

Women In Agricultural Education: Who Are You?

Billye Foster, The University of Arizona

Abstract

In a traditionally male dominated field, like agricultural education, artificial barriers based on attitudinal bias often prevent qualified women from reaching their potential. Due to the late entrance of women into this field, there are very few role models for young women entering the profession. This descriptive study was designed to create a demographic profile of the women in secondary and middle school level agricultural education across the United States.

Although the women surveyed reported high levels of satisfaction in their profession, the actual ratio of women to men is still quite low (1:6). The large percentage of women that felt they had experienced some barriers due to their gender may provide some explanation for this discrepancy. Acceptance by peers, community and administrators combined with the challenge of balancing family and career appear to be areas of concern for these women.

Introduction

“The term the ‘glass ceiling’ first came into use in 1986, when two *Wall Street Journal* reporters coined the phrase to describe the invisible barrier that blocks women from the top jobs” (Catalyst Report, 1993). Research on the advancement of women in the professions points to many of the same glass ceiling phenomena cited in business, but also includes some unique issues. Artificial barriers based on attitudinal bias often prevent qualified women from reaching their potential (Catalyst Report, 1993). The glass ceiling phenomena may also pervade agricultural education. Due to the late entrance of women into this field, there are very few role models for women who aspire to teach agricultural education. The evolution of women in the field of agricultural education is not well documented.

P. W. Kaufman’s 19th century chronicle, Women Teachers on the Frontier (1984), provides a unique insight into society’s vision for women in education. At mid-century, town officials in Concord, Massachusetts, found that pupils under women teachers improved more than those taught by men.

And surely, this being the fact,’ the town stated, ‘it is not good economy to employ a man to teach those schools, when the services of a woman, of the best qualifications, can be obtained for two-thirds or three-fourths the expense (Kaufman, 1984, p. xxi).

Women’s struggle for equality in the job place was still in its infancy in 1855. As women’s roles as educators became more widely accepted, concepts about education were also changing. The young American economy revolved around agriculture and legislators recognized the need for the advancement of agriculturists through education. That need was initially addressed with the passage of the Morrill Act of 1862, which established the university land-grant system. In 1917, Congress passed the National Vocational Education Act. This act, known as the Smith-Hughes Act, provided for the establishment of vocational agriculture classes in secondary schools. The National FFA Organization was established in 1928 as a club for

male students enrolled in vocational agriculture. The vocational agriculture arena changed in 1969 when the National FFA voted to allow girls to become members (Official FFA Manual, 2000-2001). As female enrollment in vocational agriculture classes increased, the need for female agricultural education teachers surfaced and male teachers became uncomfortable in dealing with certain female issues and serving as chaperones for mixed groups of students on overnight trips (B. Milford and B. Winters, personal communication, April 1982).

According to a 1987 study by Knight, on a national level, women only held 5.1 % of secondary agricultural education positions. In a more recent study (Camp, 1988) that percentage rose to 15.8 % nationwide, still not comparable with the 35 % female student membership reported by the National FFA (National FFA, 2000). A more disturbing study by Baker and Baggett in 1995 targeted Pennsylvania agricultural education teachers. That study showed 23 women were teaching agriculture in secondary schools in 1980-81. However, by 1990-91, only six of the original women remained in agricultural education positions in Pennsylvania. Camp's supply and demand study did not include a breakdown by gender until 1998. It was reported in the 1998 study that 15.8% of the agricultural education teacher population is female (Camp, 1998). The Department of Labor (DOL) Women's Bureau reported women comprised 38 % of the labor force in 1970 and 42 % in 1980. Those numbers are expected to increase to a level of 48 % by the year 2008.

Initial gathering of numbers for this study reflected, in spring 2000, a national agricultural education teacher population of 15.77 % female, showing an almost exact replica of Camp's 1998 study reflecting 15.8 % females. Camp also announced a pool of 734 potential agricultural education teachers from the graduating classes of higher education institutions in 1998. Applying the DOL's projection to those agricultural education teachers would mean an increase of 352 women to the pool of potential teachers, assuming the total numbers remained constant from 1998 until 2008. Interestingly, Camp's study also reported 41 % of the newly qualified potential teachers of agricultural education were female. These potential numbers add credence to the projections of the Department of Labor.

