on the topics of low stress animal handling and safety, reproductive technologies and calving management, proper vaccination techniques, and pasture management. The introductory workshop was developed with the goal of building the women cattle producer's self-confidence and providing skills and knowledge needed for success in a non-intimidating atmosphere (Shaeffer et. al., 2012). With the demand of hands-on workshops and program evaluation responses valuing educational opportunities with only the female gender present, a more advanced training was developed on the topics of Beef Quality Assurance (BQA, truck and trailer safety, and tractor safety (Shaeffer, et. al., 2014).

The NCAgri-Women (NCAGW) also launched its charter in August 2013. The North Carolina Agri-Women is an affiliate of American Agri-Women, representing women involved in every segment of the North Carolina food, fiber and bio-fuel industry no matter

the type, size or location within the state. NCAGW represents both organic and non-organic food production, both traditional and sustainable agriculture, and both urban and rural agriculture. The North Carolina chapter was created in response to the lack of opportunities for women in the NC agriculture community to receive professional training and network with each other. While there were numerous women's auxiliary groups within various agricultural commodity organizations, there was not an organization that unified all areas of agriculture and gave a voice to those endeavors (A. Robinette, personal communications, February 16, 2015).

Women's groups such as the NC Women of the Land Agricultural Network (NC WOLAN) and the Blue Ridge Women in Agriculture share the same mission of providing a platform to strengthen local food systems through education, support, outreach and service to women and young girls (Blue Ridge Women in Agriculture, 2013). The NC WOLAN offers "The Farm School for Women" established by Genesis Farm owner Trudy Matheny is designed to provide knowledge and experience through an educational class and hands-on experiential fieldwork, as well as, a the "GoFarm! Girls on the Farm!" for adolescent girls ages 10-13 years old established in September 2013 (NCWOLAN, 2010)

In 2013, the NC Choices' Women Working in the Meat Business workshop was designed to help women tackle real and perceived barriers in their meat business careers by offering educational, technical, and business planning assistance while building a professional network (S. Blacklin, personal communications, March 16, 2015).

When it comes to Extension programming, there are barriers and encouragers for adult participation. Those barriers to program participation are: 1) Situational barriers (cost,

time, child care, transportation, weather and competing responsibilities), 2) Institutional barriers (length of the program, attendance requirements, convenience of schedule and lack of availability of information), 3) Dispositional barriers (attitudes toward education and self-respect) 4) Socio-demographic barriers (age, sex, race, income, educational level, and geographic location) (Johnstone & Rivera, 1965; Norland, 1992). Educators should be aware of these potential barriers faced by participants and are encouraged to implement programs accordingly to overcome those barriers.” (Jayaratne, 2013).

### *Barriers Faced by Women Farmers*

Many women own and operate their own agricultural business. They do face some barriers, one of which is a sexist bias in society (Grabemeyer, 1993). This bias makes the assumption that there has to be a man running the farm and the woman is the helper. Extension personnel generally share the commonly held attitudes of society that women are mainly concerned with household responsibilities and do not contribute significantly to agriculture. Society, as a whole, has not supported women farmers because of the deep-seated perception regarding what are acceptable farm activities for women to carry out (Sachs, 1983).

During World War I from 1917 to 1919, the Woman’s Land Army of America brought city women to rural America to help cover the farm work after the men went off to war. Most of these women had no farm experience, but they were quickly taught how to plow, plant, and harvest fields with a tractor. These women, also known as farmerettes, were

paid wages equal to male farm laborers and they were also protected by an eight-hour workday (Weiss, 2009).

During World War II, women took over a more serious role in the absence of men during war time. Women were not only laborers in agriculture, they also were factory workers. Unfortunately, women were not paid a fair wage when doing the same duties as men. The Equal Pay Act of 1963 was established in order to help bridge the economic pay gap between the two sexes (History.com Staff, 2010). Although wages have improved for women, according to the National Women's Law Center, women are still not receiving fair wages. Despite the Equal Pay Act of 1963 which requires men and women to be paid the same wage for the same job duty, women still receive \$0.77 on the dollar of their male counterpart. This gender gap translates to \$10,784 annually in less pay for women and their families (National Women's Law Center, 2012).

Research conducted by Barbercheck (2009) stated problems affecting women and the success of their farms are as follows: women producers are not taken as seriously as men, isolation from other women farmers, need for child care, lack of family support for their role in managing the farm, lack of computer knowledge, women are not welcome in many agricultural groups, lack of farm background, isolation from other farmers and lack of we/email access.

Many women have experienced barriers that hinder them from becoming a successful farmer. Some of these barriers are access to credit and land. In the past, the United States Department of Agriculture had been accused of discrimination by some women farmers for denying them loans and other assistance. As a way for the USDA to help women overcome

such barriers, the Farm Service Agency (FSA) created an outreach program for women (USDA FSA, 2013).

### **Chapter Summary**

History has shown the importance of women's roles in agriculture even though the gender gap still exists today. To overcome such barriers as the gender gap and to address the significant rise in the number of women farmers, women's agricultural groups have formed. The women's agricultural groups were formed on the premise of education through hands-on training and networking. In the past, agricultural education lacked the focus of women's farms that are characterized by limited acreage, small diverse production systems and the organic and sustainable practices. Extension educators need to be more aware and have an understanding of women's responsibilities, abilities, and needs; restrictions in terms of family commitment; and unbalanced distribution of resources under which women must operate. With the structural shift in agriculture, it is important for Extension educators to provide a learning environment that is non-intimidating.

## **CHAPTER 3**

### **METHODS AND PROCEDURES**

#### **Purpose**

The researcher sought further information on the educational needs and barriers of North Carolina women cattle producers. Through a quantitative study, the following research questions were addressed:

1. What are the demographic characteristics of women cattle producers in North Carolina?
2. What are the educational needs of women cattle producers in North Carolina?
3. What barriers do women cattle producers face in preventing their farm in becoming more successful?
4. What are the preferred communication channels of educational information?
5. What program delivery best suits women cattle producers in North Carolina?
6. Does knowledge and skills vary with demographic characteristics, such as farming experience, age and education?

#### **Research Design**

This was a descriptive survey research study. It was designed to assess the educational needs and barriers of North Carolina women cattle producers, as well as their preferred educational delivery methods. The method of data collection was a questionnaire that was either mailed or emailed via Survey Monkey.

## **Population and Sample**

The population for this study was women beef cattle farmers from North Carolina. The researcher chose to use the list of women participants to the “NC Leadership & Cattle Handling for Women Cattle Producers” program. The “NC Leadership & Cattle Handling for Women Producers” program was developed in 2010 by the researcher. The master list includes women who have attended, applied, or were interested in the women’s cattle handling workshops conducted by the North Carolina State University and North Carolina Department of Agriculture personnel.

The sampling frame was obtained by the researcher’s mailing list from the “NC Leadership & Cattle Handling Program for Women Producers. After the contact list was compiled, the total population sample size was 196.

When conducting survey research, there are four sources of error that can affect the quality of the research (Dillman, Christan, & Smyth, 2009). These sources of error are sampling error, coverage error, measurement error, and non-response error. Sampling error cannot be controlled and will always be present when conducting sample surveys (Dillman et al., 2009). Coverage error can occur when the mode of survey questionnaire distribution does not include the whole population (Dillman et al., 2009), such as sending a survey via e-mail when only half of the population has access to an email address or the internet. Measurement error is usually due to poor question wording, causing a respondent to respond inaccurately or imprecisely (Dillman et al., 2009). Reducing the source of measurement error requires that the researcher use an instrument that is valid and reliable (Briers, Linder, & Murphy, 2001). To control for measurement error, the researcher conducted a pilot study.

The pilot study was administered on October 30, 2015 to a list of 18 women cattle producers from Georgia provided by a University of Georgia Extension Specialist. The Georgia women cattle producers were contacted by the Georgia Specialist before being asked by the researcher to fill out the questionnaire via Survey Monkey. As suggested by Gall, Borg and Gall (1996), face and content validity were addressed by a panel of experts. These experts were four Extension Specialists with North Carolina State University Cooperative Extension who were located on campus and had knowledge and experience with survey research and the cattle industry in North Carolina.

Non-response error occurs when those who do not respond to the questionnaire are different from those who did respond (Dillman et al., 2009). There are several ways to handle non-response error (Briers, Linder, & Murphy, 2001). These methods include ignoring the non-respondents, comparing respondents to the population, comparing respondents to non-respondents, comparing early to late respondents, and “double-dipping” non-respondents. To control for this error, the researcher compared early respondents to late respondents based upon key questions. A respondent was considered early if they responded prior to December 15, 2015 and late if they responded after that date. The key questions used to compare early to late respondents were years of experience in the cattle industry, number of stockers grazed or backgrounded annually and age. An independent t- test was performed comparing the data which showed no significant difference between the two groups of respondents. Because of this, the results can be generalized to the whole population chosen for this study.

## **Instrumentation**

The researcher developed the instrumentation used for the study (Appendix A). The instrument was developed using a number of previously designed instruments (Kistler, 2002, Barbercheck, 2009, Joseph, 2013). The researcher received written or verbal consent to utilize the instruments.

The survey instrument was developed to determine the educational needs and barriers of North Carolina women cattle producers. The survey instrument contained close-ended and open-ended questions. The instrument consisted of three major sections: scale for recording competency levels, training needs, and educational resources, scale for recording barriers that limited the ability to become more successful, and questions for recording demographic information.

The content validity was established by using a panel of experts in the Extension education field. The panel of experts was given a copy of the instrument and was asked to comment on its contents. Experts' comments and suggestions were incorporated into the final instrument. The final instrument was submitted to the North Carolina State University Institutional Review Board (IRB) and received approval for the study.

The instrument was pilot tested with 18 Georgia women cattle producers. The pilot study participants were given the link to the instrument, and the response rate was 50% with two email requests. The purpose of pilot test was to identify face validity and determine the reliability of the instrument was established with a Cronbach's Alpha of 0.89.

The first section contained questions related to production practices and the knowledge and skills of the respondents. The first open-ended question aimed to determine

the three most crucial skills or pieces of knowledge the respondents would like to acquire to enhance their farm. The second question asked them to rate, on a four-point Likert scale, their knowledge and skill level on 23 categories of production practices. The Likert scale ranged from 1 “Never thought about” to 4 “Considerable”. Question three asked for the respondents to check off additional training needs for various production practices. Questions four and five listed several options for educational events and times and asked respondents to select what educational event would be best for them within the next two years. Question six asked for information related to the respondents’ past attendance of educational workshops or seminars held by different agencies. Questions seven through ten attempted to determine where respondents obtain information on beef production and management problems, if those sources of information were useful, and their level of membership in the Cattlemen’s Association (county, state, national).

In the second section, respondents were asked about barriers preventing them from being more successful. Question eleven asked respondents to rate, on a four-point Likert scale ranging from 1 “Never thought about” to 4 “Considerable” various categories of barriers women face and to what extent these barriers may have been problems for the respondents. Question twelve asked to rate on a scale of 1 to 3 with 1 “It Doesn’t Matter to Me” and 3 “Much More Comfortable” the extent to which the respondent might be more comfortable attending educational events specifically designed for women farmers. Questions thirteen through sixteen asked about their attendance to the NC Leadership & Cattle Handling workshop along with their membership to different cattlemen’s organizations. Question seventeen asked for the respondents to select which workshop

format they prefer. These formats were ranked with the following: Women Only, Open to Men & Women, Either, or Would Not Attend. Question eighteen was an open-ended question asking participants to identify what, if any, benefits they could see a women's workshop providing. Open-ended question nineteen asked respondents to describe the three barriers faced by them as a woman, that prevented their farm from becoming more successful.

The third and last section consisted of nineteen demographic questions. Question twenty asked the participant to identify themselves as either a sole operator, one of main operators, farm partner (business or domestic), agricultural helper, business manager or not involved in the operation. Question twenty-one and twenty-two asked the respondent to indicate their main farm products choosing from livestock (i.e. meat and fiber), fruit and vegetable, row crop (i.e. corn and wheat), or dairy and the use of different marketing strategies they have used in the past two years (direct, retail, wholesale, subscription or community supported agriculture. Questions twenty-three and twenty-four gathered further information on the respondents and the spouse/partner's off farm work (no off-farm work, full-time off-farm work, or part-time work). Questions twenty-five and twenty-six asked if the respondent had any dependents, the number of dependents and the age(s) of the dependents. Questions twenty-eight and twenty-nine asked the importance of generating enough farm income so that off-farm work is not necessary and the importance of choosing practices to reduce costs on a Likert scale for 1 to 4, with 1 "Not Important" to 4 "Very Important". Questions thirty and thirty-one asked the participants how long they have been farming and the number of years they have been in the cattle business. In order for the

researcher to gain information on the educational needs of various topics throughout the states, the respondents were asked what county they reside in question thirty-two. Information on the number of breeding females in their herd and number of head of stockers grazed or backgrounded annually was asked within questions thirty-three and thirty-four. Questions thirty-five and thirty-six related to the participants highest level of education (some high school, high school graduate/GED, vocational/technical degree, some college, college graduate (e.g., B.S.), post graduate (Master's or Doctoral degree), professional degree (e.g., DVM, JD, MD) and if the respondent's education was related to agriculture. Questions thirty-seven and thirty-eight gained further insight into the age (less than 30, 30-4-, 41-50, 51-60, above 60) and how the respondent identify themselves regarding race (American Indian or Alaska Native, Asian, Black or African American, African American/non-Hispanic, Hispanic/Non-White, Native Hawaiian/other Pacific Islander or White/Caucasian). The last question of the questionnaire was an open-ended question which allowed the respondents to provide any additional comments or suggestions to improve educational programs for cattlemen.

