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SELECTED CHARACTERISTICS OF THE NATIONAL FFA ORGANIZATION'S AGRISCIENCE TEACHER OF THE YEAR AWARD WINNERS AND THEIR AGRISCIENCE PROGRAMS

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Abstract

The National FFA AgriScience Teacher of the Year Award Program was instituted in ***1988*** to recognize outstanding agricultural educators who emphasized agriscience technology in their curriculum. This study sought to determine selected characteristics of the National FFA AgriScience Teacher of the Year Award winners and their programs from the years 1988 - 1995 (N = 253). A purposive sample of 187 agriscience teachers that were still teaching resulted in 13 1 useable responses (71%) representing 42 states. The respondents of the National FFA AgriScience Teacher of the Year Award Program are veteran teachers, with an average age of 42 years and average teaching experience of 18 years. The respondents were made up of a higher percentage of females (13.1%) than the national average of female teachers in agricultural education (9.74%). Students enrolled in agricultural courses that integrate science are being granted science credit at the high school and college level. Dedicated (specialized) courses are attracting a higher number of female students (40.96%) as compared to the number of female students in the total agricultural education program (36.77%). Eighty-two percent of the AgriScience Teacher of the Year participants had attended workshops and/or courses that helped them integrate science into the curriculum.

Introduction/Theoretical Framework

Science has been an important part of the curriculum in agricultural education since its inception (True, 1929; Vaughn, 1993). Agriculture has always been an applied science and to some extent agriculture teachers have always taught the principles of science as they applied to agriculture (Christian & Key, 1994; Vaughn, 1993; Budke, 1991).

Integration of academic and vocational education is an educational reform strategy envisioned by educators (Rosenstock, 199 l), supported by business and industry (Stasz and Grubb, 1991) and promoted by legislators (Wirt, 1991; Schmidt, Beeken, & Jennings, 1992). The delivery system for agricultural education is ideal for integrating academic and vocational education. The pursuit to integrate science into agricultural education could improve the image and quality of the programs while meeting the needs of a rampant changing industry.

Agricultural education teachers have traditionally had the freedom of determining the curriculum taught in the local programs. The rationale behind this concept was that teachers can customize their programs to make them community-based and to meet the local needs of the students. Therefore, integration of science into the curriculum depends, to a large extent, on the local teacher.

Many programs embraced the change and updated their curriculum to better serve the clientele and the agriculture industry by integrating science

into the agriculture curriculum. Luft & Peterson (1989) and Kirby, Smith, Wilson, & Matheson (1990) credited increased student enrollment and student interest in agriculture to the integration of science and emphasis of agriscience in the curriculum. Information about integrating agriscience in secondary agricultural education programs is needed to provide state and local leaders in agricultural education assistance as they plan and manage program change.

Agricultural educators were challenged with upgrading the curriculum to recruit and retain quality students. The viability of secondary agricultural education programs was being revitalized through science and technology. In an effort to encourage agricultural education teachers to emphasize the role of science in a complex, dynamic, and rapidly changing industry, the AgriScience Teacher of the Year Awards Program was started in 1986. As a special project of the National FFA Foundation, Inc., the AgriScience Teacher of the Year Program recognized teachers that integrated science into their agricultural education programs and emphasized agriculture and science through innovative curriculum, ideas, and projects (National FFA Organization, 1989).

The purpose of the AgriScience Teacher of the Year Program was to recognize outstanding agricultural educators who emphasized agriscience technology in their curriculum. Duval (1988) stated, "The National FFA Organization has recognized agriscience and emerging technologies as being of primary importance to the future of agriculture and the organization. As a youth organization, FFA has strived to be on the cutting edge of scientific and technological advances in agriculture" (p. 19). Duval maintained that the National AgriScience Teachers of the Year have had a positive impact on local, state, and national agricultural education curriculum.

In the past, little was known about the AgriScience Teacher of the Year Award winners and their programs. Many assumptions have been made about the characteristics of these individuals based on award applications. Studying the characteristics of exemplary teachers offers a place to begin to understand the complex human interactions that constitute teaching and learning of the highest order (Lowman, 1996). Penick and Yager (1993) suggest that looking at the successful and the exciting situations that exist in education are presented far too infrequently.