Another study of Ohio female agricultural education teachers (Whittington, 1988) determined the women involved in that study rarely supported or encouraged each other. In an effort to promote a higher degree of support among the women at that time, an annual conference for women in the profession was encouraged and activities to encourage the development of supportive relationships included. Whittington reported that failure to provide the necessary supports can trigger a premature decision to drop out on the part of persons involved in non-traditional professions.

A 1991 study by Foster, Pikkert and Husmann looked at self-perception of gender bias among women agriculture teachers in a six state region. The researchers concluded that established female teachers expressed satisfaction in their current positions, however gender bias was viewed as a definite deterrent to women entering the agricultural education profession. They also concluded more women could be encouraged to enter the profession by changing current societal attitudes against women teachers in agriculture, increasing salaries, increasing acceptance by administrators, improving teacher education programs, building support networks and increasing recruitment efforts.

The issue of women in non-traditional careers is not unique to agricultural education. In recent studies of Northern Ireland, it was noted for women entering non-traditional roles, several accepted societal opinions often cause women to struggle in their new environment.

“...with male workers scrutinizing their every move, and a lack of role models, women are confronted with a social situation that encourages the self-imposed development and enactment of excessive work demands. In the words of a woman carpenter: ‘women must be clearly superior to survive in construction work or there will be a hundred reasons to lay her off’ (Whittcock, 2000).”

Still another viewpoint from the United Kingdom comes from Conran (1999) as she notes the IBM Women’s Leadership Conference in Milan. “IBM cannot, and will not, do without the skills of women in the workplace. Nevertheless, some short-sighted employers cannot see that women at work are an established reality. The nation needs their skills—and their children—while their house-holds need their incomes. But the attitude of these employers to mothers in the workforce is: ‘If you don’t like the heat, get back to the kitchen.’

In a recent USDA Current Research Information System (CRIS) search, no studies with specific information on women in agricultural education were found. Five studies were found that involved women and agriculture, however only two of these related to this study. An Iowa State University study (Carter, 1992), reported that from 1980 to 1985 fewer females than males took initial jobs related to their majors and more females started a lower salaries. In addition, females were not as satisfied with their current positions and felt uncomfortable or hindered in the workplace because of their gender, supervisor demands for overtime and child care issues (Carter, 1992). Jovanovic at the University of Illinois launched a longitudinal investigation of the characteristics linked to retention of women in engineering in 1997. The 1997 results from the baseline assessment indicated that although the women and men who enrolled in engineering (another area that traditionally draws low numbers of women) in the fall of 1995 shared similar demographic backgrounds, they began their schooling with different expectations.

Objectives

This study was designed to identify current female agricultural education teachers in the United States and determine a demographic profile for those women. Additionally this study sought to describe unique challenges experienced by female agricultural education teachers. Specific objectives for the study are as follows:

1. Describe female agricultural education teachers according to selected demographic characteristics: years experience, educational level, previous industry experience, salary, subjects taught, time expenditures, age, marital status and children.
2. Describe the mentors of these female agricultural teachers and the level of support from other women in the field as perceived by the respondents.
3. Describe the respondents perceived level of job satisfaction, acceptance by others, and discriminating actions.

4. Describe perceived personal and professional barriers facing female agricultural education teachers.

Methods and Procedures

State Supervisors of agricultural education in the United States, Puerto Rico and the Virgin Islands were contacted to help identify female teachers in each state. The population of the study was all female agricultural education teachers identified by state supervisors (N=1694). From the list generated, a proportional stratified random sample was determined. The sample was drawn from the six regions of the National Association of Agricultural Educators (NAAE). The sample for the study consisted of 962 female agricultural education teachers. It should be noted that the total sample was determined by combining the random samples from each region. In early stages, consideration was given to reporting this study as six separate activities, hence the total sample used was larger than necessary. Table 1 shows the breakdown of women in the total secondary agricultural education teacher population by NAAE Region and the determination of the sample by Region.

