

## **University Freshmen Attitudes Regarding Decisions to Attend University Programs of Agriculture in Kentucky**

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### **Abstract**

This study assessed the viewpoints and attitudes of university freshmen majoring in agriculture regarding recruitment into university programs of agriculture. Three hundred and sixty-five university freshmen at one land grant and three non-land grants in the Commonwealth of Kentucky were surveyed. Results indicated that a majority of the freshman students majoring in agriculture within this state were Caucasian, female, possessed a farm background, had agricultural work experience, completed high school agricultural education, were members of FFA, and were members of 4-H.

Career opportunities are the most important factor influencing a student to major in agriculture. Other factors include love of animals, reputation of faculty, scientific nature, financial aid, and environmental concern. The students' parent/guardian is the most influential person in determining choice of college, school, or department of agriculture. Other persons who were identified as influential include the university agricultural program representative, friend of the prospective student, high school agriculture teacher, university representative, high school counselor, brother or sister of student, other relative, other person, or other teacher.

Campus visits are the most helpful source for informing freshmen students about the college, school or department of agriculture. Sources also ranked by university freshmen included contacts with faculty, brochures, website, interaction with current students, letters from staff and phone calls from university representatives.

It was recommended that faculty members examine their university agricultural programs to evaluate if the recruitment process is meeting the needs and expectations of the students. Further research should be conducted to include a national study to assess university students' attitudes regarding entrance standards, the recruitment process including public relations strategies, marketing agriculture as a major, and university entrance standards. Faculty attitudes of the recruitment process and issues of retention of agriculture students should also be examined in depth.

## **Introduction/Theoretical Framework**

Enrollments in high school and university programs of agriculture have wavered in the past. During the last 20 years, enrollment trends have influenced how high school and university programs conduct business of educating future agriculturalists. In the 1980's enrollment dipped significantly. This enrollment change also impacted the university level in the late 1980s.

Manderscheid (1988) reported a 24 percent decline in Land Grant University agriculture enrollments over the 1978-1988 period; in non-landgrant programs the decrease was 13 percent. Paralleling this decrease in university agriculture program enrollments were cutbacks in faculty positions. This low decline has influenced the number of faculty positions even today. According to the American Association for Agricultural Education (AAAE), university agricultural education faculty membership decreased from a 1984 high of 326 members to today's membership of 242 active members (AAAE, 2003).

Universities responded to fewer students by downsizing agricultural education departments and programs. However, at the same time enrollments rebounded as the curricula were modernized when suggested by the National Research Council (1988). By 2001-2002, 742,732 students in the nation enrolled in agricultural education (National FFA Organization, 2003). For the 2002-2003 academic school year, Kentucky enrolled 28,974 students in a high school agriculture courses (Kentucky Career and Technical Education, 2003). Courses were classified into career clusters of agricultural business, agricultural mechanics, exploratory agriculture, forestry, horticulture, and production agriculture.

At the university level colleges, schools, and departments of agriculture also were reporting increased enrollments. Litenber, Whatley, and Scamardo (1992) reported with the exception of the North Central region, agricultural education enrollments had recovered to early-1980 levels. According to USDE, 1992 enrollments in colleges of agriculture nationwide had increased by 18.9 percent (USDE, 1996). However, the demographic composition of today's agriculture classes has changed from that of the 1980s.

Dyer, Breja and Andreasen (1999) studied backgrounds and attitudes of freshman in the College of Agriculture at Iowa State University. They reported a majority of the freshman majoring in agriculture had completed at least one high school agriculture course, were members of FFA, 4-H, possessed an agricultural experience while in high school, and were from a farm or rural background. However, Dyer, Breja and Andreasen (1999) noted the majority of students that were from a farm or rural background had narrowed when compared to students at the Iowa State University College of Agriculture from previous years.

With more freshmen coming from urban backgrounds or situations in which they have gained no knowledge of or experience in agriculture, new problems and opportunities emerge. According to Russell (1993), this lack of agricultural background and experience jeopardizes the long-term future of the agricultural industry. Russell warned of an impending

“brain drain” in the agricultural industry if students’ lack of experience in agriculture continues. Colleges, schools and departments of agriculture must provide information, not only in agriculture, but also about agriculture. However, losses in enrollment translate to losses of dollars from instructional budgets. The needed resources to provide this instruction may not be available.

