

FOLLOW-UP OF FEMALE GRADUATES OF
THE COLLEGE OF AGRICULTURE AT
OKLAHOMA STATE UNIVERSITY:
1985-1989

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ANDREA M. PARET

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Thesis Approved:

Robert Terry

Thesis Adviser

Wesley Kelley

James P. Key

Noemon N. Durham

Dean of the Graduate College

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CHAPTER I

INTRODUCTION

Today our country is undergoing continual and rapid changes in all areas. In science and technology, in education, in communications, and in other fields new discoveries are made and new knowledge is found. Professionals and workers alike have to learn more specialized knowledge and skills and keep abreast of new developments. Educational institutions have to offer flexible and current curricula to maintain their quality and meet the ever changing needs of students.

The social structure of our society has been and is changing too. Cultural norms and traditional roles held by certain segments of society have become less stringent, and instead more diversified. Women and men have been taking on "new" responsibilities. Comprising about 44 percent of the paid labor force, women today are strongly affecting the labor market. Over the last decades more women have entered predominantly male professions. Even though these changes have been taking place for several years social structures are slow to change and women still constitute only a minor percentage in many traditionally male professions. Questions arise about existing barriers, and whether sex discrimination by males, lack of self-confidence by women, or others constitute the main obstacles.

Agriculture, traditionally, has been a predominately male field as far as education, training, paid labor, land ownership, farming and ranching, and professional employment is concerned. The percentage of women in the agricultural areas has increased though. Figures from the United States Department of Education show that in 1970 only 4.2 percent of students earning a Bachelor of Science degree in Agriculture and Natural Resources were female. By 1985, this number had increased to over 31 percent.

In the College of Agriculture at Oklahoma State University female Bachelor of Science graduates represented 20 to 24 percent of all Bachelor of Science graduates during the last five years. Drueckhammer (1985) emphasizes that

... the university must view itself as a changing social institution in touch with the political, social, and economic structure of society if it is to survive as a source of information and training for today's agriculture (p.3).

An ongoing evaluation process of the programs of the College of Agriculture is crucial for its effectiveness in meeting its goals and objectives.

Several studies have been conducted regarding different aspects of the total program of the College of Agriculture at Oklahoma State University within the last few years. But no study has been done focusing on the particular situation of female students at the undergraduate level and on how well their needs are met.

Statement of the Problem

With changes taking place in the agricultural industry regarding the types of employment and the skills needed, and with more nontraditional fields of training and employment within agriculture being and becoming available to women, it is important for the College of Agriculture at Oklahoma State University to evaluate its programs in regard to female students and their particular situation. Also, it is possible that the same would hold true for other institutions with similar programs.

Purpose of the Study

The purpose of this study was to gather specific information from female students who graduated from 1985-1989 with a Bachelor of Science degree from the College of Agriculture at Oklahoma State University about their current employment and its relation to their college training, the quality and adequacy of their academic preparation at Oklahoma State University as perceived by them, factors the female graduates experienced and/or experience as enhancing or inhibiting satisfactory employment, and their perceptions as to sex bias and sex stereotyping in the area of their college training and their work.

Objectives of the Study

The objectives of this study were:

1. To identify current positions of female graduates.

2. To determine female graduates' perceptions of the degree of relationship between their area of employment and their college degree.

3. To determine the adequacy of the programs within the College of Agriculture as perceived by female graduates.

4. To determine factors female graduates perceive as enhancing or inhibiting satisfactory employment in their field of study.

5. To determine the perceptions of female graduates as to sex bias and sex stereotyping in the area of their college training and their work.

Definition of Terms

Nontraditional Student: A student enrolled in a program in which 80 percent or more of the students are of the other sex (Kouzekanani & Knight, 1983).

The following definitions were adopted from the Rules and Regulations for Title II of the Education Amendments of 1976 (Office of the Federal Register, 1977).

Sex Bias: Behaviors resulting from the assumption that one sex is superior to the other.

Sex Discrimination: Action which limits or denies a person or a group of persons opportunities, privileges, roles, or rewards on the basis of their sex.

Sex Stereotyping: Attributing behaviors, abilities, interests, values, and roles to a person or a group of persons on the basis of their sex.

Assumptions

For the purpose of this study, the following assumptions were made:

1. The instrument developed for this study adequately measures the respondents' perceptions about their college training and work experience regarding the information needed to reach the objectives of the study.
2. The respondents' answers are honest expressions of their attitude and opinions.

Limitations

The study population consisted of female Bachelor of Science degree graduates from the College of Agriculture at Oklahoma State University who graduated from 1985-1989. Conclusions drawn were limited to this population.

Scope

This study included 252 female Bachelor of Science degree graduates from the College of Agriculture at Oklahoma State University (OSU) whose names were obtained from the OSU Alumni Association. All female students who majored in agriculture, completed their degree at OSU from 1985-1989, and could be reached by the domestic phone system were included. Students who had changed their major to a non-agricultural field, transferred to another institution, or dropped out, were not part of the study population.

CHAPTER II

LITERATURE REVIEW

The field of agriculture including training, education, needed skills, jobs, and professions is constantly undergoing changes and adapting to new situations, circumstances, and technologies. At the same time agriculture influences and causes changes in other scientific and non-scientific fields. The ways in which women contributed to agriculture throughout U.S. history is one important area in which profound changes have been taking place. The purpose of this study was to gather specific information of female graduates of the College of Agriculture at Oklahoma State University to find out how well their needs were met through the programs of the College of Agriculture. The literature review looks at (a) the changing role of women in the U.S., (b) women in agriculture, and (c) program evaluation.

The Changing Role of Women in the United States

In 1988, women comprised about 44 percent of the labor force and this number is projected to increase to 47 percent by the year 2000 according to Shirley M. Dennis, director of the Department of Labor's Women's Bureau (Office of Information and Public Affairs, Feb.1988). Discussing the growing involvement

of women in the labor force Shank (1988) states that the rising number of women participating in the labor market is "both a product and a cause of many profound social and economic changes that have occurred in the United States over the last 40 years" (p.3). During these past 40 years the proportion of 25- to 54-year old women in the labor force increased from one-third to more than 70 percent.

According to figures from the Labor Department the majority of women work because of economic need (Office of Information and Public Affairs, Jan.1987). In March of 1985 almost two-thirds of the women in the labor force were either single, divorced, widowed, separated, or had husbands with low incomes. Riley (1987) gives an additional viewpoint about women's motives for work besides financial needs citing a 1946 poll discovering "that a startling 25 percent of American women would have preferred to have been born male" (p.241). O'Donnell (1985) lists the following reasons as women's motives for paid work in contrast to mothering and volunteerism: income, personal fulfillment, social outlet, more structure, regular hours, set responsibilities, an established set of rewards.

Even though increasing numbers of women have been entering the job market, women are still concentrated in traditionally female occupations which tend to be lower paying jobs. On an average, a woman earns 65 cents for every dollar earned by the average man when both work full-time and year round (Office of Information and Public Affairs, April and May 1989). In 1984, women represented 61 percent of all persons over 16 years old

who had incomes below the poverty level (Office of Information and Public Affairs, Jan.1987). This phenomenon generally is referred to as the "feminization of poverty".

The place women hold in our society today is easier understood when looking at it from a historical perspective. Riley (1987) emphasizes that attitudes of society about women's role and women's own actions and behavior did not always coincide during the last decades. Often the majority of women did not conform anymore to the accepted model or stereotype of what an American woman should be like.

During World War I and World War II a large number of women entered the work force taking jobs of men. But returning war veterans replaced many women and minority men, especially in higher paying jobs. After World War II the traditional image of "women as domestic, docile, cheerful, simple, and submissive enjoyed periods of rejuvenation" (Riley, 1987, p.265). During the postwar years many women's organizations lost members and declined in strength. Women themselves helped in some ways to perpetuate stereotypes by accepting low wages and existing conditions without fighting for justice and equality. In 1920, Congress had established the Labor Department's Women's Bureau as an organization concerned with the interests of working women. But before 1960 the Bureau "appeared determined to improve the world of women's work rather than to break down barriers between 'male' and 'female' jobs" (Boris and Honey, 1988, p.31). During the late 1950s and the early 1960s attitudes toward working women were slowly changing. At least they were seen as a

permanent part of the labor force and not just as a temporary resource to be utilized during emergencies. In 1961, President John F. Kennedy created the President's Commission on the Status of Women. This commission's findings helped initiate a national debate on women's issues (Riley, 1987). The Equal Pay Act of 1963 and Title VII of the Civil Rights Act of 1964 aimed at overcoming some of the existing inequalities. But Hornig (1984) points out that even though the Civil Rights Act of 1964 outlawed sex-based discrimination in many areas of education and employment, it promised more than what actually happened. "It did not yet create a new social reality, but it did legitimate the effort to develop one" (p.43). In the early 1960s, many people did not question whether women's inadequate participation and subordinate roles in the professions might come from barriers in the system of access, training, employment opportunities. "The imperfections were all to be found within women" (Hornig, 1984, p.44). Newer research then showed some of the existing barriers, e.g. more loans and grants being available for men, or institutions maintaining quotas of various kinds for the admission of female students, e.g. by limiting female dorms (Hornig, 1984).

In 1966, the National Organization of Women (NOW) was founded as a formal organization of the contemporary feminist movement. The statement of purpose of NOW attacked the choices women traditionally were assumed to have: on the one side marriage and motherhood and on the other side serious participation in industry or the professions (Riley, 1987). NOW formally

endorsed and publicized the Equal Rights Amendment in 1967 which had been introduced to Congress in 1923 already for the first time. Other women's organizations established themselves. Books and magazines dealing with women's issues were published. Colleges and universities offered more and more courses in women's history, psychology, and sociology. Additional equity laws were passed in Congress.

Between 1960 and 1970 the proportion of women in the workforce almost doubled. But still women mainly worked in lower paying jobs. In 1974, the Coalition of Labor Union Women (CLUW) was organized with the goal of increasing affirmative action. During the 1980s, unions started including women's issues in their efforts (Riley, 1987).

Women's educational opportunities started to expand after 1960. The number of female college students rose and more women entered professional areas. Between 1971 and 1981 the percentage of female lawyers and judges increased from 4 to 14 percent; female doctors, from 9 to 22 percent; and female engineers, from 1 to 4 percent. By 1985, women earned almost 30 percent of all Ph.D. degrees granted (Riley, 1987).

Black women and minority women participated in these changes only to some extent. Historically, black women held a different position within their culture than white women. They were more independent and were rather concerned with racial issues than with gender issues during the 1960s.

The structure of the family was and is another major area of change in our society affecting women and being affected by

them. In the early 1950s, over 70 percent of American families were composed of a father who worked and a mother who stayed home and cared for the children. In 1980, this number had dropped to 15 percent (Riley, 1987). The definition of what constitutes a family has expanded today and has brought new attitudes toward gender roles.

An interesting aspect about women's role in our society is discussed by Chafe (1977). He points out that it wasn't until the late 19th and early 20th century that women (and only certain groups of women) were even able to devote most of their time to childrearing and homemaking (the role that many people still believe to be the only "true" role of women).

In the overwhelmingly agrarian society of colonial America, there was little opportunity for a leisure class existence or a polarization of labor between the sexes. Women from all classes were centrally involved in the mainstream economic activities of the community. Crops had to be planted and harvested, animals tended, clothes made, gardens cared for, and food prepared. Even in households with many servants, the mistress spent her day coordinating work activities (Chafe, 1977, p.17).

Even though restrictive cultural norms about a woman's place being in the home existed during this time reality looked different and the norms were not enforced. With industrialization the central economic role of women declined and expectations of society changed in regard to women conforming to the cultural norms. But this process did not affect all women in the same way.

By the end of the 19th century, therefore, a clear line had been drawn between the appropriate activities of 'proper' white middle-class women and the activities associated with black, poor, and immigrant women.

For the first time in the nation's history, women from the former group were not centrally involved in what the dominant culture defined as mainstream economic activities. Their less-well-off sisters, by contrast, provided a major source of cheap and marginal labor (Chafe, 1977, p.23).

Industrialization was only made possible through the exploitation of cheap labor which was often supplied by poor women. The 1900 census showed that 41 percent of all non-white women worked. Only 17 percent of white women worked and most of them were immigrants.

In 1916, the U.S. Employment Service, an agency of the Labor Department, established a women's and girl's division. This division required protection of women on the job because their biology was supposed to make them so different from men that only certain jobs were considered appropriate for them. The division's goal was to guide them "in desirable industry and avoidance of occupations and places where evil conditions exist" (Boris and Honey, 1988, p.26). This, of course, meant a division of jobs into "female" and "male" with female jobs being less valued and having lower wages.

Looking at history clearly shows that women in the U.S. have held numerous diversified roles throughout the last centuries. Childraising and homemaking (or even jobs in nursing and teaching) are not the only jobs women were and are able and capable of performing. Many women have made important contributions to our society but often these go unnoticed. Trescott (1984) describes how women engineers in the past often received less credit for their work than what men did in comparable sit-

uations. She cites the example of Lillian and Frank Gilbreth. Lillian often was just mentioned in connection with her husband even though he never earned a college degree and died at an early age in 1924. Lillian instead had a Ph.D. degree and worked for almost another five decades after her husband's death. She headed Gilbreth, Inc., became a full professor of management in the School of Engineering at Purdue University in 1935, head of the Department of Personnel Relations at Newark School of Engineering in 1941, and visiting professor of management at the University of Wisconsin at Madison in 1955. She also received many honorary degrees in engineering at the master's and the doctoral levels from the 1920's on. For all her accomplishments she has not received adequate recognition, for example in engineering literature. Hubbard (1984) points out that science itself is perceived as "male or masculine, in contrast to other endeavors in which men also greatly outnumber women, such as literature, music, or painting" (p.209).

But besides women's contributions in science and technology and other fields of paid work I consider it crucial that society starts to realize and appreciate the contributions made to society through the "jobs" of childraising and homemaking (whether it be done by women or men). As long as this type of work is looked down on and considered less valuable and important than paid work our society is neglecting one of its major foundations of existence and equality is a long way off.

O'Donnell (1985) conducted a study involving extensive interviewing of 74 middle-class women and mothers. She points out

how this generation has incorporated many of the strengths of the women's movement while at the same time recognizing its weaknesses and oversights. Describing women who are putting an emphasis on mothering during a certain time span of their lives O'Donnell (1985) poses the following question:

Because of their frequent sacrifice of high salaries, career advancement, and job security, how many of us will continue to view such women as victims of male supremacy or as reactionaries who represent an inevitable but unfortunate backlash from the women's movement? (p.9)

O'Donnell realizes the importance of childraising and homemaking and at the same time emphasizes the need for a continued struggle for equality so that time spent raising children does not involve a lack of status and require costly career sacrifices and that men can participate more in the area of childraising.

Clearly we must continue to work for changes which allow women greater access to positions of power in the labor force, even if they take some time off for full-time-mothering, and for opportunities which allow men greater access to the rewards and pleasures of parenting (O'Donnell, 1985, p.16).

The role of women has changed and almost all women work in the labor force some time during their lives.

Perhaps it is only as women have gained the opportunity to be more than just mothers, as they realize they can incorporate other forms of meaningful employment into their lives before, after, and even during the time they raise children, that the benefits of mothering become truly evident. The years women spend as child rearers can no longer be viewed as the only productive ones of their lives. But this does not mean they are not among the most rewarding and personally satisfying (O'Donnell, 1985, p.94).

Many mothers in O'Donnell's study emphasized the rewards and opportunities for personal growth and development in the work of

childraising but very clearly stated the urgent need for more recognition and appreciation of this work.

Women do not want to be looked down upon either by some conservatives about choosing to work outside the home while raising children or by feminists for deciding to quit their job and be full-time-mothers for several years.

Despite enormous changes in women's lives and roles that have been taking place much still needs to be done to achieve equality. In our society socialization of girls differs from the socialization of boys from the day of birth. This creates differences in behavior which then later often are interpreted as being natural to one or the other sex. Opinions vary greatly on questions about what gender is, what women and men are, how to define 'feminine' and 'masculine', how specific characteristics develop, and the importance of biological factors and social and cultural processes.

Women's suffrage which was passed in 1920 did not bring about as many changes as hoped for (because it did not automatically transform the entire societal structure). But much has improved since then even though the process has been very slow at times and there have also been setbacks. The Equal Rights Amendment did not get ratified by the required three-fourths of the states by the 1982 deadline even though it had passed both houses of Congress with a great majority. Different government administrations, e.g. the Eisenhower administration, "relied on economic growth to provide opportunity for women and minority men to advance themselves in the labor market" (Boris and

Honey, 1988, p.31). In 1981, the Reagan administration showed opposition to using federal money to bring about social change and tried to eliminate the Women's Educational Equity Act (WEEA) (Cusick, 1983). It had been created by Congress in 1974 to help schools and colleges in educating female students for full participation in modern life. Several trustees of the University of North Carolina at Chapel Hill stated concern about the high female enrollment (almost 60 percent) at their university (Greene, 1987). They feared the university would lose some of its political influence and that the giving patterns of alumni could change. They discussed changing admission standards (they were based more on student's academic and leadership records in high school than on their Scholastic Aptitude Test scores with women on the average being stronger in the first area and the average man scoring higher on the A.C.T.). The question needs to be asked why the trustees instead didn't think about encouraging women to enter better paid fields of work so that they would receive higher salaries and then be able to afford giving more money to the university as alumnis.

Equality is a diverse issue involving more freedom and less restrictive cultural norms for both women and men. Chafe (1977) summarizes that it might be most important for men and women to "learn to view each other as individuals, separate and independent of each other, each with the right to self-determination and fulfillment" (p.178).

Women in Agriculture

Women all over the world have been working in production agriculture in numerous ways for centuries. In many parts of the world today women are the primary food producers. But in the United States, agriculture is still viewed as a male field of work. After conducting a thorough study of women in agricultural production in the U.S., Sachs (1983) concluded that even though women are working as farmers, wage laborers, unpaid laborers, and subsistence producers "their work on farms has seldom been acknowledged as an economic contribution" (p. 118). Reasons for overlooking and not acknowledging women's participation in farming can be found in a "powerful sexual division of labor" and a "patriarchal system" (Sachs, 1983, p. xi). Often farm women were or are restricted to domestic work. But women do work in agricultural production performing "men's work" during times when extra labor is needed. Usually though, this work is done under the control of men with men assigning work to women. One of the women interviewed by Sachs (1983) felt that women only get to do what men don't want to do. "Women do the disking, you'll never see a woman doing the planting because the men like to do it" (p. 98). On the other hand, men rarely perform "women's work" during times when extra labor is needed in the area of domestic work.

The sexual division of labor in agriculture has shifted over time. In subsistence farming in the U.S. in the 17th and 18th centuries, a division of labor existed between families and

also within families. Products and services were exchanged between families. Within families men often were responsible for field crops and large livestock while women were more responsible for garden crops, small livestock, and domestic production. In some areas women were responsible for the milking of cows. Often women worked in the fields due to the seasonal and labor-intensive character of agricultural production resulting in frequent periods of labor shortage (Sachs, 1983).

With the transition from subsistence to commercial production, men's work in the fields was viewed as more and more important in comparison to women's work. Men's work increasingly focused on cash crops and production for the market, while women continued to produce goods and services for the family's use.

Although women's subsistence labor was economically essential for the survival of the farm, women's subsistence work was undervalued because it was generally nonmarket activity (Sachs, 1983, p. 4, 5).

Regional differences existed in the U.S. In the south, agriculture from the beginning was more geared towards producing for markets (tobacco and other crops). In the north, both industrialization and commercial agricultural production for people in the urban areas increased at the same time. On the southern plantations women slaves worked alongside men slaves in the fields (later as sharecroppers). In addition to their field work women had to care for the children and perform household tasks. Sachs (1983) discusses the discrepancy between the belief that agricultural production is men's work and the labor of black women.

The racial distinction between women's work reveals that the desire to keep white women out of the fields is not based on the presumption that women cannot perform agricultural labor; rather, it is a matter of status for white men that they can keep their women in the home (p. 25).

With industrialization the family unit ceased to be the unit of production. Increasingly more and more goods were produced outside the homes. One example is the textile production which primarily had been done by women in their homes until the textile mills took over.