### **Data Collection**

Procedures outlined in Dillman's Tailored Design Method (Dillman et al., 2009) for mail surveys were used for both the emailed and mailed survey implementation. Dillman's (2009) method calls for multiple contacts of the participants in order to increase the number of response rate. The first form of contact is to notify the participants that they were selected to participate, and that they will be receiving a questionnaire, then a few days later, the

questionnaire is sent, followed by a thank you/reminder letter a week later. A replacement questionnaire or reminder is sent 2 to 4 weeks after the reminder letter, urging the participants to respond. The final contact happens 2 to 4 weeks after the second questionnaire was sent and should be made by a different mode of delivery than the previous efforts. The researcher also provided an incentive (L.L. Bean Large Hammock retailing \$119) in order to increase the response rate. The incentive was only offered the first two weeks after sending the questionnaire.

In the winter of 2015, data were collected using an online survey via Survey Monkey. An email sent by the researcher on December 1, 2015 which informed the participants of the purpose of the study and the survey link. Consent was acknowledged by the completion of the survey. The participants were given two weeks to respond. After two weeks, a follow-up e-mail was sent on December 15, 2014 with the survey link asking the women to respond to the survey within a week. A second follow-up email was sent to all of the non-respondents in the sample after the week deadline for additional responses on January 5, 2015. Data collection ended on January 25, 2015. A total response rate of 63.78% was obtained with 125 responses, of those 125, 119 were usable, making the usable response rate 60.71%.

Linder, Murphy, and Briers (2001) suggest that procedures for handling nonresponse issues need to be implemented when the response rate is less than 85%. A comparison of early to late respondents was used in this study to address nonresponse error. According to Linder et al. (2001), operationally late respondents are those who respond to a survey during the last set of successive follow-up contacts. Early and late respondents were compared for major variables using independent t-test, and found that there were no significant differences

between early and late respondents. Therefore, the finding of this study can be generalized to the target population.

### **Data Analysis**

Data were exported from SuveyMonkey.com to Microsoft Excel for content analysis of open-ended responses and Statistical Package for the Social Sciences (SPSS) Program 22 for Windows was used for data analysis. The open-ended question responses were placed in categories and a peer debrief was conducted with an Extension educator. A dependability audit was established (see appendices for categories and open-ended responses). The researcher's biases were established at the onset of the study; however, those biases can never fully be removed. Ordinal data were collected, with items listed in a ranked system ranging from 1-4. Descriptive statistics were used to analyze the data collected from the study. Data were summarized using frequencies, percentages, means, and standard deviations. A regression analysis was used to determine the relationship between variables.

### **Chapter Summary**

The purpose of this study was to seek further information on the educational needs and barriers of North Carolina women cattle producers. A quantitative study was done using survey data to answer the research questions. Dillman's Tailored Design Method for using surveys was used. The data described using descriptive statistics, content analysis and regression analysis.

## CHAPTER 4

### FINDINGS

The researcher desired to seek further information on the educational needs and barriers of North Carolina women cattle producers. Through a quantitative study, the following research questions were addressed:

1. What are the demographic characteristics of women cattle producers in North Carolina?
2. What are the educational needs of women cattle producers in North Carolina?
3. What are the barriers/challenges women cattle farmers face when farming?
4. What are the preferred communication channels of educational information?
5. What program delivery best suits women cattle producers in North Carolina?
6. Does training needs vary with demographic characteristics, such as cattle experience, age and education?

The results for this study was reported based upon each research question to be answered.

#### *1. What are the demographic characteristics of women cattle producers in North Carolina?*

Table 1 categorizes the respondents based on their age, in years. Over half of the respondents are under the age of 50, 57.4% (n=66). Although majority of the respondents were under the age of 50, there was also a 20% decline in the age after the age of 60. The majority of the women farmers, 97.4% (n=112), were White or Caucasian. The other

ethnicities represented 2.7% ( $n=3$ ) African American, Hispanic (non-white), and American Indian. The distribution of respondents who completed the questionnaire are demonstrated by a circle within their county of residence in North Carolina is shown in Figure 1.

Table 1

*Age of North Carolina Women Cattle Producers (N=115)*

Age Category	N	%
Less than 30 years	14	12.2
30-40 years	25	21.7
41-50 years	27	23.5
51-60 years	36	31.3
Over 60 years	13	11.3

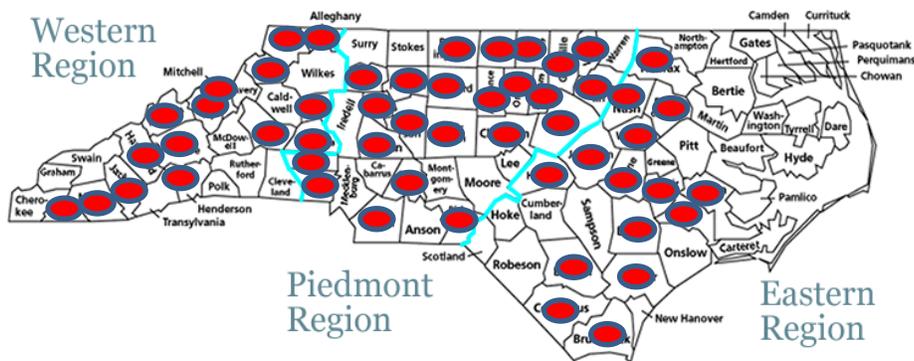


Figure 1. Distribution of North Carolina Women Cattle Producer Respondents by County.

Table 2 characterizes the highest level of education obtained by respondents. Over half of the respondents 67.7% ( $n=78$ ) graduated with a B.S. or higher degree. Respondents obtaining a degree in agriculture resulted in only 29.6% ( $n=34$ ) while others obtained a non-agricultural degree 70.4% ( $n=81$ ).

Table 2

*Education Level of Respondents (N=118)*

<b>Level of Education</b>	<b><i>n</i></b>	<b>%</b>
Some High School	1	0.9
High School graduate/GED	6	5.2
Vocational/ Technical	9	7.8
Some College	22	19.1
College Graduate (e.g., B.S.)	43	37.3
Post Graduate (Master's or Doctoral degree)	32	27.8
Professional degree (e.g., DVM, JD, MD)	3	2.6
Other (RN, AAS)	2	1.6

Table 3 summarizes the amount of off-farm work performed by the women cattle producers. Over half (67.8%,  $n=78$ ) of the respondents performed either a full-time or part-time occupation outside of the farm duties. Only 32.2% ( $n=37$ ) had no off-farm work.

Table 3

*Extent of Respondents' Off-Farm Work (N=115)*

<b>Time of Off-Farm Work</b>	<b>N</b>	<b>%</b>
No Off-Farm Work	37	32.2
Part-time Off-Farm Work	32	27.8
Full-Time Off-Farm Work	46	40.0

Table 4 summarizes the amount of off-farm work performed by the spouse/partner of the women cattle producers. Over half (63.5%,  $n=73$ ) of the respondent's spouses/partner performed either a full-time or part-time occupation outside of the farm duties. Only 24.3% ( $n=28$ ) had no off-farm work and 12.2% ( $n=14$ ) did not have a spouse or partner.

Table 4

*Extent of Spouse/Partner's Off-Farm Work (N=115)*

<b>Spouse Off-Farm Work</b>	<b>n</b>	<b>Percentage</b>
No-Off Farm Work	28	24.3%
Full-Time Off-Farm Work	60	52.2%
Part-time Off-Farm Work	13	11.3%
I do not have a spouse/partner	14	12.2%

Table 5 characterizes the number of respondents having a dependent at home. Over half (58.3%, n=67) of the respondents did not have a dependent in their household. Respondents having dependents (41.7%, n=48) had a range of 0-6 dependents ( $M=1$ ,  $SD=1.2$ )

Table 5

*Respondents Having Household Dependents (N=119)*

<b>Dependents</b>	<b><i>n</i></b>	<b>%</b>
No	67	58.3
Yes	48	41.7

Table 6 summarizes the on-farm role of the North Carolina women cattle producers. The majority of the women cattle producers, 52.9% ( $n=63$ ), categorize themselves as a domestic or business farm partner. Roles described as sole operator, 16.0% ( $n=19$ ), one of main operators (24.4%,  $n=29$ ), agricultural helper, 13.4% ( $n=16$ ) and business manager, 5.9% ( $n=7$ ), account for another 59%. Cattle women who are not involved in a farm operation account for 5.9% ( $n=7$ ).

Table 6

*Identity of Role on the Farm (N=119)*

<b>Role Identification</b>	<b><i>n</i></b>	<b>%</b>
Sole Operator	19	16.0
One of Main Operators	29	24.4
Farm Partner (business or domestic)	63	52.9
Agricultural Helper	16	13.4
Business Manager	7	5.9
Not Involved in the Operation	7	5.9

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

Table 7 categorizes the respondents based on their years of cattle business experience, in years. Nearly half (44.3%, n=51) of the respondents have five years or less experience in the cattle business, followed by 25.2% (n=29) having six to 10 years of experience. Only 20.9% (n=35) had over 11 years of experience in the cattle business.

Table 7

*Years of Cattle Business Experience (N=115)*

<b>Years of Experience</b>	<b><i>n</i></b>	<b>%</b>
5 years or less	51	44.3
6-10 years	29	25.2
11-15 years	10	8.7
16.-20 years	7	6.1
21-25 years	7	6.1
26 years or more	11	9.6

Table 8 summarizes the respondent's level of membership in a county, state, or national cattlemen's association. Close to half 42.9% ( $n=51$ ) of the women cattle producers are members within their county cattlemen's association while over half of the respondents 54.6% ( $n=65$ ) are involved with the North Carolina Cattlemen's Association. Respondents who are members at the national level account for 16.8% ( $n=20$ ). Only 26.8% ( $n=32$ ) of the respondents were not a member in any cattlemen's organization.

Table 8

*Level of Membership in the Cattlemen's Associations (N=119)*

<b>Membership</b>	<b><i>n</i></b>	<b>%</b>
County Cattlemen's Association	51	42.9
State Cattlemen's Association	65	54.6
National Cattlemen's Beef Association	20	16.8
None of the above	32	26.8
Other (Breed Associations)	7	5.6

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

Table 9 characterizes the women cattle producers based upon their main farm products. Livestock (i.e. meat and fiber) were the main farm product with 88.3% ( $n=105$ ). Other main farm products such as fruit and vegetable (14.4%,  $n=17$ ), row crop (6.7%,  $n=8$ ), hay production (4.1%,  $n=5$ ), and dairy (1.8%,  $n=2$ ) accounted for 27% of the respondent's

main farm products. The other 10.4% (n=10.4), accounted for those who have agri-tourism, grow herbs, and do not currently own a farm.

Table 9

*Respondents' Main Farm Product(s) (N=119)*

<b>Farm Product</b>	<b><i>n</i></b>	<b>%</b>
Livestock (i.e. meat and fiber)	105	88.3
Fruit and Vegetable	17	14.4
Other (Agro-tourism, Herbs, No Farm Yet)	13	10.4
Row Crop (i.e. corn, wheat)	8	6.7
Hay Production	5	4.1
Dairy	2	1.8

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

Table 10 summarizes the respondent's use of marketing strategies for their farm product(s) within the last two years. Majority of the women cattle producers used either direct marketing (52.3%, n=62) or wholesale marketing (40.4%, n=48). Other marketing strategies used, such as community supported agriculture (17.7%, n=21), retail (15.2%, n=18), subscription (12.6%, n=15), live auction (8.0%, n=10) account for another 65.5% of the different marketing strategies used by the respondents. Only 7.2% (n=9), have not started marketing their farm product(s).

Table 10

*Marketing Strategies of Farm Product(s) Used Within the Last Two Years*

<b>Marketing Strategy</b>	<b><i>n</i></b>	<b>%</b>
Direct (farmers' market, farm stand)	62	52.3
Wholesale (cooperatives, processors, wholesalers)	48	40.4
Community Supported Agriculture (farm share)	21	17.7
Retail (restaurants, grocers)	18	15.2
Subscription (pre-order)	15	12.6
Other (private sales and social media)	15	12.0
Live Auction (stockyard, telle-market)	10	8.0
None or N/A (no farm or not selling)	9	7.2

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

Table 11 summarizes the producers based on the number of head of beef breeding females and/or stockers that are grazed or backgrounded annually. These data were used as indicators of operation size. In both number of breeding females and number of cattle backgrounded annually, the majority of the farms had between 1 and 49 head of cattle, 70.4% (n=81) and 47.8% (n=55), respectively. The number of head of breeding females and stockers grazed or backgrounded per farm did not exceed 499 head. Only 13.0% (n=15) of respondents indicated they had not breeding females, while 42.6% (n=49) stated they did not background cattle.