Moore (1994) stated, "There are times when selecting purposive samples would do more to advance the profession than selecting random samples. At times we need to identify the best programs, best teachers, and best FFA Chapters and study them in detail" (p. 11). Moore (1994) suggested that we can best integrate agricultural and academic education by studying the schools and teachers who are experiencing success in these areas. A study of the FFA AgriScience Teacher of the Year Award winners addresses his challenge. By studying the agriscience teachers that were recognized agricultural educators who emphasized agriscience technology in their curriculum, we can determine the characteristics of the teachers and their programs that make them outstanding in integrating science.

Purpose and Objectives

The purpose of this study was to determine the characteristics of the programs and winners of the state, regional, and national winners of the National FFA AgriScience Teacher of the Year Awards Program. To fulfill the purposes of the study, the following research questions were addressed:

1. What are the selected teacher characteristics of the state, regional, and national winners of the National FFA AgriScience Teacher of the Year Awards Program?

2. What are the selected agricultural education program characteristics of the state, regional, and national winners of the National

AgriScience Teacher of the Year Awards Program?

Methods/Procedures

The target population of this study consisted of all state, regional, and national winners of the National FFA AgriScience Teacher of the Year Award Program from the years 1988 - 1995 (N = 253). The accessible population was limited to agriculture teachers whose names were provided by the National FFA Organization and consisted of all available records of AgriScience winners that were still teaching. The list of names and addresses was cross-referenced with the Agricultural Educators Director-v (1995) to determine if they maintained the same address and/or school since winning their respective AgriScience Teacher of the Year award. Finally, the National Vocational Agriculture Teachers Association (NVATA) office verified individuals whose names were not listed in the Agricultural Educators Director-v (1995). If the individuals could not be found in the directory or in the membership records of NVATA, they were eliminated from the sample. AgriScience winners that were no longer teaching at the secondary level were also eliminated from the sample. A purposive sample of 187 teachers who were still teaching was identified from the population for inclusion in the study.

The instrument was constructed based on a review of the literature and examined by a panel of experts for validity. The panel of experts consisted of members of the agricultural education profession representing teachers, state supervisors, teacher educators, and the National FFA Organization Staff (n = 7). The instrument was pilot tested with a sample of teachers (n = 16). Reliability analysis of the pilot test revealed a Cronbach's alpha of .88.

The survey instrument and cover letter were mailed to the subjects with a self-addressed, stamped return envelope. Two weeks after the initial mailing, a reminder post card was sent to non-respondents. After another two weeks, a telephone call was placed to all non-respondents by using a phone number that was obtained through the intemet (WWW. Switchboard.com, **1996).** A new cover letter with a survey instrument and return envelope was mailed to non respondents. Usable responses were received from 13 1 teachers for an overall response rate of 71.98%.

Results/Findings

The findings presented are based on responses of 13 1 state, regional, and national recipients of the National FFA AgriScience Teacher of the Year Awards Program from 1988 - 1995, (representing 42 states). Teachers ranged from twenty-five to sixty years of age. The mean age of the respondents was 42.04. The respondents ranged from 3 - 28 years of teaching (M= 18.16). The respondents years of teaching in the present school ranged from 1 - 38 years and the average years taught at their present school was 14.1 years. Eighty-seven percent of the respondents were male. while 13% were female (Figure 1).

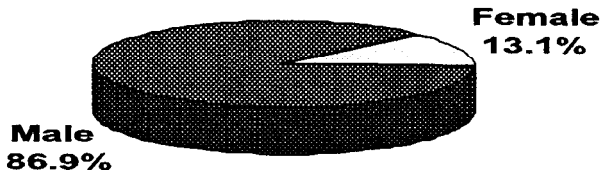

Figure 1. Gender of the Agriscience Teacher Respondents (N=131).