At the beginning of the 20th century with a steadily decreasing proportion of the population involved in agricultural production, the United States Department of Agriculture (USDA) realized the importance of rural women in maintaining segments of the population in rural areas. The USDA tried to counter negative perceptions about farm life for women. The importance of domestic work was emphasized and the science of Home Economics established. The reasons for the dissatisfaction of women with rural life like "overwork, isolation, devaluation of work, poverty, and male dominance" were neglected. "If women were overworked, they could resolve their problem through the rationalization of housework" (Sachs, 1983, p. 23, 24). The Land Grant Colleges established after the Morrill Act of 1862 and later the Agricultural Experiment Stations and the Extension Service did not question the "natural" division of labor. Agricultural science became a male field and domestic science a female field. "This division was not one of equality, since agri-

culture was certainly viewed as far more important than domestic science by university administrators" (Sachs, 1983, p. 54).

The contributions women have made to agricultural production are difficult to assess. Sachs (1983) lists census figures showing that in 1978 five percent of all farmers and farm managers in the U.S. were female. She points out that it is quite likely that women's contributions are underreported due to the perception of field work as "men's work", the devaluation of women's labor, and women's own hesitance in the past to talk about their work in a male profession. Women often had contradictory feelings about being involved in agricultural production. They were discouraged from it because it would make them less attractive and less feminine. On the other hand, many women enjoyed working outdoors. Once women proved they could handle "men's work" they often were defined as "having almost as much sense as a man" (Sachs, 1983, p. 18). Another reason that kept many women from working more in the fields was that it was expected of them to perform their child raising and domestic duties regardless of their involvement in fieldwork.

In her study of women working in production agriculture, Sachs (1983) found that "the type of work women perform on farms is associated with their relationships with men" (p.108). She divided the women in her study into the following four groups: single women, widows, women married to farmers, and women married to nonfarmers. Single women, widows, and women married to nonfarmers often had the sole responsibility for the farm and made all the decisions concerning the farm. Women

married to farmers instead usually perceived themselves more as "helpers" or "workers" with their husbands being the farm managers. They usually didn't consider themselves to be farmers even when they spend the same amount of time as their husbands working on the farm and were performing the same types of work.

Women desiring to, or being forced by circumstances to work in agricultural production today still face many constraints. Men attempting to farm also face obstacles but there are certain constraints applying to women in particular. Inequities in occupations and wages between women and men leave women economically disadvantaged and make it harder for them to buy land and obtain credit. Landownership patterns in the past have favored men and even until 1981 "the inheritance tax laws on farms discriminated against women such that women were often unable to retain the farm after their husband's death" (Sachs, 1983, p. 115). Obtaining credit can be difficult for women because most bankers are not used to perceive women as capable farmers. Additional constraints for women include lack of access to training and information. Women farmers usually are excluded from the information networks of male farmers and all-men informal and formal gatherings. The descriptions of several of the women in Sachs' study (1983) about their interactions with government personnel responsible for working with farmers showed that "the male bias in agricultural extension operates as an obstacle for women farmers" (p. 113).

The lack of support groups and information networks for women and the urgent need to establish them is discussed in

several studies relating to different areas of agriculture. In a study of women teachers of vocational agriculture in Ohio, Knight (1987) found that 81 percent expressed a "need for support and encouragement from family, colleagues, administrators, and leaders" (p. 83). The desire for an annual meeting exclusively for women teachers of vocational agriculture was also expressed by 81 percent.

Brooks (1987) concluded in her study of female teachers of production agriculture in Ohio (at the time of her study there were eight female and 350 male teachers of production agriculture in the state of Ohio) that women need more feedback and encouragement than males. Such a statement can be misinterpreted without adding possible reasons for this need.

To be accepted, women in traditionally male professions generally have to work harder and cannot allow themselves as many mistakes as a man in a comparable position. Mailing a questionnaire to almost 1,000 women engineers Trescott (1984) found 75 percent responding that women entering engineering in the 20th century generally have been more persistent than male counterparts.

Brooks (1987) tested the hypothesis that "a paucity of role models and a scarcity of networking has a direct effect on job satisfaction of female teachers of production agriculture" (p. 2). When analyzing the results of the study she rejected the hypothesis. Even though most female teachers had male role models the gender did not seem to impact on the role model's influence. The same was true for networking with male or female

counterparts. "Job satisfaction, with the exception of their chances for promotion, was quite satisfying for female teachers involved in this study" (p.20). On the other hand, half of these female teachers felt that colleagues or superiors had questioned their professional commitment because of their gender. Half of the teachers knew females who were trained as teachers of production agriculture but were not able to find employment in that field. All teachers had experienced differential treatment because of their gender but not all of the treatment had been experienced negatively.

Hornig (1984) researched several studies and found that unemployment or underemployment rates (i.e., involuntarily working part-time or working outside their field of training because jobs in the field are not available) are higher for women scientists than for men scientists. Studies testing possible reasons for this inequality showed that "some degree of employment discrimination based on sex alone clearly persists despite the laws that prohibit it" (Hornig, 1984, p. 53). According to Vetter (1984), unemployment rates for doctoral scientists and engineers in 1979 differed substantially between women and men. In the agricultural sciences men's unemployment rate was less than one percent while for women it was over nine percent.

In Brooks' study (1987), women teachers felt the required time commitment involved in teaching production agriculture has "a direct effect not only on performance of teaching duties but on domestic relations" (p. 20, 21). One teacher even felt the divorce rate of vocational agricultural teachers should be

studied in this regard. The work hours the teachers in this study listed ranged from 40 to 80 hours per week with an average of 60 hours (except one part-time teacher working 35 hours). In addition to their work as teachers, the women had childraising and household responsibilities. Hubbard (1984) discusses the difficulties women face when entering professions "whose structure and content have been shaped by men" (p. 206). These difficulties include the "heavy demands in terms of hours, the need for total immersion in one's work, and the assumption that work comes first" (p. 206). Countering the perception that these structures are "intrinsic or 'natural'" she points out that

... they result from the fact that the men who have shaped the professions have been able to count on the services of a bevy of paid and unpaid helpers, many of them women -- assistants, secretaries, wives, sisters -- to take care of their physical, social, and emotional needs, so as to leave them free to devote inordinately large amounts of time to their work (p. 206).

In Knight's study (1987), 31 percent and 29 percent respectively of the female vocational agricultural teachers in Ohio reported experience with sexual discrimination and harassment. "In this day and age, these kinds of numbers give cause for concern" (p. 83). Forty-three percent expressed traditional concerns faced by all vocational agricultural teachers (time commitment, paper work), but over one-third had concerns unique to women teachers (stereotypes, harassment, greater household responsibilities).

Doese (1987) described her experiences as a female vocational agricultural teacher. She felt that being a female, she first had to "pass a tough credibility test" (p. 5) with her students. The parents of the students were even harder to convince. She enjoyed her profession and encouraged other females interested in vocational agriculture to enter the field. At the same time she acknowledged that a female vocational agricultural teacher "must be willing to accept a bigger challenge than the male counterpart in this male dominated industry" (p. 7).

Ries & McCracken (1980) studied the relationship between perceived sex bias and the decision of women to teach production agriculture. Results showed that female secondary and university students who perceived greater sex bias had less desire to teach. Seventy percent of female vocational agriculture teachers in the study believed that the perception of sex bias (whether realistic or not) is a deterrent for females interested in teaching production agriculture. Reasons listed regarding their own career choice included enjoying to work with students and a strong interest in agriculture but also accepting the challenge of a male-intensive field.

Thomas & Schiflett (1988) surveyed females and males ten years after they had graduated from colleges of agriculture. They found that structural conditions allocated different occupations and employment benefits to comparably trained men and women. Women experienced more occupational segregation than men with their first full-time jobs being concentrated in traditionally female occupations such as sales, clerical, and technical

positions. The researchers warned that educators and students "may become concerned that agricultural higher education fails to produce nontraditional career advantages for women in the labor market" (p. 12). They recommended further study regarding the question why women with college degrees continue to be allocated secondary jobs and also why they choose to accept such positions.

A number of studies deal with the situation of students of vocational education. Knight et.al. (1980) developed a model for the recruitment, retention, and placement of female students in nontraditional secondary vocational educational programs. Students, teachers, parents, employers, administrators, and counselors were surveyed. They found a relationship between the level of experiences with sex equity and the level of sex equity acceptance for some of the surveyed groups.

Smith (1982) in a follow-up assessment of training in non-traditional occupations criticized efforts put into sex equity programs. She pointed out that nontraditional females have higher dropout rates, a lower labor force participation, and higher unemployment rates than either traditional females or traditional males.

If nontraditional students fare worse in the labor market, recruiting, enrolling and training them represents a social cost since the resources used in the process could have been used more productively, on average, to train traditional students (p. 18).

Hargrave et.al. (1983) countered this criticism with a three-year follow-up study of students in traditional and nontraditional vocational and technical programs. The data of this

study did not indicate that one group was more successful than the other. The researchers found a high probability that secondary female nontraditional completers' lower rate of employment and labor force participation was due to their high rate of continuing education. Two of the study's recommendations were:

1. Since nontraditional students differ little with traditional students according to this research, educators, counselors, parents, businesses, and industries should support and encourage potential nontraditional students to consider nontraditional vocational training.
2. These findings should be presented to state and national legislative and policy-making bodies to support past mandated sex equity activities and encourage future sex equity legislation (p.65).

The data from Slate's study (1978) about vocational agriculture teachers' perceptions of female students in their programs showed that the average response from teachers was "in agreement with girls possessing leadership potential" but most teachers felt "it would be difficult for a girl to receive a position of leadership in an agricultural profession" (p.35). Most vocational agriculture teachers were undecided about whether or not to encourage females to become vocational agriculture teachers. They agreed that if a girl would choose to become a vocational agriculture teacher it definitely should be in a multiple teacher department. Apparently they doubted that female instructors could handle all the responsibilities of a single teacher department.

Gray (1983) studied the effectiveness of sex equity workshops for vocational educators in Oklahoma. A pre-test, post-test, and follow-up test (3 months after the workshop) were ad-

ministered. There was a significant difference at the .01 level between the pre-test and post-test scores on components concerning the expectations of the level of employment and decision making responsibilities of females and males, the expectations of the type of employment, and how well individuals would function in work settings. However, the follow-up test showed a decline in the participants' sensitivity to sex equity issues. In the areas of the importance or purpose of employment for males and females, and expectations of males' and females' basic abilities and potentials, no significant changes were noted between either the pre-test and post-test and between the pre-test and follow-up test. Gray emphasized the difficulty of changing attitudes. One of the recommendations was to hold a one-day workshop and give participants assignments to carry out in their work settings over a certain period of time. Then they would come back to report their experiences and complete the workshop.

Several studies showed progress in enrollment figures in nontraditional vocational education programs since Title IX of the Education Amendments in 1972 and Title II of the Vocational Education Amendments in 1976 were passed. Rehman (1980) concluded that there has been a significant increase in nontraditional enrollment since 1976 in Oklahoma Vocational Education Programs. The number of females enrolling in nontraditional programs increased more than males in nontraditional programs after 1976. This could be due to unattractiveness of traditionally female programs leading into low-paying jobs.

A number of authors address possible strategies for achievement of higher levels of sex equity. Kouzekanani & Knight (1983) identified widely used strategies for the recruitment, retention, and placement of students in nontraditional vocational education programs. Several of these strategies would also be applicable to college students and graduates in the work force. The need for support groups and networking is great and has been discussed earlier. Role models are another important aspect. Brooks (1987) recommended encouraging more women to teach agricultural courses at the university level. Training and awareness raising of personnel and students concerning sex equity issues has to be pursued continuously. Sproles (1987) found that high school students appeared less receptive to non-traditional agricultural students than the teachers. Parents of the students are an important target group for educational activities about sex equity issues. Career counseling, publicity, informational and instructional materials as well as classroom language have to be unbiased.

The National Advisory Council For Vocational Education and the National Advisory Council On Women's Educational Programs (1980) reported that "schools putting the most effort into various activities to further equity were also those with the highest non-traditional enrollment of women" (p. i, ii). They stated the need for more emphasis on activities "designed to overcome inequities in addition to the monitoring and reviewing designed to discover such inequities" (p. ii). The advisory councils found that successful sex equity programs

... established a liaison with potential employers, provided participants with support services and orientation to the program, instituted comprehensive evaluation, and employed competent and dedicated staff (p.ii).

Progress has been made reducing sex bias, sex stereotyping, and discrimination. But the goal of sex equity is still far away and numerous barriers are in existence. Research is available on successful strategies to remove barriers and should be applied more widely. Women and men have to be given equal opportunities so that they can develop according to their needs and abilities.

Program Evaluation

Oklahoma State University (OSU) was founded as Oklahoma Agricultural and Mechanical College in 1890 under the Morrill Land-Grant Act of 1862. Reaching its 100th anniversary OSU's mission today is

... to provide an environment in which its constituents can discover, examine, preserve, and transmit knowledge, wisdom, and values that will help ensure the survival of present and future generations, with enrichment in the quality of life (Office of the Registrar, 1989, p. 6).

The constituents and their needs within society are the focal point. Society is changing and with it the needs of its members. Requirements for jobs are not constant over the years and new and different skills have to be acquired. In the agricultural profession over 500 different types of positions exist today in research, education, business, industry, government and international development, farming and ranching (Office of the

Registrar, 1989). The purpose of the College of Agriculture is described as follows:

The curricula in the College of Agriculture are designed to meet the needs of students in a wide range of subject matter related to food and fiber production and associated agribusinesses and organizations. Courses are concerned with personal development as well as professional competence of students in their chosen fields (Office of the Registrar, 1989, p. 32).

Planning and implementing curricula and individual courses does not encompass the total educational process. Evaluation is a third major part. According to Wentling (1980), evaluation is necessary and important because it can aid in planning and decision making, it can upgrade program personnel, improve the program for students, and insure accountability of expenditures. There are many different methods used in evaluation and in some form evaluation needs to be an ongoing process within the program. One valuable form of evaluation is the follow-up study.

Very important information regarding the strengths and weaknesses of a program may be gathered from the former students, who are in the best position to judge such characteristics (Wentling, 1980, p. 140).

Former students can contribute substantially to the assessment of the program regarding the students' needs and how well they were met, e.g. whether they gained the professional competence needed in the work place.

Follow-up studies can use mail surveys, telephone interviews, personal interviews, or a combination of these three. The instrument used to gather relevant information needs to be carefully developed, implemented and analyzed. Findings and conclusions are then formulated and recommendations made.

Wentling (1980) emphasizes that "the utilization of evaluation results represents, by far, the most important part of evaluation" (p.382). To facilitate this process of implementing evaluation results into a program it is important that the researchers conducting follow-up studies have the support of the people responsible for the program. The program staff has to be informed, interested and involved in the study from the beginning to make sure information they consider relevant is included. Adoption of changes is facilitated when awareness of the problem to be researched is raised early. In this study the problem is a lack of information about the particular situation of female students in the College of Agriculture at OSU.

Summary

The review of literature has shown that the role of women in our society has undergone profound changes throughout history. Women have always contributed to agriculture even though the ways and means by which they did so changed over time. Often women's contributions in agriculture have been valued less than men's. Equality has been an issue for many years and still is the goal we need to strive for. Landers et.al. (1980) emphasize that the effort to work towards sex equity has to be

... continuous so that the eventual assimilation of sex affirmative and sex fair policies, procedures, programs, and processes will be standard operating procedures for policy makers and administrators, teachers and support personnel, students and parents, and the public at large (p.305).

Interests and abilities should determine career choices rather than sexual stereotypes. Research related to this study has shown the need for role models and support groups among other strategies in encouraging women to enter and remain in careers in nontraditional areas like agriculture. Several of these strategies are relevant to education at the college level. The evaluation of the program of the College of Agriculture at Oklahoma State University through a follow-up study of female graduates is important in assessing how well the needs of female students were and are met and what can be done differently to meet the needs even better.

CHAPTER III

DESIGN AND CONDUCT OF THE STUDY

In this chapter the procedures used in this study are described. They were determined by the purpose and objectives outlined in Chapter I. The following tasks were accomplished in order to collect and analyze data pertaining to the purpose and objectives:

1. Determine the population for the study.
2. Develop the instrument for data collection.
3. Develop a procedure for effective data collection.
4. Select methods for analysis of the data.

Study Population

The population for this study consisted of female Bachelor of Science degree graduates of the College of Agriculture at Oklahoma State University (OSU). The female students who graduated from 1985 to 1989 were surveyed with the goal of obtaining information to reach the purpose and the objectives of the study. A list of these graduates was obtained from the OSU Alumni Association through the Dean's office of the College of Agriculture at OSU in October and November 1989. Names and addresses of 257 female students who graduated from 1985 until the summer of 1989 were contained in this list. Five of these

graduates, who had current addresses outside the United States and could not be reached by the domestic phone system, were not included in the study population thus limiting it to 252 graduates.

Development of the Instrument

To obtain relevant information from the female Bachelor of Science degree graduates of the College of Agriculture at OSU an instrument had to be developed. In the development of the questionnaire, related literature and instruments used in similar studies were reviewed. Several questions from Drueckhammer's instrument (1985) were adopted.

The method chosen for collecting data was a telephone survey. Comparing mail questionnaires and telephone surveys, Finley & Key (1983) found that telephone surveys were more economical and resulted in a higher percentage of useable and reliable responses. In summarizing their analysis of several surveys they concluded:

1. It is more economical to use the telephone to gather data;
2. The percent of valid responses will be approximately twice as great through the telephone interview as anticipated by mailed questionnaire;
3. An infinitely large population or a small population are both well suited to the telephone interview technique; and,
4. Interviews conducted over the telephone are highly reliable (p.4).

Questions were developed to secure information pertaining to each of the objectives. Eleven questions were included concerning the graduates' college education and their perception of

its benefits to them in their careers. Nine questions pertained to the respondents' employment history and the degree of relationship between their employment and field of college study. Eight questions determined respondents' assessment of the influence of several factors on their careers and their perceptions as to sex bias and sex stereotyping in the area of their college training and their work.

The researcher planned an interview length of 8 to 9 minutes. In the development of the instrument the advice of Sudman & Bradburn (1982) for telephone surveys was followed: "Since respondents can keep only a small number of alternatives in mind, questions should have no more than three or four alternatives" (p. 263). Careful consideration was also given to the order of the questions.

Collection of the Data

The final form of the instrument to be used in this study was completed on November 28, 1989 (see Appendix). By this time the instrument had been critiqued by several professors in the College of Agriculture, pilot tested with several former agricultural students who were not part of the study population, and approved by the OSU Institutional Review Board.

The telephone interviews were implemented from November 29, 1989 to January 9, 1990, mainly Monday through Friday evenings and Saturdays during the day. The average length of the interviews was 8.34 minutes. From the study population of 252 graduates 192 (76%) participated in the study. Seven (3%) did not

consent to participate and for 53 graduates (21%) current phone numbers or addresses could not be obtained from the OSU Alumni Association, the individual departments in the College of Agriculture, or the phone directory, or these graduates could not be reached by the researcher during the time of data collection.

Analysis of the Data

The population of the study consisted of all female B.S. degree graduates from the College of Agriculture at OSU whose names were supplied by the OSU Alumni Association, who earned their degree from 1985 to 1989, and who had current addresses within the United States.

The data received from this population provided the following information: the current position held by the graduates, the relationship of their positions to their college training, the quality and adequacy of their academic preparation at OSU as perceived by them, factors female graduates perceived as enhancing or inhibiting satisfactory employment in their field of study, and their perceptions as to sex bias and sex stereotyping in the area of their college training and their work.

The survey involved quantitative and qualitative information. The qualitative information (attitudes and opinions) was designed to allow quantifying responses. Several open-ended questions yielded additional information and comments. Descriptive statistics were used in this study since the total population was surveyed. After the completion of the interviews, re-

sponses for each question were grouped and frequency scores, percentages, and means were calculated.

The introductory sentences of the interview provided the respondents with a short statement of purpose of the study, an assurance of confidentiality of all the data, and the affirmation of the possibility of choosing not to respond to individual questions. Verbal consent to participate in the study was obtained from the respondents. At the end of the interview, the respondents were thanked for their participation. The interview records were coded and no names appeared on them.

The university educational history of the graduates was determined through questions 2, 3, 4, and 5 of the interview. Question 2 asked for the year of graduation to insure the respondent belonged to the study population. Question 3 determined the B.S. degree major of each respondent allowing stratified analysis of the data by the departments in the College of Agriculture. Question 4 determined whether the respondent had transferred to OSU or had done all or the majority of course work at OSU. Information on additional education pursued since receiving the B.S. degree was provided by responses to question 5.