Table 11

*Number of Head of Beef Breeding Females and/or Stockers Grazed or Backgrounded Annually by North Carolina Women Cattle Producers (N=115)*

Number of Head of Cattle	Breeding Females		Stocker Grazed/Backgrounded	
	<i>n</i>	%	<i>n</i>	%
None	15	13.0	49	42.6
1-49	81	70.4	55	47.8
50-99	9	7.8	3	2.6
100-249	9	7.8	6	5.2
250-499	1	0.9	2	1.7
500-999	0	0.0	0	0.0
1000 +	0	0.0	0	0.0

2. *What are the educational needs of women cattle producers in North Carolina?*

Table 12 describes the three most crucial skills or pieces of knowledge women cattle producers stated they would like to acquire to run their farm. Business management (30.0%, n=105) was described as the most crucial piece of knowledge needed to run a farm.

Respondents stated forages/pasture management (14.9%, n=52) as the second most crucial piece of knowledge while herd health (12.3%, n=43) ranked third on the list.

Table 12

*Knowledge and Skills Women Cattle Producers Would Like To Acquire To Run Their Farm*

<b>Type of Knowledge/Skill</b>	<b><i>n</i></b>	<b>%</b>
Business Management	105	30.0
Forages/Pasture Management	52	14.9
Herd Health	43	12.3
Marketing	35	10.0
Reproduction	29	8.3
Farm Equipment/Structures	24	6.9
Animal Handling/ Safety	23	6.6
Cattle Nutrition	20	5.7
Labor Management & Communication	8	2.3
Legislation & Regulations	7	2.0
Cattle Management	3	0.9
Time Management	2	0.6
Nutrition	1	0.3

Table 13 summarized the respondent's current knowledge and skill level of different cattle topics. The topic areas were categorized according to respondents' open-ended answers (See Appendix F). The respondents have minimal knowledge of the following topics: farm estate planning (53.8%,  $n=64$ ), marketing products for direct meat (44.5%,  $n=53$ ), labor management (31.1%,  $n=37$ ), increasing productivity/fertility in cattle (34.5%,  $n=41$ ), genetic selection (44.5%,  $n=53$ ), building infrastructure such as barns (39.5%,  $n=47$ ), operating equipment (33.6%,  $n=40$ ), maintaining equipment (48.7%,  $n=58$ ), working with local government (43.7%,  $n=52$ ) and keeping up with legislation that affects their farm or lifestyle (41.2%,  $n=49$ ). On the other hand, half of the respondents had the considerable

knowledge and skill of communicating with their domestic partner and/or family with 52.1%  
(*n*=62).

Table 13

*Current Knowledge and Skill Level of Respondents (n=119)*

Topic	Never thought about it		Minimal		Moderate		Considerable	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Managing Finances	1	0.8	18	15.1	54	45.4	46	38.7
Using Computers for Business Purposes	1	0.8	16	14.3	47	39.5	55	46.2
Farm Estate Planning	12	10.1	64	53.8	29	24.4	14	11.8
Marketing Products (Live Animal Market)	3	2.5	41	34.5	47	39.5	28	23.5
Marketing Products (Direct Meat Market)	9	7.6	53	44.5	34	28.6	23	19.3
Labor Management	20	16.8	37	31.1	37	31.1	25	21.0
Communicating with Farm Workers	25	21.0	28	23.5	33	27.7	33	27.7
Keeping Workers/Family Safe	1	0.8	12	10.1	48	40.3	58	48.7
Communicating (Partner/Family)	3	2.5	11	9.2	43	36.1	62	52.1
Calving Management	0	0.0	25	21.0	55	46.2	39	32.8
Maintaining Herd Health	0	0.0	23	19.3	50	42.0	46	38.7
Increasing Productivity/Fertility (Repro)	1	0.8	41	34.5	43	36.1	34	28.6
Genetic Selection	2	1.7	53	44.5	40	33.6	24	20.2
Cattle Nutrition	1	0.8	24	20.2	57	47.9	37	31.1
Animal Welfare Practices	3	2.5	19	16.0	45	37.8	52	43.7
Proper Vaccination Techniques (BQA)	2	1.7	20	16.8	45	37.8	52	43.7
Pasture Management	1	0.8	24	20.2	55	46.2	39	32.8
Increasing Productivity/Fertility (Crops)	1	0.8	39	32.8	51	42.9	28	23.5
Building Infrastructure (Barns)	1	0.8	47	39.5	43	36.1	28	23.5
Maintaining Equipment (Tractors)	1	0.8	58	48.7	35	29.4	25	21.0
Working with Local Government	8	6.7	52	43.7	42	35.3	17	14.3
Keeping up with legislation	5	4.2	49	41.2	42	35.3	23	19.3

Table 14 summarizes the additional training needs on subject matter topics selected by the North Carolina women cattle producers. The top five subject matter training needs are as follows: maintaining herd health (64.7%,  $n=77$ ), cattle nutrition (64.7%,  $n=77$ ), increasing productivity/fertility of cattle (59.7%,  $n=71$ ), pasture management (57.1%,  $n=68$ ) and genetic selection (54.6%,  $n=65$ ).

Table 14

*Respondents Would Like Additional Training on the Subject Matter*

<b>Subject Matter</b>	<b><i>n</i></b>	<b>%</b>
Maintaining Herd Health	77	64.7
Cattle Nutrition	77	64.7
Increasing Productivity/ Fertility (Reproduction, Breeding Programs)	71	59.7
Pasture Management	68	57.1
Genetic Selection (EPDs, herd records, genetic testing)	65	54.6
Increasing Productivity/ Fertility (Crops and Pastures)	64	53.8
Calving Management	63	52.9
Managing Finances	62	52.1
Marketing Products (Direct Meat Market)	60	50.4
Marketing Products (Live Animal Market)	59	49.6
Keeping up with Legislation that affects your farm or lifestyle	59	49.6
Farm Estate Planning	56	47.1
Using Computers for Business Purposes (finances, records)	52	43.6
Building Infrastructure (such as barns, tractors, etc.)	51	42.9
Maintaining Equipment (Tractors, bushhog, etc.)	51	42.9
Operating Equipment (Tractors, bushhog, etc.)	40	33.6
Working with Local Government	38	31.9
Animal Welfare Practices (Low Stress Animal Handling)	37	31.1
Proper Vaccination Techniques (Beef Quality Assurance)	34	28.6
Keeping Workers/ Family Safe	26	21.8
Communicating (Domestic Partner/ Family)	20	16.8
Labor Management	19	16.0
Communicating with Farm Workers	10	8.4
Other (Acquiring land, castration)	6	4.8

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

*3. What are the barriers/challenges women cattle farmers face when farming?*

Table 15 describes the top three barriers respondents stated they face as a woman in agriculture. The top three barriers faced by the North Carolina women cattle producer is the lack of education and training (20.4%, n=68). Other barriers include the lack of money

(11.7%, n=39), and gender bias (8.7%, n=29). See Appendix G for detail descriptions of the barriers listed by respondents and categories assigned to the open-ended responses.

Table 15

*Barriers Respondents Face as a Woman.*

<b>Barriers</b>	<b><i>n</i></b>	<b>%</b>
Education & Training	68	20.4
Money	39	11.7
Gender Bias	29	8.7
Physical Strength	26	7.8
Time	23	6.9
Experience & Self Confidence	21	6.3
Lack of Equipment Skills	20	6.0
Family & Husband	16	4.8
Labor	10	3.0
Networking	8	2.4
Off Farm Job	6	1.8
Farm (Do not own a farm)	1	0.3

Table 16 summarizes the problems women cattle producer’s face that are preventing them from becoming more successful. Moderate to considerable problems faced by the respondents were the sense of isolation from other women (32.4%, n=36), sense of isolation from other farmers (32.1%, n=36), lack of farming background (40.1%, n=45), sense that women producers are not taken as seriously as men (47.8%, n=54), lack of women’s roles in the beef industry (42.8%, n=42.8) and the need for women liaisons or contacts for

management questions (46%, n=52). Although these problems were moderate to considerable, respondent's had the highest ranking of "not at all a problem" in all of the categories except for the problem that women producers are not taken as seriously as men 29.2% (n=32) as a moderate problem and the lack of women roles in the beef industry as a minimal problem (30.9%, n=34).

Table 16

*Problems Preventing Women Cattle Producers in Becoming More Successful*

<b>Problem</b>	<b>Not at all</b>		<b>Minimal</b>		<b>Moderate</b>		<b>Considerable</b>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Sense of isolation from other women	41	36.9	34	30.6	29	26.1	07	6.3
Sense of isolation from other farmers	39	34.8	37	33.0	27	24.1	09	8.0
Need for child care	89	80.9	11	10.0	03	2.7	07	6.4
Lack of computer knowledge	75	66.4	26	23.0	06	5.3	06	5.3
Lack of web/email access	88	79.3	17	15.3	06	5.4	00	0.0
Lack of family support (for your role in managing the farm)	73	64.0	24	21.1	10	8.8	07	6.1
Lack of farming background	39	34.8	28	25.0	23	20.5	22	19.6
Sense that women are not welcome (in ag groups, farm supply stores, etc.)	45	40.2	36	32.1	20	17.9	11	9.8
Sense that women producers are not taken as seriously as men	30	26.5	29	25.7	33	29.2	21	18.6
Lack of women role in the beef industry	29	26.4	34	30.9	28	25.5	19	17.3
Need for women liaisons or contacts for management questions	31	27.4	30	26.5	22	19.5	30	26.5

4. *What are the preferred communication channels of educational information?*

Table 17 characterizes the sources of information women cattle producer's use for beef production and management problems. The highest ranked source of information used by respondent's was the use of acquiring information from other cattlemen (78.2%,  $n=93$ ). Closely ranked by seeking information from their peers were the use of Extension personnel (69.7%,  $n=83$ ) and their veterinarian (65.5%,  $n=78$ ). Other than using personal contact, respondent's used the Internet (61.3%,  $n=73$ ) to find information regarding beef production and management questions.

Table 17

*Sources of Information on Beef Production and Management Problems*

<b>Source of Information</b>	<b><i>n</i></b>	<b>%</b>
Other Cattlemen	93	78.2
County Extension Agent and/or Specialist	83	69.7
Veterinarian	78	65.5
Internet (WWW-World Wide Web)	73	61.3
Magazines	47	39.5
Fertilizer, feed, animal health, equipment, or other dealers/salesmen	41	34.5
Extension Publications	40	33.6
Close Relatives (father, brother, etc.)	39	32.8
Farm & Ranch Organizations	38	31.9
USDA organizations (e.g. NRCS, Soil & Water, FSA)	37	31.1
Private Consultant	5	4.2
Other (Books)	4	3.2

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

Table 18 summarizes the sources of assistance used by respondents within the past two years for their cattle operation. The top ranked source of information assistance used by the women cattle producers was Extension personnel (79.8%, n=95) followed by their veterinarian (77.3%, n=92).

Table 18

*Sources of Assistance Respondents' Used Within the Past Two Years*

<b>Source of Assistance</b>	<b><i>n</i></b>	<b>%</b>
Extension or University sources	95	79.8
Veterinarian	92	77.3
USDA organizations (e.g., NRCS, Soil & Water, FSA)	67	56.3
Commodity Organization (Cattlemen's Association)	65	54.6
Farm Supply Store	62	52.1
Fertilizer, feed, animal health, equipment, or other dealers/salesmen	54	45.4
Private Consultant	12	10.0
Other (friends, other cattlemen)	2	1.6

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

Table 19 summarizes the usefulness of various sources of assistance. Overall, respondent’s stated Extension or a university sources of information (67.5%,  $n=77$ ) was “very useful”. Veterinarians ranked “very useful” with 65.7% ( $n=69$ ). The USDA organizations, such as Natural Resource Conservation Service and Soil & Water (37.6%,  $n=38$ ) were also “very useful”. Although the Extension or University source ranked “very useful”, some respondents stated the organization was “limited” to “not useful” (4.4%,  $n=5$ ).

Table 19

*Sources of Assistance Used By Respondents and Their Usefulness*

Source of Assistance	Not Useful		Limited Usefulness		Somewhat Useful		Very Useful		N/A	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Extension or University Source	2	1.8	3	2.6	18	15.8	77	67.5	14	12.3
USDA organizations (e.g. NRCS, Soil & Water, FSA)	2	2.0	4	4.0	30	29.7	38	37.6	27	26.7
Commodity Organization (e.g., Cattlemen’s Association)	0	0.0	9	7.6	35	35.0	31	31.0	25	25.0
Farm Supply Store	0	0.0	15	15.3	37	37.8	16	16.3	30	30.6
Veterinarian	1	1.0	4	3.8	19	18.1	69	65.7	12	11.4
Private Consultant	0	0.0	9	9.7	30	32.3	16	17.2	38	40.9
Fertilizer, feed, animal health, equipment, or other dealers/salesmen	1	1.3	1	1.3	8	10.3	8	10.3	60	76.9

5. *What program delivery is preferred by women cattle producers in North Carolina?*

Table 20 summarizes the type of educational program delivery North Carolina cattle women prefer within the next two years. Of the respondents, 89.9% ( $n=107$ ) would like to attend a seminar or workshop, followed by on-farm demonstrations with 82.4% ( $n=98$ ).