This research addressed how students who are likely to complete a program of instruction and seek employment in the industry of agriculture are identified and recruited. Fishbein and Ajzen (1975) provided the theoretical framework for this study. They determined that intentions to participate in an activity could be predicted based upon knowledge, observation, or other information about some issue. This model suggested that a person’s intent to pursue study in a field of agriculture, or to become actively involved in an agricultural career, may be predicted by analyzing his/her beliefs about agriculture.

### **Purpose and Objectives**

The primary purpose of this study was to assess the attitudes and intentions of university freshmen majoring in agriculture toward recruitment and retention of university agriculture programs. The study addressed the following questions.

1. What are the demographics of freshmen students enrolled in university agricultural programs?
2. What factors and/or persons determined or influenced agricultural students to choose the university attended?
3. What are the future plans of freshmen students majoring in agriculture?

### **Procedures**

This study used a descriptive survey focusing on university programs of agriculture located in the Commonwealth of Kentucky. Four universities (a land grant and three non-landgrant) with colleges, schools, or departments of agriculture were included in this study. A student roster from each university college admissions office served as the population frame for this census study, with a total population of 543 students (N=543). Freshmen majoring in agriculture at universities across Kentucky were administered the survey in November, 2002.

A survey was distributed to each student during a scheduled class in November 2002 by an agricultural education faculty member at each university. Surveys were completed and returned to the faculty member and follow-up contacts were made in December, 2002 requesting instruments from non-respondents. Completed data collection instruments were received from 365 respondents, resulting in a 72.5% response rate.

The two-part questionnaire used in this study was developed by Dyer, Lacy, and Osborne (1996) and was used with their consent. The instrument was reviewed for content and face validity at that time. Part I of the questionnaire addressed demographic information and contained close-ended and partially close-ended questions. Part II of the instrument was divided into three constructs: Attitudes Toward Agriculture as an Area of Study; Attitudes Toward High School Agriculture Programs; and Attitudes Toward University Agriculture Programs. These sections used a five-point Likert-type scale (1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree, 5=Strongly Agree). Dyer, et al. reported reliability estimates for the three constructs using Cronbach's Alpha ( $r = .85, .78, .88$ , respectively).

Data were entered and analyzed using SPSS 10.0 and Microsoft Excel. Descriptive statistics were used to summarize using measures of central tendency and variability. Factors, persons or sources ranked most influential in the decision making process to attend the university agriculture program were ranked based on a value point system. The highest ranked response was given the largest numeric value, sum of the responses were totaled and the entire grouping ranked.

## **Findings**

*Research Question 1:* What are the demographics of freshmen students enrolled in university agricultural programs?

Demographics analyzed include gender, ethnic background, geographic background and students' agricultural education background. A majority of the student respondents was female (52%,  $n=190$ ), although variation was found across programs (Table 1).

A large majority (97%,  $n=339$ ) of the freshman indicating agriculture as their major in this state were Caucasian. As shown on Table 1, one-third (34%,  $n=125$ ) of the students' geographic background was from a farm. However in two of the four universities, 50% or more of the students possess a farm background. An additional 23% ( $n=84$ ) of the students were from urban backgrounds (population 10,000 to 99,000). Sixty three (17%) students are from small towns less than 10,000. Ten percent ( $n=37$ ) of the respondents have a rural, non farm background. Fifty-four freshmen (15%) indicated they were from a population over 100,000 which included both large metropolitan and suburban metropolitan areas.

Table 1.