Frequency scores were determined for responses from questions 6, 7, and 10 relating to employment history. Questions 8 and 11 asking about the relationship between respondents' first and present position and their college training had four forced choice answers that were given the following response categories

and point values for purposes of calculating and categorizing mean responses:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Not related	1	1.00 - 1.49
Somewhat related	2	1.50 - 2.49
Closely related	3	2.50 - 3.49
In the field of college study	4	3.50 - 4.00

Questions 12 to 15 determined the graduates' evaluation of their college training. These questions had four forced choice answers with the following response categories and point values:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Poor	1	1.00 - 1.49
Average	2	1.50 - 2.49
Good	3	2.50 - 3.49
Excellent	4	3.50 - 4.00

Question 16 asking respondents about the benefit received from their college training had four forced choice answers and used the following scale:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
No benefit	1	1.00 - 1.49
Little benefit	2	1.50 - 2.49
Moderate benefit	3	2.50 - 3.49
Great benefit	4	3.50 - 4.00

Satisfaction with present full-time employment was determined in question 19 with the following scale being utilized:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Very dissatisfied	1	1.00 - 1.49
Somewhat dissatisfied	2	1.50 - 2.49
Somewhat satisfied	3	2.50 - 3.49
Very satisfied	4	3.50 - 4.00

Seeking choice answers with no point value given were questions 18 (relating to respondents' college education) and 29 (salary information).

Questions 20 and 21 determined respondents' marital status and number of children. Question 22 (a), (b), (c), and (d) determined the influence of several factors on respondents' careers with five forced choice answers given the following response categories and point scale values:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Very negative	1	1.00 - 1.49
Negative	2	1.50 - 2.24
No influence	2.5	2.25 - 2.74
Positive	3	2.75 - 3.49
Very positive	4	3.50 - 4.00

Questions 23, 24, and 25 determined the degree of agreement with the statement of having been treated differently because of being a woman in the field of agriculture. The following response categories and point scale values were utilized:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Strongly disagree	1	1.00 - 1.49
Slightly disagree	2	1.50 - 2.49
Slightly agree	3	2.50 - 3.49
Strongly agree	4	3.50 - 4.00

Questions 9 (method of contacting first employer) and 17 (factors influencing decision regarding college education) were open-ended. The responses were grouped and frequency scores determined for each department separately and for the College of Agriculture total.

Responses to questions 26 (barriers women face in the field of agriculture) and 27 (suggestions for improvements in the College of Agriculture regarding female students) as well as additional comments made when responding to questions 23, 24, and 25 were grouped. This grouping of responses was reviewed and cri-

tiqued by a second person. Frequency scores were determined for the College of Agriculture in total.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The purpose of this chapter is to describe the specific information received from female B.S. graduates from the College of Agriculture at Oklahoma State University (OSU) about their current position, the relationship of their position to their college degree, the quality and adequacy of their academic preparation at OSU as perceived by them, factors they perceive as enhancing or inhibiting satisfactory employment, and their perceptions as to sex bias and sex stereotyping in the area of their college training and their work.

The data collected in this study were secured by individual phone interviews the researcher conducted with 192 participants from a study population of 252 female graduates who received their B.S. degree from the College of Agriculture at OSU from 1985-1989. For purposes of presenting these data this chapter is divided into the following sections:

- Educational background of respondents
- Employment data
- Respondents' evaluation of their college education
- Influence of selected factors on respondents' career
- Specific situation of women in the field of agriculture

- Respondents' suggestions for improvements in the College of Agriculture regarding female students.

Educational Background of Respondents

The questionnaire contained four questions pertaining to the educational history of the graduates. The frequency of female graduates of the College of Agriculture on the OSU Alumni List and the percentage of respondents by year of graduation is presented in Table 1. For 1985-1988, spring, summer, and fall graduates are included but for 1989 only spring graduates. Female graduates represented 20% to 24% of all graduates from the College of Agriculture at OSU during the school years 1985-1989. Similar to the decline in female graduates during these years the total B.S. degrees granted in the College of Agriculture decreased from 327 in 1985-1986 to 269 in 1988-1989 (Office of Institutional Research, 1987, 1989).

In Table 2 the distribution of respondents by B.S. degree majors in the College of Agriculture is recorded. The leading majors were Animal Science with 35.42% and Agricultural Economics with 27.08%. Horticulture, Agricultural Communications, and Landscape Architecture represented 8.33%, 7.81%, and 5.21% respectively. Degrees in Agricultural Education, Agronomy, Forestry, General Agriculture, Pre-veterinary Medicine, Biochemistry, and Entomology showed the lowest numbers, each representing less than 4%. None of the respondents had majored in Agricultural Engineering, Mechanized Agriculture, or Plant

TABLE 1

FREQUENCY OF FEMALE GRADUATES ON OSU ALUMNI LIST AND
PERCENT OF RESPONDENTS BY YEAR OF GRADUATION

Year	Frequency Distribution			
	Female Graduates on OSU Alumni List		Respondents in Study	
	n	%	n	%
1985	70	27.78	59	23.41
1986	59	23.41	42	16.67
1987	49	19.44	35	13.89
1988	52	20.63	39	15.48
1989 (only spring graduates)	22	8.73	17	6.75
Total	252	100.00	192	76.19

TABLE 2

DISTRIBUTION OF RESPONDENTS BY B.S. DEGREE MAJORS
IN THE COLLEGE OF AGRICULTURE

Degree Major	Frequency Distribution	
	n	%
Agricultural Communications	15	7.81
Agricultural Economics	52	27.08
Agricultural Education	7	3.65
Agricultural Engineering	0	0.00
Agriculture (General)	3	1.56
Agronomy	7	3.65
Animal Science	68	35.42
Biochemistry	2	1.04
Entomology	2	1.04
Forestry	7	3.65
Horticulture	16	8.33
Landscape Architecture	10	5.21
Mechanized Agriculture	0	0.00
Plant Pathology	0	0.00
Pre-veterinary Medicine	3	1.56
Total	192	100.00

Pathology. Therefore, these three degree majors will not be listed in subsequent tables.

A comparison of the percentages of the different majors held by female graduates with the total B.S. degrees granted in the College of Agriculture shows similar percentages for Agricultural Economics, Entomology, and Forestry for 1985-1989 (Office of Institutional Research, 1988, 1990). Percentage-wise, majors in Agricultural Communications and General Agriculture combined (no separate numbers were given), in Animal Science and Pre-veterinary Medicine combined, and in Horticulture and Landscape Architecture combined, were chosen more often by female students. Agricultural Education, Agronomy, and Biochemistry were chosen less often. Agricultural Engineering and Mechanized Agriculture represented 2.41% of the total B.S. degrees granted but none of the respondents in the study had chosen them as majors.

Inspection of Table 3 shows that in Agronomy, General Agriculture, Pre-veterinary Medicine, Agricultural Education, and Forestry over 50% of the students had transferred to OSU during their college training. A total of 131 respondents (68.23%) had completed all or the majority of course work at OSU while 61 respondents (31.77%) had transferred.

Additional degree work done by respondents since completing their B.S. degree in the College of Agriculture is reported in Table 4. All Pre-veterinary Medicine majors and 50% of Biochemistry and Entomology majors had pursued further education. In Horticulture, Animal Science, Agricultural Communications, and

Agricultural Economics, 32%-38% had worked on additional degrees. None of the General Agriculture and Agronomy majors had done additional degree work.

TABLE 3

DISTRIBUTION OF STUDENTS COMPLETING ALL OR MAJORITY OF COURSE WORK AT OSU AND STUDENTS WHO TRANSFERRED TO OSU

Degree Major	Frequency Distribution				
	Majority of course work at OSU		Transfer Student		Total
	n	%	n	%	n
Agricultural Communications	13	86.67	2	13.33	15
Agricultural Economics	41	78.85	11	21.15	52
Agricultural Education	3	42.86	4	57.14	7
Agriculture (General)	1	33.33	2	66.67	3
Agronomy	2	28.57	5	71.43	7
Animal Science	46	67.65	22	32.35	68
Biochemistry	1	50.00	1	50.00	2
Entomology	2	100.00	0	0.00	2
Forestry	3	42.86	4	57.14	7
Horticulture	9	56.25	7	43.75	16
Landscape Architecture	9	90.00	1	10.00	10
Pre-veterinary Medicine	1	33.33	2	66.67	3
Total	131	68.23	61	31.77	192

TABLE 4

ADDITIONAL DEGREE WORK BY RESPONDENTS SINCE COMPLETING
THE B.S. DEGREE IN THE COLLEGE OF AGRICULTURE

Degree Major	Received or is working on an additional degree				Total n
	Yes		No		
	n	%	n	%	
Agricultural Communications	5	33.33	10	66.67	15
Agricultural Economics	17	32.70	35	67.31	52
Agricultural Education	2	28.57	5	71.43	7
Agriculture (General)	0	0.00	3	100.00	3
Agronomy	0	0.00	7	100.00	7
Animal Science	25	36.76	43	63.24	68
Biochemistry	1	50.00	1	50.00	2
Entomology	1	50.00	1	50.00	2
Forestry	1	14.29	6	85.71	7
Horticulture	6	37.50	10	62.50	16
Landscape Architecture	2	20.00	8	80.00	10
Pre-veterinary Medicine	3	100.00	0	0.00	3
Total	63	32.81	129	67.19	192

Employment Data

To obtain data regarding first and present employment, means of finding employment, the relationship of employment to the college degree, and salary information, eight questions were included in the interview.

The number of full-time positions held by respondents since graduation is shown in Table 5. Only one full-time position had been held by 42.19% of all respondents. All Pre-veterinary Medicine majors, and 71.43% of Agricultural Education and Agronomy majors had held one position. Two positions had been held

TABLE 5
NUMBER OF FULL-TIME POSITIONS RESPONDENTS HAVE HELD
SINCE GRADUATION

Degree Major	Distribution of Respondents by Number of Positions Held									
	None		One		Two		Three +		Total	
	n	%	n	%	n	%	n	%		
Agricultural Communications	1	6 67	6	40 00	6	40 00	2	13 33	15	
Agricultural Economics	5	9 62	26	50 00	18	34 62	3	5 77	52	
Agricultural Education	0	0 00	5	71 43	1	14 29	1	14 29	7	
Agriculture (General)	1	33 33	1	33 33	0	0 00	1	33 33	3	
Agronomy	0	0 00	5	71 43	1	14 29	1	14 29	7	
Animal Science	11	16 18	20	29 41	22	32 35	15	22 06	68	
Biochemistry	0	0 00	1	50 00	1	50 00	0	0 00	2	
Entomology	1	50 00	1	50 00	0	0 00	0	0 00	2	
Forestry	2	28 57	4	57 14	0	0 00	1	14 29	7	
Horticulture	2	12 50	4	25 00	4	25 00	6	37 50	16	
Landscape Architecture	1	10 00	5	50 00	3	30 00	1	10 00	10	
Pre-veterinary Medicine	0	0 00	3	100 00	0	0 00	0	0 00	3	
Total	24	12 50	81	42 19	56	29 17	31	16 15	192	

by 29.17% of all female graduates with Biochemistry (50%) and Agricultural Communications majors (40%) showing the highest percentages. Three or more positions had been held by 16.15% of the respondents. Horticulture (37.50%) and General Agriculture majors (33.33%) represented the highest percentages in that category. At the time of data collection 12.50% of the respondents had not held any full-time positions.

A comparison of present full-time employment by degree majors is presented in Table 6. Respondents working full-time made up 75.52% of the study population. The highest percentages were found in Biochemistry and Pre-veterinary Medicine (100% each), Agronomy (85.71%), Agricultural Economics (82.69%), and Agricultural Communications (80%).

The present status of the 47 graduates without full-time employment (24.48% of the respondents) was determined and the data are recorded in Table 7. One Entomology major (100%), two Agricultural Communications majors (66.67%), five Agricultural Economics majors (55.56%), nine Animal Science majors (50%), three Horticulture majors (50%), and one Forestry major (50%) held no full-time employment at the time of data collection because they were full-time students. For all degree majors together, 46.81% of respondents not full-time employed were students. Being unemployed was stated as a reason for not working full-time by the following majors: one Agronomy (100%), one Agricultural Education (50%), two Landscape Architecture (50%), two Horticulture (33.33%), three Animal Science (16.67%), and one Agricultural Economics (11.11%). Together they represented

TABLE 6

COMPARISON OF PRESENT FULL-TIME EMPLOYMENT BY DEGREE MAJORS

Degree Major	Presently full-time employed					Total n
	Yes		No			
	n	%	n	%		
Agricultural Communications	12	80.00	3	20.00	15	
Agricultural Economics	43	82.69	9	17.31	52	
Agricultural Education	5	71.43	2	28.57	7	
Agriculture (General)	2	66.67	1	33.33	3	
Agronomy	6	85.71	1	14.29	7	
Animal Science	50	73.53	18	26.47	68	
Biochemistry	2	100.00	0	0.00	2	
Entomology	1	50.00	1	50.00	2	
Forestry	5	71.43	2	28.57	7	
Horticulture	10	62.50	6	37.50	16	
Landscape Architecture	6	60.00	4	40.00	10	
Pre-veterinary Medicine	3	100.00	0	0.00	3	
Total	145	75.52	47	24.48	192	

TABLE 7

PRESENT STATUS OF RESPONDENTS WHO ARE WITHOUT
FULL-TIME POSITIONS

Degree Major	Distribution of Respondents by Present Status								Total n
	Unemployed		Part-time job		Student		Homemaker		
	n	%	n	%	n	%	n	%	
Agricultural Communications	0	0 00	0	0 00	2	66 67	1	33 33	3
Agricultural Economics	1	11 11	2	22 22	5	55 56	1	11 11	9
Agricultural Education	1	50 00	1	50 00	0	0 00	0	0 00	2
Agriculture (General)	0	0 00	1	100 00	0	0 00	0	0 00	1
Agronomy	1	100 00	0	0 00	0	0 00	0	0 00	1
Animal Science	3	16 67	3	16 67	9	50 00	3	16 67	18
Biochemistry	0	0 00	0	0 00	0	0 00	0	0 00	0
Entomology	0	0 00	0	0 00	1	100 00	0	0 00	1
Forestry	0	0 00	0	0 00	1	50 00	1	50 00	2
Horticulture	2	33 33	0	0 00	3	50 00	1	16 67	6
Landscape Architecture	2	50 00	0	0 00	1	25 00	1	25 00	4
Pre-veterinary Medicine	0	0 00	0	0 00	0	0 00	0	0 00	0
Total	10	21 28	7	14 89	22	46 81	8	17 02	47

21.28% of the 47 respondents not working full-time. Eight respondents (17.02%) were full-time homemakers. Seven respondents (14.89) had part-time jobs with three of these expressing the wish to work full-time.

Methods of contacting the first employer after graduation are shown in Table 8. The total number of responses for this question was 177 because not all graduates had been looking for a job. On the basis of the proportions of respondents utilizing various methods of contact, own initiative (including answering advertisements in newspapers, agricultural journals, and on college bulletin boards) ranked first with 47.46% of the respondents using this method. Department contacts including internships (16.95%) ranked second. Friends/relatives (10.73%) and previous employer (9.04%) came third and fourth. The Agricultural Placement Center was named by 11 respondents (6.21%) with the State Employment Agency (3.95%) coming next before the University Placement which was used by only 2.82%. A look at individual majors shows that Agricultural Education, General Agriculture, Biochemistry, and Pre-veterinary Medicine majors did not use Department contacts in making contact with their first employer. The Agricultural Placement Center was used as a means of contact only by portions of the following majors: Agronomy (28.57%), Agricultural Economics (17.78%), and Agricultural Communications (6.67%). University Placement was only named by 8.89% Agricultural Economics and 1.59% Animal Science majors.

The extent of relationship of the first full-time position to the degree major is reported in Table 9. All 168 graduates

TABLE 8

METHODS OF CONTACT WITH FIRST EMPLOYER AFTER GRADUATION

Degree Major	Distribution of Respondents by Methods of Contacting First Employer															Total n	
	Department Contacts		Agricultural Placement Center		University Placement		State Employment Agency		Friend or Relative		Previous Employer		Own Initiative		Other		
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n		%
Agricultural Communications	2	13 33	1	6 67	0	0 00	2	13 33	4	26 67	2	13 33	3	20 00	1	6 67	15
Agricultural Economics	5	11 11	8	17 78	4	8 89	2	4 44	2	4 44	6	13 33	17	37 78	1	2 22	45
Agricultural Education	0	0 00	0	0 00	0	0 00	0	0 00	2	28 57	0	0 00	5	71 43	0	0 00	7
Agriculture (General)	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	1	33 33	2	66 67	0	0 00	3
Agronomy	2	28 57	2	28 57	0	0 00	0	0 00	0	0 00	0	0 00	3	42 86	0	0 00	7
Animal Science	11	17 46	0	0 00	1	1 59	3	4 76	9	14 29	3	4 76	33	52 38	3	4 76	63
Biochemistry	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	2	100 00	0	0 00	2
Entomology	1	50 00	0	0 00	0	0 00	0	0 00	0	0 00	1	50 00	0	0 00	0	0 00	2
Forestry	3	50 00	0	0 00	0	0 00	0	0 00	1	16 67	0	0 00	2	33 33	0	0 00	6
Horticulture	5	33 33	0	0 00	0	0 00	0	0 00	0	0 00	2	13 33	8	53 33	0	0 00	15
Landscape Architecture	1	11 11	0	0 00	0	0 00	0	0 00	0	0 00	1	11 11	7	77 78	0	0 00	9
Pre-veterinary Medicine	0	0 00	0	0 00	0	0 00	0	0 00	1	33 33	0	0 00	2	66 67	0	0 00	3
Total	30	16 95	11	6 21	5	2 82	7	3 95	19	10 73	16	9 04	84	47 46	5	2 82	177

who had held at least one full-time position responded. The degree of relatedness response choices of the individuals were combined in order to calculate mean responses for the total group. To facilitate interpretation of the combined means, real limits were established for each response category as specified below:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Not related	1	1.00 - 1.49
Somewhat related	2	1.50 - 2.49
Closely related	3	2.50 - 3.49
In the field of college study	4	3.50 - 4.00

Fifty-five respondents (32.74%) had obtained jobs in their field of college study. Entomology, Pre-veterinary Medicine, Landscape Architecture, and General Agriculture majors had mean response values of "in the field of college study". The jobs of 24.40% of all respondents were closely related to their respective B.S. degrees. "Closely related" was the mean response for Agronomy, Forestry, Agricultural Communications, Animal Science, and Horticulture majors. Thirty-three graduates (19.64%) indicated that their first jobs were "somewhat related" to their degree. Biochemistry, Agricultural Economics, and Agricultural Education majors had mean responses in that category. Thirty-nine graduates (23.21%) had jobs which were not related to their field of college study, with Agricultural Education (57.14%), Agricultural Economics (31.91%) and Animal Science majors (28.07%) comprising the highest percentages within this category.

The extent of relationship of the respondents' present full-time positions to their college degrees is shown in Table

TABLE 9

RELATIONSHIP OF B.S. DEGREE AREA TO FIRST FULL-TIME POSITION AFTER GRADUATION

Degree Major	Distribution of Respondents by Degree of Relationship of Major to First Position										Mean	Response
	Not Related n	%	Somewhat Related n	%	Closely Related n	%	In Field of College Study n	%	Total n			
Agricultural Communications	1	7 14	5	35 71	5	35 71	3	21 43	14	2 71	Closely related	
Agricultural Economics	15	31 91	11	23 40	11	23 40	10	21 28	47	2 34	Somewhat related	
Agricultural Education	4	57 14	1	14 29	2	28 57	0	0 00	7	1 71	Somewhat related	
Agriculture (General)	0	0 00	0	0 00	1	50 00	1	50 00	2	3 50	In field of c study	
Agronomy	0	0 00	0	0 00	5	71 43	2	28 57	7	3 29	Closely related	
Animal Science	16	28 07	9	15 79	11	19 30	21	36 84	57	2 65	Closely related	
Biochemistry	0	0 00	2	100 00	0	0 00	0	0 00	2	2 00	Somewhat related	
Entomology	0	0 00	0	0 00	0	0 00	1	100 00	1	4 00	In field of c study	
Forestry	1	20 00	1	20 00	2	40 00	1	20 00	5	2 60	Closely related	
Horticulture	2	14 29	3	21 43	2	14 29	7	50 00	14	3 00	Closely related	
Landscape Architecture	0	0 00	1	11 11	2	22 22	6	66 67	9	3 56	In field of c study	
Pre-veterinary Medicine	0	0 00	0	0 00	0	0 00	3	100 00	3	4 00	In field of c study	
Total	39	23 21	33	19 64	41	24 40	55	32 74	168	2 67	Closely related	

10. The same response categories and point scale values were used as in the previous comparison. Positions in the field of college study decreased from 32.74% for the first job to 28.97% of present employment. Positions not related to the college degree increased from 23.21% to 26.21%. The mean response category for Agronomy majors changed from "closely related" to "in the field of college study", and for Biochemistry majors from "somewhat related" to "closely related". For General Agriculture majors the response category changed from "in the field of college study" to "closely related", and for Animal Science majors from "closely related" to "somewhat related".