Table 20

*Educational Programs Preferred By Respondents Within the Next Two Years (N=119)*

<b>Type of Program</b>	<b><i>n</i></b>	<b>%</b>
Seminars/ Workshops	107	89.9
On-Farm Demonstrations at a local farm	98	82.4
Learn from Home (Internet or web based)	64	53.8
Presentations during regular meetings or organizations (to which you belong)	50	42.0

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

Table 21 indicates respondent’s preferred time and day to attend educational programs. The best time for an educational program on a weekday would be in the evening from 7:00 to 9:00pm (49.6%,  $n=59$ ) and on the weekend from 9 am to 12:00 noon (50.4%,  $n=60$ ).

Table 21

*Respondents Preferred Time and Day to Attend Educational Programs (N=119)*

Time of Day	Weekdays		Weekends	
	<i>n</i>	%	<i>n</i>	%
Morning (9:00 am - 12:00 noon)	42	35.3	60	50.4
Mid-day (11:00 am – 2:00 pm)	45	37.8	57	47.9
Afternoon (1:00 pm – 4:00 pm)	46	38.7	49	41.2
Evening (7:00 pm – 9:00 pm)	59	49.6	22	18.5

*Note: Respondents could check all that apply, therefore the percentage total could be greater than 100*

Table 22 indicates the educational workshops or seminars attended by the respondents. Over half of the respondents (73.1%,  $n=87$ ) indicated they have attended a local county Extension educational seminar and similarly, 65.5% ( $n=78$ ) of the women producers have attended a local county Extension field day. Of the respondent’s, 2.5% ( $n=3$ ) have not attended an educational program.

Table 22

*Educational Workshops or Seminars Attended by North Carolina Women Cattle Producers (N=119)*

<b>Educational Program</b>	<b><i>n</i></b>	<b>%</b>
Local County Extension seminars/workshops	87	73.1
Local County Extension field days/ demonstrations	78	65.5
Area research & Extension center field days, meetings, etc.	59	49.6
North Carolina Beef Quality Assurance Program	57	47.9
Farm & Ranch organization seminars, conventions, etc.	53	44.5
Fertilizer, feed, animal health, equipment dealer/sales sponsored programs/meetings	51	42.9
USDA organization (e.g., NRCS, FSA) programs, seminars	41	34.5
Veterinarian sponsored/conducted events	37	31.1
Farm Credit/financial organization programs	24	20.2
Private Consultant seminars/workshops	12	10.1
Other (Annie's Project, Breed Association meetings)	12	9.6
None	3	2.5

Table 23 indicates the respondent's comfort level of attending events designed for women farmers. Of the respondent's, 29.4% ( $n=35$ ) stated they would feel "much more comfortable" and 25.2% ( $n=30$ ) would be "somewhat more comfortable" attending an educational event designed for women farmers. A little under half of the respondents (43.7%,  $n=52$ ) stated it "did not matter".

Table 23

*Respondents' Comfort Level in Attending Educational Events Designed for Women Farmers (N=117)*

<b>Comfort Level</b>	<b><i>n</i></b>	<b>%</b>
Much more comfortable	35	29.9
Somewhat more comfortable	30	25.6
Doesn't matter to me	52	44.4

Table 24 indicates the value of a “NC Leadership & Cattle Handling for Women Producers” workshop. Over half of the respondents (64.7%,  $n=77$ ), felt the workshop would be of “great value” with another 21.8% ( $n=26$ ) stating this program would be fairly valuable. Of these respondents, 59.0% ( $n=69$ ) have attending one of the “NC Leadership & Cattle Handling for Women Producers” workshops.

Table 24

*Value of a “NC Leadership & Cattle Handling for Women Producers” Workshop (N=117)*

<b>Value of Workshop</b>	<b><i>n</i></b>	<b>%</b>
Greatly valuable	77	64.7
Fairly valuable	26	21.8
Somewhat valuable	9	7.6
A little valuable	4	3.4
No value at all	1	0.8

Table 25 summarizes the attendance of the respondent's to the type of "NC Leadership & Cattle Handling for Women Producers" workshop. Respondents who attended both the Phase 1 Introductory Workshop and the Phase 2 Advanced Workshop were 18.8% (n=22) along with 45.3% (n=53) of the respondents attending either the Introductory Workshop or the Advanced Workshop. As a result of attending one of the "NC Leadership & Cattle Handling for Women Producers" workshops, 17.9% (n=21) became a member of the North Carolina Cattlemen's Association and 3.4% (n=4) became a National Cattlemen's Association member. Respondents who were already a North Carolina Cattlemen's Association member prior to attending the workshop accounted for 32.4% (n=40).

Table 25

*"NC Leadership & Cattle Handling for Women Producers" Workshop Attendance by Respondents (N=117)*

<b>Workshop Description</b>	<b>n</b>	<b>%</b>
Phase 1- Introduction to BQA (Reproduction, Pasture Management and Low Stress Animal Handling)	46	39.3
Phase 2- Advanced BQA (Truck & Trailer Safety, Tractor Safety)	7	6.0
Both	22	18.8
None	42	35.9

Table 26 summarizes the educational program subject matter delivery preference of respondents regarding the gender of the audience. Over half of the respondents would attend either an all-women’s workshop or an open workshop with both men and women in attendance, except when it comes to the topic of tractor and trailer driving and safety. Nearly half (47.9%,  $n=56$ ) of the respondents prefer for the tractor and trailer driving workshop to be a women only event.

Table 26

*Educational Program Subject Matter Delivery Preference Regarding Gendered Audiences (N=117)*

Topic	Women Only		Open-Men & Women		Either		Would Not Attend	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Low Stress Animal Handling	29	24.8	19	16.2	66	56.4	3	2.6
BQA Techniques (Vaccinating, Ear Tagging, Deworming)	29	24.8	20	17.1	64	54.7	4	3.4
Reproductive Management	24	20.5	22	18.8	70	59.8	1	0.9
Tractor & Trailer Driving and Safety	56	47.9	14	12.0	44	37.6	3	2.6
Farm Economics	17	14.5	31	26.5	68	58.1	1	0.9
Pasture Management	12	10.3	30	25.6	74	63.2	1	0.9
Pesticide & Herbicide Application	12	10.3	29	24.8	64	54.7	12	10.3

Table 27 categorizes the North Carolina women cattle producer’s response to the benefits of a women’s workshop to women cattle producers. Having a supportive environment for learning (35.7%,  $n=40$ ) ranked as the greatest benefit for an all-women’s workshop, followed by the opportunity to network with peers (25.0%,  $n=28$ ). Some of the respondents (20.5%,  $n=23$ ) felt an all-women’s workshop provided them with confidence and empowered them to conduct daily farm duties.

Table 27

*Benefits of a Women’s Workshop to Women Cattle Producers (N=112)*

<b>Category</b>	<b><i>n</i></b>	<b>%</b>
Supportive Environment	40	35.7
Networking	28	25.0
Confidence & Empowerment	23	20.5
Continuing Education & Resources	11	9.8
Gender Differences & Roles	9	8.0
Gender Bias	1	1.0

*6. Does knowledge and skills vary with demographic characteristics, such as experience, age, and education?*

The results of the regression analysis are shown in Table 28. The results indicate that women cattle producers’ overall knowledge and skills related to cattle management varies with their age and years of farming experience as summarized in Tables 1 and 7. However

women cattle producers' overall knowledge and skills did not vary with other demographic variables such as their levels of education, whether the education was related to agriculture, years in cattle business, and whether farming was full or part-time. Analysis indicated that younger women cattle producers had relatively higher level of overall knowledge and skills compared to older women cattle producers. Women cattle producers' with more years of farming experience had greater levels of overall knowledge and skills related to managing cattle operations.

Table 28

*Summary of Regression Analysis for Variables Predicting Women Cattle Producers' Overall Knowledge and Skills Necessary for Managing Cattle Operations (N = 119)*

<b>Demographic Variable</b>	<b>B</b>	<b>SE B</b>	<b><math>\beta</math></b>	<b>p</b>
Highest level of education	0.19	0.97	0.02	0.85
Whether education was related to agriculture	-4.27	2.63	-0.19	0.11
Respondents' age	-2.35	0.97	-0.28*	0.02
Years of farming experience	0.32	0.14	0.35*	0.02
Years in the cattle business	-0.70	1.00	-0.10	0.49
Whether depend on off farm income, part-time farming, or full-time farming	1.51	1.33	0.12	0.26
$R^2$			0.19	
Adjusted $R^2$			0.13	

Note: \*Significant at  $p < 0.05$

**CHAPTER 5**  
**SUMMARY, CONCLUSIONS, DISCUSSION, IMPLICATIONS, AND**  
**RECOMMENDATIONS**

**Summary**

The purpose of the study is to examine the educational needs and barriers of women cattle producers in North Carolina. Through a quantitative study, the following research questions were addressed:

1. What are the demographic characteristics of women cattle producers in North Carolina?
2. What are the educational needs of women cattle producers in North Carolina?
3. What are the barriers/challenges women cattle farmers when farming?
4. What are the preferred communication channels of educational information?
5. What program delivery best suits women cattle producers in North Carolina?
6. Does knowledge and skills vary with demographic characteristics, such as farming experience, age and education?

This study aimed to better understand the needs and barriers of North Carolina women cattle producers in relation to the educational programs needed and the method of delivery.

Because of the nature of this study, there were some inherent limitations that could not be controlled. The researcher used the contact list from the “NC Leadership and Cattle Handling for Women Producers” program in which the researcher is the program coordinator. This list could have created bias among the respondents for their educational programming preferences because they previously had contact with the North Carolina Cooperative Extension Service in some sort of capacity. Because the sample representing the women cattle producers of North Carolina was purposive, the results can only be generalized to the study population and not to the beef cattle industry of North Carolina as a whole. Because survey research was used, the data obtained consists of perceptions of the respondents’ answers to open-ended questions. Although the instrument was pilot tested successfully, there was a chance that a study participant could have misunderstood a question or did not answer truthfully.

Survey research was conducted according to Dillman’s Tailored Design Method (Dillman, 2009) to collect data for this study. Dillman suggests four points of contact in order to obtain the highest possible response rate. A pre-notice letter was sent on December 1, 2015. The cut off for receiving new data was January 15, 2015. Descriptive statistics and regression analysis were used to describe the data for this study.

The results showed that the majority of the respondents were white females under the age of 50, with less than five years of cattle business experience, and at least a high school education. The North Carolina women cattle producers mainly specialized in livestock farming, and majority had fewer than 50 head of cattle on their operation. The majority of the women producers had at least a part-time or full-time off-farm work and considered

themselves as a farm partner (business or domestic). Over half of the respondents were a member of a Cattlemen's Association.

The respondents relied on many sources of information on beef production and management problems, but used other cattlemen as their main source of information. When needing assistance for problems, the women cattle producers use Extension personnel and their veterinarian.

Program delivery that is preferred by the women cattle producers include a seminar or workshop that was conducted in the evenings 7:00 pm to 9:00 pm on the weekdays and mornings from 9:00 am to 12:00 noon on the weekends. Over half (55.5%) of the women would feel somewhat to much more comfortable attending educational events designed for women farmers and find programs such as the "NC Leadership & Cattle Handling for Women Producers" program greatly valuable. Respondents stated a women's workshop would provide a supportive environment, networking opportunity and give the respondents' confidence and empowerment.

Knowledge and skill level related to cattle management varied with the respondent's age and years of farming experience. However, women cattle producers' overall knowledge and skills did not vary with other demographic variables such as their levels of education, whether the education was related to agriculture, years in cattle business, and whether farming was full or part-time. Younger women cattle producers had relatively higher level of overall knowledge and skills compared to older women cattle producers. Women cattle producers' with more years of farming experience had greater levels of overall knowledge and skills related to managing cattle operations.

## Conclusions and Discussion

### *1. What are the demographic characteristics of women cattle producers in North Carolina?*

The objective of this research question was to describe the characteristics of the women cattle producers in North Carolina. The typical women cattle producer was a white female, under the age of 50, with less than 5 years of cattle business experience, and at least a high school education. The North Carolina women cattle producers mainly specialized in livestock farming and majority had fewer than 50 head of cattle on their operation. The majority of the women producers had at least a part-time or full-time off-farm work and considered themselves as a farm partner (business or domestic). Over half of the respondents were a member of a Cattlemen's Association.

Data from the 2007 Census of Agriculture (USDA, 2007) agrees with the study's findings on the gender, race, age and the number of head of cattle on an operation. The 2007 Census of Agriculture indicates that the typical beef cattle farmer has less than 50 head of cattle. McBride and Mathews, Jr. (2011) found that 60% of the United States beef cow-calf operations are small farms with most of the household income coming from off-farm sources which supports this study.

