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Meeting the Extension Needs of Women Farmers: A Perspective from Pennsylvania

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Abstract: According to the 2002 Census of Agriculture, women comprised 11% of principal farm operators and 27% of all farm operators. Here we report findings from a needs assessment conducted to understand the educational needs of women farmers in Pennsylvania. We describe the characteristics of the women who responded to the needs assessment, the problems they face in making their farm operation successful, and the program topics and formats they prefer. Finally, we provide recommendations to increase Extension engagement with this growing clientele.

Introduction

Globally, women contribute significantly to agricultural production (Sachs, 1996). In the United States, the number of women reporting farming as a livelihood is increasing (U.S. Census of Agriculture, 2002). According to the 2002 Census of Agriculture, women comprised 11 % of principal farm operators and 27% of all farm operators. 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. For example, Pennsylvania lost 2,000 farms between 1997 and 2002, but gained 1000 farms operated by women (ERS, 2002). 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, soybeans, and hogs (U.S. Census of Agriculture, 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; plow, disk, plant and harvest crops; apply fertilizers, herbicides, and insecticides; as well as do fieldwork without machinery, purchase major farm supplies, supervise family members, and market products (Danes, 1996; 1997). Farm women who do not work off the farm are twice as likely as those who do work off farm to harvest crops, care for farm animals, and market products (Danes, 1997).

Other evidence that farm women perform a wide variety of farm tasks is indirect but equally as telling (Lee, 1992). Farm injury data from 31 states confirm that women 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 such vehicles rolling over (Gunderson et al., 1990); and other farm fatalities (Stallones, 1990; Stueland et al., 1991). Given the evidence that women are engaged in many aspects of farming, the question arises, to what extent are the educational needs of women farmers being met?

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 often not well served by Extension. They suggested that specific strategies be developed to reach women farmers with educational programming. They recommended 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.

However, even today, more than 15 years after Rivera and Corning's (1990) suggestion, 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 that gap. Taylor and Fransman (2004) suggest that programs that 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 farmers prefer to learn.

We report findings from a needs assessment conducted to understand the educational needs of women farmers in Pennsylvania. We describe the characteristics of the women who responded to the needs assessment, the problems they face in making their farm operation successful, and the program topics and formats they prefer. Finally, we provide recommendations to increase Extension engagement with this growing clientele.

Methods and Materials

The research was conducted as an activity of the Pennsylvania Women's Agricultural Network, PA-WAgN <<http://wagn.cas.psu.edu>>, a research and Extension program affiliated with the Pennsylvania State University. Founded in 2003 by women farmers and agricultural professionals, PA-WAgN activities focus on integrating research, outreach, and educational efforts to better understand and meet the educational and networking needs of women farmers in Pennsylvania.

We developed a needs assessment to determine the educational program needs of women farmers in Pennsylvania and chose to use a survey to collect the data. An educational need is considered a discrepancy between an audience's current status and some desired result (Wilkin & Altschuld, 1995), the working assumption being that education can bring about the desired result. The survey instrument was comprised of closed- and open-ended questions that assess skill levels; perceived barriers to farm success; need for, access to, and utility of educational programs; preferences of content and format of educational programs; and demographics of the respondents <<http://wagn.cas.psu.edu/NeedsAssessment.pdf>>.

The survey instrument received IRB approval, and we distributed it to all farmers who registered as members of PA-WAgN (on-line or by mail) or attended a PA-WAgN educational event. Approximately 700 survey instruments have been distributed. We report results based on 151 needs assessment surveys returned between February 2006 and September 2007.

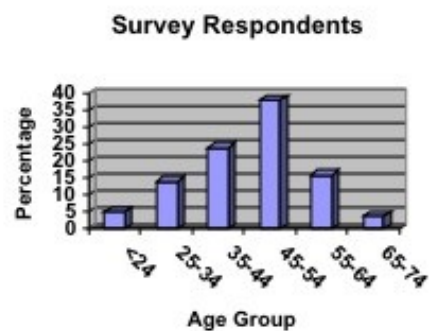
Findings

Characteristics of Women Farmers Responding to the Survey

The respondents were asked to provide information about themselves, including age, years in farming, their role on the farm, and the types of farming enterprises in which they were engaged. The age grouping of respondents is approximately normally distributed (Figure 1). The greatest percentage (38%) of survey respondents was 45-54 years of age. This age distribution represents a slightly higher proportion of younger women farmers (19% under 35 in survey) than women principal operators reported for Pennsylvania in the 2002 Census of Agriculture (6.8% under 35).

Figure 1.