The questionnaire, developed by the researcher, was reviewed by a panel of six experts, including two female teacher educators and female graduate students in agricultural education,

Table 1

Teacher Numbers by Region and Nationally

NAAE Region	Total Agricultural Education Teachers	Number Female Agricultural Education Teachers	Percent Female Agricultural Education Teachers for Region	Percent Female Agricultural Education Teachers Nationally	Sample Size by Region
1	1733	377	21.75	3.51	188
2	2630	201	7.64	1.87	134
3	1098	186	16.94	1.73	127
4	1915	310	16.19	2.89	171
5 ^a	2095	300	14.32	2.79	169
6	1268	320	25.24	2.98	173
Total Number	10739	1694	15.77	100	962

Note: Region 1—AK, AZ, CA, HI, ID, MT, NV, OR, UT, WA, WY

Region 2—AR, CO, KS, LA, NM, OK, TX

Region 3—IA, MN, NE, ND, SD, WI

Region 4—IL, IN, KY, MI, MO, OH

Region 5—AL, FL, GA, MS, NC, PR, SC, TN, VI

Region 6—CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA, WV

^aThere were no female agricultural education teachers in the Virgin Islands or Puerto Rico.

for content and face validity. It was also field tested on a group of female secondary level business teachers. Minor wording changes on selected questions were made as a result of their input. The questionnaire contained six sections focusing on educational background, teaching experience, mentoring/motivation, professional treatment, Desert Roses newsletter and web site, and demographics. Question format for each section was predominately checklists and fill-ins. Additionally, the questionnaire included two open-ended questions asking respondents to identify any challenging situations they encountered in the profession, as well as to identify what they perceived to be the greatest challenge or barrier to women in the field. Since the purpose of this study was to create a profile of demographic and personal attributes, reliability was not assessed. Salant and Dillman (1994, p.87) state, "...asking about many personal attributes and behaviors produces very little measurement error."

A mailed questionnaire following a modified Dillman (1978) method was used. The first packet, including a cover letter, an incentive and a copy of the questionnaire designed with a return-addressed, postage-paid cover, was mailed in April 2000. Instruments were coded to allow follow-up. Three follow-ups were conducted using electronic mail, postcards and telephone calls. The final usable response rate was 60 % (N=579). Due to the unique and individual characteristics being investigated results of this study cannot be generalized beyond those women who responded.

The Statistical Package for the Social Sciences (SPSS 10.1) was used to analyze the data associated with this research. Means and standard deviations were computed on all questions requiring an agreement rating response. Qualitative analyses were completed on the open-ended responses in the questionnaire. Responses were initially defined and organized into common themes.

Findings

The results of this study are reported by objective.

Objective one: Demographic Profile

Lists provided by state supervisors identified 1694 females employed as agricultural education secondary and middle school teachers in spring 2000, indicating that women comprised only slightly over 15 % of the total agricultural education teachers.

The respondents' experience in teaching was reported with the majority (54.5 %) having taught 1-5 years. Another 20.4 % reported teaching 6-10 years, followed by a smaller percentage (11.7) having taught 11-15 years. An even smaller number of respondents (8.6 %) reported teaching 16-20 years and only 4.9 % reported teaching over 20 years. A majority (61.2 %) of the female agricultural education teachers in this study held bachelors degrees, while 38.2 % held masters degrees, and less than 1 (0.4) % held a doctoral degree. Over 66 % reported interest in increasing their level of education. Of the respondents, 61.9 % (n=579) took agricultural education classes in high school and 56.8 % were former members of FFA. Of the 37.9 % who did not take agricultural education classes in high school, 19 % reported classes were not available. Another 7.1 % reported that agricultural education classes conflicted with their other classes and 6.4 % responded that no girls were allowed to take agricultural education classes

while they were in school. Eighty-two percent of the respondents reported previous experience in some area of the agricultural industry.

When reporting salary ranges, 26.9 % of the respondents fell into the \$30-\$34,999 range. Another 20.6 % reported salaries in the \$25-\$29,999 range, followed by 15.9 % reporting in the \$35-\$39,999 range. Eleven point one percent of the respondents reported salaries in the \$40-\$44,999 range and 10.6 % reported salaries over \$50,000. Only 5.9 % reported salaries in the range of \$45-\$49,999, and the remaining 9.0 % reported salaries under \$24,999. When salary ranges were compared with years experience women who taught 1-5 years most often reported salaries in the \$25-\$29,999 range. Those who taught 6-10 years fell in the range of \$35-\$39,999, while those with 11-15 years of experience ranged between \$40 and \$44,999. Women with 16-20 years experience reported salaries in the \$40-\$44,999 range and those with 21-25 years experience fell into the \$45-\$50,000 range. Interestingly women who taught over 26 years most often reported salaries in the \$45-\$50,000 range, although some reported salaries over \$50,000.