### *2. What are the educational needs of women cattle producers in North Carolina?*

The objective of this research question was to determine the educational needs of women cattle producers in North Carolina. Respondents would like to have additional training on the subject matter of various topics, but maintaining herd health and cattle

nutrition ranked at the highest educational need. Over half of the respondents would like to have additional training on the following: increasing productivity/fertility of cattle, pasture management, genetic selection, increasing productivity/fertility of crops and pastures, calving management, managing finances, and marketing their products. Although, respondents had minimal knowledge and skills in the areas of farm estate planning, labor management, building infrastructure, operating and maintaining equipment, working with local government and keeping up with legislation, less than half of the respondents would like to have additional training on those topics. This research supports survey research conducted by Suvedi (2010) on the educational needs of Michigan farmers. Suvedi (2010) found there was an educational need in various aspects of business management- including marketing, bookkeeping and accounting skills.

Taylor and Fransman (2004) suggest that programs provide different kinds of learning and encourages dialogue are providing an appropriate environment for women to learn. A set of values needed by an educator to increase participation include: value different kind of learning styles and create a “learning environment” to allow the participant’s full potential to shine, encourage dialogue and exploration, break down traditional barriers, and foster leadership (Taylor & Fransman, 2004).

### *3. What are the barriers/challenges women cattle farmers face when farming?*

The objective for this question was to determine the barriers women cattle producers face in preventing their farm in becoming more successful. The top 5 barriers respondents stated as barriers are as follows: 1) lack of education and training, 2) lack of

money, 3) gender bias, 4) physical strength , and 5) lack of time. Although the objective of determining the barriers/challenges was achieved, there was an instrument error in the fact that the researcher perceived the respondents had a barrier. Moderate to considerable problems faced by the respondents were the sense of isolation from other women, sense of isolation from other farmers, lack of farming background, sense that women producers are not taken as seriously as men, lack of women's roles in the beef industry and the need for women liaisons or contacts for management questions. Although these problems were moderate to considerable, respondent's had the highest ranking of "not at all a problem" in all of the categories except for the problem that women producers are not taken as seriously as men as a moderate problem and the lack of women roles in the beef industry as a minimal problem. Barbercheck (2009) and Brasier et al. (2009) reported similar results to this study from their research. They found that women farmers do not feel that they are taken as seriously as men.

#### *4. What are the preferred communication channels of educational information?*

The objective for this question was to determine which communication channels and sources of information were preferred by the women cattle producers of North Carolina. Majority of the women cattle producers use other cattlemen as their main source of information followed by Extension personnel and their veterinarian. Another source of information highly used is the internet.

Respondents used Extension personnel the most in the past two years followed by their veterinarian. Other sources of information that half of the respondents used within the

last two years include: USDA organizations (Natural Resource Conservation Service and Soil & Water Conservation), their commodity organizations (Cattlemen's Association) and their farm supply store. Overall, the respondents felt the Extension personnel, veterinarian and USDA sources were very useful. Majority of the respondents felt the commodity organization and the farm supply store were somewhat useful. Data from Akridge, Gloy, and Whipker (2000) and Batte, Jones, and Schnitkey (1989) found similar results.

*5. What program delivery best suits women cattle producers in North Carolina?*

The objective for this research question was to determine which program delivery methods best suit women cattle producers in North Carolina. Majority of the women producers prefer to attend seminars or workshops, followed by on-farm demonstrations at a local farm. A little over half (61.3%) like to learn from home using the Internet. The best time for the seminars or on-farm demonstrations would be on weekdays in the evening from 7:00 pm to 9:00 pm and in the mornings on the weekends from 9:00 am to noon. Over half (73.1%) of the respondents have attended a local county Extension seminar or demonstration. Barbercheck (2009) also reported that the formats that most respondents reported as best for them were seminars or workshops (85%), on farm demonstrations (80%), and learning from home (74%). Barbercheck (2009) research also reported presentations during regular meeting of organizations to which the participants belong were indicated as the least preferred format (45%).

Over half of the women (55.5%) would feel somewhat to much more comfortable attending educational events designed for women farmers and find programs such as the "NC

Leadership & Cattle Handling for Women Producers” program greatly valuable. Respondents stated a women’s workshop would provide a supportive environment, networking opportunity and give the respondents’ confidence and empowerment. Although the respondents stated they would feel more comfortable in an all-women’s workshop, over half stated they would attend either a women only or an open gendered audience of men and women on various cattle operation topics, except tractor and trailer driving and safety. Nearly half of the respondents prefer to have a women’s workshop to learn the fundamentals of tractor and trailer driving. Majority of the respondents have attended one or both of the “NC Leadership & Cattle Handling for Women Producers” workshops prior to this research survey.

*6. Does knowledge and skills vary with demographic characteristics, such as farming experience, age, and education?*

The objective for this research question was to determine if training needs vary with demographic characteristics such as cattle experience, age, and education. Regression analysis indicated that women cattle producers’ overall knowledge and skills related to cattle management varies with their age and years of farming experience. However, women cattle producers’ overall knowledge and skills did not vary with other demographic variables such as their levels of education, whether the education was related to agriculture, years in cattle business, and whether farming was full or part-time. Analysis indicated that younger women cattle producers had relatively higher level of overall knowledge and skills compared to older

women cattle producers. Women cattle producers with more years of farming experience had greater level of overall knowledge and skills related to managing cattle operations.

The survey instrument answered the objectives of the researcher, but there were some instrument error discovered after the data was collected. Question nineteen (Table 15) was an open-ended question asking the respondents to list the three barriers faced by them as a woman that is preventing their farm in becoming more successful. This question assumed the respondents had a barrier and should have been designed to ask if they had a barrier, yes or no, and if yes, please list the barrier. Question twenty-two (Table 10) also displayed an instrument error when asking the respondents what marketing strategies they have used in the last two years. The instrument should have included the option for livestock auction which would have included those producers who sell at the stockyard or telle-market.

### **Implications**

Studies have been conducted to try to determine factors that affect the adult learner. One of those factors for an educator is to provide an environment for learning. This study also found the same connection. Because this study focused on the educational needs, program delivery and the barriers that prevent women cattle producers from becoming more successful, the results can help organizations, such as the North Carolina Cooperative Extension Service, in developing educational programs aimed at those with an educational need.

Over half of the respondents (55.5%) would feel somewhat to much more comfortable to in attending educational events designed for women farmers, whereas the

other 44.4% of the respondents stated “doesn’t matter to me”. This is also evident in the data showing that women prefer an all-women’s workshop on specific topics, but are willing to attend a mix gender workshop. Because respondents from multiple studies feel they are not taken as seriously as men, it is important for the educator to provide a non-intimidating atmosphere for learning regardless of the type of workshop (women, open-men & women, or either).

### **Recommendations**

Based on the finding and conclusions discovered in this study, recommendations have been made in two areas. These areas are: recommendations for practice and recommendations for further research.

#### *Recommendations for Practice*

1. The North Carolina Cooperative Extension Service, and other organizations that provide educational programs for farmers, can create programs that focus solely on women and new and beginning farmers.
2. The North Carolina Extension Service is the most preferred source of information for women beef cattle producers in North Carolina, therefore Extension needs to continue their communication and programming efforts to build upon the success of the rise of women cattle producers.
3. The North Carolina Cooperative Extension Service and commodity organizations should provide a supportive environment for learning and a time for networking

among producers and provide additional information that is research-based, since one of the main sources of information is peer to peer contact.

4. The North Carolina Cooperative Extension Service should conduct seminars and workshops and demonstrations either in the evenings on the weekdays or mornings on the weekends to capture the attendance of women cattle producers.

#### *Recommendation for Further Research*

1. This study should be replicated in other states with women beef cattle operations and producer characteristics similar to those of North Carolina in order to assess similarities and differences between the groups that have or do not have a women's program dedicated to providing educational trainings for women cattle producers.
2. A qualitative research study should be conducted to gain further knowledge into the barriers faced by women cattle producers.
3. This study should be performed on the male beef cattle producers in North Carolina to see if their educational needs and barriers in making their farm more successful are similar to their female counterparts.

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## APPENDICES

## APPENDIX A

### SURVEY

Dear Women Cattle Producers,

My name is April Shaeffer and I am a graduate student at North Carolina State University. For my Master's research I am conducting a needs assessment for women cattle producers in North Carolina. Specifically, I am looking into the educational needs and barriers by women cattle producers in order to make your farm successful.

You were selected to participate in this study because of your contact information within the NC Leadership & Cattle Handling Program email list. Although your participation is strictly voluntary, I would appreciate it if you completed the questionnaire. There are no risks to your participation. The results of this study will benefit NC Cooperative Extension and the NC Leadership & Cattle Handling for Women Producers program. We will use the information to improve our program delivery and to better meet your needs in the future.

Your answers to the questionnaire are completely confidential and will be released only as summaries in which no individual's answers can be identified. When you complete the questionnaire, your name will be deleted from the email list and never connected to your answers in any way. If you choose to participate in this study, please follow the directions for each question and answer them to the best of your knowledge. Your completion of the questionnaire will indicate your consent to participate in this study. If for some reason you prefer not to participate, please let me know by sending me an email or calling.

Thank you for taking time to assist me in accomplishing my educational goals along with helping the NC Leadership & Cattle Handling for Women Producers program. If you respond to this questionnaire before December 11th, you will be entered into a drawing for a L.L. Bean large hammock (retail \$119). The hammock will be shipped out on December 15th to the winner (just in time for the Holidays). If you have any questions or comments about this study, I would be happy to talk to you. I can be reached at the phone number, mailing address, and email below.

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INSTRUCTIONS: In the following questionnaire, we have asked questions to help us determine the educational needs and barriers of women cattle producers. This is very important information for the NC Leadership and Cattle Handling for Women Producers. This questionnaire should take approximately 15 minutes.

**\*1. Think about the knowledge and skills required to run your farm. What are the three most crucial skills or pieces of knowledge you would like to acquire to run your farm?**

1

2

3

**\*2. Listed below are knowledge and skills other farmers have mentioned as important for running their farms. Please check the category that best represents your current skill and/or knowledge-level in each area.**

	Minimal	Moderate	Considerable	Never thought about
Managing Finances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using Computers for Business Purposes (finances, records, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farm Estate Planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing Products (Live Animal Market)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing Products (Direct Meat Market)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Labor Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating with Farm Workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keeping Workers/Family Safe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating (Domestic Partner/Family)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calving Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining Herd Health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increasing Productivity/Fertility (Reproduction, Cattle Breeding Programs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Genetic Selection (EPDs, herd records, genetic testing)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cattle Nutrition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Animal Welfare Practices (Low Stress Animal Handling)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proper Vaccination Techniques (Beef Quality Assurance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pasture Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increasing Productivity/Fertility (Crops and Pastures)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building Infrastructure (such as Barns, tractors, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Operating Equipment (Tractors, bush hog, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining Equipment (Tractors, bush hog, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working with Local Government	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keeping up with Legislation that affects your farm or lifestyle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\*3. I would like additional training on the following topics: (Check All That Apply)**

- Managing Finances
- Using Computers for Business Purposes (finances, records, etc.)
- Farm Estate Planning
- Marketing Products (Live Animal Market)
- Marketing Products (Direct Meat Market)
- Labor Management
- Communicating with Farm Workers
- Keeping Workers/ Family Safe
- Communicating (Domestic Partner/ Family)
- Calving Management
- Maintaining Herd Health
- Increasing Productivity/ Fertility (Reproduction, Cattle Breeding Programs)
- Genetic Selection (EPDs, herd records, genetic testing)
- Cattle Nutrition
- Animal Welfare Practices (Low Stress Animal Handling)
- Proper Vaccination Techniques (Beef Quality Assurance)
- Pasture Management
- Increasing Productivity/ Fertility (Crops and Pastures)
- Building Infrastructure (such as barns, tractors, etc.)
- Operating Equipment (Tractors, bushhog, etc.)
- Maintaining Equipment (Tractors, bushhog, etc.)
- Working with Local Government
- Keeping up with Legislation that affects your farm or lifestyle.