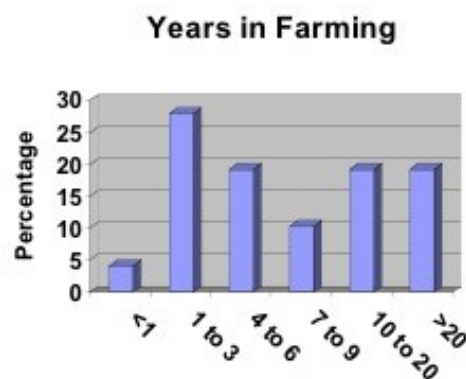
Frequency Distribution of Age Groups of Respondents to the PA-WAgN Needs Assessment Survey



The greatest percentage of respondents (28%) had been farming for 1 to 3 years. The distribution of years in farming is bimodal, with approximately 47% having farmed 1 to 6 years ("new farmers") and about 40% having farmed 10 or more years ("experienced farmers") (Figure 2).

Figure 2.

Frequency Distribution of Number of Years in Farming of Respondents to the PA-WAgN Needs Assessment Survey



The respondents to the survey were highly involved in their farming operations (Table 1). When describing their role on the farm, 32% of respondents described themselves as sole operator, 35% as a farm partner, and 16% as one of the main operators.

Table 1.

Self-Definition of Farm Role by Respondents to the PA-WAgN Needs Assessment Survey

Self-Definition	Percentage of Respondents (%)
Sole operator	32
One of main operators	16
Farm partner	35
Ag helper	7
Business manager	1
Not involved	1
Other	8

Respondents were engaged in diverse agricultural enterprises. Approximately 59% produced fruit and vegetable crops; 58% produced livestock; 19% produced dairy products; and 4% produced row crops. Enterprises were diverse and often focused on non-traditional, specialty products, as suggested by the 45% who indicated that they produced "other" products (e.g., horses, hay, poultry, eggs, herbs, fiber, and landscape plants). Sixty-five percent of respondents marketed their products directly to consumers through on-farm markets, farmers markets, or other direct marketing outlets, and 20% distributed farm produce through Community Supported Agriculture operations.

Educational Experience and Barriers

The respondents were asked to provide information about their experience with agricultural Extension educational events and the utility of the information they received at these events. The majority of the respondents had contact with providers of agricultural educational programs or had attended agricultural education events and found the information they received useful in making farm decisions (Table 2). The primary source of their information was government agencies, followed by non-governmental organizations, PA-WAgN, and farm and commodity organizations. For those who used the services, they found information from non-governmental organizations most helpful.

Table 2.

Types of Organizations That Respondents Had Used in the Past 2 Years and the Usefulness of the Contact for Helping Them to Make Farm Decisions

Type of Organization	Used Source (%)	Very Useful or Somewhat Useful (%)
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Governmental Agency (e.g., Extension, conservation district, university educators)	85	74
Non-Profit Organization (e.g., PA Assoc. for Sustainable Agriculture, PA Certified Organic)	66	92
Pennsylvania Women's Agricultural Network (PA-WAgN)	66	74
Farm & commodity organizations (e.g., grower groups, Farm Bureau)	35	53

Respondents were also asked to identify the problems they face in making their farm operation successful. The problem most frequently reported as being considerable or moderate was the sense that women producers are not taken as seriously as men producers (64%). All nine problems but one were indicated as considerable or moderate challenges to farm success by at least half of the respondents (Table 3).

Table 3.

Frequency of Responses to the Question: "During the past year, to what extent have these been problems for you in making your farm successful?"

Problems in Making Farm Successful	Extent of Problem: Considerable or Moderate (%)
Women producers not taken as seriously as men	64
Isolation from other women farmers	58
Need for child care	58
Lack of family support for role in managing farm	54
Lack of computer knowledge	52
Women not welcome in many ag groups	51
Lack of farm background	51
Isolation from other farmers	51
Lack of Web/email access	33

Educational and Technical Training Needs

The needs assessment revealed numerous topics in which the respondents would like to receive training and identified preferred formats for educational events. The respondents expressed interest in a broad range of production, management, life-skill, and marketing topics that are commonly available through Extension. In

many cases, the needs of the respondents are similar to other clientele groups that are increasing in numbers—small enterprise, beginning, and limited-resource farmers (Ehmke & Mount, 2007).

Of the 19 skills listed in the needs assessment, a majority of respondents reported that their skill level is minimal in seven skills, including equipment maintenance (74%), working with local government (64%), planning for retirement (57%), and labor management (56%). About a third of the respondents reported that their skill level is minimal in another five skills, including marketing (38%) and increasing productivity/fertility (32%).

Interest in attending a workshop, demonstration, or other educational event to develop skills in the next 2 years, if offered, ran high. The skills that respondents want to develop most over the next 2 years include marketing products (79%) and increasing production and soil fertility (70%). Anywhere from two-thirds to one-half of the respondents want to attend events to develop seven other skills: equipment maintenance, working with local government, equipment operation, building infrastructure, pest management, maintaining environmental health, and managing finances (Table 4).

Table 4.