The level of education completed by the respondents varied from a bachelors degree to a Ph.D. Approximately 30% of the agriscience teachers had a bachelors degree, approximately 63% had earned a masters degree, and approximately 7% of the respondents had earned either an educational specialist or a doctoral degree (Figure 2).

Figure 3 reflects the number of years that the FFA AgriScience Teacher of the Year award winners were enrolled in agricultural education and their FFA membership while in high school. Only

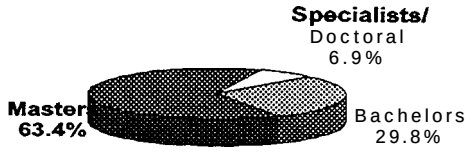

Figure 2. Educational Degree Characteristics of the Respondents (N=13 1).

slight differences were noted between years enrolled in agricultural education and years of membership in the FFA. The demographics were grouped into three categories representing interest levels or opportunities to enroll and participate in agricultural education and/or FFA. Twenty-nine percent of the respondents were not enrolled in agricultural education and 28% were not FFA members while in high school. Approximately 15% of the respondents were enrolled in agricultural education and were FFA members from 1 - 3 years, and 57% of the FFA AgriScience Teacher of the Year Award winners were enrolled in agricultural education while in high school and were members of the FFA from 4 - 6 years.

The participants were asked if they had participated in workshops and/or courses that taught them how to integrate science into their curriculum. Eighty-two percent of the respondents indicated they had attended a workshop/course and 18% indicated they had not participated in a workshop/course that taught them how to integrated science. Of the respondents that indicated they had attended a workshop/course, 82% had attended 1 - 5 and 18% indicated they had attended 6 - 15 workshops/courses that taught them how to integrate science into their curriculum. The average number of workshops/courses attended by those responding to the question concerning number of workshops/courses was 4.0 with a standard deviation of 6.28 (Figure 4).

The average program enrollment reported by the respondents was approximately 15 5 students. Enrollment was grouped into four categories depicting small, average, large, and very large enrollments. Only 9.2% of the programs had 17 - 45 students enrolled, approximately 36% of the programs had enrollments between 50 - 100 students, while approximately 34% of the programs had enrollments of 103 - 200 students. Approximately 21% of the respondents indicated program enrollments between 201 - 750 students.

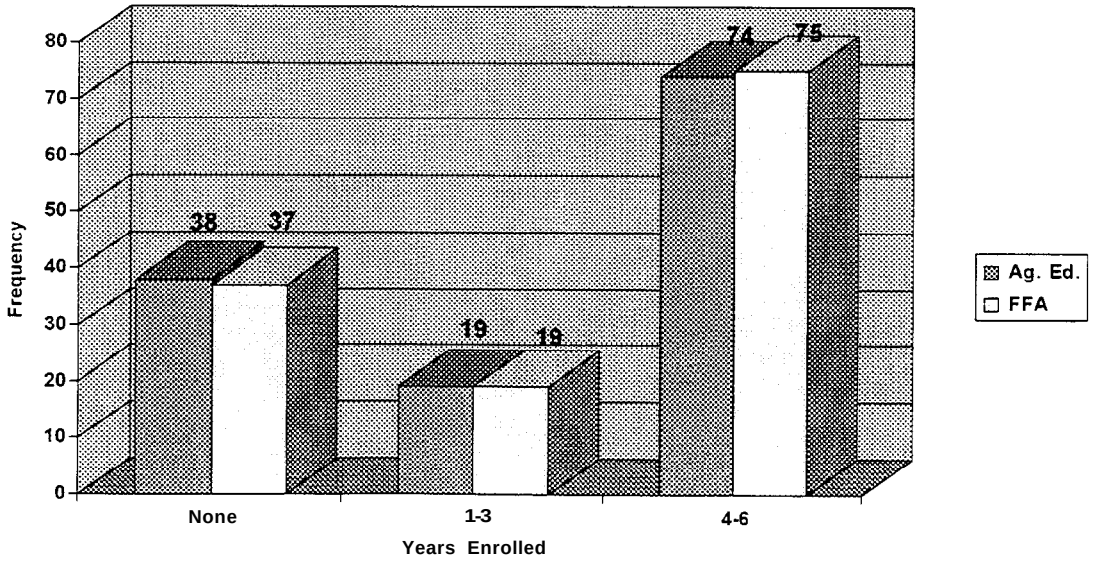

Figure 3. Years Teacher Was Enrolled in Agricultural Education and FFA While in High School (N=13 1).