Other (please specify)

**\*4. Listed below are several options for the type of educational events just discussed. Which of the following would be best for you within the next 2 years? (Check All That Apply).**

- Seminars/Workshops
- On-Farm Demonstrations at a local farm
- Presentations during regular meetings of organizations to which you belong
- Learn from Home (Internet or web based)

**\*5. Which days and times for these events would best fit into your schedule over the next 2 years? (Please Check All That Apply).**

	Weekdays	Weekend
Morning (9:00 am - 12:00 Noon)	<input type="checkbox"/>	<input type="checkbox"/>
Mid-Day (11:00 am - 2:00 pm)	<input type="checkbox"/>	<input type="checkbox"/>
Afternoon (1:00 pm - 4:00 pm)	<input type="checkbox"/>	<input type="checkbox"/>
Evening (7:00 pm - 9:00 pm)	<input type="checkbox"/>	<input type="checkbox"/>

**\*6. What other educational workshops, seminars, etc. do you or have you attended? (Check All That Apply)**

- Farm & Ranch organization seminars, conventions, etc.
- USDA organization (e.g. NRCS, FSA) programs, seminars
- Farm Credit/financial organization programs
- Fertilizer, feed, animal health, equipment dealer/sales sponsored programs/meetings
- Veterinarian sponsored/conducted events
- Private Consultant seminars/workshops
- North Carolina Beef Quality Assurance Program
- Local county Extension seminars/workshops
- Local county Extension field days/ demonstrations
- Area research & Extension center field days, meetings, etc
- None

Other (please specify)

**\*7. Where, or to whom, do you look for information on beef production and management problems? (Check All That Apply).**

- Other cattlemen
- Close relatives (father, brother, etc.)
- Magazines
- USDA organizations (e.g. NRCS, Soil & Water Conservation, FSA)
- Farm & ranch organizations
- County Extension Agent and/or Specialist
- Extension Publications
- Veterinarian
- Private Consultant
- Internet (WWW- World Wide Web)
- Fertilizer, feed, animal health, equipment, or other dealers/salesmen

Other (please specify)

**8. Listed below are sources of assistance for farmers. In the past two years, have you used these sources for making farm decisions? (Check One)**

	Yes	No
Extension or University sources.	<input type="checkbox"/>	<input type="checkbox"/>
USDA Organizations (e.g. NRCS, Soil & Water agents, FSA)	<input type="checkbox"/>	<input type="checkbox"/>
Commodity Organization (Cattlemen's Association)	<input type="checkbox"/>	<input type="checkbox"/>
Farm Supply Store	<input type="checkbox"/>	<input type="checkbox"/>
Veterinarian	<input type="checkbox"/>	<input type="checkbox"/>
Private Consultant	<input type="checkbox"/>	<input type="checkbox"/>
Fertilizer, feed, animal health, equipment, or other dealers/salesmen	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify)

**\*9. From the previous question, how useful were these contacts? (Check One)**

	Not Useful	Limited Usefulness	Somewhat Useful	Very Useful	N/A
Extension or University sources.	<input type="radio"/>				
USDA Organizations (e.g. NRCS, Soil & Water agents, FSA)	<input type="radio"/>				
Commodity Organization (Cattlemen's Association)	<input type="radio"/>				
Farm Supply Store	<input type="radio"/>				
Veterinarian	<input type="radio"/>				
Private Consultant	<input type="radio"/>				
Fertilizer, feed, animal health, equipment, or other dealers/salesmen	<input type="radio"/>				

**10. Which of the following describes your level of membership in the Cattlemen's Association? (Check All That Apply)**

- County Cattlemen's Association
- State Cattlemen's Association
- National Cattlemen's Beef Association
- None of the above

Other (please specify)

**\*11. Here are a few problems other women have said they faced while trying to run a successful farm business. During the past year, to what extent have these been problems for you in making your farm successful? Extent of Problem (Check One).**

	Not at all	Minimal	Moderate	Considerable
Sense of isolation from other women	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sense of isolation from other farmers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Need for child care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of computer knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of web/email access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of family support (for your role in managing the farm)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of farming background	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sense that women are not welcome (in ag groups, farm supply stores, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sense that women producers are not taken as seriously as men	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of women role in the beef industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Need for women liaisons or contacts for management questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\*12. To what extent would you be more comfortable attending educational events designed for women farmers (i.e. women teaching women, hands-on workshops, peer teaching, time for networking) as opposed to mixed gender events? (Check One)**

- Much more comfortable
- Somewhat more comfortable
- Doesn't matter to me

**\*13. "NC Leadership & Cattle Handling for Women Producers" provides a non-intimidating learning environment, networking, and empowerment for women producers. How valuable would this workshop be for you? (Check One)**

- No value at all
- A little valuable
- Somewhat valuable
- Fairly valuable
- Greatly valuable

**\*14. Have you attended a "NC Leadership & Cattle Handling for Women Producers" workshop? (Check One)**

- Yes
- No

**\*15. If you attended the "NC Leadership & Cattle Handling for Women Producers," which workshop did you attend? (Check One)**

- Phase 1- Introduction to BQA, Reproduction, Pasture Management and Low Stress Animal Handling
- Phase 2- Advanced BQA- Truck & Trailer Safety, Tractor Safety
- Both
- None

**\*16. Did you become a North Carolina Cattlemen's Association member as a result of the "NC Leadership & Cattle Handling for Women Producers" program? (Check One)**

- Yes
- No
- No, but I became a county and/or a National Cattlemen's Beef Association member
- I was already a member

**\*17. For the following topics, which format would you prefer? (Check One)**

	Women Only	Open- Men & Women	Either	Would Not Attend
Low Stress Animal Handling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BQA Techniques (Vaccinating, Ear tagging, Deworming)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reproductive Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tractor & Trailer Driving and Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farm Economics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pasture Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pesticide & Herbicide Application	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\*18. What benefits can you see a women's workshop providing for you and other women farmers?**

**\*19. As a woman producer, think about the knowledge and skills required to run your farm. What are the three barriers faced by you, as a woman, that are preventing your farm from becoming more successful?**

1

2

3

Help us understand who we are reaching by answering the following questions:

**\*20. How do you identify yourself? (Check All That Apply)**

- Sole operator
- One of main operators
- Farm partner (business or domestic)
- Agricultural helper
- Business manager
- Not involved in the operation

Other (please specify)

**\*21. Please indicate your main farm product(s). (Check All That Apply)**

- Livestock (i.e. meat and fiber)
- Fruit and Vegetable
- Row Crop (i.e. corn, wheat)
- Dairy

Other (please specify)

**\*22. Which marketing strategies have you used in the last 2 years? (Check All That Apply)**

- Direct (farmers' market, farm stand)
- Retail (restaurants, grocers)
- Wholesale (cooperatives, processors, wholesalers)
- Subscription (pre-order)
- Community Supported Agriculture (farm share)

Other (please specify)

**\*23. Please indicate the extent of your off-farm work. (Check One)**

- No off-farm work
- Full-time off-farm work
- Part-time off-farm work

**\*24. Please indicate the extent of your Spouse/Partner's off-farm work. (Check One).**

- No off-farm work
- Full-time off-farm work
- Part-time off-farm work
- I do not have a spouse/partner

**\*25. Do you have any dependents? (Check One)**

- Yes
- No

**\*26. Number of Dependents**

**27. Age(s) of dependents**

**\*28. How important is generating enough farm income so that off-farm work is not necessary? (Check One)**

- Not important
- Somewhat Important
- Important
- Very Important

**\*29. How important is choosing practices to reduce costs? (Check One)**

- Not important
- Somewhat important
- Important
- Very Important

**\*30. How many years have you been farming?**

**\*31. Number of years you have been in the cattle business? (Check One)**

- 5 years or less
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26 years or more

**\*32. What county do you reside?**

**\*33. Please indicate the number of breeding beef females in your herd. (Check One)**

- None
- 1-49
- 50-99
- 100-249
- 250-499
- 500-999
- 1,000 +

Other (please specify)

**\*34. Please indicate the number of head of stockers grazed or backgrounded annually. (Check One)**

- None
- 1-49
- 50-99
- 100-249
- 250-499
- 500-999
- 1,000 +

Other (please specify)

**\*35. What is your highest level of education? (Check One)**

- Some high school
- High School graduate/GED
- Vocational / technical degree
- Some College
- College graduate (e.g. B.S.)
- Post graduate (Master's or Doctoral degree)
- Professional degree (e.g. DVM, JD, MD)

Other (please specify)

**\*36. Was your education related to agriculture? (Check One)**

- Yes
- No

**\*37. Please indicate your age group: (Check One)**

- Less than 30
- 30-40
- 41-50
- 51-60
- above 60

**\*38. How do you identify yourself. (Check One)**

- American Indian or Alaska Native
- Asian
- Black or African American
- African American, non-Hispanic
- Hispanic, non-white
- Native Hawaiian or other Pacific Islander
- White or Caucasian

Other (please specify)

**39. Please provide any additional comments or suggestions to improve educational programs for cattlemen:**

Thank you for completing this questionnaire. I appreciate your input as I make every effort to improve the NC Leadership & Cattle Handling for Women Producers and the North Carolina Cooperative Extension programs.

**APPENDIX B**  
**NOTIFICATION LETTER**

Dear Women Cattle Producers,

For those of you who do not know me, my name is April Shaeffer and I am a full time Research Specialist in the NCSU Animal Science Department, as well as, a Master's student in Agricultural & Extension Education. As a staff member in the Animal Science department, I am the program coordinator of the "NC Leadership & Cattle Handling for Women Producers" and the "Amazing Grazing" pasture-based educational program.

I am writing to ask for your help with an important research study I am conducting as part of my project to complete my Master's degree. A few days from now you will receive a questionnaire to complete regarding your educational needs and barriers you face as a woman beef cattle producer. The answers you provide will help me to develop Extension programs to help make your farm more successful.

I am writing in advance because I have found many people like to know ahead of time that they will be contacted to fill out the questionnaire. I hope you will take 10-20 minutes of your time to help me. The study will not only help in the completion of my coursework, but could lead to a greater impact on the topics developed for the NC Leadership & Cattle Handling program.

Thank you for your time and consideration. I am beyond excited at what the future holds for women cattle producers in North Carolina.

Sincerely,

April D. Shaeffer, Research Specialist

NCSU Animal Science Department  
Box 7621  
Raleigh, NC 27695  
Phone: 919-515-4005  
[April\\_Shaeffer@ncsu.edu](mailto:April_Shaeffer@ncsu.edu)

## APPENDIX C

### COVER LETTER EMAIL

Dear Women Cattle Producers,

My name is April Shaeffer and I am a graduate student at North Carolina State University. For my Master's research I am conducting a needs assessment for women cattle producers in North Carolina. Specifically, I am looking into the educational needs and barriers by women cattle producers in order to make your farm successful.

You were selected to participate in this study because of your contact information within the NC Leadership & Cattle Handling Program email list. Although your participation is strictly voluntary, I would appreciate it if you completed the questionnaire. There are no risks to your participation. The results of this study will benefit NC Cooperative Extension and the NC Leadership & Cattle Handling for Women Producers program. We will use the information to improve our program delivery and to better meet your needs in the future.

Your answers to the questionnaire are completely confidential and will be released only as summaries in which no individual's answers can be identified. When you complete the questionnaire, your name will be deleted from the email list and never connected to your answers in any way. If you choose to participate in this study, please follow the directions for each question and answer them to the best of your knowledge. Your completion of the questionnaire will indicate your consent to participate in this study. If for some reason you prefer not to participate, please let me know by sending me an email or calling.

Thank you for taking time to assist me in accomplishing my educational goals along with helping the NC Leadership & Cattle Handling for Women Producers program. If you have any questions or comments about this study, I would be happy to talk to you. I can be reached at the phone number, mailing address, and email below.

April D. Shaeffer  
NCSU Animal Science Dept.  
Box 7621  
Raleigh, NC 27695  
919-515-4005 (work), 606-407-2006 (cell)  
April\_Shaeffer@ncsu.edu

## **APPENDIX D**

### **THANK YOU / REMINDER**

Dear Woman Cattle Producer,

A few days ago an online survey was sent to you seeking your opinion and input regarding your educational needs and barriers in order to make your farm more successful.

If you have already completed and submitted the questionnaire, please accept my sincere thanks. If not, please do so right away. I am especially grateful for your help because it is only by asking producers like you to share your experiences that we can gain a better understanding of the educational needs of women beef cattle producers across the state.

If you did not receive the questionnaire, or if it was misplaced, please call me at (606) 407-2006 or email [April\\_Shaeffer@ncsu.edu](mailto:April_Shaeffer@ncsu.edu) and I would be glad to send you the link once more.

April Shaeffer  
NCSU Box 7621  
Raleigh, NC 27695  
Phone: (606) 407-2006  
[April\\_Shaeffer@ncsu.edu](mailto:April_Shaeffer@ncsu.edu)

## **APPENDIX E**

### **SECOND THANK YOU/REMINDER EMAIL**

Dear Woman Cattle Producer,

Several weeks ago you were sent an email with a link to an online questionnaire from Survey Monkey regarding my research project. The questionnaire asked about your educational needs and barriers in your cattle operation.

I am emailing you now because I do not think you have completed this questionnaire. If you have, please accept my sincere thanks. If you did not receive the email from Survey Monkey with the questionnaire or you deleted the email, please let me know. Just to reassure you, the questionnaire will be completely confidential and your name will never be connected to the results in any way. Protecting the confidentiality of people's answers is very important to me, as well as to North Carolina State University. This study is important and will not only help with the completion of my coursework, but will provide valuable information to the NC Leadership & Cattle Handling for Women Producers program.

I hope that you will take just a few minutes and complete the questionnaire. A link to the questionnaire is provided below. If for some reason you prefer not to answer it, please let me know by replying to this email stating your intention to not complete it.