Respondents reported a diverse variety of subjects taught. Topics most frequently taught by women were FFA (84 %) and horticulture (76.5 %). Topics least likely to be taught by women were hydroponics (23.8 %) and aquaculture (25.7 %). A breakdown of those areas is shown in Table 2. In addition to their time in the classroom (25 hours per week), female agricultural education teachers also spend an average of 27 hours per week on related activities. These women reported averages of 8.8 hours preparing for class, 7.1 hours on FFA activities, 2.5 hours on SAE visits, 1.8 hours in committee meetings and 5.9 hours in other work-related activities. Combined the subjects averaged 68.6 hours of obligated time per week. Those

Table 2

Subject matter taught by respondents

Subject matter topics	Percentage of respondents teaching this topic
Animal Science	75.0
Aquaculture	25.7
Companion Animals	29.7
FFA	84.1
Horticulture	76.5
Leadership	67.7
Plant Science	72.2
Agricultural Business	46.3
Agricultural Mechanics	39.6
Equine Science	33.9
Food Science	26.1
Hydroponics	23.8
Marketing	35.8
Soil Science	51.5

respondents who reported personal/family related activities reflected an average of an additional 17.5 hours per week involvement time. A mean of 7.9 hours for domestic (housework), 4.9 hours for family obligation/time, 1.3 hours devoted to health care, 2.0 hours for religious activities and 1.4 hours for activities for their own children's schools. Figure 1 shows a breakdown of these hours by week.

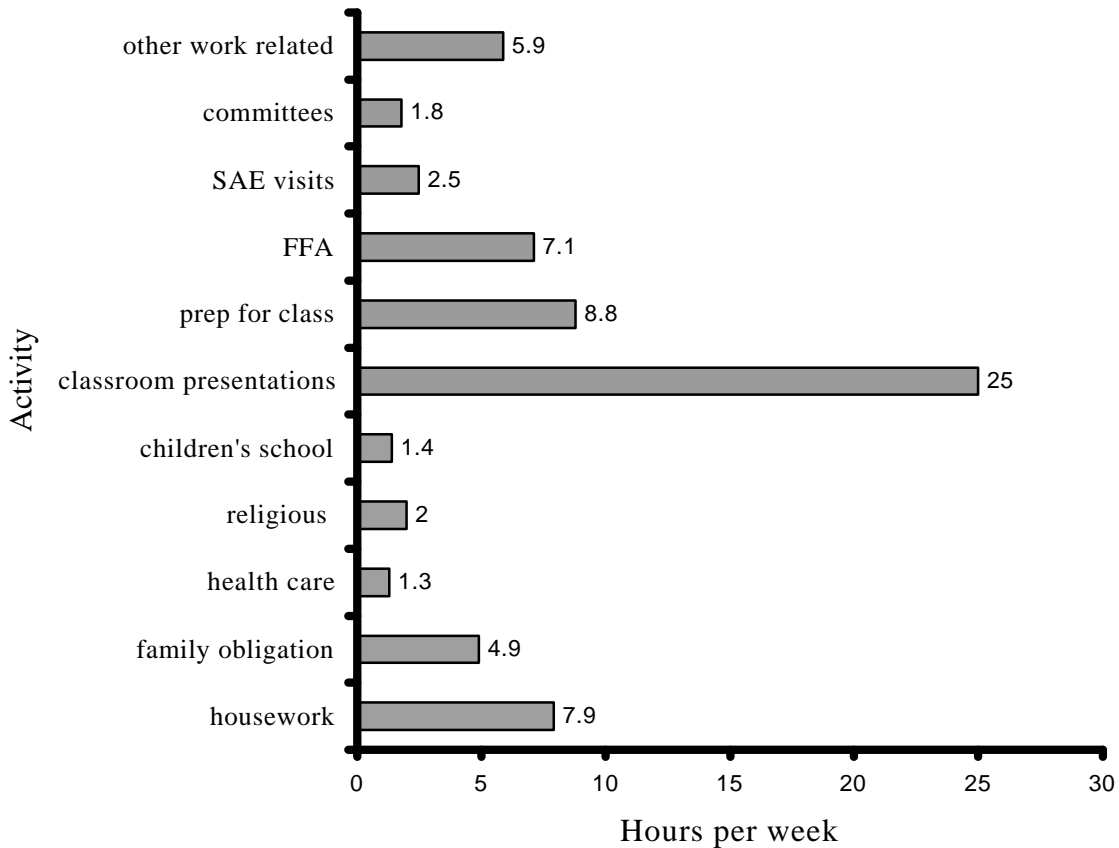


Figure 1. Breakdown Of Hours Committed During Week.

