

Improving the Image of Animal Science Among High School Science Teachers

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Any professional who can not or does not generate enough interest to at least perpetuate itself will ultimately die. Perhaps the single greatest concern today among the Nation's college and university agricultural programs is declining enrollment. This situation has already reached crisis proportions at some institutions. According to a recent Resident Instruction Committee on Operations and Policy (RICOP) report, post secondary level undergraduate agricultural enrollment nationwide is down 36% since 1981. There is much speculation concerning the causes of this problem; currently the most frequently mentioned factor is the poor image of the agricultural industry, especially among students who might consider professional careers in agriculture.

This poor image likely stems from a lack of understanding or misinformation. According to Matlin (1983), perceptions are based on the way information is gathered and interpreted. If the teachers which the students are in constant contact with have accurate knowledge of available professions in agriculture, recruiting efforts will be more effective. Rock (1975) stated that with perceptions the interest is not in the objective event but in how things appear. Coleman (1974) indicated that perceptions tend to have a constancy factor and that people tend to continue to perceive an organization as it was rather than as it is. If this is true, it is imperative that activities which result in a positive change in perceptions should be given careful consideration.

Objective of the Study

Agriculture involves manipulation of biological processes and it seems logical to assume that the perceptions of agriculture held by high school science teachers have an important influence on student attitudes and are a viable population to target for recruitment is high school science students. Therefore, any effort to enhance the image of agriculture among their teachers should enhance recruiting efforts.

The purpose of this study was to determine whether or not an inservice workshop for high school science teachers reflecting some of the current animal science research activities would increase their level of awareness of agriculture's involvement in basic scientific research in a positive way.

Methodology

In conjunction with the annual South Carolina High School Science Teacher's Conference, 26 science

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teachers were randomly selected and assigned to control and experimental groups (N = 13 for each group). The control group responded to a questionnaire designed to determine their perception of the involvement of agriculture in 20 selected areas of scientific research. A Likert type scale of 1-5 was used for each item. At the conclusion of a three-part presentation (a. endocrinology b. embryo manipulation, c. ruminant digestive processes) by Clemson University Animal science faculty, the experimental group also responded to the questionnaire. The following hypothesis was tested. There will be no significant difference between the control and experimental group's perception of the degree of involvement of agricultural science in 20 identified areas of research. An analysis of variance was used to test the null hypothesis.

Results and Discussion

The results of the analysis of variance are presented in Table 1 indicate a significant difference at the .05 level for group effects. Therefore the null hypothesis was rejected.

Table 1.

Source	d.f.	SS	MS	F
Groups	1	1274	1274	4.71*
Error	24	6496.62	270.69	
Total	25	7770.62		

*P < 0.05

Table 2. Questionnaire Item Summary

Items	Control Group	Experimental	% Change Group
1. Statistical Methods	39	50	+28.
2. Soil Fertility	52	57	+ 9.5
3. Chimeric Individual	32	42	+31.
4. Cryobiology	47	52	+10.8
5. Floral Genetics	53	57	+ 7.4
6. Genetic Engineering	54	57	+ 5.5
7. Hormone Physiology	55	55	0
8. Livestock Improvement	57	58	+ 1.8
9. Embryo Physiology	51	56	+ 9.9
10. Preservation of Endangered Species	38	55	+44.9
11. Food Production	54	55	+ 1.9
12. Internal Surgery	40	47	+17.
13. Human Reproduction	39	53	+36.
14. Humane Treatments	47	51	+ 8.3
15. Plant Variety Development	54	60	+11.3
16. Microbial Digestion	45	60	+33.5
17. Fistula Implantation	40	50	+25.0
18. Fiber Digestion	46	55	+19.5
19. Drainage and Irrigation	50	53	+ 6.0
20. Gastrointestinal Chemistry	43	59	+37.2

Table 2 presents a response summary for the questionnaire before and after the presentations. It is not surprising that little improvement was made in the respondents' level of knowledge of the agricultural scientists' involvement in areas related to food

production or livestock improvement. Moderate improvement was evident in areas related to genetics. Areas with the greatest improvement, and therefore those of lowest perceived involvement, were those related to mathematics, chemistry, physiology, surgery, human reproduction and endangered species. The 0% change in the hormone physiology is difficult to explain in view of enhanced perceptions in all other categories related to physiology.

High school science teachers either have a lack of knowledge or misconceptions regarding the area, degree of sophistication and scope of application of results of agricultural research in general, and animal science in particular. With a little effort the negative perception of agriculture can be improved. At an earlier embryo handling demonstration for high school biology teachers, comments such as the following were made: "We didn't know anyone in the state knew anything about this. How can we get this kind of information for our classes?" It appears from the results of this study and others, that greater efforts should be directed toward improving the awareness of high school science teachers. It seems likely that similar improvements may be possible with junior college and small four year colleges as well.

Summary

First, these results indicate that a large number of South Carolina high school science teachers do not

relate agricultural research with scientific research. This is due to a lack of knowledge on the part of the high school teachers. Many, if not most, science teachers are not aware of the extent of the agricultural scientist's involvement in basic and applied research. It is not surprising, then, that most high school students have little or no interest in agriculture or closely allied areas. Agricultural colleges, especially those not generally accepted as being in the main stream of research, must reverse this trend, or advances in agricultural efficiency will develop a serious lag. Second, the opinion of a small group was significantly (Table I) altered. This indicates that once aware of the actual status, study participants changed their perception of what constitutes agricultural research, at least in the areas in which information was presented. Finally, almost without exception study participants asked how they could be kept informed on current advances in agricultural research. This suggests that greater efforts to establish a working relationship with high school science teachers is warranted.

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