(Questionnaire Link Here)

April D. Shaeffer

NCSU Box 7621  
Raleigh, NC 27695  
919-515-4005 (work)  
606-407-2006 (cell)  
April\_Shaeffer@ncsu.edu

## APPENDIX F

### OPEN-ENDED RESPONSES TO CRUCIAL SKILLS AND KNOWLEDGE NEEDED

#### Animal Handling/Safety

- How to handle calving emergencies (as a women)
- Cattle handling
- cattle handling
- Being able to herd the cattle up without causing alot of stress
- cattle handling
- Safety for Animals and Personnel
- How to handle cattle with very little stress
- Handling practices
- Animal handling
- how to properly and calmly move cattle
- animal containment
- Proper and safe cattle handling including health of cattle an pastures
- cattle handling
- Keeping cattle INSIDE the fence line
- low stress handling
- Having nice working area
- Cattle Handling
- farm safety for all
- Animal behavior
- Roaping
- Farm safety
- Cattle Handling
- hands-on cattle handling
- 
- Business Management
- Best cuts of beef
- Organic and grass-finished beef production
- Hands on 'knowledge', how to make things happen with my enterprise, such as how to get a 'crop' to grow
- assessing financial profitability
- farm accounting
- Business management
- Productivity
- Better record keeping
- Management software
- How to make a profit with a small herd 30-35 brood cows
- Business management
- developing a multi year strategic plan

- Record Keeping
- Organizational skills
- Business Management
- how to look for best seasonal prices on feed
- finances - true to how they effect bottom line proffit
- Business Planning
- Finances/loans, grants, etc.
- Finances
- enterprise specific records and benchmarks from other producers to compare to
- where to find and how to obtain finacial support
- Ways to make more money
- Farm Estate Planning
- Financial management
- App for tracking live animal from cuts at processor to retail outlet
- Accounting/tax filing requirements and incentives
- where to get supplies
- management skills
- Finances
- Budgeting
- financial planning
- Managing finances
- Cattle Management
- keeping track of details
- record keeping
- More business planning
- Computer Skills
- Financial Risk Management
- Resources
- How to market beef
- How to find good land to purchase for farming.
- Forming a sound business plan
- business management
- Finance management
- general management
- Cattle Management
- Book keeping skills
- yearly checklist of crucial tasks
- knowledge of laws on processing and selling product
- Land financing
- ability to improve my business plan
- Be more efficient since also work FT jobs
- Farm Record Keeping
- How to manage 100 head herd by myself, in absence of husband

- good and effective record keeping
- investments
- best way to handle administrative part of farm
- What it takes to be successful
- Estate Planning
- Best practices/software/apps for tracking expenses and cattle
- Increasing Productivity/Fertility
- Choosing best cattle for my farm
- Finances
- increasing productivity
- taxes/accounting
- Financial resources and information
- Business/Finance management skills
- Recordkeeping
- Budgeting
- Accounting
- how to castrate bulls easily
- Finances
- How to finance getting started!
- Planning for succession of farm assets
- meat quality
- computer skills
- Estate planning
- making money count
- managing the cost of the farm
- Better at record keeping
- Knowing the basic day to day needs/jobs on the farm
- how to do farm financing
- knowledge of tax laws
- overall management of how the farm runs on a daily basis
- Help with start up
- Using Computers for Business Purposes
- ability to build a longterm financial plan for retirement
- learn to drive our farm tractors
- Farm Estate Planning
- information that will help with long term decisions
- Grant Writing
- Capital to do what I need to
- Keeping better financial records
- Financing
- Balancing Income and Farm need
- resources available to farmers
- managing financial

- Complete one project before starting another
- Record keeping
- Business planning
- being proactive
- Learning what works best for my farm
- How to grow/ improve infrastructure w out loans
- Estate Planing

### **Cattle Management**

- Delivering practice in difficult births
- herd management
- how to manage cattle

### **Cattle Nutrition**

- true nutritional needs of animals for premium meat production and optimal growth
- cattle nutrition and health
- How and what to feed
- cattle nutrition & management
- knowledge of basic cattle nutrition and health requirements
- cost effective nutrition
- nutrition
- cattle nutrition
- detailed information on feeding options for calves including price per pound of gain
- nutrition
- learn feed mixing for best nutrients
- cattle/chicken nutrition
- feeding
- Winter cattle management
- cattle nutrition
- nutrition
- Good and supplements
- Cattle Nutrition
- Nutrition
- proper diet for animal
- Local alternative feed resources

### **Farm Equipment/Structures**

- how to properly use farm equipment
- Mechanical
- More knowledge about farm equipment
- Run the tractor
- Mechanical
- Understanding tractors and implements

- Driving our Kubota tractor
- Knowing what equipment is needed most and what would just be nice to have
- Having the proper equipment to work/feed/care for cattle
- cattle handling facilities
- Tractor/machinery operations & maintenance
- Farm maintenance
- how to construct simple, efficient farm things
- Building Infrastructure
- More knowledge of operating equipment
- Fencing
- Should I set up my own meat processing area at the farm
- knowing how to operate equipment
- Equipment/machinery use and maintenance
- how to set up cattle handling facilities
- Machinery repair
- Water lines
- Carpentry/Electrical skills
- best fencing for cattle

#### **Forages/Pasture Management**

- pasture management
- pasture management
- Grass management
- soil health
- increasing pasture productivity
- growing quality pasture / types of grasses for area
- pasture management
- continue to advance understanding my of sustainable animal husbandry and pasture management
- How to manage 1000 acres (fencing, rotation, crops) in absence of husband
- More knowledge of grasses
- Best forages to plant for stockpiling pastures in the high mountains
- pasture management
- Pasture management on rough terrain in mountains
- pasture management (weed control) grasses
- Pasture management
- Soil knowledge
- Pasture/forage improvements
- Increasing quality and nutrients of forage, thereby decreasing the need for supplemental feeding
- pasture management over a year
- Forage management
- pasture management
- weed identity
- Crop rotation

- forage use/ strip grazing
- forage knowledge
- rotational grazing
- Pasture management
- pasture management
- Soil management for forages
- Cost Effective & Efficient Forage & Grazing Management for Small Acre Cattle Farm
- Pasture management
- Managing pastures with cattle and other animals (sheep, turkeys)
- current info on feeds, feeding and pasture mgmt
- pasture management
- pasture management for extreme weather situations
- Forages
- Pasture Management
- pasture management
- learning more about pasture management
- Pasture rotation
- Pasture Management
- knowledge to determine most profitable grazing/feeding combination to maximize beef production
- Pasture Management
- pasture knowledge
- pasture management

### **Herd Health**

- Maintaining herd health
- How to tell the age of cattle
- health of animals
- Have ability to identify illness in your herd
- animal husbandry specific to each species
- Cattle health
- Tail bleeding
- knowledge of bovine health practices
- daily animal welfare
- herd health
- Animal health
- Livestock husbandry
- animal health
- Herd health management for grass-fed only, non-vaccinated cattle
- How to best manage the Cattle herd

- Maintaining Herd Health
- Herd Health
- water for the animals
- Being able to doctor your animals without always calling the vet
- Handling, worming, vaccine, hoof care what is really necessary
- proper care for newborn calves
- Shots
- Herd Health
- Proper Vaccination Techniques
- beef quality assurance program
- taking care of animals
- equipment maintenance
- Health and Wellness - Proactive Approach
- health knowledge
- How to maintain a health and profitable herd
- Herd health
- Herd health
- herd health
- Health and nutrition
- animal health
- Vaccination planning
- Low level vet skills
- herd genetics
- biosecurity
- Health programs for cattle
- Managing Herd and Calves--Cattle Health
- How to spot any disease or potential problem of health
- herd health
- herd health
- maintaining herd health

#### **Labor Management & Communication**

- Getting and handling help, i.e. speaking a language that gets things done when I'm not there to do it.
- Finding good labor (if I were running farm alone)
- Additional help
- labor management
- personnel management
- Communication
- labor expertise
- Labor sources and management

### **Legislation & Regulations**

- zoning laws
- More information on minority government programs
- Legislation
- State and Federal tax issues
- working with local government (ext. agencies)
- Laws and rules for selling cattle
- Legislation

### **Marketing**

- how to read the market trends and how to market cattle
- Maximizing marketing avenues for beef
- marketing skills for direct sales
- Marketing beef to the public (farmers market and other ways)
- Marketing Options: How To Get Top Dollar @ Market or Elsewhere for Calf Crop or Grown Cattle
- Marketing
- marketing ideas
- Marketing knowledge (direct meat market requirements)
- How to better market products for direct meat sales
- understanding marketing channels and opportunities for sales
- Marketing
- marketing strategies
- marketing strategies
- marketing
- when to sell
- meat marketing
- marketing in the direct market
- Marketing/direct meats
- how to read market/futures reports
- access to markets
- Building distribution for direct marketing
- Marketing products (live animals)
- Marketing
- Marketing Products
- How to market your animal
- Marketing assistance (if I were alone)
- Marketing
- Finishing out steers for niche markets I.e., selling directly to retailers or the public
- Marketing
- Marketing of animals
- How to market/sale product
- where to sell products
- marketing
- Understanding the sale barn, prices, estimating cattle weight

- Marketing
- marketing and best selling options
- Marketing

**Not owner of a farm yet**

- I don't presently have a farm myself.

**Nutrition**

- Nutrition

**Reproduction**

- understanding breeding for improvements
- Breeding(cattle)
- AI breeding
- CALVING MANAGEMENT
- learn to palpate a cow
- artificial insemination
- calving management
- breeding (AI)
- Genetic Selection
- Identifying Calving Problems
- Genetic selection
- Reproduction
- CiDR insertion practice
- Stock selection for continued breeding
- Deeper knowledge of breeding
- How to maintain or have a good breeding program
- Reproduction methods
- Best practices to increase AI conception rates
- Breeding/Calving
- Calving techniques
- Genetic testing
- artificial insemination
- signs of pregnancy/ when to breed
- How to assess maternal traits in potential herd sires
- birthing problems
- Calving
- calving assistance
- reproduction and AI
- AI/embryo transfer to improve genetics

**Time**

- Time management
- timeline for cow-calf operation
- time management

## APPENDIX G

### OPEN-ENDED RESPONSES TO BARRIERS FACED BY WOMEN FARMERS

#### Education & Training

- A lack of certain specific knowledge
- not knowing all the vacienes and ways to give shots
- Knowledge
- General cattle production knowledge.
- Marketing strategies
- Need software for cattle management
- need for strategic planning
- location of classes / travel distance
- lack of background knowledge
- Knowledge
- need seasonal advice...what to do when
- lack of formal education
- Reproductive Management
- Not having been raised on a farm and knowing the ins and outs of farm management like my husband
- Basic knowledge
- limited equipment knowledge ie hay making
- Lack of farming background
- support or knowledge
- Reliable sources of information, people to ask
- Lack of farming experience and knowledge
- Marketing
- Lack of knowledge about equipment or confidence in being able to operate equipment
- knowledge of the heavy equipment
- Still building knowledge
- Lack of mechanical knowledge
- Lack of education/cattle handling
- knowledge on the industry
- Marketing knowledge
- lack of knowledge listed above
- Forage management knowledge
- confidence in my knowledge to convey to potential customer
- increased animal health and genetic knowledge
- Not knowing the feeding program
- Don't feel knowledgeable about pasture mgt
- doing it the some "ole way"
- Pesticide & Herbicide Application
- basic knowledge of industry
- farming skills

- Pasture/soil science knowledge base
- need more information on how to direct market- cut out the middle man and finding time to do it.
- Lack of education
- I need AI training
- Business and marketing knowledge
- lack of knowlege
- Hands on that the two previous areas have limited.
- gene selection to enhance my herd
- Herd management skills
- Understanding genetics (all that data) for bull selection
- Market ignorance
- forage management
- Skills
- social media exposure
- Not knowing the breeding program
- Marketing
- lack of knowledge of government programs
- Skill
- lack of knowledge of the market
- Resources
- Lack of educational oportunites designed for the needs of the women.
- Knowledge of the actual handling of my herd
- farming background
- knowledge
- Knowledge
- communication in Spanish
- knowledge
- knowledge of cattle handling
- I need calving training
- Knowledge in farm operation

### **Experience & Self Confidence**

- Lack of Experience
- Experience of doing it on my own
- not being confident
- myself
- I need more experience working cattle low stress in corral and herding on pasture
- Confidence/ support to be able to be successful
- Experience
- Care for animals totally alone
- Not comfortable making big management decisions (ie. how to rotate, background, etc.)
- Years of experience
- Because of above, lack of ability to be assertive in opinion
- Myself
- Lack of productive leadership
- Lack of self-confidence with farm issues

- some fear of the cattle and their size and strength
- Fear
- confidence that I can do it
- a little fear of trying to do stuff by myself and getting injured
- Lack of business experience
- Myself
- Lack of confidence in being able to be taken seriously by male producers

### **Family & Husband**

- child care
- Balancing full-time work, farm work and family time
- Husband continues with many of the same old practices with cattle despite continuing education
- balancing home family and farm
- Husbands Family
- Husband
- interference from other family members
- Money
- Having to take your children/ leaving them in truck or car
- I'm tired from working and being a mom and don't feel like farming a lot of the time.
- my husband already knows it all. :)
- Working with family.
- Childcare
- family issues
- No help from spouse
- family support
- Convincing my husband of new techniques

### **Gender Bias**

- not being taken seriously
- The land my family has is earmarked for the brothers in my family, not my sisters and me.
- Access--getting beyond the societal notions you don't think about.
- old boy network
- being taken seriously
- Lack of being taken seriously
- Gender-Bias and stereotypes
- not given enough respect
- Women are not taken a seriously as men.
- My farming ideas not being taken seriously by spouse
- Being taken seriously in the industry.
- women not taken as seriously as men
- Convincing my father I am serious about taking over his cattle operation
- Not taken seriously or respected
- Access--getting PAST the barriers taught.
- patronizing attitudes