When addressing more personal issues, 64.2 % of the respondents were married with another 22.6 % having never married. Among the respondents, 9.2 % were divorced and 3.9 % were divorced and remarried. Fifty three percent reported having children (Figure 2). The average age of the respondents was 33.7 years, with a range of age from 22 years to 62 years old.

Objective two: Mentors and Support Systems

The majority (76.9 %) of female agricultural education teachers reported some type of regular contact (weekly, monthly, quarterly or yearly) with other female teachers in the profession. Of that 76.9 %, only 23.1 % reported that contact as happening once a week, while 41.1% made contact with other female agricultural education teachers once a month, 25.7 %

made contact once a quarter, 9.3 % made contact with other female agricultural education teachers once a year and 0.8% of the respondents did not complete this question.

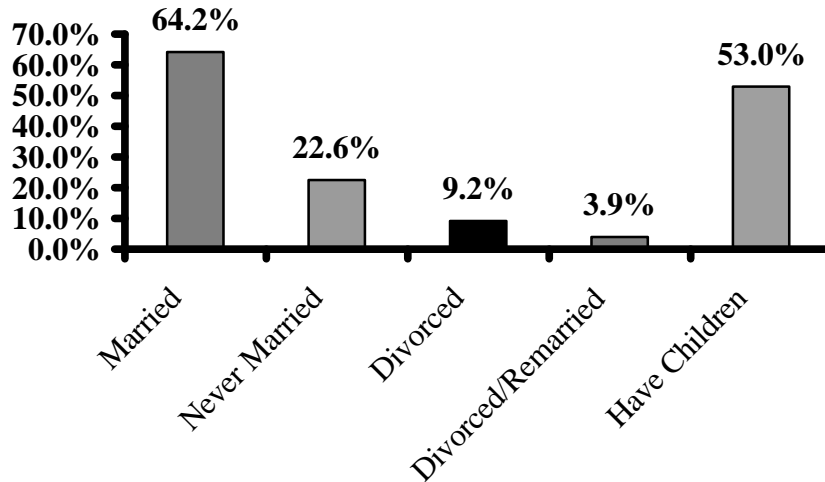


Figure 2. Family Status

Telephone and professional meetings were reported as the main forms of maintaining contact followed by in-person contact and email. Less than 5 % used written letters (Table 3). Respondents were asked to mark all that applied so frequencies are higher than the number in the sample.

Table 3

Preferred Methods of Maintaining Contact (N = 579)

	n ^a	Percent
Telephone	352	60.8
Email	219	37.8
In person	319	55.1
Letters	28	4.8
Professional Meetings	407	70.3

^an=cases reporting use of method out of 579 respondents

When asked about their career mentors, respondents suggested a variety of situations. Gender representation was broken down to 37.5 % male, 3.6 % female and 59.0 % reported as a combination of mentors from both genders. Former high school agricultural education teachers were most frequently reported as mentors (41.1 %). This group was followed by parents/relatives (21.0 %), and college professors/advisors (15.4 %). The remaining reported

mentor relationships divided among other teachers, friends and spouses. Additionally, nearly two-thirds, 64.7 % reported active membership in the NAAE.

Objective three: Job Satisfaction/Acceptance

Using a five-point Likert scale, women reported enjoyment with their current position. More than 81 % of the respondents reported being very satisfied with their current position. Still, almost two thirds (61.7 %) felt they experienced some form of barrier due to their gender.

When respondents were asked about their observation of administrators' perceptions of their ability to perform their jobs, 53.8 % perceived that when first hired their administrators felt their ability to perform the job was above average to excellent. The respondents reported that after being on the job they felt 91.2 % of their administrators would rank their ability to perform the job above average to excellent.

In review of their professional career, respondents were asked if they felt they ever experienced any discriminating questions during job interviews. Although 24.3 % reported they were asked discriminating questions during their **first** job interview, only 8.7 % reported they were asked such questions during their last interview. Most women held less than two teaching positions ($M = 1.73$) at the time of the study.