Table 11 was developed to show the number of years respondents had worked for their present employers. All 145 presently full-time employed graduates answered this question. Over 50% of the Biochemistry, Entomology, Horticulture, Animal Science, Agricultural Communications, and Agricultural Economics majors indicated that they had worked for their present employer up to one year. For all majors combined, the total for this length of job tenure was 53.42%. Pre-veterinary Medicine (100%) and Landscape Architecture graduates (50%) ranked highest in having worked for their present employer two years. Agronomy (66.67%), Agricultural Education and Forestry (60% each), and General Agriculture majors (50%) ranked highest in having worked for their present employer three or more years. For all majors combined, 21.23% had worked two years and 25.34% had tenure of three or more years in their present position.

TABLE 10

RELATIONSHIP OF B.S DEGREE AREA TO PRESENT FULL-TIME POSITION

Degree Major	Distribution of Respondents by Degree of Relationship of Major to Present Position										Mean	Response
	Not Related		Somewhat Related		Closely Related		In Field of College Study		Total			
	n	%	n	%	n	%	n	%	n			
Agricultural Communications	2	16.67	5	41.67	2	16.67	3	25.00	12	2.50	Closely related	
Agricultural Economics	15	34.88	10	23.26	11	25.58	7	16.28	43	2.23	Somewhat related	
Agricultural Education	1	20.00	1	20.00	3	60.00	0	0.00	5	2.40	Somewhat related	
Agriculture (General)	0	0.00	0	0.00	2	100.00	0	0.00	2	3.00	Closely related	
Agronomy	0	0.00	0	0.00	3	50.00	3	50.00	6	3.50	In field of c study	
Animal Science	17	34.00	11	22.00	7	14.00	15	30.00	50	2.40	Somewhat related	
Biochemistry	0	0.00	1	50.00	1	50.00	0	0.00	2	2.50	Closely related	
Entomology	0	0.00	0	0.00	0	0.00	1	100.00	1	4.00	In field of c study	
Forestry	1	20.00	0	0.00	3	60.00	1	20.00	5	2.80	Closely related	
Horticulture	2	20.00	1	10.00	2	20.00	5	50.00	10	3.00	Closely related	
Landscape Architecture	0	0.00	0	0.00	2	33.33	4	66.67	6	3.67	In field of c study	
Pre-veterinary Medicine	0	0.00	0	0.00	0	0.00	3	100.00	3	4.00	In field of c study	
Total	38	26.21	29	20.00	36	24.83	42	28.97	145	2.57	Closely related	

TABLE 11

NUMBER OF YEARS RESPONDENTS HAVE WORKED FOR PRESENT EMPLOYER

Degree Major	Distribution By Years of Job Tenure						Total n
	One		Two		Three +		
	n	%	n	%	n	%	
Agricultural Communications	7	58.33	2	16.67	3	25.00	12
Agricultural Economics	23	53.49	8	18.60	12	27.91	43
Agricultural Education	2	40.00	0	0.00	3	60.00	5
Agriculture (General)	1	50.00	0	0.00	1	50.00	2
Agronomy	1	16.67	1	16.67	4	66.67	6
Animal Science	30	60.00	12	24.00	8	16.00	50
Biochemistry	2	100.00	0	0.00	0	0.00	2
Entomology	1	100.00	0	0.00	0	0.00	1
Forestry	2	40.00	0	0.00	3	60.00	5
Horticulture	7	70.00	2	20.00	1	10.00	10
Landscape Architecture	2	33.33	3	50.00	1	16.67	6
Pre-veterinary Medicine	0	0.00	3	100.00	0	0.00	3
Total	78	53.79	31	21.38	36	24.83	145

Responses to the question regarding the degree of satisfaction with currently held positions were obtained from all but one of the 145 graduates with full-time employment. The data are recorded in Table 12. The question had four forced choice answers and used the following response categories and point scale values to facilitate the calculation and interpretation of combined means:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Very dissatisfied	1	1.00 - 1.49
Somewhat dissatisfied	2	1.50 - 2.49
Somewhat satisfied	3	2.50 - 3.49
Very satisfied	4	3.50 - 4.00

On the average, the respondents from General Agriculture, Pre-veterinary Medicine, Agronomy, Agricultural Communications, Biochemistry, Horticulture, and Landscape Architecture were "very satisfied" with their current full-time employment. The respective overall mean responses were calculated at 4.00, 4.00, 3.83, 3.67, 3.50, 3.50, and 3.50. The remainder, arranged in order according to the power of their mean responses were as follows: Agricultural Education (3.40), Forstry (3.40), Animal Science (3.28), Agricultural Economics (3.21), and Entomology (3.00). These latter means all were classified in the "somewhat satisfied" category as was the case when an overall mean was computed across all respondents. It was notable that 52.08% of the total respondents were "very satisfied", with an additional 32.42% being "somewhat satisfied" with their current full-time positions. Only 4 respondents (2.78%) indicated that they were "very dissatisfied" with their current status.

TABLE 12

DEGREE OF SATISFACTION WITH CURRENT FULL-TIME POSITION

Degree Major	Distribution of Respondents by Degree of Satisfaction										Mean	Response
	Very Dissatisfied		Somewhat Dissatisfied		Somewhat Satisfied		Very Satisfied		Total n			
	n	%	n	%	n	%	n	%				
Agricultural Communications	0	0 00	0	0 00	4	33 33	8	66 67	12	3 67	Very satisfied	
Agricultural Economics	2	4 65	5	11 63	18	41 86	18	41 86	43	3 21	Somewhat satisfied	
Agricultural Education	0	0 00	0	0 00	3	60 00	2	40 00	5	3 40	Somewhat satisfied	
Agriculture (General)	0	0 00	0	0 00	0	0 00	2	100 00	2	4 00	Very satisfied	
Agronomy	0	0 00	0	0 00	1	16 67	5	83 33	6	3 83	Very satisfied	
Animal Science	2	4 00	5	10 00	23	46 00	23	46 00	50	3 28	Somewhat satisfied	
Biochemistry	0	0 00	0	0 00	1	50 00	1	50 00	2	3 50	Very satisfied	
Entomology	0	0 00	0	0 00	1	100 00	0	0 00	1	3 00	Somewhat satisfied	
Forestry	0	0 00	1	20 00	1	20 00	3	60 00	5	3 40	Somewhat satisfied	
Horticulture	0	0 00	2	20 00	1	10 00	7	70 00	10	3 50	Very satisfied	
Landscape Architecture	0	0 00	1	16 67	1	16 67	4	66 67	6	3 50	Very satisfied	
Pre-veterinary Medicine	0	0 00	0	0 00	0	0 00	2	100 00	2	4 00	Very satisfied	
Total	4	2 78	14	9 72	51	35 42	75	52 08	144	3 37	Somewhat satisfied	

Salary information is presented in Tables 13, 14, 15, and 16. Due to the sensitivity of requesting salary information the interview questions only asked for salary ranges. Less than 5% of the graduates chose not to respond.

Table 13 reports respondents' salary range for their first position after graduating with a B.S. degree. The largest percentage of responses was in the \$10,000-\$19,999 range (62.07%). Over 50% of respondents in each of the following degree major areas indicated this salary range: General Agriculture, Biochemistry and Entomology majors (100% each), Agricultural Communications (84.62%), Forestry (80%), Horticulture (69.23%), Agricultural Education (66.67%), Animal Science (66%), and Landscape Architecture (55.55%). The \$20,000-\$29,999 range was reported by 20.69% of all respondents with a B.S. degree. Agricultural Economics and Landscape Architecture majors (33.33% each), and Agronomy majors (28.57%) had the highest percentages in this category. Animal Science, Agricultural Education, Agricultural Communications, and Horticulture majors were each represented by 7-18% of their respective respondents. Only four graduates (2.76%) reported earning between \$30,000-\$39,999 which was the highest reported salary range. Twenty-one graduates (14.48%) reported earning less than \$10,000 in their first job with Horticulture majors comprising the highest percentage (23.08%).

As reported in Table 14, the majority of B.S. graduates who continued school and started their first full-time job after receiving an additional degree (M.S. or Doctoral degree) re-

TABLE 13

COMPARISON OF SALARY RANGE FOR FIRST POSITION AFTER
GRADUATING WITH A B.S. DEGREE BY MAJORS

Degree Major	Distribution of Respondents by Salary Range								Total n
	Below \$10,000		\$10,000- \$19,999		\$20,000- \$29,999		\$30,000- \$39,999		
	n	%	n	%	n	%	n	%	
Agricultural Communications	1	7.69	11	84.62	1	7.69	0	0.00	13
Agricultural Economics	6	15.38	18	46.15	13	33.33	2	5.13	39
Agricultural Education	1	16.67	4	66.67	1	16.67	0	0.00	6
Agriculture (General)	0	0.00	1	100.00	0	0.00	0	0.00	1
Agronomy	1	14.29	3	42.86	2	28.57	1	14.29	7
Animal Science	8	16.00	33	66.00	9	18.00	0	0.00	50
Biochemistry	0	0.00	1	100.00	0	0.00	0	0.00	1
Entomology	0	0.00	1	100.00	0	0.00	0	0.00	1
Forestry	0	0.00	4	80.00	0	0.00	1	20.00	5
Horticulture	3	23.08	9	69.23	1	7.69	0	0.00	13
Landscape Architecture	1	11.11	5	55.55	3	33.33	0	0.00	9
Pre-veterinary Medicine	0	0.00	0	0.00	0	0.00	0	0.00	0
Total	21	14.48	90	62.07	30	20.69	4	2.76	145

ceived salaries in the \$20,000-\$29,999 range (75%). The highest reported salary range was the same as for the B.S. degree graduates (\$30,000-\$39,999).

Present salaries for B.S. graduates who in the meantime received a M.S. or Doctoral degree are recorded in Table 15. The majority (66.67%) had salaries in the \$20,000-\$29,999 range. One person (4.76%) reported a salary range of \$40,000-\$49,999 but indicated that her advanced degree was in an area not related to agriculture.

Salary ranges for present full-time employment with a B.S. degree are shown in Table 16. In comparison with the first positions the highest percentage is still in the \$10,000-\$19,999 range (56.30%). Over 50% of respondents in the following degree major areas had salaries in this range: General Agriculture and Entomology (100% each), Agricultural Education (80%), Agricultural Communications (70%), Horticulture (66.67%), Forestry (60%), and Animal Science (57.14%). The \$20,000-\$29,999 range was indicated by 28.57% of all respondents. The highest percentages were represented by one Biochemistry major (100%) and three Landscape Architecture majors (75%). Eleven respondents (9.24%) received salaries in the \$30,000-\$39,999 range. Seven respondents (5.88%) had salaries under \$10,000. They were six Animal Science majors (14.29%) and one Agricultural Economics major (2.78%).

TABLE 14

COMPARISON OF SALARY RANGE FOR FIRST POSITION AFTER
GRADUATING WITH A MASTERS OR DOCTORAL DEGREE

Salary Range	Distribution by Type of Degree					
	M.S. Degree		Doctoral Degree		Total	
	n	%	n	%	n	%
\$10,000 - \$19,999	2	25.00	1	12.50	3	18.75
\$20,000 - \$29,999	5	62.50	7	87.50	12	75.00
\$30,000 - \$39,999	1	12.50	0	0.00	1	6.25
Total	8	100.00	8	100.00	16	100.00

TABLE 15

COMPARISON OF SALARY RANGE FOR PRESENT POSITION AFTER
GRADUATING WITH A MASTERS OR DOCTORAL DEGREE

Salary Range	Distribution by Type of Degree					
	M.S. Degree		Doctoral Degree		Total	
	n	%	n	%	n	%
\$10,000 - \$19,999	3	27.27	2	20.00	5	23.81
\$20,000 - \$29,999	7	63.64	7	70.00	14	66.67
\$30,000 - \$39,999	1	9.09	0	0.00	1	4.76
\$40,000 - \$49,999	0	0.00	1	10.00	1	4.76
Total	11	100.00	10	100.00	21	100.00

TABLE 16

COMPARISON OF SALARY RANGE FOR PRESENT POSITION
WITH A B.S. DEGREE

Degree Major	Distribution of Respondents by Salary Range								Total n
	Below \$10,000		\$10,000- \$19,999		\$20,000- \$29,999		\$30,000- \$39,999		
	n	%	n	%	n	%	n	%	
Agricultural Communications	0	0 00	7	70 00	2	20 00	1	10 00	10
Agricultural Economics	1	2 78	17	47 22	12	33 33	6	16 67	36
Agricultural Education	0	0 00	4	80 00	1	20 00	0	0 00	5
Agriculture (General)	0	0 00	1	100 00	0	0 00	0	0 00	1
Agronomy	0	0 00	3	50 00	2	33 33	1	16 67	6
Animal Science	6	14 63	24	58 54	10	24 39	1	2 44	41
Biochemistry	0	0 00	0	0 00	1	100 00	0	0 00	1
Entomology	0	0 00	1	100 00	0	0 00	0	0 00	1
Forestry	0	0 00	3	60 00	1	20 00	1	20 00	5
Horticulture	0	0 00	6	66 67	2	22 22	1	11 11	9
Landscape Architecture	0	0 00	1	25 00	3	75 00	0	0 00	4
Pre-veterinary Medicine	0	0 00	0	0 00	0	0 00	0	0 00	0
Total	7	5 88	67	56 30	34	28 57	11	9 24	119

Respondents' Evaluation of Their
College Education

A group of questions was included in the instrument to obtain from the respondents an evaluation of different aspects of their college training. They were asked to provide one of four forced choice answers. In order to calculate mean responses and to categorize those the following scale values were employed:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Poor	1	1.00 - 1.49
Average	2	1.50 - 2.49
Good	3	2.50 - 3.49
Excellent	4	3.50 - 4.00

As reported in Table 17, graduates from all degree major areas except Landscape Architecture evaluated the quality of instructors in their major area of study on the average as "good". Agricultural Economics majors had the highest mean response of 3.44, followed by Animal Science (3.35), Agricultural Education and Agronomy (3.29 each), Horticulture (3.25), Forestry (3.14), and Agricultural Communications (3.07). All graduates with Biochemistry, Entomology, and Pre-veterinary Medicine majors rated their instructors "good". The mean response of General Agriculture majors of 2.67 was the lowest in the "good" category. A response of "good" was indicated by 43.75%, and "excellent" by 40.62% of all respondents. In the "excellent" category, Agricultural Education majors ranked first with 57.14%, second were Agricultural Economics majors with 50%, followed by Animal Science (45.59%), Agronomy (42.86%), Agricultural Communications (40%), Horticulture (37.50%), and Forestry (28.57%). Twenty-

TABLE 17

RESPONDENTS' ASSESSMENT OF QUALITY OF INSTRUCTORS IN MAJOR AREA OF STUDY

Degree Major	Poor		Average		Good		Excellent		Total n	Mean	Response
	n	%	n	%	n	%	n	%			
Agricultural Communications	0	0 00	5	33 33	4	26 67	6	40 00	15	3 07	Good
Agricultural Economics	0	0 00	3	5 77	23	44 23	26	50 00	52	3 44	Good
Agricultural Education	0	0 00	2	28 57	1	14 29	4	57 14	7	3 29	Good
Agriculture (General)	0	0 00	1	33 33	2	66 67	0	0 00	3	2 67	Good
Agronomy	0	0 00	1	14 29	3	42 86	3	42 86	7	3 29	Good
Animal Science	0	0 00	7	10 29	30	44 12	31	45 59	68	3 35	Good
Biochemistry	0	0 00	0	0 00	2	100 00	0	0 00	2	3 00	Good
Entomology	0	0 00	0	0 00	2	100 00	0	0 00	2	3 00	Good
Forestry	0	0 00	1	14 29	4	57 14	2	28 57	7	3 14	Good
Horticulture	0	0 00	2	12 50	8	50 00	6	37 50	16	3 25	Good
Landscape Architecture	1	10 00	7	70 00	2	20 00	0	0 00	10	2 10	Average
Pre-veterinary Medicine	0	0 00	0	0 00	3	100 00	0	0 00	3	3 00	Good
Total	1	0 52	29	15 10	84	43 75	78	40 62	192	3 24	Good

nine responses (15.10%) were in the "average" category. Seventy percent of the Landscape Architecture majors evaluated their instructors as "average" as well as 33.33% of Agricultural Communications and General Agriculture majors, and 28.57% of Agricultural Education majors. Out of the total study population only one Landscape Architecture major indicated "poor" as a response (representing 0.52% of all respondents). Landscape Architecture majors had a mean response of "average" as categorized from the 2.10 figure.

Respondents' perceptions regarding the usefulness and quality of course content in the major area of study are reported in Table 18. Responses for this and the following question were received from all but one respondent. On the average, graduates from all degree major areas evaluated the usefulness and quality of course content as "good". The individual responses of Agronomy majors indicated either "good" or "excellent" and the calculated overall mean response of Agronomy majors of 3.43 was substantially higher than the mean responses of all other degree majors. Arranged in order of the power of their mean responses, ratings by other majors were: Agricultural Economics (3.06), Animal Science (3.03), Agricultural Education (3.00), Biochemistry (3.00), Horticulture (3.00), Pre-veterinary Medicine (3.00), Forestry (2.86), Agricultural Communications (2.80), General Agriculture (2.67), and Entomology and Landscape Architecture (2.50).

From the data in Table 19 concerning the evaluation of the quality of equipment and facilities used in instruction in the

TABLE 18

RESPONDENTS' ASSESSMENT OF USEFULNESS AND QUALITY OF COURSE CONTENT
IN MAJOR AREA OF STUDY

Degree Major	Distribution of Respondents by Assessment of Quality of Course Content										Mean	Response
	Poor n	Poor %	Average n	Average %	Good n	Good %	Excellent n	Excellent %	Total n			
Agricultural Communications	0	0 00	5	33 33	8	53 33	2	13 33	15	2 80	Good	
Agricultural Economics	1	1 96	5	9 80	35	68 63	10	19 61	51	3 06	Good	
Agricultural Education	0	0 00	2	28 57	3	42 86	2	28 57	7	3 00	Good	
Agriculture (General)	0	0 00	1	33 33	2	66 67	0	0 00	3	2 67	Good	
Agronomy	0	0 00	0	0 00	4	57 14	3	42 86	7	3 43	Good	
Animal Science	2	2 94	11	16 18	38	55 88	17	25 00	68	3 03	Good	
Biochemistry	0	0 00	0	0 00	2	100 00	0	0 00	2	3 00	Good	
Entomology	0	0 00	1	50 00	1	50 00	0	0 00	2	2 50	Good	
Forestry	0	0 00	3	42 86	2	28 57	2	28 57	7	2 86	Good	
Horticulture	0	0 00	6	37 50	4	25 00	6	37 50	16	3 00	Good	
Landscape Architecture	0	0 00	6	60 00	3	30 00	1	10 00	10	2 50	Good	
Pre-veterinary Medicine	0	0 00	0	0 00	3	100 00	0	0 00	3	3 00	Good	
Total	3	1 57	40	20 94	105	54 97	43	22 51	191	2 98	Good	

major area of study it can be seen that Pre-veterinary Medicine majors had a mean response of "excellent" (3.67). Landscape Architecture (2.10) and Entomology majors (1.50) had the lowest mean responses respectively, each classified as "average". All other majors on the average rated equipment and facilities as "good". The order of these ratings by majors was: Agricultural Education (3.43), Animal Science (3.15), Agronomy (3.00), Agricultural Economics (2.83), Forestry (2.71), General Agriculture (2.67), Horticulture (2.62), Agricultural Communications (2.60), and Biochemistry (2.50). The highest percentages of responses in the "excellent" category were represented by Pre-veterinary Medicine (66.67%) and Agricultural Education majors (57.14%). A response of "good" was obtained from 71.43% of Agronomy and Forestry majors each. A rating of "poor" was indicated by 5.24% of all respondents.