Demographics of University Freshmen Majoring in Agriculture

	UK (n=164)	WKU (n=78)	Murray (n=94)	Morehead (n=29)	Total (n=365)
Gender (n=364)					
Male	80 (49%)	46 (59%)	33 (35%)	15 (52%)	174 (48%)
Female	83 (51%)	32 (41%)	61 (65%)	14 (48%)	190 (52%)
Ethnicity (n=351)					
African American	5 (3%)	0	1 (1%)	0	6 (1.7%)
Caucasian	146 (94%)	74 (99%)	90 (98%)	29 (100%)	339 (97%)
Hispanic	2 (1%)	0	0	0	2 (0.6%)
Other	2 (1%)	1 (1%)	1 (1%)	0	4 (1.1%)
Geo. Location (n=363)					
Large Metro >100,000	19 (12%)	2 (2%)	5 (5%)	1 (3%)	27 (7.4%)
Suburb of Metro >100,000	11 (7%)	2 (2%)	14 (15%)	0	27 (7.4%)
Urban 10,000 – 99,000	45 (28%)	20 (26%)	14 (15%)	5 (17%)	84 (23%)
Small Town <10,000	33 (20%)	7 (9%)	18 (19%)	5 (17%)	63 (17%)
Rural , Non-farm	10 (6%)	8 (10%)	16 (17%)	3 (10%)	37 (10%)
Farm	44 (27%)	39 (50%)	27 (29%)	15 (52%)	125 (34%)

Incoming freshman majoring in agriculture have a variety of agricultural/youth program experiences prior to enrolling at the university (Table 2). These experiences include, but are not limited to enrolling in secondary agricultural education courses, membership in FFA and 4-H, and participation in other agricultural experiences, both paid and non-paid. Table 2 shows the number and percentage of involvement by entering freshmen students for each category for each agricultural program.

A majority (58%, n=210) of respondents participated in high school agricultural education program. Almost all of the university agriculture programs had a majority of students enroll in agricultural education classes, with only one university program having a majority of students who did not enroll in high school agriculture. Most students were members of FFA (57%, n=201) and members of 4-H (53%, n=177).

Of the students who did not take high school agriculture, 68.5% stated the reason he or she did not enroll was agriculture was not offered in his or her school. Other reasons students did not participate in high school agricultural education program included he or she was not interested (15.1%, n=22); too busy with college preparatory courses (11.6%, n=17); took other electives such as band (2.7%, n=4); and agricultural education was not promoted (2.1%, n=3).

Table 2.

Agriculture Experience Prior to Enrollment in the University Agriculture Program

	UK (n=164)	WKU (n=78)	Murray (n=94)	Morehead (n=29)	Total (n=365)
Secondary Ag Ed Classes					
Yes	76 (46%)	63 (81%)	51 (54%)	20 (69%)	210 (58%)
No	88 (54%)	15 (19%)	43 (46%)	9 (31%)	155 (42%)
Member of FFA (n=355)					
Yes	74 (46%)	59 (80%)	49 (53%)	19 (70%)	201 (57%)
No	87 (54%)	15 (20%)	44 (47%)	8 (30%)	154 (43%)
Member of 4-H (n=332)					
Yes	84 (53%)	43 (63%)	33 (42%)	17 (65%)	177 (53%)
No	75 (47%)	25 (37%)	46 (58%)	9 (35%)	155 (47%)
Type of Ag Experience					
None	44 (27%)	6 (8%)	13 (14%)	2 (7%)	65 (18%)
Paid	12 (7%)	4 (5%)	14 (15%)	4 (14%)	34 (9%)
Unpaid	18 (11%)	5 (6%)	16 (17%)	5 (17%)	44 (12%)
Both Paid & Unpaid	90 (55%)	63 (81%)	51 (54%)	18 (62%)	222 (61%)

Sixty-one percent ( $n=222$ ) of the freshmen studying agriculture in Kentucky indicated they had both a paid and non-paid agriculture experience prior to enrolling at the university. Sixty-five students (18%) reported that they had no prior experience in agriculture before studying it in college. Twelve percent ( $n=44$ ) stated they have an unpaid agriculture experience, whereas 9% ( $n=34$ ) indicated they had a paid agriculture experience prior to enrolling.

*Research Question 2:* What factors and/or persons determined or influenced agricultural students?

Freshmen students indicated career opportunities as the most important factor to influence him or her to attend the college, school, or department of agriculture (Table 3). Students' love of animals was ranked as the second most important factor. Freshmen ranked the positive reputation of the faculty as the third most important factor for their college choice. Ranking fourth, students expressed the scientific nature of agriculture as an important aspect in their decision making process. Financial aid and scholarships were a factor and ranked fifth. Students were environmentally concerned and ranked this item sixth regarding influence of college choice.

Table 3.