Objective four: Perceived Barriers

When asked to respond to the two open-ended questions, responses were grouped and sorted to determine trends. Some respondents provided multiple responses and some elected not to respond to the open-ended questions at all. The first open-ended question asked respondents, "What do you perceive to be the greatest barrier faced by female agricultural education teachers?" There were 518 comments recorded. The most significant area or trend to surface was *acceptance by peers and other males in industry*. Over 144 individual comments were recorded, similar in nature to the following example: "Other ag teachers (male) view the female teachers as "hobby advisors"—the largest problem I see in being a female ag teacher is having to "prove" you are qualified." Other areas that produced significant response included: *balancing family and career*, *acceptance by administrators*, *acceptance by community*, and *gender-related issues*. Still other trends identified, but given lesser significance were *acceptance by students* and *having to prove yourself*.

The second question, "Do you feel you have experienced any barriers or challenges as a teacher due to your gender? If yes, please explain," yielded 342 comments. It should be noted here that 61.7 % of the respondents answered yes to this question. The most significant trend identified in this scenario was *being accepted by parents and community*. An example of these comments was "Some parents have a hard time accepting a woman in a "man's field"..." Acceptance by parents and community was followed by identified trends of *acceptance by peers*, *acceptance by administrators* and *business leaders* and *acceptance by students*. These issues were followed by less significant trends identified as *need to continually prove yourself*, *gender-related issues* and *family life—balancing career and family*.

Conclusions and Recommendations

According to the respondents of this study, the profile of the female agricultural education teacher depicts a 33 year old, who is married and has children. This woman holds a bachelors degree with hopes to pursue a higher level of education. She has taught ten years or less and had experience with agricultural education and FFA in high school. Her average salary is approximately \$30,000. In addition, she has some previous experience in the agriculture industry. The profile of the female agricultural education teacher, as depicted by these respondents, defines a woman who spends an average of 51.8 hours at her professional occupation each week and an additional 17 hours meeting family obligations. She has contact with other women in the field once a month, usually by telephone, but also at professional meetings. Her mentor was male and was probably her high school agricultural education teacher. Although this professional woman perceives she has experienced gender challenges, she is satisfied with her chosen field of work.

The high percentage of women having taught less than 10 years with an average age of 33 denotes short-term careers for women in the field. Additionally the comparison of numbers of women at the time of this study and those figures reported by Camp in 1998 indicate a stabilization trend in the number of women in the field. Research concerning the emergence of women into the field should be continued. In addition, research focusing on the retention of women in the profession should be addressed.

The number of women reporting families, along with extensive after hours work responsibilities, acknowledges unique challenges facing these working women. This study is in agreement with a recent study by Rosencrans and Seevers (2001), that notes "Involving volunteers with special skills and expertise is a way to broaden the knowledge base available to students and allow teachers to focus on other areas." To assist in balancing family and workload, women should identify and utilize volunteers and community resources to assist with and expand their programs. Seminars, workshops, in-service training and newsletters should be developed on topics of balancing work and family. Studies reporting possible alternative work scenarios for agricultural education teachers could be beneficial in enticing and retaining women into the profession.

Challenges facing women in this field were identified in general and through personal experiences reported in the open-ended sections of the questionnaire. This study agrees with Foster, Pikkert and Husmann that gender bias could be a definite deterrent to woman entering the profession. The top three barriers, as perceived by women in the field, included acceptance by peers and other males in industry, balancing family and career and acceptance by administrators. Although women reported increasing levels of acceptance by their administration as their tenure increased, other barriers of acceptance were still a concern. The three barriers or challenges most often personally experienced by the respondents included acceptance by parents and community, acceptance by peers (male teachers), and acceptance by administrators and business leaders. When starting new positions, women should work to become involved in other community activities and organizations in order to increase familiarity with their abilities and thereby increase credibility. Another area for expanded research opportunity would be an in-depth qualitative study revolving around both the open-ended comments and the unsolicited comments retrieved in this study.

Women in agricultural education identified a limited network of peers to consult with. Only 3.6 reported females as their primary mentors although many reported a combination of male and female mentors. However male contact was definitely predominant. Individual state agricultural education professional organizations should promote the use of a structured mentoring system that pairs experienced women in the field with beginning female teachers. Mentors and mentees should maximize communication opportunities by increasing frequency of contact through utilizing existing technologies such as email. Also in an effort to increase retention of women in the field, mentors and advisor (teacher educators) should encourage more female agricultural education teachers and student teachers to visit the Desert Roses web site and open forum. *Desert Roses newsletter and web site are part of a non-profit, pro-active support communication system for women in agricultural education.* Finally, professional organizations, such as the NAAE, should help organize and sponsor forums and/or conferences for women to discuss challenges and situations unique to their gender.

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