Responses to the question "How would you rate the effectiveness of your total B.S. degree program as preparation for your first position after receiving your degree?" were obtained from 172 respondents and are recorded in Table 20. Several graduates indicated that they felt unable to answer this question because they had not held a position yet since graduation. Others chose not to respond because their job was not related to agriculture. Graduates from all degree majors except General Agriculture and Entomology rated the effectiveness of the B.S. degree program regarding the preparation for the first position after graduation on the average as "good". Agronomy majors had the highest mean response (3.29), followed by Biochemistry and

TABLE 19

RESPONDENTS' ASSESSMENT OF QUALITY OF EQUIPMENT AND FACILITIES USED IN
INSTRUCTION IN MAJOR AREA OF STUDY

Degree Major	Poor		Average		Good		Excellent		Total n	Mean	Response
	n	%	n	%	n	%	n	%			
Agricultural Communications	2	13 33	5	33 33	5	33 33	3	20 00	15	2 60	Good
Agricultural Economics	1	1 92	13	25 00	32	61 54	6	11 54	52	2 83	Good
Agricultural Education	0	0 00	1	14 29	2	28 57	4	57 14	7	3 43	Good
Agriculture (General)	0	0 00	1	33 33	2	66 67	0	0 00	3	2 67	Good
Agronomy	0	0 00	1	14 29	5	71 43	1	14 29	7	3 00	Good
Animal Science	0	0 00	11	16 42	35	52 24	21	31 34	67	3 15	Good
Biochemistry	0	0 00	1	50 00	1	50 00	0	0 00	2	2 50	Good
Entomology	1	50 00	1	50 00	0	0 00	0	0 00	2	1 50	Average
Forestry	0	0 00	2	28 57	5	71 43	0	0 00	7	2 71	Good
Horticulture	2	12 50	3	18 75	10	62 50	1	6 25	16	2 62	Good
Landscape Architecture	4	40 00	2	20 00	3	30 00	1	10 00	10	2 10	Average
Pre-veterinary Medicine	0	0 00	0	0 00	1	33 33	2	66 67	3	3 67	Excellent
Total	10	5 24	41	21 47	101	52 88	39	20 42	191	2 88	Good

TABLE 20

RESPONDENTS' ASSESSMENT OF EFFECTIVENESS OF TOTAL B.S. DEGREE PROGRAM AS
PREPARATION FOR FIRST POSITION AFTER GRADUATION

Degree Major	Distribution of Respondents by Assessment of Effectiveness of B S Degree Program										Mean	Response
	Poor		Average		Good		Excellent		Total			
	n	%	n	%	n	%	n	%	n			
Agricultural Communications	1	6.67	4	26.67	6	40.00	4	26.67	15	2.87	Good	
Agricultural Economics	4	8.16	12	24.49	25	51.02	8	16.33	49	2.76	Good	
Agricultural Education	0	0.00	3	60.00	1	20.00	1	20.00	5	2.60	Good	
Agriculture (General)	1	33.33	1	33.33	1	33.33	0	0.00	3	2.00	Average	
Agronomy	0	0.00	0	0.00	5	71.43	2	28.57	7	3.29	Good	
Animal Science	5	8.77	16	28.07	29	50.88	7	12.28	57	2.67	Good	
Biochemistry	0	0.00	0	0.00	1	100.00	0	0.00	1	3.00	Good	
Entomology	0	0.00	2	100.00	0	0.00	0	0.00	2	2.00	Average	
Forestry	0	0.00	0	0.00	6	100.00	0	0.00	6	3.00	Good	
Horticulture	2	14.29	2	14.29	9	64.29	1	7.14	14	2.64	Good	
Landscape Architecture	1	10.00	4	40.00	4	40.00	1	10.00	10	2.50	Good	
Pre-veterinary Medicine	0	0.00	1	33.33	2	66.67	0	0.00	3	2.67	Good	
Total	14	8.14	45	26.16	89	51.74	24	13.95	172	2.72	Good	

Forestry (3.00), Agricultural Communications (2.87), Agricultural Economics (2.76), Animal Science and Pre-veterinary Medicine (2.67), Horticulture (2.64), Agricultural Education (2.60), and Landscape Architecture (2.50). General Agriculture and Entomology majors had a mean response of "average". The overall mean response for this question was calculated at 2.72 and was lower than the mean responses for the previous three questions but still classified as "good".

All graduates responded to the question "Of how much benefit has your training received at the College of Agriculture at OSU been to you in your career?" The data are recorded in Table 21. The following answer categories and point scale values were established to facilitate the calculation and interpretation of mean responses:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
No benefit	1	1.00 - 1.49
Little benefit	2	1.50 - 2.49
Moderate benefit	3	2.50 - 3.49
Great benefit	4	3.50 - 4.00

On the average, graduates from all degree majors except Agronomy and General Agriculture felt that their college training had been of "moderate benefit" to them in their careers. The arrangement of these in order of the power of their mean responses was: Agricultural Communications (3.40), Pre-veterinary Medicine (3.33), Landscape Architecture (3.30), Animal Science (3.24), Agricultural Education (3.14), Horticulture (3.12), Agricultural Economics (3.06), Biochemistry (3.00), Forestry (2.86), and Entomology (2.50). Over 85% of Agronomy majors indicated that their college training had been of "great benefit"

TABLE 21

RESPONDENTS' ASSESSMENT OF TRAINING RECEIVED IN B.S. DEGREE PROGRAM
REGARDING BENEFIT TO CAREER

Degree Major	Distribution of Respondents by Assessment of Training Regarding Benefit to Career										Mean	Response
	No Benefit		Little Benefit		Moderate Benefit		Great Benefit		Total n			
	n	%	n	%	n	%	n	%				
Agricultural Communications	0	0 00	1	6 67	7	46 67	7	46 67	15	3 40	Moderate	
Agricultural Economics	2	3 85	8	15 38	27	51 92	15	28 85	52	3 06	Moderate	
Agricultural Education	1	14 29	0	0 00	3	42 86	3	42 86	7	3 14	Moderate	
Agriculture (General)	1	33 33	0	0 00	2	66 67	0	0 00	3	2 33	Little	
Agronomy	0	0 00	0	0 00	1	14 29	6	85 71	7	3 86	Great	
Animal Science	2	2 94	8	11 76	30	44 12	28	41 18	68	3 24	Moderate	
Biochemistry	0	0 00	0	0 00	2	100 00	0	0 00	2	3 00	Moderate	
Entomology	0	0 00	1	50 00	1	50 00	0	0 00	2	2 50	Moderate	
Forestry	0	0 00	1	14 29	6	85 71	0	0 00	7	2 86	Moderate	
Horticulture	1	6 25	2	12 50	7	43 75	6	37 50	16	3 12	Moderate	
Landscape Architecture	0	0 00	1	10 00	5	50 00	4	40 00	10	3 30	Moderate	
Pre-veterinary Medicine	0	0 00	0	0 00	2	66 67	1	33 33	3	3 33	Moderate	
Total	7	3 65	22	11 46	93	48 44	70	36 46	192	3 18	Moderate	

to them and their combined mean response of 3.86 was classified as "great benefit". The calculated mean response for General Agriculture majors of 2.33 was classified as "little benefit". Seven of the 192 graduates (3.65%) felt their college training had been of "no benefit" to them in their careers. These included one graduate each in General Agriculture, Agricultural Education, and Horticulture, and two in Agricultural Economics and Animal Science. Four of these graduates had jobs unrelated to their college training, one was a student (pursuing a degree outside the field of agriculture), and two were unemployed or underemployed. Four of them would have chosen a degree in an area outside of agriculture if they could remake that decision (see also Table 22).

Respondents' choices if they could remake their decision regarding study in the College of Agriculture at OSU were determined through question 18 and are recorded in Table 22. Ninety-one graduates (47.40%) would seek the same degree again and 39 (20.31%) would seek the same degree with some changes (choosing a different option, taking several additional or some different courses, or pursuing a double major). A comparison of the individual degree majors shows that 100% of Agronomy majors would seek the same degree again. Forestry majors have the second highest percentage with 85.71%, followed by Agricultural Economics (82.69%), General Agriculture and Pre-veterinary Medicine (66.67% each), Horticulture (62.50%), Animal Science (61.76%), Agricultural Communications (60%), Biochemistry and Entomology (50%). Only 42.86% of Agricultural Education and 40% of Land-

TABLE 22

RESPONDENTS' CHOICES IF THEY COULD REMAKE THEIR DECISION
REGARDING STUDY IN THE COLLEGE OF AGRICULTURE

Degree Major	Distribution of Respondents by Choices if They Could Remake Decision Regarding Study										Total n
	Seek Same Degree at OSU		Seek Same Degree at OSU with some changes		Seek Degree in a Different Area of Agri- culture at OSU		Seek Degree in Agriculture at Another Institution		Seek Degree in Area Outside of Agriculture		
	n	%	n	%	n	%	n	%	n	%	
Agricultural Communications	6	40 00	3	20 00	1	6 67	1	6 67	4	26 67	15
Agricultural Economics	30	57 69	13	25 00	1	1 92	0	0 00	8	15 38	52
Agricultural Education	3	42 86	0	0 00	4	57 14	0	0 00	0	0 00	7
Agriculture (General)	2	66 67	0	0 00	0	0 00	0	0 00	1	33 33	3
Agronomy	3	42 86	4	57 14	0	0 00	0	0 00	0	0 00	7
Animal Science	31	45 59	11	16 18	15	22 06	0	0 00	11	16 18	68
Biochemistry	1	50 00	0	0 00	0	0 00	0	0 00	1	50 00	2
Entomology	1	50 00	0	0 00	0	0 00	0	0 00	1	50 00	2
Forestry	4	57 14	2	28 57	0	0 00	0	0 00	1	14 29	7
Horticulture	6	37 50	4	25 00	2	12 50	1	6 25	3	18 75	16
Landscape Architecture	3	30 00	1	10 00	1	10 00	2	20 00	3	30 00	10
Pre-veterinary Medicine	1	33 33	1	33 33	1	33 33	0	0 00	0	0 00	3
Total	91	47 40	39	20 31	25	13 02	4	2 08	33	17 19	192

scape Architecture majors would choose the same degree again. A different degree within the College of Agriculture at OSU would have been chosen by 13.02% of the graduates. The highest percentages in this response category were represented by Agricultural Education majors (57.14%), followed by Pre-veterinary Medicine (33.33%), and Animal Science (22.06%). Four graduates (2.08%), including two Landscape Architecture majors (20%), would seek a degree in agriculture at a different institution. Thirty-three respondents (17.19%) would seek a degree in an area outside of agriculture if they could remake their decision. These included the following graduates: one Biochemistry and Entomology (50% each), one General Agriculture (33.33%), three Landscape Architecture (30%), four Agricultural Communications (26.67%), three Horticulture (18.75%), 11 Animal Science (16.18%), eight Agricultural Economics majors (15.38%), and one Forestry major (14.29%).

Factors influencing respondents' decision to earn a degree in agriculture at OSU are recorded in Table 23. Several graduates indicated multiple factors, therefore a total of 231 responses was obtained. One Biochemistry major did not respond. The question was open-ended. After the completion of the interviews all responses were grouped and frequency scores and percentages calculated. Ninety-five responses (41.13%) indicated that the graduates' own interest in agriculture or the specific field of study they entered was a main influencing factor. Pre-veterinary Medicine (66.67%) and Horticulture majors (64.71%) had the highest percentages of responses in this category.

TABLE 23

FACTORS INFLUENCING RESPONDENTS' DECISION TO EARN
A DEGREE IN AGRICULTURE AT OSU

Distribution of Respondents by Factors Influencing Decision													
Degree Major	Own Interest		Relatives or Friends		Farm-background		Vo-Ag Teacher/Program		OSU' Reputation in Agriculture or Specific Field		Other		Total n
	n	%	n	%	n	%	n	%	n	%	n	%	
Agricultural Communications	5	25 00	5	25 00	3	15 00	3	15 00	3	15 00	1	5 00	20
Agricultural Economics	21	35 00	20	33 33	8	13 33	4	6 67	3	5 00	4	6 67	60
Agricultural Education	1	12 50	5	62 50	0	0 00	2	25 00	0	0 00	0	0 00	8
Agriculture (General)	1	33 33	0	0 00	1	33 33	0	0 00	0	0 00	1	33 33	3
Agronomy	4	40 00	1	10 00	3	30 00	0	0 00	1	10 00	1	10 00	10
Animal Science	38	47 50	23	28 75	4	5 00	3	3 75	10	12 50	2	2 50	80
Biochemistry	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	1	100 00	1
Entomology	0	0 00	1	16 67	1	16 67	0	0 00	0	0 00	4	66 67	6
Forestry	5	50 00	0	0 00	1	10 00	0	0 00	1	10 00	3	30 00	10
Horticulture	11	64 71	2	11 76	2	11 76	0	0 00	1	5 88	1	5 88	17
Landscape Architecture	7	53 85	1	7 69	4	30 77	0	0 00	0	0 00	1	7 69	13
Pre-veterinary Medicine	2	66 67	0	0 00	0	0 00	0	0 00	0	0 00	1	33 33	3
Total	95	41 13	58	25 11	27	11 69	12	5 19	19	8 23	20	8 66	231

Fifty-eight respondents (25.11%) indicated that their relatives or friends had been very influential. This response was given by 62.50% of Agricultural Education majors. Having a farm background was stated by 27 respondents (11.69%) including one General Agriculture (33.33%), four Landscape Architecture (30.77%), and three Agronomy majors (30%). Reputation of OSU in agriculture or a specific field within agriculture had influenced 8.23% of respondents. Fifteen percent of Agricultural Communications, 12.50% of Animal Science, and 10% of Agronomy and Forestry majors had responses in this category. The Vocational Agriculture program and/or teacher were influential for 5.19% of respondents. Agricultural Education majors (25%) had the highest percentage of responses in this category, followed by Agricultural Communications (15%), Agricultural Economics (6.67%), and Animal Science majors (3.75%). The "other" category included several individual responses. One Agricultural Economics major said that the 4-H program had influenced her decision to seek a degree in agriculture at OSU. Having better job possibilities with a degree was the reason for three graduates. Helpfulness and sincerity of the college was one response, and OSU recruiters were mentioned by three graduates.

Influence of Selected Factors on Respondents' Career

A comparison of the marital status of the respondents by degree major is recorded in Table 24. The "single" category includes women who are divorced or separated. Responses were

obtained from all but one respondent. Eighty-seven graduates (45.55%) were single and 104 (54.45%) were married. Agricultural Education (85.71%) and Forestry majors (71.43%) had the highest percentage of respondents who were married.

TABLE 24

COMPARISON OF RESPONDENTS' MARITAL STATUS BY DEGREE MAJOR

Degree Major	Distribution by Marital Status				
	Single		Married		Total n
	n	%	n	%	
Agricultural Communications	7	46.67	8	53.33	15
Agricultural Economics	24	46.15	28	53.85	52
Agricultural Education	1	14.29	6	85.71	7
Agriculture (General)	1	33.33	2	66.67	3
Agronomy	3	42.86	4	57.14	7
Animal Science	34	50.75	33	49.25	67
Biochemistry	1	50.00	1	50.00	2
Entomology	1	50.00	1	50.00	2
Forestry	2	28.57	5	71.43	7
Horticulture	7	43.75	9	56.25	16
Landscape Architecture	4	40.00	6	60.00	10
Pre-veterinary Medicine	2	66.67	1	33.33	3
Total	87	45.55	104	54.45	191

From the data in Table 25 can be seen that almost 80% of the graduates had no children, 13.02% had one, 5.21% two, and 2.08% three or more children. Agricultural Education and Pre-veterinary Medicine majors had the highest percentages of having children with 42.86% and 33.33% respectively.

TABLE 25

NUMBER OF CHILDREN OF RESPONDENTS BY DEGREE MAJOR

Degree Major	Distribution of Respondents by Number of Children										Total n
	None		One		Two		Three +		Total n		
	n	%	n	%	n	%	n	%			
Agricultural Communications	11	73.33	3	20.00	1	6.67	0	0.00		15	
Agricultural Economics	40	76.92	8	15.38	3	5.77	1	1.92		52	
Agricultural Education	4	57.14	1	14.29	2	28.57	0	0.00		7	
Agriculture (General)	3	100.00	0	0.00	0	0.00	0	0.00		3	
Agronomy	6	85.71	0	0.00	1	14.29	0	0.00		7	
Animal Science	57	83.82	8	11.76	2	2.94	1	1.47		68	
Biochemistry	2	100.00	0	0.00	0	0.00	0	0.00		2	
Entomology	2	100.00	0	0.00	0	0.00	0	0.00		2	
Forestry	5	71.43	1	14.29	0	0.00	1	14.29		7	
Horticulture	14	87.50	1	6.25	1	6.25	0	0.00		16	
Landscape Architecture	7	70.00	2	20.00	0	0.00	1	10.00		10	
Pre-veterinary Medicine	2	66.67	1	33.33	0	0.00	0	0.00		3	
Total	153	79.69	25	13.02	10	5.21	4	2.08		192	

The questions determining the marital status of the respondents and the number of children they had were included in the instrument so the data could be utilized in the analysis of the following question regarding the influence of selected factors on respondents' career.

Question 22 (a), (b), (c), and (d) asked the respondents whether or not different factors had influenced their careers. If the response indicated an influence the graduates were asked to assess its type on a four point forced choice scale. For the computation of the data and the calculation of combined mean responses the following response categories and point scale values were established:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Very negative	1	1.00 - 1.49
Negative	2	1.50 - 2.24
No influence	2.5	2.25 - 2.74
Positive	3	2.75 - 3.49
Very positive	4	3.50 - 4.00

In question 22 (a) respondents were asked to assess the influence of their marital status on their career. Responses by women who were single (including divorced and separated) are reported in Table 26. Forty-nine of these graduates (56.32%) felt that their marital status had not influenced their career. Fifty percent or more of respondents with the following degree majors indicated the "no influence" category: General Agriculture, Biochemistry, Entomology, and Landscape Architecture (100% each), Agricultural Economics (58.33%), Horticulture (57.14%), Animal Science (55.88%), and Forestry (50%). Thirty graduates (34.48%) indicated that being single had a "positive" or "very

TABLE 26

SINGLE RESPONDENTS' ASSESSMENT OF INFLUENCE OF MARITAL STATUS ON CAREER

Degree Major	Distribution of Respondents by Degree of Influence										Mean	Response	
	Very Negative		Negative		No Influence		Positive		Very Positive				Total
	n	%	n	%	n	%	n	%	n	%	n		
Agricultural Communications	0	0 00	0	0 00	3	42 86	2	28 57	2	28 57	7	3 07	Positive
Agricultural Economics	0	0 00	2	8 33	14	58 33	6	25 00	2	8 33	24	2 71	No influence
Agricultural Education	0	0 00	1	100 00	0	0 00	0	0 00	0	0 00	1	2 00	Negative
Agriculture (General)	0	0 00	0	0 00	1	100 00	0	0 00	0	0 00	1	2 50	No influence
Agronomy	0	0 00	0	0 00	1	33 33	2	66 67	0	0 00	3	2 83	Positive
Animal Science	0	0 00	4	11 76	19	55 88	7	20 59	4	11 76	34	2 72	No influence
Biochemistry	0	0 00	0	0 00	1	100 00	0	0 00	0	0 00	1	2 50	No influence
Entomology	0	0 00	0	0 00	1	100 00	0	0 00	0	0 00	1	2 50	No influence
Forestry	0	0 00	0	0 00	1	50 00	0	0 00	1	50 00	2	3 25	Positive
Horticulture	0	0 00	0	0 00	4	57 14	2	28 57	1	14 29	7	2 86	Positive
Landscape Architecture	0	0 00	0	0 00	4	100 00	0	0 00	0	0 00	4	2 50	No influence
Pre-veterinary Medicine	0	0 00	1	50 00	0	0 00	1	50 00	0	0 00	2	2 50	No influence
Total	0	0 00	8	9 20	49	56 32	20	22 99	10	11 49	87	2 74	No influence

positive" influence on their career. The highest percentages for both those categories combined were represented by two Agronomy (66.67%) and four Agricultural Communications majors (57.14%), and by one Forestry and one Pre-veterinary Medicine major (50% each). Eight responses (9.20%) were in the "negative" and no response in the "very negative" category. The calculated mean responses of Forestry, Agricultural Communications, Horticulture, and Agronomy majors of 3.25, 3.07, 2.86, and 2.83 respectively were classified as "positive". All other degree majors had mean responses of "no influence" except Agricultural Education (represented by one respondent) with a mean response of "negative". The total combined mean response of 2.74 was classified as "no influence".