Factors Ranked as Most Influential in Choosing University Program of Agriculture

	UK (n=164)	WKU (n=78)	Murray (n=94)	Morehead (n=29)	Total (n=365)
Career Opportunities	1	2	2	1	1
Love of Animals	3	1	1	2	2
Reputation of Faculty	2	3	5	3	3
Scientific nature	3	4	3	4	4
Financial Aid	5	5	6	5	5
Environmental Concern	6	6	4	6	6
Unsure of Interest	7	7	7	7	7
Other	8	8	8	8	8

Kentucky freshmen agriculture majors ranked their parent/guardian as the person who most influenced their choice of college, school, or department of agriculture (Table 4). The agriculture representative from the college, school or department of agriculture was ranked second as the most influential in helping make the decision. Friends were ranked third and the high school agricultural education teacher was ranked as the fourth most influential person who provided an influence in freshmen choosing the college to attend. The university representative from the admissions office was the fifth most influential person ranked by freshman majoring in agriculture. The students' high school counselor was indicated as an influence in determining choice of college, school or department and was ranked sixth. Family members play a role and the brother or sister of the freshman was ranked seventh in influence. Other people in the freshman's life as a relative, friend, or teacher ranked eighth, ninth, and tenth as a person of influence in this decision.

Table 4.

Persons Ranked as Most Influential in Choosing the University Agriculture Program and/or University

	UK (n=164)	WKU (n=78)	Murray (n=94)	Morehead (n=29)	Total (n=365)
Parent/Guardian	1	2	3	2	1
Agriculture Representative	2	4	2	3	2
Friend	5	1	3	4	3
High School Ag Teacher	3	3	5	1	4
Univ. Rep./Admissions	4	6	1	6	5
High School Counselor	6	5	6	5	6
Brother/Sister	7	7	7	7	7
Other Relative	8	9	9	10	8
Other Person	9	8	8	8	9
Other Teacher	10	10	10	9	10

Sources most helpful also were ranked in informing students about the program of agriculture (Table 5). Brochures, website, campus visits, letters from staff, phone calls, contacts with faculty, contacts with students and other sources of information were listed as

sources. Freshman students indicated visits to campus were the most helpful source in informing them about the college, school or department of agriculture; therefore they ranked it first. Campus visits were ranked first by all universities. Contacts with faculty ranked second most helpful, and brochures ranked third. Students identified the website as fourth most helpful and ranked contacts with other students fifth. Staff letters were identified as sixth; phone calls ranked seventh; and other sources were ranked eighth.

*Table 5.*

Sources Ranked Most Helpful in Informing about the Program of Agriculture and/or University

	UK (n=164)	WKU (n=78)	Murray (n=94)	Morehead (n=29)	Total (n=365)
Campus Visits	1	1	1	1	1
Contacts with Faculty	2	3	3	6	2
Brochures	3	5	2	3	3
Website	6	2	4	2	4
Contacts with Students	4	4	5	7	5
Letters from Staff	5	6	6	5	6
Phone Calls	7	7	7	7	7
Other	8	8	8	8	8

*Research Question 3:* What are the future plans of freshmen majoring in agriculture?

Freshmen respondents (72%, n=246) indicated they do not plan to change majors and/or universities in the future (Table 6). Respondents (85%, n=284) also plan to pursue an agricultural related career after graduation. Again, all universities involved in this study had a majority of students stating they wanted a career in agriculture.

*Table 6.*

Future Plans of University Freshmen Majoring in Agriculture

	UK (n=164)	WKU (n=78)	Murray (n=94)	Morehead (n=29)	Total (n=365)
Changing majors/ university (n=353)					
Yes	34 (22%)	24 (34%)	32 (36%)	5 (17%)	95 (28%)
No	120 (78%)	46 (66%)	56 (64%)	24 (83%)	246 (72%)
Ag Career (n=334)					
Yes	111(77%)	65 (92%)	82 (92%)	24 (86%)	284 (85%)
No	33 (23%)	6 (8%)	7 (8%)	4 (14%)	50 (15%)
Grad Degree (n=314)					
Yes	88 (61%)	29 (42%)	47 (60%)	10 (44%)	174 (55%)
No	37 (26%)	32 (46%)	28 (36%)	11 (48%)	108 (34%)
Undecided	19 (13%)	8 (12%)	3 (4%)	2 (8%)	32 (10%)

Regarding education after attaining a bachelors degree, over half of the respondents (55%,  $n=174$ ) indicated they will pursue a post graduate degree. Thirty-four percent ( $n=108$ ) said they would not pursue a post graduate degree, and 32 respondents (10%) were undecided at this time.