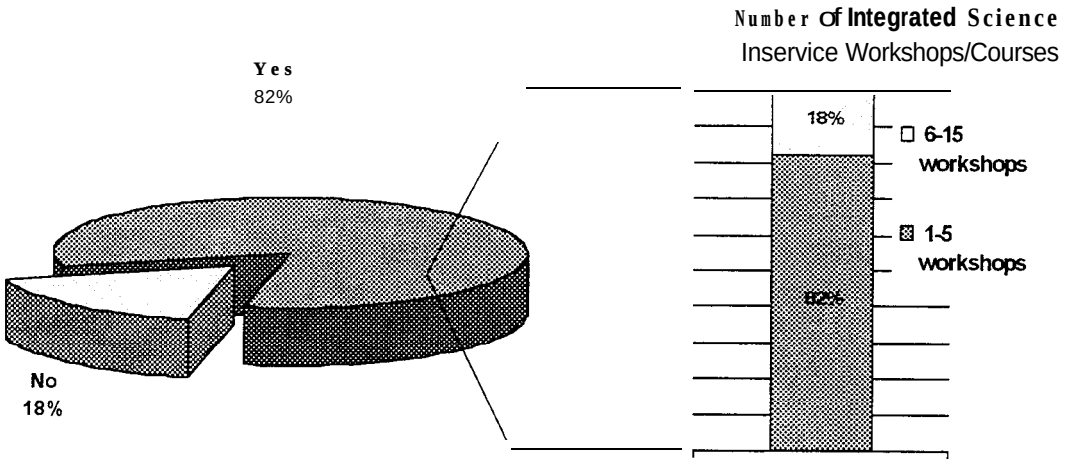

Figure 4. Participation in Integrated Science Inservice Workshops/Courses (N=130).

Approximately 52% of the programs were single-teacher departments, 30% of the programs had two teachers, and approximately 18% of the respondents taught in a 3 - 6 teacher department. The average number of teachers teaching in the local agricultural education program was 1.82 (SD = 1.15).

The respondents were asked to identify the type of integrated science program that best described their agricultural education program. Table 1. illustrates how the respondents classified their integrated science program. Only 9.3% of the respondents indicated their program as a single dedicated (specialized) course, 48.8% indicated that their program was best described as integrating science across the curriculum, and 4 1.9% of the respondents indicated their program was a combination of single dedicated courses and integration of science across the curriculum.

The average female enrollment reported by the respondents in their agricultural education program was 36.77%, while the average enrollment reported in specialized courses that integrated science was 40.96% (Figure 5). The percentage of minority students that were enrolled in agricultural education programs (Mean (M) = 9.92%) was similar to the number that enrolled in specialized courses (M = 9.17%) that integrated science. These data were broken down into four categories for reporting purposes. Almost 22% of the respondents reported having no minority students in their agricultural education program, while 34% of the respondents reported that no minority students were enrolled in the specialized courses that integrated science (Figure 6).

The average percentage of students enrolled in agricultural education that were FFA members was 74.33%, while the average percentage of students enrolled in specialized courses that integrated science was 73.53%. The percentages were divided into five groups for statistical analysis. Upon review of these groups, only 42.3% of the programs had 100% FFA membership. Approximately 40% of the respondents who taught specialized courses had 100% FFA membership (Figure 7).