- Changing the minds of the men involved
- be taken seriously for ideas
- men's attitudes about women farming
- Farmer's wife stereotypes
- Lack of an Outlet for women to turn to for assistance without judgement.
- Not being able to have ideas or suggestions taken seriously by male family members
- price differential offered between men and women
- Dealing with men at farm/tractor/ other ag businesses
- Not given the opportunity to gain skills in certain areas because men are given precedence
- Association programs directed toward women focus on auxiliary and "social" events
- Being thane seriously by the consumer
- Not taken as seriously as men
- not deemed good enough in many places where men are majority

### **Physical Strength**

- Am not as strong as I used to be
- physically unable
- not knowledge but sometimes physical strength
- Physical Strength
- Lack of man power
- Health
- physical strength
- handling heavy equipment-panels and such
- Physical Challenge
- Manual strength to accomplish some tasks
- physical strength
- less physical strength
- Cannot do heavy lifting anymore
- Lack of physical experience of doing the work.
- my age
- Handling animals without proper equipment Getting to old to wrestle livestock
- lack of physical strength
- physical strength for field work
- Handling animals especially when there is an issue
- Physical strength
- Strength requiring jobs
- ability to build structures on farm by my self ie fence, barns, sheds
- stress from having children & not enough time for everything & everyone
- Age, more than gender, is the biggest barrier
- physical ability
- Physical work

### **Labor**

- need more helpful labor
- finding trustworthy help.
- finding someone to help on farm when away at a class
- Labor
- Finding good trust worthy labor
- Labor
- Labor
- Finding good, honest help (labor) when needed.
- lack of enough help
- Knowledge of and obtaining labor

### **Lack of Equipment Skills**

- anything to do with machinery
- Don't feel as comfortable around equipment
- unequipped to use farm equipment properly
- Equipment management
- uncertainty about machinery operation
- Difficulties trying to fix machinery
- anything to do with equipment
- Not being able to drive large equipment to facilitate better farm management
- Mechanical ability
- vendors to do the odd jobs new pole light installation, buildong repairs etc,
- constant redoing, repetitive jobs
- Don't understand equipment very well
- lack of mechanical knowledge
- anything to do with the repair of the above
- unable to repair equipment
- Maintance
- Not able to run equipment to haul round bales, bale hay, mix feed, etc.
- need deeper mechanical knowledge
- Depending on another farmer to cut/bale hay for me
- ability to repair own equipment

### **Money**

- Available money
- Money ...Money ...money....infrustrcture cost are killing me
- Money
- Money/Finances
- Capital to expand
- Finanical
- Finances
- financial support
- Finances
- Finances
- money/ grants

- Finances
- MONEY (not a skill but a barrier)
- Financial resources for equipment/buildings
- Capital
- Money
- lack of funds from a single budget
- finances not being available
- money
- lack of access to capital
- lack of funding
- lack of finances
- Cost of running a farm operation
- Finances
- Lack of money to make basic repairs and improvements; and opportunity to purchase replacement cattle
- Money
- Money
- financial reasons
- Can not afford a real tractor. I use a lawn tractor with a pull behind trailer hand throw fertilizer and grass seed.
- farming on limited budget
- money to invest in the operation
- developing budgets and obtaining financing to expand enough to give up off farm employment
- Finances aren't always there.
- Cost of equipment and products--for health--winter feed supplements (hay/grain), etc.
- Cash Flow
- Finances
- Finances
- Price of required commodities
- feed costs

#### **Networking**

- Isolation from the public
- Networking
- The personal connections needed to sell meat products
- networking with other women
- Lack of networking for women
- need neighbor sharing on problems
- no real support, just lip service
- lack of support for women producers

#### **None or N/A**

- I don't think the barriers to success in the cattle industry are determined by gender

### **Off Farm Job**

- I work a FT public job.
- another fulltime job
- work outside of farm balance
- Working off the farm
- I want to make the farm my sole income

### **Time**

- Lack of time...I work a full-time job off the farm in order to have the money to do what we need to to keep farmingrunning
- Time
- Time
- My lack of time to fully commit.
- Time management
- scheduling getting things done on time
- time to be a mother wife producer and employee
- needing to devote more time to the farm but dependent on off the farm income to provide cash for expansion
- time away from farm- off farm job
- Time
- time (I have full time off farm job)
- Time - work full time job off the farm
- Time
- time to learn and explore options for small farming
- Time
- Managing my time
- time constraints
- too many projects
- Time (I wish I did this in my 30s or 40s and not my 60s)
- time constraints/other demands in life
- lack of time- I work an off-farm job full time
- Time management (farm duties,household duties,and association involvement)
- Time management
- Time

## APPENDIX H

### OPEN-ENDED RESPONSES TO THE BENEFITS OF A WOMEN'S WORKSHOP TO WOMEN FARMERS

#### Confidence & Empowerment

- Increased capabilities and confidence.
- Self confidence in managing farm issues.
- The confidence to assert myself as an authority and as a resource in a farm setting.
- Time and access for thinking and comparing experiences is always a benefit of such gatherings.
- Just touching other doers makes ones confidence enlarge.
- Sense of empowerment
- Perspective
- Education and empowerment
- Confidence
- Building self confidence
- The more we learn the more we can do. Knowledge is the key and if it takes only women classes to do it then I'm all for it. I don't want it to be viewed by men though that we feel we aren't treated equally and they therefore resent us for doing these classes. I think it should be presented as an additional way for us to learn and be offered to them as well.
- I felt better after the workshops knowing other women was trying to farm
- Confidence in your job
- Confidence building
- to make a better farmer
- Con firenze in the field
- Huge benefit for me.
- Feeling more comfortable and empowered to do the same tasks as men without being judged.
- A you can do if just given the opportunity.
- Having the confidence to be taken seriously by other farmers, businesses, etc.
- Increasing knowledge will increase confidence in being able to market product & be taken seriously by other producers.
- It would empower me to realize their are women succeeding at cattle farming.
- try to get more hands on experience.
- The knowledge and ability to confidently manage a farm productively.

#### Continuing Education & Resources

- knowledge and experience on situations I may encounter in real life
- More hands on personal experience
- Continued education in the field that is always changing.
- BQA Techniques (Vaccinating, Ear tagging, Deworming)
- Keeps us updated as well as the male farmers as well as getting hands on experience.
- Educational
- More information
- knowledge on how to make our farm more efficient

- education to be more hands on in the family farm to shift from working full time non-farm to making my farm more profitable so the farm is my full time employment
- Further knowledge
- Resources

### **Gender Bias**

- What we feel are the judgmental eyes of the Male counterparts watching our moves/ mistakes

### **Gender Differences & Roles**

- The issues address at a women only workshop are unique to women. I found this to be the case with anything that "size matters". For example handling cattle dealing with large equipment etc... Not having the extra height or strength created a situation that needs to be addressed differently.
- The ability to run a farm in the event something we're to happen to my husband. This is something that concerns me.
- Having similar thought process; men think completely different but we get the same or better results.
- I do not prefer women only events. I feel it furthers a distinction that I wish to move beyond. My capabilities have nothing to do with my gender.
- It would be nice to see how other women balance having a family, running a farm, being a wife, being a mother, etc.
- expanding the chances of either a wife continuing with the family farm or being able to bring a daughter up to speed to take over a farm
- I think there is a future in ag for women, but we need more exposure and training to be able to manage and be successful. In my case my husband is on the farm daily, and wants me to be involved – but he is not the most patient instructor
- Knowledge for a woman's view
- Seeing farming from a woman's perspective on how to handle some of the items , (like castration) from a lesser strength perspective.

### **Networking**

- I would feel more secure because I may be with other women who want to start their own farm or may just want to learn more so that they can help out more at home. Anything helps considering I am just getting into beef cattle and am new to everything.
- its gives women a chance to share with women and seems to be that women need a little time away to be with other women
- Networking
- Networking, less intimidating
- Varied opinions and scenarios from other women.
- one on one relationship building
- Encouragement, social time with Other ladies with the same occupation. A list of people/ recourses for farm issues.
- Knowledge and confidence. A network.
- A women's workshop would be extremely beneficial since only women can understand all the issues women face.
- Networking
- Connecting with peers
- networking with other women, developing a list of contacts to call regularly with question.
- Getting to know other women and working together!

- It's great to form relationship with other women in the agriculture industry.
- Learning from one another. Finding other resources to call if needed. There is a sense of camaraderie between women that "get" each other in this form.
- Similar experiences may be shared and knowledge gleaned from the interactions, questions, & comments @ women's workshops.
- The opportunity to learn from others that have similar experiences.
- Knowing that there are other woman in the same boat and for support.
- Networking, support
- Being able to work with other women who are facing the same challenges I am.
- Networking, approaches to problem solving that don't require upper body strength,
- The chance to talk with other women farmers and cattle producers about their experiences and learn from them. Especially as a young farmer who has only been in the business for 4 years it is really helpful to talk with older women farmers who have a lot of insight and encouragement to give.
- This gives women that are serious about farming an opportunity to expand knowledge with like-minded individuals.
- Networking
- The networking with other women farmers though I really do not have a particular need to segregate by sex.
- Share experience, knowledge. Resources
- Having support of other women facing the same things I am in a male dominated industry.
- Network and knowledge sharing

### **Supportive Environment**

- A safe, supportive environment to ask questions, network.
- easy to ask questions networking and support
- A low stress environment
- Allows us a chance to ask some questions we may feel intimidated to ask in front of mixed audiences.
- equal time
- I would be more apt to ask questions and so learn more.
- Non intimidating learning environment.
- Some would be more comfortable in women only group
- Mainly a chance to express yourself without the fear of someone thinking you ask a stupid question or commenting on your lack of physical strength or knowledge of a particular subject which is why i'd be more comfortable with other women when learning farm equipment or handling animals
- A more relaxed environment where women don't feel the need to be in competition with men as they usually have had more exposure to knowledge and know how.
- We would have more of a chance to speak up and ask questions.
- It provides a sense of openness to the group, allowing women to take leadership roles that they may otherwise not take in the presence of fellow male producers.
- I would be less afraid to ask questions in a group of all women
- I think a women's workshop could be a more comfortable learning environment for most women but I also feel I can learn in a mixed-gender setting.
- able to ask questions freely
- a warmer more open environment where people will freely talk and ask questions.
- Would feel more open to asking questions if it was only women
- Sometime it's just easier to bring up questions within a peer group.

- Gender imbalance in farming doesn't really bother me, generally speaking. But I know that all-women's events is helpful for other women, so I am supportive of such initiatives.
- Having Similar capabilities & less stressful approach to learning.
- Although I don't mind attending with men, with women only it gives opportunity to ask questions that some women might not around men without feeling intimidation. Also women understand that we sometimes have to modify the way we do something to accomplish the same outcome as a man, and men don't always understand why we do what we do.
- I have a lot of questions that I feel I could ask in an all-women workshop; I feel like long-time producers already know these answers and I feel somewhat intimidated asking what may be known to others, but what I really need to learn about.
- I am blessed in that my husband and my father always treated me as an equal on the farm and empowered me to feel comfortable in any situation...male or female. However, not all women share that confidence and shy away from attending and / or actively participating in workshops that are not gender specific. A women's workshop allows those women the opportunity to ask questions and participate at a level that is comfortable for them.
- A place to learn and feel comfortable. Not to be rushed to looked over as an asset.
- Better learning environment, a way for women to connect as farmers, sense of empowerment
- some may feel less intimidated
- Women will speak up more if it is all women.
- Especially for tractor & trailer driving and safety; much less intimidation and not being made fun of when learning.
- Stress free learning. Relevant topics.
- I feel less pressure to perform or to compete with a male. More open to trying and learning instead of being pressured to hurry.
- I can ask questions and get to participate. Don't get pushed to the side as at mixed events.
- I am learning so much from all the meetings/seminars. I think some men think they know it all and have done it like that-forever-so they are not open to any new ideas. I enjoy the social aspect of it but some times feel intimidated because I am older in age and yet newer to this adventure. Men would just seem "stuffy" in the class atmosphere and I don't see that when there are women only.
- Our questions would not appear as ignorant as in a mixed gender group where most all ready know the answer.
- An opportunity to try new skills without feeling judged.
- More laid back environment. Friendships.
- non-intimidating environment in male-dominated area; it is a lot of fun to share the experience with other women and learn together
- For me it is a learning situation to see what types of things other women are doing and how they are marketing there products. I feel like I am pretty isolated, and even though I grew up on a farm and own a large farm now, my husband is not from that background and I have a hard time getting his support because he is not knowlegable of farming. I have a BS in Animal Science so I have considerableanimal background but the business aspect is hard for me.
- Being a single female farmer one benefit I find is the ability to discuss issues with other like-minded women in agriculture. At county cattlemens meetings this opportunity rarely become available. Especially when almost all attendees are male.
- Learning to do it the right way and open minds. No judgement
- Chance to practice, ask questions without feeling intimidated by more confident men