## **Conclusions**

University freshman respondents majoring in agriculture throughout Kentucky were identified as a majority Caucasian, female, and possessed a farm background. Students took agricultural education at the high school level, and rated it as good. Students were also members of the FFA and some had involvement with 4-H. Those students who were not program graduates did not have access to an agricultural education program. Incoming freshman students majoring in agriculture have a variety of agricultural/youth program experiences prior to enrolling at the university. These experiences include involvement in both paid and non-paid agriculture activities. Students major in a variety of agriculture programs; the most frequent was animal science.

Various factors and persons influence a student's decision of university choice. Career opportunities are the most important factor to influence a student to attend a particular college, school, or department of agriculture. Some other factors contributing to the decision to attend a university program of agriculture included love of animals, reputation of faculty, scientific nature, financial aid, and environmental concern.

A parent/guardian is the most influential person in determining choice of college, school, or department of agriculture. Other persons identified as an influence in attending university programs of agriculture included the agricultural representative from the college, department or school of agriculture; friend of the student, high school agriculture teacher; university representative; high school counselor; brother or sister of student; other relative; other person; or other teacher in the high school.

Campus visits were the most helpful source for informing freshmen students majoring in agriculture about the college, school or department of agriculture. Other sources also ranked by university freshmen included contacts with faculty, brochures, website, interaction with current students, letters from staff and phone calls from university representatives.

Freshmen who declared agriculture as their major do not plan to change majors and/or universities in the future. Students also plan to pursue an agricultural related career after graduation. Regarding further education, students plan to pursue a graduate degree after receiving their undergraduate degree.

## **Recommendations**

Campus visits and contact with faculty was important to the decisions of university freshmen. Faculty, administration and staff must continue to take time to meet with prospective students and encourage on-campus visits. Parents are also influential in

determining choice of university program of agriculture. All involved with university programs of agriculture must work at developing relationships with students and parents.

The role of the agricultural educator and the agricultural education program to the local college, school or department of agriculture is sometimes never appreciated or addressed. Teacher educators must work with Associate Deans for Instruction and Directors of Student Relations/Recruitment coordinators to best promote instruction in and about agriculture. In addition, agricultural educators must promote the importance of recruiting quality students for agricultural programs.

Further research should be conducted in this state to assess university students' attitudes regarding entrance standards, the recruitment process including public relations strategies, marketing agriculture as a major, and university entrance standards. Furthermore, the issue of recruitment issues for land grant and non-land grant universities should be investigated to analyze if differences exist.

Additional states should examine their university agriculture programs to evaluate if the recruitment process is meeting the needs and expectations of the students. Furthermore, a national or regional study could provide a broader perspective into the recruitment and student decision making process. Findings from these studies would help administration and faculty alike in the recruiting of quality agriculture students.

A similar study should be conducted to assess the university faculty attitudes of the recruitment process and issues regarding retention of agriculture students. This study could lend to a comparative analysis regarding perceptions of faculty and students in colleges, schools, and departments of agriculture.

### **Discussion/Implications**

A slight majority of students entering agriculture in this state are female. In a state that is perceived by some as more traditional in nature, this is surprising! Traditionally, faculty members in university programs of agriculture are male. As changes with our student population occur, do learning styles and needs of our students change? As agriculturalists and educators we must be ready to embrace this change and be ready to assist our colleges, schools, and departments of agriculture prepare for the future.

As state and federal budgets get tightened and accountability for schools at all levels becomes more crucial, professionals in agriculture must be aware of the attitudes of the clients—our students. Faculty, staff, administration and even current agriculture students must market and promote agriculture through the aspects in reaching potential students.

University agricultural educators are vital to the success of state high school agricultural education programs and also play an important role in the recruitment of students within our colleges, schools, or departments of agriculture. Does contact with students through secondary agricultural education play a role in the recruiting process? Does

interaction with agricultural education teachers influence students' decision? What value does an university agricultural education program have on the recruitment of potential students in the university programs of agriculture?

Agricultural educators in both land grant and non-land grant universities must strive to recruit and enable potential agriculture majors to achieve success. This is crucial for the careers of our students and future success of our programs.

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