As can be seen from the data in Table 27, the majority of the respondents who were married (62.14%) felt their marital status had influenced their career. Forty-eight graduates (46.60%) responded with "positive" or "very positive". The highest percentages in those two categories combined were represented by one Pre-veterinary Medicine (100%), 15 Agricultural Economics (53.57%), three Agricultural Education, three Landscape Architecture, two Agronomy and two Forestry majors (50% each). A "negative" influence was indicated by 14 respondents with majors in Agricultural Economics (21.43%), Agricultural Education and Landscape Architecture (16.67% each), Animal Science (15.15%) and Agricultural Communications (12.50%). One Forestry major (25%) and one Animal Science major (3.03%) felt that being married had a "very negative" influence on their career. The

TABLE 27

MARRIED RESPONDENTS' ASSESSMENT OF INFLUENCE OF MARITAL STATUS ON CAREER

Degree Major	Distribution of Respondents by Degree of Influence										Mean	Response	
	Very Negative n	%	Negative n	%	No Influence n	%	Positive n	%	Very Positive n	%			Total n
Agricultural Communications	0	0 00	1	12 50	5	62 50	0	0 00	2	25 00	8	2 81	Positive
Agricultural Economics	0	0 00	6	21 43	7	25 00	12	42 86	3	10 71	28	2 77	Positive
Agricultural Education	0	0 00	1	16 67	2	33 33	1	16 67	2	33 33	6	3 00	Positive
Agriculture (General)	0	0 00	0	0 00	2	100 00	0	0 00	0	0 00	2	2 50	No influence
Agronomy	0	0 00	0	0 00	2	50 00	0	0 00	2	50 00	4	3 25	Positive
Animal Science	1	3 03	5	15 15	11	33 33	9	27 27	7	21 21	33	2 83	Positive
Biochemistry	0	0 00	0	0 00	1	100 00	0	0 00	0	0 00	1	2 50	No influence
Entomology	0	0 00	0	0 00	1	100 00	0	0 00	0	0 00	1	2 50	No influence
Forestry	1	25 00	0	0 00	1	25 00	1	25 00	1	25 00	4	2 62	No influence
Horticulture	0	0 00	0	0 00	5	55 56	4	44 44	0	0 00	9	2 72	No influence
Landscape Architecture	0	0 00	1	16 67	2	33 33	1	16 67	2	33 33	6	3 00	Positive
Pre-veterinary Medicine	0	0 00	0	0 00	0	0 00	0	0 00	1	100 00	1	4 00	Very positive
Total	2	1 94	14	13 59	39	37 86	28	27 18	20	19 42	103	2 83	Positive

mean response of Pre-veterinary Medicine majors (represented by one respondent) was "very positive" and on the average Agronomy, Agricultural Education, Landscape Architecture, Animal Science, Agricultural Communications, and Agricultural Economics majors indicated a "positive" influence. All other degree majors had mean responses classified as "no influence". The total mean response of 2.83 was "positive".

Question 22 (b) determined the influence of children on respondents' careers and was asked of all respondents who had indicated that they had children. Their responses are recorded in Table 28. Thirteen respondents (34.21%) felt their children had not influenced their career. A "positive" or "very positive" influence was indicated by 10 respondents (26.31%) and 14 graduates (36.84%) felt that having children had a "negative" influence on their career. Two of these respondents who indicated a "negative" influence stressed at the same time that they did not regret it. One of them had discontinued her employment to raise her child and experienced it very positive. Only one response (2.63%) was in the "very negative" category. The total mean response of 2.49 was classified as "no influence". Agronomy majors (represented by one respondent) had a mean response of 4.00 classified as "very positive" and the mean responses of Agricultural Education (3.17) and Horticulture majors (3.00) were "positive". Landscape Architecture, Agricultural Economics, Agricultural Communications, and Animal Science majors on the average felt that having children did not influence their careers. Forestry and Pre-veterinary Medicine majors had a mean response

TABLE 28

RESPONDENTS' ASSESSMENT OF INFLUENCE OF HAVING CHILDREN ON CAREER

Distribution of Respondents by Degree of Influence													
Degree Major	Very Negative		Negative		No Influence		Positive		Very Positive		Total n	Mean	Response
	n	%	n	%	n	%	n	%	n	%			
Agricultural Communications	0	0 00	1	25 00	3	75 00	0	0 00	0	0 00	4	2 38	No influence
Agricultural Economics	0	0 00	5	41 67	4	33 33	3	25 00	0	0 00	12	2 42	No influence
Agricultural Education	0	0 00	0	0 00	1	33 33	1	33 33	1	33 33	3	3 17	Positive
Agriculture (General)	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	-
Agronomy	0	0 00	0	0 00	0	0 00	0	0 00	1	100 00	1	4 00	Very positive
Animal Science	1	9 09	3	27 27	5	45 45	2	18 18	0	0 00	11	2 32	No influence
Biochemistry	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	-
Entomology	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	0	0 00	-
Forestry	0	0 00	1	100 00	0	0 00	0	0 00	0	0 00	1	2 00	Negative
Horticulture	0	0 00	1	50 00	0	0 00	0	0 00	1	50 00	2	3 00	Positive
Landscape Architecture	0	0 00	2	66 67	0	0 00	1	33 33	0	0 00	3	2 67	No influence
Pre-veterinary Medicine	0	0 00	1	100 00	0	0 00	0	0 00	0	0 00	1	2 00	Negative
Total	1	2 63	14	36 84	13	34 21	7	18 42	3	7 89	38	2 49	No influence

of "negative" (2.00). The other degree majors were not represented in this question.

All married women without children were asked what kind of influence not having children had on their careers. Their responses are recorded in Table 29. Forty graduates (57.97%) felt that not having children did not influence their career. Responses of "positive" and "very positive" were given by 27.54% and 14.49% respectively. None of the respondents indicated a "negative" or "very negative" influence. The total mean response of 2.86 was in the "positive" category as well as the mean responses of Entomology (3.00), Animal Science (2.93), and Agricultural Economics (2.86) majors. "Very positive" was the mean response for Pre-veterinary Medicine and Agronomy majors. All other degree majors on the average indicated that not having children did not influence their career.

Question 22 (c) about the influence of the husband's job on their wife's career was asked of all married women. All but one respondent answered this question and the data are recorded in Table 30. The highest percentage of responses (45.63%) was in the "no influence" category. Thirty-seven graduates (35.92%) felt their husbands' jobs were influencing their own careers positively or very positively. Nineteen graduates (18.45%) felt that their husbands' jobs had a "negative" or "very negative" influence on their career. Graduates with the following majors had a mean response of "positive": Entomology (3.00), Agricultural Education (2.92), Agricultural Communications (2.81), Animal Science (2.76), and Agronomy (2.75). All other mean re-

TABLE 29

RESPONDENTS' ASSESSMENT OF INFLUENCE OF NOT HAVING CHILDREN ON CAREER

Degree Major	Distribution of Respondents by Degree of Influence										Mean	Response	
	Very Negative n	%	Negative n	%	No Influence n	%	Positive n	%	Very Positive n	%			Total n
Agricultural Communications	0	0 00	0	0 00	3	75 00	1	25 00	0	0 00	4	2 62	No influence
Agricultural Economics	0	0 00	0	0 00	11	61 11	4	22 22	3	16 67	18	2 86	Positive
Agricultural Education	0	0 00	0	0 00	2	66 67	1	33 33	0	0 00	3	2 67	No influence
Agriculture (General)	0	0 00	0	0 00	2	100 00	0	0 00	0	0 00	2	2 50	No influence
Agronomy	0	0 00	0	0 00	1	33 33	0	0 00	2	66 67	3	3 50	Very positive
Animal Science	0	0 00	0	0 00	11	47 83	8	34 78	4	17 39	23	2 93	Positive
Biochemistry	0	0 00	0	0 00	1	100 00	0	0 00	0	0 00	1	2 50	No influence
Entomology	0	0 00	0	0 00	0	0 00	1	100 00	0	0 00	1	3 00	Positive
Forestry	0	0 00	0	0 00	2	66 67	1	33 33	0	0 00	3	2 67	No influence
Horticulture	0	0 00	0	0 00	5	71 43	2	28 57	0	0 00	7	2 64	No influence
Landscape Architecture	0	0 00	0	0 00	2	66 67	1	33 33	0	0 00	3	2 67	No influence
Pre-veterinary Medicine	0	0 00	0	0 00	0	0 00	0	0 00	1	100 00	1	4 00	Very positive
Total	0	0 00	0	0 00	40	57 97	19	27 54	10	14 49	69	2 86	Positive

TABLE 30

RESPONDENTS' ASSESSMENT OF INFLUENCE OF HUSBAND'S JOB ON CAREER

Distribution of Respondents by Degree of Influence													
Degree Major	Very Negative		Negative		No Influence		Positive		Very Positive		Total n	Mean	Response
	n	%	n	%	n	%	n	%	n	%			
Agricultural Communications	0	0 00	0	0 00	5	62 50	2	25 00	1	12 50	8	2 81	Positive
Agricultural Economics	0	0 00	10	35 71	10	35 71	5	17 86	3	10 71	28	2 57	No influence
Agricultural Education	0	0 00	0	0 00	3	50 00	2	33 33	1	16 67	6	2 92	Positive
Agriculture (General)	0	0 00	0	0 00	2	100 00	0	0 00	0	0 00	2	2 50	No influence
Agronomy	0	0 00	0	0 00	2	50 00	2	50 00	0	0 00	2	2 75	Positive
Animal Science	0	0 00	4	12 12	14	42 42	12	36 36	3	9 09	33	2 76	Positive
Biochemistry	0	0 00	0	0 00	1	100 00	0	0 00	0	0 00	1	2 50	No influence
Entomology	0	0 00	0	0 00	0	0 00	1	100 00	0	0 00	1	3 00	Positive
Forestry	1	25 00	1	25 00	1	25 00	0	0 00	1	25 00	4	2 38	No influence
Horticulture	0	0 00	1	11 11	6	66 67	2	22 22	0	0 00	9	2 56	No influence
Landscape Architecture	0	0 00	2	33 33	2	33 33	0	0 00	2	33 33	6	2 50	No influence
Pre-veterinary Medicine	0	0 00	0	0 00	1	100 00	0	0 00	0	0 00	1	2 50	No influence
Total	1	0 97	18	17 48	47	45 63	26	25 24	11	10 68	103	2 68	No influence

sponses were in the "no influence" category including the total mean response of 2.68.

All respondents were asked question 22 (d) regarding the influence of their gender on their career and all but two graduates responded. From the data in Table 31 it can be seen that 104 graduates (54.74%) felt their gender did not influence their career. Over 50% of graduates with the following degree majors indicated "no influence": General Agriculture and Biochemistry (100% each), Landscape Architecture (70%), Animal Science (58.82%), Horticulture (56.25%), and Agricultural Economics (55.77%). Thirty-seven responses (19.47%) were in the "positive" and "very positive" categories and 49 (25.79%) in the "negative" and "very negative" categories. Individual responses of Agricultural Communications, Agricultural Economics, and Agricultural Education majors ranged from "very positive" to "very negative". All Agricultural Education majors felt that their gender had influenced their career either positively or negatively. The mean responses of all degree majors including the total mean response were classified as "no influence".

Specific Situation of Women in the Field of Agriculture

Through questions 23, 24, and 25, respondents' perceptions as to being treated differently at selected points in their career path because of being a female in the field of agriculture were determined. For the analysis of the data and the

TABLE 31

RESPONDENTS' ASSESSMENT OF INFLUENCE OF GENDER ON CAREER

Distribution of Respondents by Degree of Influence													
Degree Major	Very Negative		Negative		No Influence		Positive		Very Positive		Total	Mean	Response
	n	%	n	%	n	%	n	%	n	%	n		
Agricultural Communications	1	6.67	3	20.00	7	46.67	3	20.00	1	6.67	15	2.50	No influence
Agricultural Economics	2	3.85	12	23.08	29	55.77	8	15.38	1	1.92	52	2.43	No influence
Agricultural Education	1	14.29	2	28.57	0	0.00	2	28.57	2	28.57	7	2.71	No influence
Agriculture (General)	0	0.00	0	0.00	3	100.00	0	0.00	0	0.00	3	2.50	No influence
Agronomy	0	0.00	2	28.57	3	42.86	2	28.57	0	0.00	7	2.50	No influence
Animal Science	0	0.00	16	23.53	40	58.82	9	13.24	3	4.41	68	2.51	No influence
Biochemistry	0	0.00	0	0.00	2	100.00	0	0.00	0	0.00	2	2.50	No influence
Entomology	0	0.00	1	50.00	1	50.00	0	0.00	0	0.00	2	2.25	No influence
Forestry	0	0.00	1	20.00	2	40.00	2	40.00	0	0.00	5	2.60	No influence
Horticulture	1	6.25	3	18.75	9	56.25	3	18.75	0	0.00	16	2.41	No influence
Landscape Architecture	0	0.00	3	30.00	7	70.00	0	0.00	0	0.00	10	2.35	No influence
Pre-veterinary Medicine	0	0.00	1	33.33	1	33.33	1	33.33	0	0.00	3	2.50	No influence
Total	5	2.63	44	23.16	104	54.74	30	15.79	7	3.68	190	2.48	No influence

calculation of combined mean responses the following four forced choice responses and point scale values were established:

<u>Response Category</u>	<u>Scale</u>	<u>Range Limits</u>
Strongly disagree	1	1.00 - 1.49
Slightly disagree	2	1.50 - 2.49
Slightly agree	3	2.50 - 3.49
Strongly agree	4	3.50 - 4.00

Respondents who indicated agreement with being treated differently were asked to comment on how they were treated differently. After the data collection the comments which had resulted from these questions were grouped and frequency distributions and percentages determined for the College of Agriculture total.

When asked to indicate their extent of agreement as to having been treated differently during their college education because of being a female in the field of agriculture only 45 of the graduates (23.44%) responded with positive agreement as recorded in Table 32. With 57.14% and 42.86% respectively, Agronomy and Forestry majors represented the highest percentages in the "slightly agree" and "strongly agree" categories. On the average, graduates from the following degree majors "slightly disagreed" that they had been treated differently during their college education: Agronomy (2.43), Entomology, Forestry, and Pre-veterinary Medicine (2.00 each), Animal Science (1.88), Agricultural Education (1.86), Agricultural Communications (1.73), Horticulture (1.69), and Agricultural Economics (1.56). The total mean response of 1.74 also was classified as "slightly disagree". General Agriculture (1.33), Landscape Architecture (1.30), and Biochemistry majors (1.00) had mean responses of "strongly disagree".

TABLE 32

PERCEPTIONS OF RESPONDENTS AS TO BEING TREATED DIFFERENTLY DURING THEIR COLLEGE
EDUCATION BECAUSE OF BEING A FEMALE IN THE FIELD OF AGRICULTURE

Degree Major	Distribution of Respondents by Extent of Agreement										Mean	Response
	Strongly Disagree		Slightly Disagree		Slightly Agree		Strongly Agree		Total			
	n	%	n	%	n	%	n	%	n			
Agricultural Communications	10	66.67	1	6.67	2	13.33	2	13.33	15	1.73	Slightly disagree	
Agricultural Economics	30	57.69	15	28.85	7	13.46	0	0.00	52	1.56	Slightly disagree	
Agricultural Education	4	57.14	1	14.29	1	14.29	1	14.29	7	1.86	Slightly disagree	
Agriculture (General)	2	66.67	1	33.33	0	0.00	0	0.00	3	1.33	Strongly disagree	
Agronomy	3	42.86	0	0.00	2	28.57	2	28.57	7	2.43	Slightly disagree	
Animal Science	31	45.59	18	26.47	15	22.06	4	5.88	68	1.88	Slightly disagree	
Biochemistry	2	100.00	0	0.00	0	0.00	0	0.00	2	1.00	Strongly disagree	
Entomology	1	50.00	0	0.00	1	50.00	0	0.00	2	2.00	Slightly disagree	
Forestry	3	42.86	1	14.29	3	42.86	0	0.00	7	2.00	Slightly disagree	
Horticulture	11	68.75	1	6.25	2	12.50	2	12.50	16	1.69	Slightly disagree	
Landscape Architecture	7	70.00	3	30.00	0	0.00	0	0.00	10	1.30	Strongly disagree	
Pre-veterinary Medicine	1	33.33	1	33.33	1	33.33	0	0.00	3	2.00	Slightly disagree	
Total	105	54.69	42	21.88	34	17.71	11	5.73	192	1.74	Slightly disagree	

The comments from the 45 graduates who felt they were treated differently during their college education because of being a female in the field of agriculture were grouped by the researcher and are recorded in Table 33. Several respondents specified by whom they were treated differently while others explained how they were treated differently. Five respondents chose not to give an explanation. Being considered less capable than male students, constituting a minority, having to deal with a bias towards men and male chauvenism in the College of Agriculture, and not being taken seriously, together made up 21 responses (46.67%). Being treated differently by professors and teaching staff was more often mentioned than being treated differently by peers. Five respondents felt they had been treated differently but experienced it positively.

The responses for question 24, asking the graduates whether they felt they were treated differently while seeking employment because of being a female in the field of agriculture, are recorded in Table 34. Responses were obtained from 174 graduates. The others did not feel this question applied to them because they had not been actively seeking employment or had not been seeking employment in an agricultural field. Over 85% of the Agricultural Education majors agreed with having been treated differently while seeking employment. Their combined mean response of 3.57 was classified as "strongly agree". On the average, the responses from graduates in General Agriculture, Animal Science, Agricultural Communications, Agricultural Economics, Biochemistry, and Forestry were categorized as "slightly agree"

TABLE 33

RESPONDENTS' COMMENTS REGARDING BEING TREATED DIFFERENTLY
DURING THEIR COLLEGE EDUCATION BECAUSE OF BEING
A FEMALE IN THE FIELD OF AGRICULTURE

Comments	Frequency Distribution	
	n	%
Women considered less capable	6	13.33
Being a minority	4	8.89
Bias towards men	4	8.89
Male chauvenism	4	8.89
Not being taken seriously	3	6.67
Professors and teaching staff (inlcuding lab assistants):		
Expecting less of female students	4	8.89
Expecting more of female students	2	4.44
Treating female students differently	2	4.44
Sexual harassment by one professor	1	2.22
Being treated differently by peers	2	4.44
Being treated differently but experiencing it positively	5	11.11
Other	3	6.67
No explanation	5	11.11
Total	45	100.00

TABLE 34

PERCEPTIONS OF RESPONDENTS AS TO BEING TREATED DIFFERENTLY WHILE SEEKING EMPLOYMENT
BECAUSE OF BEING A FEMALE IN THE FIELD OF AGRICULTURE

Degree Major	Distribution of Respondents by Extent of Agreement								Total n	Mean	Response
	Strongly Disagree		Slightly Disagree		Slightly Agree		Strongly Agree				
	n	%	n	%	n	%	n	%			
Agricultural Communications	5	33.33	0	0.00	6	40.00	4	26.67	15	2.60	Slightly agree
Agricultural Economics	11	26.19	7	16.67	13	30.95	11	26.19	42	2.57	Slightly agree
Agricultural Education	0	0.00	1	14.29	1	14.29	5	71.43	7	3.57	Strongly agree
Agriculture (General)	0	0.00	2	66.67	0	0.00	1	33.33	3	2.67	Slightly agree
Agronomy	3	42.86	3	42.86	0	0.00	1	14.29	7	1.86	Slightly disagree
Animal Science	11	18.03	16	26.23	17	27.87	17	27.87	61	2.66	Slightly agree
Biochemistry	0	0.00	1	50.00	1	50.00	0	0.00	2	2.50	Slightly agree
Entomology	1	50.00	0	0.00	1	50.00	0	0.00	2	2.00	Slightly disagree
Forestry	2	33.33	1	16.67	1	16.67	2	33.33	6	2.50	Slightly agree
Horticulture	7	43.75	3	18.75	1	6.25	5	31.25	16	2.25	Slightly disagree
Landscape Architecture	5	50.00	2	20.00	3	30.00	0	0.00	10	1.80	Slightly disagree
Pre-veterinary Medicine	1	33.33	1	33.33	1	33.33	0	0.00	3	2.00	Slightly disagree
Total	46	26.44	37	21.26	45	25.86	46	26.44	174	2.52	Slightly agree

with being treated differently. The respective overall mean responses were calculated at 2.67, 2.66, 2.60, 2.57, 2.50, and 2.50. The overall mean response for all graduates of 2.52 was also classified as "slightly agree". The remainder of degree majors had mean responses of "slightly disagree".