Frequencies of Current Minimal Skill Level and Willingness to Attend an Educational Event for Training in That Skill During the Next 2 Years

Knowledge/Skill	Minimal Skill (%)	Want Training (%)
Equipment maintenance	74	55
Working with local government	64	60
Planning for retirement	57	44
Equipment operation	56	54
Building infrastructure	56	62
Labor management	56	42
Keeping up with legislation	56	46
Marketing products	38	49
Pest management	38	65
Communicating with farm workers	32	32
Increasing productivity/fertility (livestock and/or crops)	32	70
Organizing and running meetings	31	25
Maintaining environmental health	23	57
Managing finances	20	64
Keeping workers and family safe	18	38
Using computers	15	42

Parenting	13	12
Communicating with family members	11	28
Communicating with domestic partner	10	24

Many respondents expressed a preference for a particular format and type of learning environment. The respondents preferred hands-on and participatory workshops and seminars, supporting the expectations of Taylor and Fransman (2004). Respondents who reported that they would be more comfortable in educational activities that emphasize hands-on, interactive learning, networking and peer teaching were also more likely to be younger, to have farmed fewer years, to use direct markets, to consider themselves "helpers" on the farm, to consider a lack of farming background to be a challenge in creating a successful business, and to consider that women farmers not taken as seriously as men farmers to be a challenge in creating a successful farm business. In interactive learning contexts, students can form relationships with potential colleagues and mentors who can provide advice, support, and information in the future. Recent research has shown that small businesses have greater financial success when they are engaged in learning networks with other businesses (Kilpatrick, 2002).

Respondents reported mixed preferences for the time of day that educational events are scheduled (morning, 32%; afternoon, 31%; evening 29%), with most preferring to attend educational events on weekdays (50%) compared to weekends (41%). The formats that most respondents reported as best for them were seminars or workshops (85%), on farm demonstrations (80%), and learning from home (74%). Presentations during regular meetings of organizations to which they belong were indicated as the least preferred format (45%) (Table 4).

Women are often responsible for childcare or may have an off-farm job in addition to their work on the farm. The ability to learn at home can help them access agricultural education. Among the 74% of respondents who preferred to learn at home, 51% would like to receive written materials (e.g., newsletters, articles, books), 48% would like to participate in an online course, and 47% would like to receive electronic materials (e.g., Web links, e-mail) (Table 5).

Table 5.

Format of Educational Event That Is Best for Respondents Within the Next 2 Years

Format	Best for Respondent (%)
Seminar/Workshop	85
On-farm demonstration at local farm	80
Presentations during regular meetings	45
At home:	74
Written materials	51
Electronic materials	47
Online courses	48

About half (46%) of the women farmers expressed a desire to attend educational events specifically designed for women farmers. This design includes time for networking, presentations, or teaching by other women farmers and an interactive format. Interestingly, beginning farmers especially desired events designed specifically for women. Of those who had been farming 1-5 years, 58% would feel more comfortable attending events designed specifically for women. In contrast, only 25% of those who had been farming more than 20 years responded similarly (Table 6).

Table 6.

Percentage of Respondents According to Farming Experience Who Would Be More Comfortable Attending Educational Events Designed for Women or for Whom It Does Not Matter

Number of Years Farming	Doesn't Matter (%)	Somewhat or Much More Comfortable (%)
Less than 5	41.7	58.3
5-9	53.6	46.4
10-19	58.3	41.7.
20+	75.0	25.0
Note: This Distribution Is Significantly Different from Random ($P < 0.05$) According to a Chi-Square Test (Norusis, 1990)		

Recommendations

Based on our findings from the needs assessment, we offer the following recommendations for Extension and other agricultural professionals who want to improve or increase their engagement with women farmers.

- Show that you take women farmers seriously through making personal contact. Once initial personal contact is made, women are more likely to feel validated and welcome, and will be more likely to participate in Extension programs.
- Provide workshops, hands-on education, and interactive formats at educational events.
- Hold some events specifically designed for women farmers, with a focus on relatively new and beginning farmers.
- Recognize that women farmers may face barriers such as discrimination by other farmers and agriculture service providers.
- Create opportunities for women farmers to network with each other, Extension personnel, and agricultural service providers. This helps to create a personal and professional network that can be drawn upon as needed.

- Offer educational opportunities in multiple formats (including on-line, classroom, and on-farm) and dates/times.
- Hold educational events on women-operated farms.
- Invite women farm operators to speak or to participate on a farmer panel.
- Invite women farmers to help plan events and serve on advisory groups.
- Most of all, listen to what women farmers say (Kiernan, 2005; Salmen, 1989). Talk with other Extension educators, and conduct needs assessments, using the one reported here to get you started <<http://wagn.cas.psu.edu/NeedsAssessment.pdf>>.

These recommendations provide some initial steps for Extension educators, faculty, and staff as they develop programs to meet the needs of this growing segment of the agricultural community. While this sample may not be representative of all women farmers, it does provide some important insights about a new, and increasing, farming clientele. Strategies to reach out to this segment of the farming population will help ensure a more secure future for family farming in the United States.

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