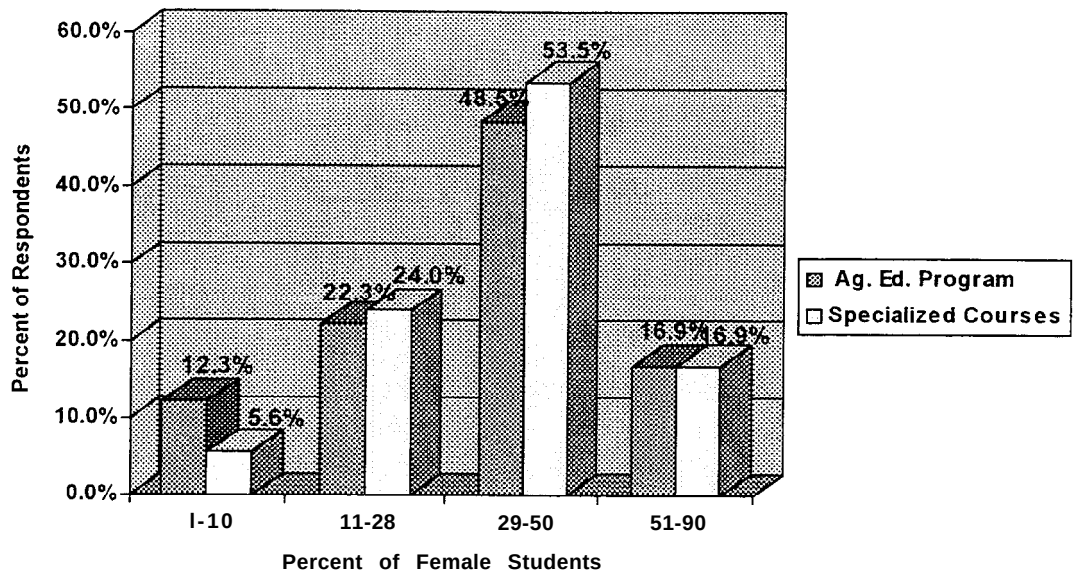

Figure 5. Percent of Female Enrollment in Agricultural Education and Specialized Courses (N= 13 1).

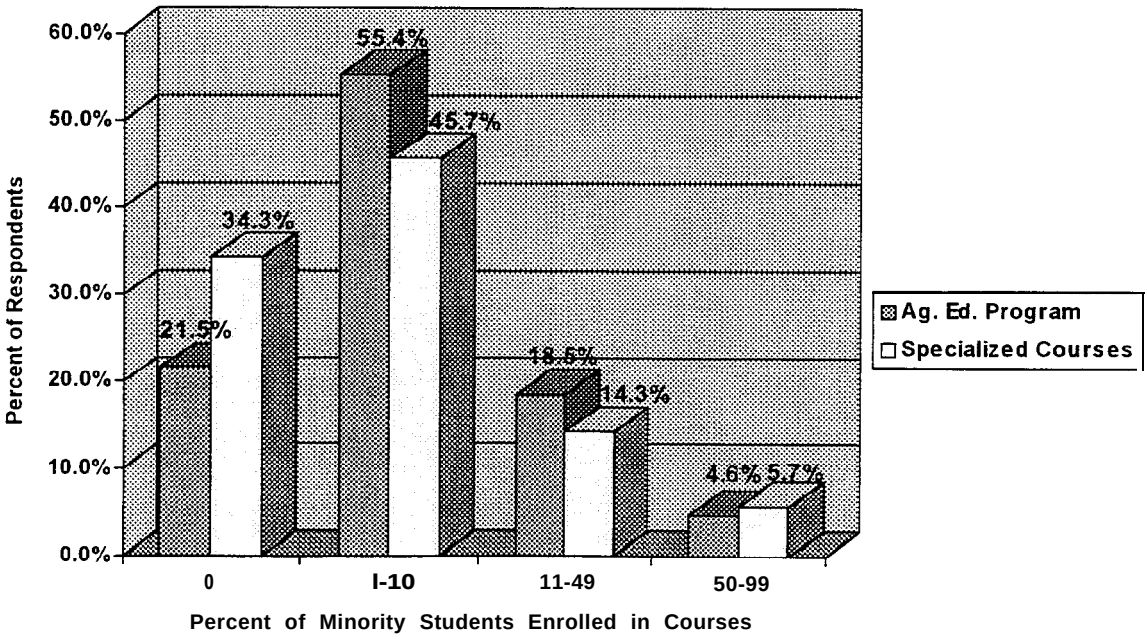

Figure 6. Percent of Minority Enrollment in Agricultural Education and in Specialized Courses (N = 13 1).