Ninety-one (52.30%) of all the graduates responding to this question felt they had been treated differently while seeking employment because of being a woman in the field of agriculture and their comments are reported in Table 35. Thirty-two of these graduates (35.16%) experienced employers who did not want to hire women. Twelve respondents (13.19%) felt they were considered less capable and qualified because of their gender and 11 (12.09%) felt they were not taken seriously. Nine graduates (9.89%) commented that it was easier to find a job as a woman because some companies had to fill quotas but seven graduates (7.69%) felt it was harder for women to find jobs in agriculture because they represented a minority.

Question 25 asked the graduates whether they felt they were treated differently in their job because of being a female in the field of agriculture. Several graduates did not respond to this question because so far they had not worked in an agriculture related job. A total of 144 responses was received and the data are recorded in Table 36. Slightly over half of the respondents to this question (50.96%) "slightly" or "strongly agreed" with having been treated differently in their jobs. The highest percentages in those two categories combined were represented by majors in Biochemistry (100%), Agricultural Education

TABLE 35

RESPONDENTS' COMMENTS REGARDING BEING TREATED DIFFERENTLY
WHILE SEEKING EMPLOYMENT BECAUSE OF BEING A FEMALE
IN THE FIELD OF AGRICULTURE

Comments	Frequency Distribution	
	n	%
Employers did not want to hire women	32	35.16
Women considered less capable and qualified	12	13.19
Not being taken seriously	11	12.09
Easier to find a job because quotas had to be filled	9	9.89
Harder to find a job because being a minority	7	7.69
Female applicants were questioned and scrutinized more	4	4.40
Less salary and benefits offered	3	3.30
Did not get a position because of being female	3	3.30
Other	3	3.30
No comments	7	7.69
Total	91	100.00

TABLE 36

PERCEPTIONS OF RESPONDENTS AS TO BEING TREATED DIFFERENTLY IN THEIR JOB
BECAUSE OF BEING A FEMALE IN THE FIELD OF AGRICULTURE

Degree Major	Distribution of Respondents by Extent of Agreement										Mean	Response
	Strongly Disagree		Slightly Disagree		Slightly Agree		Strongly Agree		Total			
	n	%	n	%	n	%	n	%	n			
Agricultural Communications	7	46.67	2	13.33	6	40.00	0	0.00	15	1.93	Slightly disagree	
Agricultural Economics	7	22.58	9	29.03	12	38.71	3	9.68	31	2.35	Slightly disagree	
Agricultural Education	0	0.00	1	33.33	0	0.00	2	66.67	3	3.33	Slightly agree	
Agriculture (General)	0	0.00	2	66.67	0	0.00	1	33.33	3	2.67	Slightly agree	
Agronomy	3	42.86	1	14.29	2	28.57	1	14.29	7	2.14	Slightly disagree	
Animal Science	10	20.00	14	28.00	21	42.00	5	10.00	50	2.42	Slightly disagree	
Biochemistry	0	0.00	0	0.00	2	100.00	0	0.00	2	3.00	Slightly agree	
Entomology	2	100.00	0	0.00	0	0.00	0	0.00	2	1.00	Strongly disagree	
Forestry	1	20.00	1	20.00	3	60.00	0	0.00	5	2.40	Slightly disagree	
Horticulture	2	14.29	4	28.57	7	50.00	1	7.14	14	2.50	Slightly agree	
Landscape Architecture	2	22.22	1	11.11	5	55.55	1	11.11	9	2.56	Slightly agree	
Pre-veterinary Medicine	1	33.33	1	33.33	1	33.33	0	0.00	3	2.00	Slightly disagree	
Total	35	24.31	36	25.00	59	40.97	14	9.72	144	2.36	Slightly disagree	

and Landscape Architecture (66.67% each), Horticulture (57.14%), and Animal Science (52%). On the average, respondents from Agricultural Education, Biochemistry, General Agriculture, Landscape Architecture, and Horticulture "slightly agreed" with being treated differently. The overall mean response for all graduates as well as the mean responses of the remaining degree majors with the exception of Entomology were in the "slightly disagree" category. Entomology majors had a mean response of "strongly disagree".

The comments of the 73 graduates (50.69%) who felt they were treated differently in their jobs due to their gender are recorded in Table 37. Twenty-three graduates (31.51% of the 73 respondents) felt women generally were considered less capable than men. Having to prove yourself more and not being taken seriously were the comments from 11 and six graduates respectively.

Question 26 was an open-ended question determining respondents' perceptions concerning barriers women in the field of agriculture face. Twenty-five respondents (13.02%) had not experienced any barriers. From the other 167 respondents (86.98%) a total of 212 responses was received. These responses were grouped and a frequency distribution and percentages calculated. The data are shown in Table 38. Prevailing stereotypes and beliefs regarding women were considered to be the main barrier by 95 respondents (44.81% of the 212 answers) without further specification on how these affected them. Difficulties in job placement with many employers not even considering to hire fe-

TABLE 37

RESPONDENTS' COMMENTS REGARDING BEING TREATED DIFFERENTLY
IN THEIR JOBS BECAUSE OF BEING A FEMALE
IN THE FIELD OF AGRICULTURE

Comments	Frequency Distribution	
	n	%
Women considered less capable	23	31.51
Having to prove yourself more	11	15.07
Not being taken seriously	6	8.23
Being a minority	4	5.48
Being treated differently but experiencing it positively	4	5.48
Receiving less salary	3	4.11
Having less chances for advancement	3	4.11
Male chauvenism	3	4.11
Employer does not give women job assignments in the area of agriculture	2	2.74
Male networks	2	2.74
Other	3	4.11
No comments	9	12.33
Total	73	100.00

TABLE 38
 RESPONDENTS' PERCEPTIONS OF BARRIERS WOMEN FACE
 IN THE FIELD OF AGRICULTURE

Barriers	Frequency Distribution	
	n	%
Stereotypes and beliefs regarding women held by:		
Society in general	(45)	
Older generation	(15)	
Farmers	(14)	
Men	(12)	
Agricultural communities	(9)	
	together:	95 44.81
Difficulties in job placement	20	9.43
Being a minority in a male dominated field	19	8.96
Physical strength	17	8.02
Having to prove yourself more	12	5.66
Family responsibilities (including lack of mobility)	12	5.66
Different treatment, discrimination	9	4.25
Discrimination regarding advancement into higher positions	8	3.77
Lack of practical experience	7	3.30
Discrimination regarding salary and loans	3	1.42
Other	10	4.72
Total	212	100.00

male graduates was indicated as a main barrier by 20 respondents (9.43%), being a minority in a male dominated field by 19 (8.96%), and responses relating to women's physical strength causing disadvantages in some settings by 17 respondents (8.02%). Having to prove yourself more and family responsibilities were each mentioned 12 times (5.66% each). Discrimination in general and regarding advancement into higher job positions, salary and obtainment of loans, together made up 20 responses (9.43%). Seven respondents (3.30%) mentioned that women are more likely to lack practical experience even if they grew up on a farm. The "other" category included five responses of "I cannot describe this so fast".

Respondents' Suggestions for Improvements
in the College of Agriculture Regarding
Female Students

In question 27 of the instrument respondents were asked: "What improvements could be made by the College of Agriculture in encouraging women to enter and remain in the field of agriculture?" Eighty-one graduates (42.19%) did not respond to this question. Their reasons for not answering included that they could not think of any possible improvements so fast, that they did not know what the college could do differently, or that they thought the College of Agriculture did a good job regarding female students. A total of 142 responses (including several multiple responses) were received from the other 111 graduates (57.81%). After the data collection all responses were grouped

and a frequency distribution and percentages determined. The results are reported in Table 39.

Improvements in the help given graduates in job placement (including the Agricultural Placement Center) were mentioned most frequently (37 times or 26.06%). Several graduates emphasized that the Agricultural Placement Center needs to make a special effort in helping female students in finding employment because job opportunities in agriculture are limited for female graduates in comparison to male graduates. Responses regarding the College of Agriculture's publicity and recruitment strategies were mentioned 35 times (24.65%). The suggestions included improvement of information and counseling about the wide variety of agricultural programs (regarding the different majors and the range of possibilities and options within each major) and the continuation of the education of the general public about women's contributions in agriculture. Seventeen comments (11.97%) referred to the course of study of enrolled students. Nine of these 17 responses advised female students to take more business, accounting, and marketing courses. Offering support groups, seminars, or workshops for female agricultural students preparing them to deal with the prejudices, stereotypes, and other barriers they will have to face when entering the workforce was the response of 15 graduates (10.56%). Professional women working in a variety of agricultural areas could be invited as speakers and for discussions. Hiring more female faculty and equal treatment of female students in the College of Agriculture were each mentioned by 10 respondents (7.04% each).

TABLE 39

RESPONDENTS' SUGGESTIONS FOR IMPROVEMENTS IN THE COLLEGE
OF AGRICULTURE REGARDING FEMALE STUDENTS

Suggested Improvements or Changes for the College of Agriculture	Frequency Distribution	
	n	%
Help in job placement (including Agricultural Placement Office)	37	26.06
Publicity and recruiting	35	24.65
Advise to students regarding selection of courses	17	11.97
Offering women's networks, support groups, seminars	15	10.56
Hiring female faculty	10	7.04
Equal treatment of female agricultural students	10	7.04
Financial assistance and scholarships specifically for female agricultural students	8	5.63
Possibilities for internships and courses with practical hands-on experience and lab work	7	4.93
Other	3	2.11
Total	142	100.00

Eight graduates suggested offering financial assistance and scholarships specifically for female agricultural students (5.63%). And seven graduates wanted more possibilities for internships and courses with practical hands-on experience (4.93%).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to present a summary of the study and the data analysis related to the purpose and objectives. Based on the findings of the data analysis, conclusions and recommendations are presented.

Summary

Purpose of the Study

The purpose of this study was to gather specific information from female students who graduated from 1985-1989 with a Bachelor of Science degree from the College of Agriculture at Oklahoma State University about their current employment and its relation to their college training, the quality and adequacy of their academic preparation at Oklahoma State University as perceived by them, factors female graduates experienced and/or experience as enhancing or inhibiting satisfactory employment, and their perceptions as to sex bias and sex stereotyping in the area of their college training and their work.

Objectives of the Study

The objectives of the study were as follows:

1. To identify current positions of female graduates.
2. To determine female graduates' perceptions of the degree of relationship between their area of employment and their college degree.
3. To determine the adequacy of the programs within the College of Agriculture as perceived by female graduates.
4. To determine factors female graduates perceive as enhancing or inhibiting satisfactory employment in their field of study.
5. To determine the perceptions of female graduates as to sex bias and sex stereotyping in the area of their college training and their work.

Design and Conduct of the Study

Following a review of literature and research related to the study, procedures were established to satisfy the purpose and objectives of the study. The study population consisted of all 252 female B.S. graduates from the College of Agriculture at Oklahoma State University (OSU), who received their degree from 1985-1989, whose names were on the list from the OSU Alumni Association, and who could be reached by the domestic phone system. After the careful development of an instrument (see Appendix) the data were obtained through phone interviews. One hundred ninety-two graduates (76% of the study population) participated in the study. The total number of responses for each question varied because several questions did not apply to all graduates and some participants chose not to respond to every

question. For data analysis, descriptive statistics were used since the total population was surveyed.

Major Findings of the Study

The data analysis was divided into the following sections:

- Educational background of respondents
- Employment data
- Respondents' evaluation of their college training
- Influence of selected factors on respondents' career
- Specific situation of women in the field of agriculture
- Respondents' suggestions for improvements in the College

of Agriculture regarding female students.

Educational Background of Respondents. The distribution of respondents by degree majors was as follows: 68 in Animal Science (35.42%), 52 in Agricultural Economics (27.08%), 16 in Horticulture (8.33%), 15 in Agricultural Communications (7.81%), 10 in Landscape Architecture (5.21%), seven each in Agricultural Education, Agronomy, and Forestry (3.65%), three each in General Agriculture and Pre-veterinary Medicine (1.56%), and two each in Biochemistry and Entomology (1.04%).

The distribution of female graduates in the degree major areas in the College of Agriculture differed from total enrollment patterns. Percentage-wise, female students chose majors in Agricultural Communications and General Agriculture combined, in Animal Science and Pre-veterinary Medicine combined, and in Horticulture and Landscape Architecture combined more often than

the total student population. Agricultural Education, Agronomy, and Biochemistry were chosen less often. None of the respondents had majored in Agricultural Engineering, Mechanized Agriculture, or Plant Pathology.

About 30% of the students had transferred to OSU during their college education. Additional degrees had been pursued by 32.81% of respondents since their graduation with a B.S. degree from the College of Agriculture at OSU.

Employment Data. Only one full-time position had been held since graduation by 42.19% of respondents, two by 29.17%, and three or more by 16.15%. Twenty-four respondents (12.50%) had not held any full-time positions. At the time of data collection 145 graduates (75.52%) held full-time employment. Twenty-two of the graduates without full-time positions were students, 10 were unemployed, eight homemakers, and seven held part-time jobs.

Respondents used a variety of methods in making initial contact with their employer. Contacting the employer on own initiative was indicated by 47.46% of the respondents. Department contacts and the Agricultural Placement Center were utilized by 23.16%. The Agricultural Placement Center was a means of making contact with the first employer for graduates with majors in Agronomy, Agricultural Economics, and Agricultural Communications.

Table 40 was developed to permit a comparison of the relationship of the B.S. degrees of respondents to their first and

present employment. As reported in this table, 96 respondents (57.14%) indicated that their first job after graduation was in the field of their college study or closely related. Agricultural Education, Agricultural Economics, and Animal Science majors showed the highest percentage of having jobs not related to their field of study. A comparison of those data with an evaluation of the relationship of the present position with the college degree across all respondents showed a slight decrease of jobs in the field of college study and an increase in not related positions. However, Agricultural Education majors indicated a substantial increase in relatedness of their employment to their college degree.

Salary ranges for the first position after graduation varied from "Below \$10,000" to "\$30,000-\$39,999". The "\$10,000-\$19,999" range had the highest percentage of responses. For the present positions a slight increase in salary ranges could be noticed.

Respondents' Evaluation of Their College Training. Table 41 contains a summary of respondents' perceptions of instructional program quality and effectiveness in the College of Agriculture at OSU. In general, all degree majors except Landscape Architecture majors (who had a mean response of "average") evaluated the quality of instructors in the major area of study as "good". Agricultural Economics majors had the highest mean response in this category (3.44) and General Agriculture majors the lowest (2.67).

TABLE 40

COMPARISON OF RELATIONSHIP OF B.S. DEGREE TO
FIRST AND PRESENT EMPLOYMENT

Degree Major	Percentage of Respondents by Extent to Which Major Was Related to First and Present Employment							
	Was not Related		Was Somewhat Related		Was Closely Related		Was in the Field of College Study	
	First %	Present %	First %	Present %	First %	Present %	First %	Present %
Agricultural Communications	7 14	16 67	35 71	41 67	35 71	16 67	21 43	25 00
Agricultural Economics	31 91	34 88	23 40	23 26	23 40	25 58	21 28	16 28
Agricultural Education	57 14	20 00	14 29	20 00	28 57	60 00	0 00	0 00
Agriculture (General)	0 00	0 00	0 00	0 00	50 00	100 00	50 00	0 00
Agronomy	0 00	0 00	0 00	0 00	71 43	50 00	28 57	50 00
Animal Science	28 07	34 00	15 79	22 00	19 30	14 00	36 84	30 00
Biochemistry	0 00	0 00	100 00	50 00	0 00	50 00	0 00	0 00
Entomology	0 00	0 00	0 00	0 00	0 00	0 00	100 00	100 00
Forestry	20 00	20 00	20 00	0 00	40 00	60 00	20 00	20 00
Horticulture	14 29	20 00	21 43	10 00	14 29	20 00	50 00	50 00
Landscape Architecture	0 00	0 00	11 11	0 00	22 22	33 33	66 67	66 67
Pre-veterinary Medicine	0 00	0 00	0 00	0 00	0 00	0 00	100 00	100 00
Total	23 21	26 21	19 64	20 00	24 40	24 83	32 74	28 97

TABLE 41

SUMMARY OF RESPONDENTS' PERCEPTIONS OF INSTRUCTIONAL PROGRAM QUALITY
AND EFFECTIVENESS IN THE COLLEGE OF AGRICULTURE AT OSU

Degree Major	Mean Responses by Selected Quality/Effectiveness Factors										
	Instructors		Course Content		Equipment And Facilities		Preparation for First Position		Amount of Benefit to Career		Total Overall Mean
Agricultural Communications	3 07	Good	2 80	Good	2 60	Good	2 87	Good	3 40	Moderate	2 95
Agricultural Economics	3 44	Good	3 06	Good	2 83	Good	2 76	Good	3 06	Moderate	3 03
Agricultural Education	3 29	Good	3 00	Good	3 43	Good	2 60	Good	3 14	Moderate	3 13
Agriculture (General)	2 67	Good	2 67	Good	2 67	Good	2 00	Average	2 33	Little	2 47
Agronomy	3 29	Good	3 43	Good	3 00	Good	3 29	Good	3 86	Great	3 37
Animal Science	3 35	Good	3 03	Good	3 15	Good	2 67	Good	3 24	Moderate	3 10
Biochemistry	3 00	Good	3 00	Good	2 50	Good	3 00	Good	3 00	Moderate	2 89
Entomology	3 00	Good	2 50	Good	1 50	Average	2 00	Average	2 50	Moderate	2 30
Forestry	3 14	Good	2 86	Good	2 71	Good	3 00	Good	2 86	Moderate	2 91
Horticulture	3 25	Good	3 00	Good	2 62	Good	2 64	Good	3 12	Moderate	2 93
Landscape Architecture	2 10	Average	2 50	Good	2 10	Average	2 50	Good	3 30	Moderate	2 50
Pre-veterinary Medicine	3 00	Good	3 00	Good	3 67	Excellent	2 67	Good	3 33	Moderate	3 13
Total	3 24	Good	2 98	Good	2 88	Good	2 72	Good	3 18	Moderate	3 01

On the average, respondents in all degree major areas evaluated the usefulness and quality of course content in their major area of study as "good". The individual mean responses ranged from 3.43 for Agronomy to 2.50 for Entomology and Landscape Architecture majors.

Equipment and facilities used in instruction were rated as "excellent" by Pre-veterinary Medicine majors and "average" by Landscape Architecture and Entomology majors. Respondents in all other degree major areas on the average rated equipment and facilities as "good" with their mean responses ranging from 3.43 (Agricultural Education) to 2.50 (Biochemistry). In general, respondents from all degree majors together were less positive about the equipment and facilities (2.88) and about the course content (2.98) than they were in evaluating the instructors (3.24) even though all three mean responses were classified as "good".

General Agriculture and Entomology majors rated the effectiveness of the total B.S. program as preparation for their first position after graduation as "average". All other degree majors' on the average evaluated the effectiveness as "good". Agronomy majors had the highest mean response in this category (3.29) and Landscape Architecture majors the lowest (2.50). The overall mean response was 2.72.

Most respondents (84.90%) felt their B.S. degree program had been of "moderate" or "great benefit" to them in their careers. The mean response for General Agriculture majors was "little benefit" (2.33) and for Agronomy majors "great benefit"

(3.86). All other degree majors on the average felt that their college training had been of "moderate benefit" to them in their careers with individual mean responses ranging from 3.40 (Agricultural Communications) to 2.50 (Entomology).

Total overall numerical means were calculated for each degree major area and for the College of Agriculture total regarding the different quality/effectiveness factors in the evaluation of the instructional program. These means were utilized as a measure of tendency towards positiveness. The degree majors arranged according to the power of their means were as follows: Agronomy (3.37), Agricultural Education and Pre-veterinary Medicine (3.13), Animal Science (3.10), Agricultural Economics (3.03), Agricultural Communications (2.95), Horticulture (2.93), Forestry (2.91), Biochemistry (2.89), Landscape Architecture (2.50), General Agriculture (2.47), and Entomology (2.30). The mean response for the College of Agriculture total was 3.01.

Asked what they would do if they could remake their decision regarding study in the College of Agriculture at OSU 67.71% of the respondents indicated they would choose the same degree again. Less than 50% of graduates with majors in Agricultural Education and Landscape Architecture would choose the same degree again. Pursuing a degree outside of agriculture was the response of 17.19% of all respondents.

Determining factors influencing respondents' decision to earn a degree in agriculture at OSU showed that "own interest" made up 41.13% of responses, "relatives or friends" 25.11%, and "farm background" 11.69%.

Influence of Selected Factors on Respondents' Career. One hundred four graduates were married and 87 single. About 80% of respondents had no children, 13.02% had one child, and 7.29% two or more children.

A summary of respondents' assessments of the influence of selected factors on their careers is recorded in Table 42. As reported in this table, over half of the single women felt their marital status did not influence their career and the mean responses of most degree majors were classified as "no influence" as well as the total mean response of 2.74. Graduates with majors in Forestry, Agricultural Communications, Horticulture, and Agronomy on the average indicated a "positive" influence. Agricultural Education majors (represented by one respondent) had a mean response of "negative".

Most married women felt their marital status had "no influence" or a "positive" influence on their career. The following degree majors had mean responses of "no influence": Agricultural Economics, General Agriculture, Biochemistry, and Entomology. The total combined mean response (2.79) as well as the mean responses of the remaining degree majors were classified as "positive".

Having children was more often perceived as having a negative influence on the career than a positive influence. The total mean response of 2.49 was in the "no influence" category. Mean responses from individual degree major areas ranged from

TABLE 42

SUMMARY OF RESPONDENTS' PERCEPTIONS OF INFLUENCE OF SELECTED FACTORS ON CAREER

Degree Major	Mean Degree of Influence by Selected Factors					
	Marital Status -Single-	Marital Status -Married-	Having Children	Not Having Children	Job of Husband	Gender
Agricultural Communications	3 07 Positive	2 93 Positive	2 38 No influence	2 62 No influence	2 81 Positive	2 50 No influence
Agricultural Economics	2 71 No influence	2 74 No influence	2 42 No influence	2 86 Positive	2 57 No influence	2 43 No influence
Agricultural Education	2 00 Negative	2 86 Positive	3 17 Positive	2 67 No influence	2 92 Positive	2 71 No influence
Agriculture (General)	2 50 No influence	2 50 No influence	- -	2 50 No influence	2 50 No influence	2 50 No influence
Agronomy	2 83 Positive	3 07 Positive	4 00 V positive	3 50 V positive	2 75 Positive	2 50 No influence
Animal Science	2 72 No influence	2 77 Positive	2 32 No influence	2 93 Positive	2 76 Positive	2 51 No influence
Biochemistry	2 50 No influence	2 50 No influence	- -	2 50 No influence	2 50 No influence	2 50 No influence
Entomology	2 50 No influence	2 50 No influence	- -	3 00 Positive	3 00 Positive	2 25 No influence
Forestry	3 25 Positive	2 83 Positive	2 00 Negative	2 67 No influence	2 38 No influence	2 60 No influence
Horticulture	2 86 Positive	2 78 Positive	3 00 Positive	2 64 No influence	2 56 No influence	2 41 No influence
Landscape Architecture	2 50 No influence	2 80 Positive	2 67 No influence	2 67 No influence	2 50 No influence	2 35 No influence
Pre-veterinary Medicine	2 50 No influence	3 00 Positive	2 00 Negative	4 00 V positive	2 50 No influence	2 50 No influence
Total	2 74 No influence	2 79 Positive	2 49 No influence	2 86 Positive	2 68 No influence	2 48 No influence

"very positive" (Agronomy) to "negative" (Forestry and Pre-veterinary Medicine).

All respondents felt that not having children either did not influence their careers or had a positive influence. The mean response of 2.86 was classified as "positive". Pre-veterinary Medicine (4.00) and Agronomy majors (3.50) had the highest mean responses of "very positive".

The influence of the husband's job on the respondents' career was more often seen as positive than as negative with a mean response of "no influence" (2.68). The following degree majors had a mean response of "positive": Entomology, Agricultural Education, Agricultural Communications, Animal Science, and Agronomy. All other mean responses were in the "no influence" category.

Eighty-six respondents (45.26%) felt their gender influenced their career with more responses indicating a negative than a positive influence. The total mean response (2.48) as well as all the mean responses from the individual degree major areas were classified as "no influence".

Specific Situation of Women in the Field of Agriculture.

As can be seen from the data in Table 43, all but three degree majors had mean responses of "slightly disagree" as to being treated differently during the college education because of being a female in the field of agriculture. The total mean response for all degree majors of 1.74 was also classified as "slightly disagree". "Strongly disagree" was the mean response

TABLE 43

PERCEPTIONS OF RESPONDENTS AS TO BEING TREATED DIFFERENTLY
BECAUSE OF BEING A FEMALE IN THE FIELD OF AGRICULTURE

Degree Major	Mean Responses by Extent of Agreement of Being Treated Differently at Selected Points in Career Path					
	During College		While Seeking Employment		In the Job	
Agricultural Communications	1 73	Slightly disagree	2 60	Slightly agree	1 93	Slightly disagree
Agricultural Economics	1 56	Slightly disagree	2 57	Slightly agree	2 35	Slightly disagree
Agricultural Education	1 86	Slightly disagree	3 75	Strongly agree	3 33	Slightly agree
Agriculture (General)	1 33	Strongly disagree	2 67	Slightly agree	2 67	Slightly agree
Agronomy	2 43	Slightly disagree	1 86	Slightly disagree	2 14	Slightly disagree
Animal Science	1 88	Slightly disagree	2 66	Slightly agree	2 42	Slightly disagree
Biochemistry	1 00	Strongly disagree	2 50	Slightly agree	3 00	Slightly agree
Entomology	2 00	Slightly disagree	2 00	Slightly disagree	1 00	Strongly disagree
Forestry	2 00	Slightly disagree	2 50	Slightly agree	2 40	Slightly disagree
Horticulture	1 69	Slightly disagree	2 25	Slightly disagree	2 50	Slightly agree
Landscape Architecture	1 30	Strongly disagree	1 80	Slightly disagree	2 56	Slightly agree
Pre-veterinary Medicine	2 00	Slightly disagree	2 00	Slightly disagree	2 00	Slightly disagree
Total	1 74	Slightly disagree	2 52	Slightly agree	2 36	Slightly disagree

of General Agriculture, Landscape Architecture, and Biochemistry majors. Comments from the graduates who felt they had been treated differently included that women were considered less capable, that they were a minority and that they had to face a bias towards men and male chauvenism.

Slightly over half of the graduates agreed with being treated differently while seeking employment because of being a female in the field of agriculture. Agricultural Education majors on the average "strongly agreed" with being treated differently and Horticulture, Entomology, Pre-veterinary Medicine, Agronomy, and Landscape Architecture majors "slightly disagreed". The other mean responses were in the "slightly agree" category as well as the total combined mean response of 2.52. Thirty-two graduates (35.16%) experienced employers who did not want to hire women, others felt women were considered less capable and qualified, and they were not taken seriously.

Responses regarding an assessment as to being treated differently in the job because of being a female in the field of agriculture had a combined mean response of 2.36 classified as "slightly disagree". Six degree major areas had mean responses in this category, one had a mean response of "strongly disagree", and five had mean responses of "slightly agree". Respondents who agreed that they were treated differently in their jobs felt that women were considered less capable and they had to prove themselves more.

Determined by responses to open-ended questions, stereotypes and beliefs regarding females and difficulties in job

placement (44.81% and 9.43% of the responses respectively) were considered important barriers women face in the field of agriculture.

Respondents' Suggestions for Improvements in the College of Agriculture at OSU Regarding Female Students. One hundred eleven graduates (giving 142 responses) had suggestions for improvements in the College of Agriculture regarding female students. Improving the help given female students with job placement was stated most frequently (26.06%), followed by improvements in publicity and recruiting (24.65%).

Conclusions

Based on a careful analysis of the data and findings, the following conclusions were formulated:

1. Since female students chose majors in Agricultural Communications and General Agriculture combined, in Animal Science and Pre-veterinary Medicine combined, and in Horticulture and Landscape Architecture combined proportionately more often, and majors in Agricultural Education, Agronomy, and Biochemistry less often, and since none of the respondents had majored in Agricultural Engineering, Mechanized Agriculture, or Plant Pathology, it is concluded that degree choice decisions in the College of Agriculture differ between female and male students.
2. Because a high percentage of graduates with a degree in Agricultural Education, Agricultural Economics, and Animal Science indicated no relationship between their first position

and their B.S. degree and a high percentage of graduates with a degree in Agricultural Economics and Animal Science indicated no relationship between their present position and their B.S. degree, it is concluded that female graduates in some degree major areas encounter difficulties in finding employment in their field of study.

3. It is concluded that female students in general feel positive about their college education in regard to quality of instructors, course content, equipment and facilities. Landscape Architecture majors (represented by 10 respondents) rated their instructors, equipment and facilities and Entomology majors (represented by two respondents) their equipment and facilities as "average" indicating areas of possible improvements. The Entomology Department is in the process of moving into new facilities which should improve its ratings.

4. In general, the graduates in most degree major areas felt their college training had prepared them adequately for their first position after graduation. General Agriculture and Entomology majors (represented by three and two respondents respectively) rated the effectiveness of their degree programs as preparation for their first position as "average" indicating that improvements could be made in these areas.

5. Since over 50% of the graduates with majors in Agricultural Education and Landscape Architecture would not choose the same degree again if they could remake their decision, it is concluded that their expectations regarding their degree major were not met.

6. In general, married respondents felt more positive about the influence of their marital status on their careers than single women.

7. Respondents' assessments as to the influence having children had on their career varied widely. However, not having children was generally considered to positively influence respondents' careers.

8. Even though several factors seemed to influence respondents' careers (having children, being treated differently while seeking employment, and others), for the majority of respondents, gender had not influenced their career.

9. The majority of graduates felt they were not treated differently during their college education because of being a female in the field of agriculture indicating that the College of Agriculture in general is acceptive and supportive of female students.

10. Over half of the respondents who had been looking for a job in agriculture felt they were treated differently while seeking employment because of being women in the field of agriculture with their comments indicating that it is more difficult for women to find employment in agriculture than for men.

11. Respondents' suggestions for improvements in the College of Agriculture included a high percentage of responses related to job placement. This indicates that the graduates felt this was an area deserving increased attention.

12. About half of the respondents working in agricultural fields felt they were treated differently in their jobs because

of being a female in the field of agriculture indicating a lack of acceptance of women in agricultural professions.

Recommendations

Resulting from the conclusions based on the analysis of the data and findings, the following recommendations were made:

1. Since there is a difference in degree choices in the College of Agriculture between female and male students, it is recommended that the College of Agriculture and its individual departments evaluate their recruitment and publicity strategies to ensure equal encouragement of and openness towards female and male students.

2. Since a high percentage of graduates in several degree major areas (Agricultural Education, Agricultural Economics, Animal Science) perceived no relationship between their first and present position and their B.S. degree, it is recommended that the College of Agriculture evaluate its degree programs to ensure training of graduates in fields in which employment is available.

3. Since most graduates who were presently employed full-time expressed satisfaction with their employment, it is recommended that the College of Agriculture continue encouraging female students to pursue degrees in agriculture.

4. Since the overall ratings of instructors, course content, equipment and facilities in the College of Agriculture were generally positive, it is recommended that the College of Agriculture continue to provide students with high quality pro-

grams. Since Landscape Architecture majors rated their instructors, equipment and facilities as only "average", it is recommended that special efforts be undertaken to determine how students' needs can be better met in that area.

5. Since General Agriculture and Entomology majors rated the effectiveness of their degree programs as preparation for their first position after graduation, only "average" and since over 50% of graduates with majors in Agricultural Education and Landscape Architecture would not choose the same major again, efforts should be taken to further evaluate these degree programs to determine what changes might be needed to better serve the needs of students.

6. Since it is harder for female than for male students to find employment in agriculture, it is recommended that the College of Agriculture expand its placement services regarding female students through Department contacts and the Agricultural Placement Center.

7. Since it is harder for women to find employment in agriculture and to be accepted within the different agricultural professions, it is recommended that the College of Agriculture offer additional support programs for female students during their college training as part of their preparation for their future careers.

8. Since differences in enrollment patterns in the College of Agriculture exist between female and male students, it is recommended that further research be conducted: (a) to determine and compare factors in the decision making process of female and

male students regarding their degree choices, and (b) to determine and compare numbers of female and male students changing their major to a non-agricultural field, transferring to another institution, or dropping out of college and reasons for their decision to discontinue their education in the different departments in the College of Agriculture at OSU.

9. Since female graduates perceive difficulties in finding employment, it is recommended that further research be conducted to determine and compare female and male graduates' expectations regarding job placement services and future employment, methods they utilize while seeking employment, and other related factors.

10. Since the study population for this study was comprised of B.S. degree graduates, it is recommended that further research with similar objectives be conducted with female Master's and Doctoral students.

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APPENDIX

INSTRUMENT FOR THE PHONE INTERVIEWS

INSTRUMENT FOR THE PHONE INTERVIEWS

1. Hello, may I speak with Mrs./Ms. _____.

Thank you.

Hello, my name is Andrea Paret, and I am with Oklahoma State University. The College of Agriculture is conducting a survey of female Bachelor of Science graduates concerning the effectiveness of the College's programs in meeting the needs of female students.

Your input in this study would be very valuable to us.

May we have a few minutes of your time to ask you some questions?

Yes/No

Thank you.

All the information will be treated completely confidential and your name will not appear in this study. And if there should be any questions you want to choose not to answer that is certainly all right.

CODE NUMBER _____ TIME ____ MIN.

2. When did you graduate with a B.S. degree from OSU?
- | | | | |
|------|------|----------|--------|
| Year | 1985 | Semester | Spring |
| | 1986 | | Summer |
| | 1987 | | Fall |
| | 1988 | | |
| | 1989 | | |
3. What was your major?
- | | |
|-------------------|-------------------------|
| Ag Communications | Entomology |
| Ag Economics | Forestry |
| Ag Education | Horticulture |
| Ag Engineering | Landscape Architecture |
| Ag (General) | Mechanized Ag |
| Agronomy | Plant Pathology |
| Animal Science | Pre-veterinary Medicine |
| Biochemistry | Other (specify) |
4. Did you do all your course work at OSU?
- Yes
- No When did you transfer to OSU?
As freshman, sophomore, junior, senior?
5. (a) Have you or are you now working on an advanced or other degree?
- Yes
- No (go on to No.6)
- (b) What were or are you majoring in? _____
- (c) What is the name of the institution? _____
- (d) Have or are you working on an additional B.S. degree, a Master's or a Doctorate? Other (specify)
- (e) Has the degree been completed?
- Yes
- No
6. How many full-time positions have you had since receiving your B.S. degree from OSU?
- None
- One (go to No. 8)
- Two (go to No. 8)
- Three or more (go to No. 8)
7. (a) How many part-time positions have you had?
- None .. . What is the reason? _____
(Go to No. 12)
- One
- Two
- Three or more
- (b) What is the reason for your decision to work part-time? _____

8. To what extent was your first position after receiving your B.S. degree from OSU related to your field of study?
 Not Related
 Somewhat Related
 Closely Related
 It was in the Field of Your College Study
9. How did you make initial contact with your first employer?
(When respondent is hesitant, give examples:
Own initiative
Through a friend or relative
University placement office
Agricultural placement office
Department contacts
Other (specify))

10. How many years have you worked for your present employer?
 One
 Two
 Three or more
11. To what extent is your present position related to your field of study?
 Is Same as First Job
 Not Related
 Somewhat Related
 Closely Related
 It is in the Field of Your College Study

The next 4 questions we want you to rate on a scale of:
 Poor - Average - Good - Excellent
 (1) (2) (3) (4)

12. On this scale how would you rate the quality of your instructors in your major area of study at OSU?
 1 2 3 4
13. How would you rate the course content (the usefulness and quality of information) of the courses in your major area of study?
 1 2 3 4
14. How would you rate the quality of equipment and facilities used in instruction in your major area of study?
 1 2 3 4
15. How would you rate the effectiveness of your total B.S. degree program as preparation for your first position after receiving your degree?
 1 2 3 4

16. Of how much benefit has your training received at the College of Agriculture at OSU been to you in your career?
- No Benefit (1)
 Little Benefit (2)
 Moderate Benefit (3)
 Great Benefit (4)
17. What was the one most influential factor in your decision to earn a degree in agriculture at OSU?
(When respondent is hesitant give examples:
- | | |
|------------------------------------------------|------------------------|
| <i>Highschool counselor</i> | <i>Parent (s)</i> |
| <i>Highschool Vo.Ag. teacher</i> | <i>Spouse</i> |
| <i>4H / County Extension Agent</i> | <i>Friend</i> |
| <i>Employer</i> | <i>Own interest</i> |
| <i>Overall prestige of OSU</i> | <i>Farm background</i> |
| <i>Nearness to home</i> | <i>Other (specify)</i> |
| <i>OSU's agricultural facilities</i> | |
| <i>Reputation of OSU faculty in your field</i> | |
| <i>Financial assistance, scholarships)</i> | |
18. If you could remake your decision regarding study in the College of Agriculture at OSU, what would you do?
- Seek the same degree at OSU.
 Seek a different degree in agriculture at OSU
 (which area?) _____
 Seek a degree in agriculture at a different institution
 (which institution?) . _____
 Seek a degree outside agriculture
 (which area?) _____
 Choose not to seek a degree.
 Other (specify) . _____
19. How satisfied are you with your current position?
- Very Dissatisfied (1)
 Somewhat Dissatisfied (2)
 Somewhat Satisfied (3)
 Very Satisfied (4)
20. What is your marital status?
 Married - Separated - Divorced - Widowed - Single
21. How many children do you have?
- None
 One
 Two
 Three or more

22. Do you feel your

(a) marital status has influenced your career?

Yes

No

If yes: has the influence been very negative, negative, positive, or very positive?

Very Negative	(1)	No Influence	(5)
Negative	(2)	Not Applicable	(6)
Positive	(3)		
Very Positive	(4)		

(a) Marital status	1	2	3	4	5	
(b) Children	1	2	3	4	5	6
(c) Job of husband	1	2	3	4	5	6
(d) Gender	1	2	3	4	5	

With the following 3 questions we will use a scale of:

Strongly disagree (1)

Slightly disagree (2)

Slightly agree (3)

Strongly agree (4)

23. Now I want to ask you whether you strongly disagree, slightly disagree, slightly agree, or strongly agree that you were treated differently during your college education because of being a woman in the field of agriculture?

1 2 3 4

If so, how were you treated differently? _____

24. Do you strongly disagree, slightly disagree, slightly agree, or strongly agree that you were treated differently while seeking employment because of being a woman in the field of agriculture?

1 2 3 4 N.A.

If so, how were you treated differently? _____

25. Do you strongly disagree, slightly disagree, slightly agree, strongly agree that you were or are treated differently in your job because of being a woman in the field of agriculture?

1 2 3 4 N.A.

If so, how were or are you treated differently?

26. If you perceive barriers in regard to women in the field of agriculture - what would you consider to be the most important one or two? _____
27. What improvements could be made by the College of Agriculture in encouraging women to enter and remain in the field of agriculture? _____
28. What is your job title? _____
29. For the recruitment and placement of female students in agriculture it would be helpful for us if we could provide current and future students with salary information.
- (a) Could you help us by telling us within a \$10,000 interval, what your annual gross salary range was in your first job?
- (b) And within a \$ 10,000 interval, what is your annual gross salary range in your present job?
- | | First Job | Present Job |
|-------------------|-----------|-------------|
| Below \$ 10,000 | | |
| \$10,000 - 20,000 | | |
| \$20,000 - 30,000 | | |
| \$30,000 - 40,000 | | |
| \$40,000 - 50,000 | | |
| \$50,000 - 60,000 | | |
| \$60,000 - 70,000 | | |
| \$70,000 - 80,000 | | |
30. Thank you very much for your time. This information will be valuable to the College of Agriculture.

VITA²

Andrea M. Paret

Candidate for the Degree of
Master of Science

Thesis: FOLLOW-UP OF FEMALE GRADUATES OF THE COLLEGE OF AGRICULTURE AT OKLAHOMA STATE UNIVERSITY: 1985-1989

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Oetisheim, West Germany, October 18, 1957, the daughter of Helen and Henry Paret.

Education: Graduated from Friedrich-Schiller High School, Fellbach, West Germany, in May 1976; received Diploma in Early Childhood Development and Child Counseling from Professional School of Public Education in Reutlingen, West Germany, in August 1979; completed requirements for the Master of Science Degree at Oklahoma State University in May, 1990.

Professional Experience: Farming, Albion, Nebraska, August 1980, to August 1983; Certified Early Childhood Teacher, Reutlingen, West Germany, February, 1984, to July, 1988.

Organizations: Alpha Tau Alpha, National Professional Honorary Fraternity in Agricultural Education; Phi Kappa Phi.