Table 1. Type of Integrated Science Program Describes Their Agricultural Education Program

Type of Program	Percent	Frequency
Single dedicated course	9.3	12
Across several courses	49.2	64
Both single and across	41.5	54
Total	100.0	130

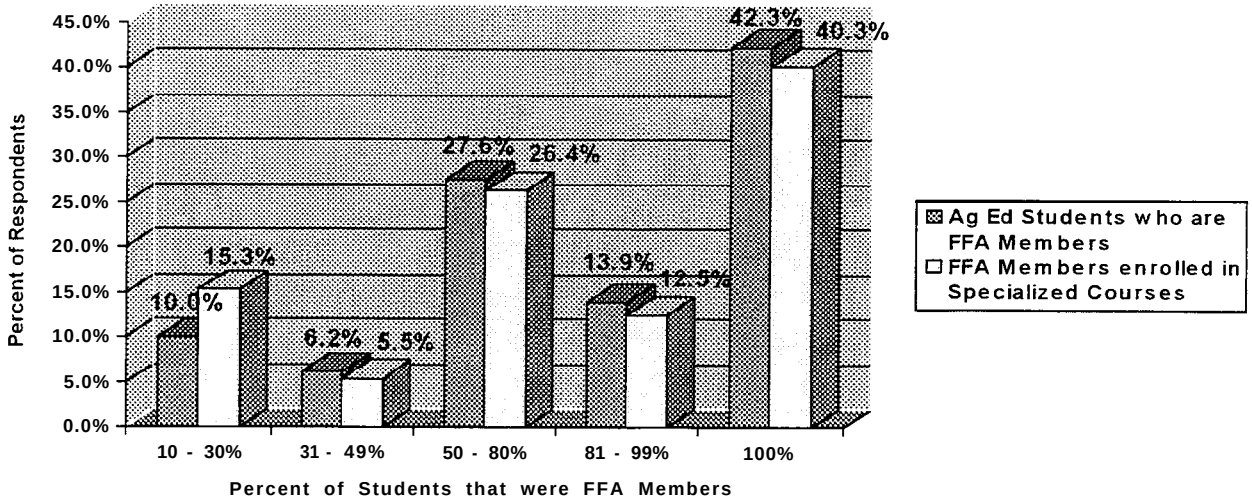

Figure 7. Percent of Students Enrolled in Agricultural Education Programs and Specialized Courses That Were FFA Members (N = 13 1).

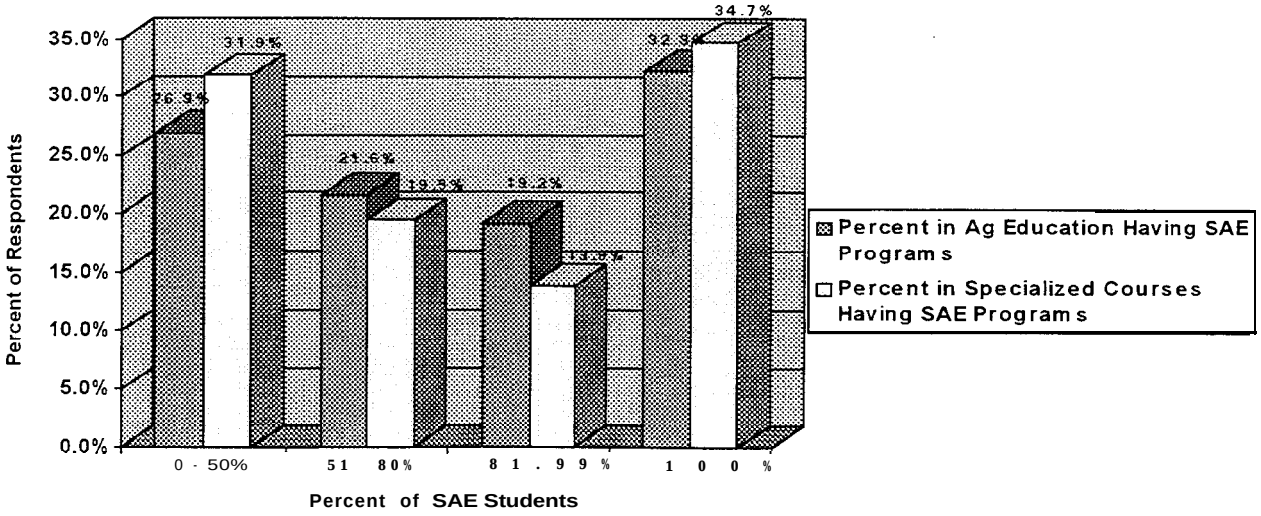

Figure 8. Percent of Students Enrolled in the Agricultural Education Program and Specialized Courses That Have SAE Programs (N = 13 1).

To gain better insight, Figure 8 was divided into four groups. One section was identified for agricultural education courses and one section for specialized courses that integrated science. The average percent of students enrolled in agricultural education programs that had SAE programs was 74.33% and the average percent of students enrolled in a specialized class was 70.55 percent.

Slightly over one-third (34.7%) of the respondents indicated that 100% of their students were enrolled in specialized courses had SAE programs.

Respondents who taught a specialized course that integrated science into the agricultural education program were asked if their students received science credit for these courses. Figure 9 reveals that half of the respondents indicated that their students received high school science credit for specialized courses that integrated science into the agricultural education program. Of the 5 1 respondents that indicated their students received science credit, 39 indicated that the science credit met admission requirements at colleges or universities in their state, while nine indicated that the science credit did not meet admission requirements at colleges or universities in their state.

The respondents were asked if their students received science credit for agricultural education classes, Seventy-six (60%) of the respondents indicated their students received science credit for agricultural education classes, while 52 (40%) of the respondents indicated that their students did not receive science credit for agricultural education classes. Respondents that indicated their students received science credit were asked if the science credit counted toward admission requirements at colleges or universities in their state. Almost three fourths (74%) of the respondents indicated that the science credit counted toward admission requirements at colleges or universities in their state. Figure 10 reveals the distribution of science credit received for agricultural education classes.

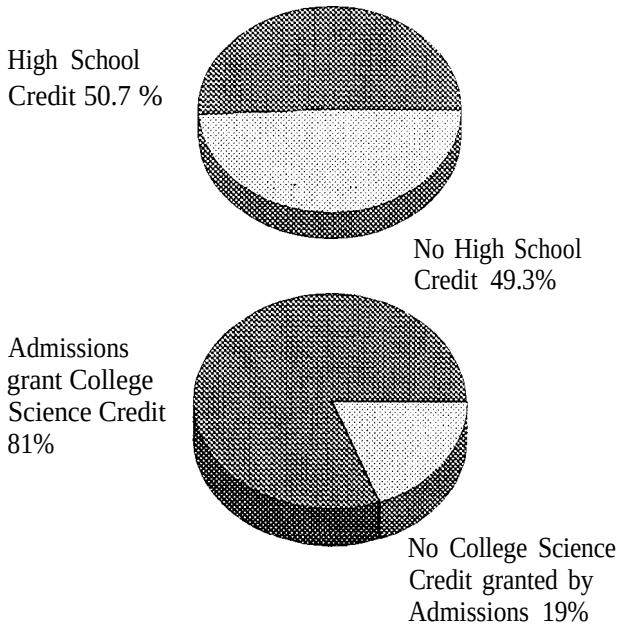

Figure 9. Specialized Courses Where Students Receive High School Science Credit and Meets State College and/or University Admissions Requirements (N = 13 1).

Table 2 illustrates the means and standard deviations of program demographic data. Program demographics included: the number of teachers teaching in the agricultural education program, number of students enrolled, the percent of students enrolled who were female, the percent minority student enrollment, percent of students that were FFA members, and the percentage of students who had an SAE program. As noted in Table 2, nearly the same number of students that were FFA members had SAE programs,

Table 3 presents the mean and standard deviation for the number of students enrolled in specialized courses that emphasized the integration of science. Respondents reported that almost 4 1% of the students in specialized courses were female and 9.17% were minorities. Approximately 74% of the students in these courses were

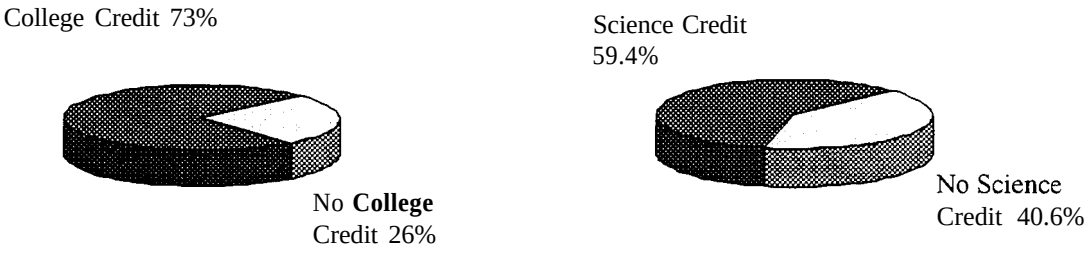

Figure 10. Percent of Agricultural Education Programs Where Students Receive High School Science Credit and Meets State College and/or University Admission Requirements (N = 13 1).

Table 2. Number of Teachers, Enrollment, Percent Female, Percent Minority, Percent FFA Members, and Percent Students having SAE Programs (N= 13 0)

Variable	Mean	SD
Number of teachers in department	1.82	1.15
Enrollment	155.14	118.89
% Female students	35.77	17.99
% Minority students	9.92	16.25
% FFA members	76.25	27.08
% Students having SAE's	74.33	28.17

Table 3. Mean and Standard Deviation (SD) for the Percent Females, Minority Enrollment, FFA Members, and SAE Programs in Specialized Courses With Emphasis in Integrated Science (N=13 1)

Variable	Number	Mean	SD
% Female students	71	40.96	18.00
% Minority students	70	9.17	17.28
% FFA members	72	73.53	31.00
% Students having SAE's	72	70.56	31.24

FFA members and nearly 7 1% of the students had SAE programs.

Conclusions/Recommendations

The conclusions of this study were based on the responses of the winners of the National FFA AgriScience Teacher of the Year Awards Program. Although other agricultural education programs that integrate science may have similar characteristics, caution must be exercised when generalizing the results of this study beyond the population.

1. Female agriculture teachers are experiencing success in integrating science into the

agricultural education program. The respondents of the National FFA AgriScience Teacher of the Year Award Program were made up of a higher percentage of females (13.1%) than the national average of female teachers in agricultural education (9.74%). This statistic could be useful in recruiting more female teachers into the agricultural education profession.

2. Many students are being rewarded for taking agriculture classes that integrate science by receiving science credit that counted toward admission into colleges. Agriculture classes that integrate science have been recognized at the post-secondary level. This information may be useful in recruiting students into agricultural education.

3. Although fewer students are involved in FFA and SAE when dedicated (specialized) courses (i.e., biotechnology) are taught, FFA and SAE are still significant components of the agricultural education program. The profession must provide more FFA and SAE activities and develop strategies to incorporate these highly valued components of the total program for students that are interested in the sciences of agriculture.

4. Female students are more likely to enroll in dedicated (specialized) agricultural education courses than agriculture courses that do not integrate science. Therefore, teachers that teach specialized courses in agriscience may use these courses as a recruiting advantage for female students to enroll in FFA and their Agricultural Education Program through dedicated (specialized) courses in agriscience.

5. Successful agriscience teachers are seeking out instructional inservice to assist them in integrating science. Therefore, the profession must provide assistance to teachers by continuing inservice instruction in integrating science.

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