The Measure of Agricultural Literacy: Before and After an Agricultural Experience

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The Measure of Agricultural Literacy: Before and After an Agricultural Experience

I. Introduction

Now more than ever, it is important for the general public to understand the importance of agriculture and not be misled by what they read on the internet or hear from the media. Agriculture continues to be kept under a microscope with controversial discussions related to GMO labeling and the continued backlash received from animal activist groups along with the water quality issues in the Western Lake Erie Basin.

The significance of agricultural literacy continues to become more relevant as the American society becomes agriculturally ignorant (Terry & Lawver, 1995, p. 64). Roberts et al. (2016) noted, "Agricultural education is not a one size fits all discipline" and the accuracy and quality of information provided to the general public is unknown (p. 15). The core concepts of agricultural literacy have remained the same over the last two decades, while the industry continues to change. Kovar & Ball (2013) noted, "If the concepts of agricultural literacy have evolved, but is being assess through traditional methods, is the understanding of agriculture truly being evaluated?" (p. 168).

II. Theoretical Framework

"Functional agricultural literacy does not imply a perfect level of understanding about agriculture, but rather a minimum level" (Frick & Spotanski, 1990, p. 6). The theoretical framework of this study is derived from Frick and Spotanski's three-dimensional approach to agricultural literacy. An individual's level of agricultural literacy can be emphasized in three major themes: a) an understanding of the applied process or methods of agriculture; b) a basic vocabulary of agricultural terms; and c) the impact agriculture has on society (Frick & Spontanski, 1990, p. 6). It is suggested that each theme must be incorporated into any program focused on agricultural literacy development.

Because agriculture literacy is important to the future of both the agriculture discipline and society, it is important to incorporate the three themes into facilitated programs to introduce the basic concepts of the industry. Frick & Spontanski (1990) believe it is not agriculture's responsibility to foresee the future, but to prepare for the future (p. 13).

III. Methodology

The study was designed to evaluate consumer's perceptions and knowledge of agriculture before and after attending the Ag Day in the Park event on June 25, 2016 at the Tallgrass Trail Park in Marion, Ohio. An instrument was distributed to 50 individuals who attended the event. The survey instrument consisted of 10 Likert-type and nine multiple choice questions that reviewed aspects from each of the learning stations available during the event. Two columns were presented on the instrument to evaluate their perceptions and knowledge for agricultural concepts after completing the learning stations at the event and then before attending the event.

IV. Results

Table 1. Comparison of Means from Respondents' Perceptions of Agriculture

Statement	Before	After
Relationship between agriculture and everyday life. **	3.72	4.48
Agriculture impact me daily. **	4.12	4.64
Agriculture is important to my community.	4.28	4.68

Importance of youth learning about agriculture.	4.26	4.72
MyPlate concepts impacting healthy choices. *	3.76	4.50
Agriculture is a negative word.	1.88	2.60
Farmers take care of their animals. **	4.16	4.72
*Fertilizer does **not** help farmers increase food production.*	2.18	2.92
Agriculture is committed to improving water quality. *	3.68	4.44
The agriculture community is transparent. **	3.06	4.04

Note. The questions in italics were negative statements; therefore, in calculating the mean score, these items were reverse coded.

*Statements were statistically significant at the .05 level using the Fisher's Exact Test and Wilcoxon Signed-Rank Test.

**Statements were statically significant at the .05 level using the Wilcoxon Signed-Rank Test.

Table 2. Participants' Performance on the Knowledge of Agriculture Test

Question	Percent Correct Before	Percent Correct After
What process does a seed go through to absorb energy from the sun? *	69.39	93.18
How long does it take a mature corn ear to be ready for harvest? *	22	39.13
What does GMOs stand for? *	74	91.11
Are GMOs causing an increase in the use of pesticides? **	48	65.91
What are the three essential nutrients that plants need to grow?	68.75	41.3
True or False: Soil holds the nutrients the plants need for food.	91.67	97.73
True or False: Milk travels from the farm to the grocery in 48 hours. *	63.27	79.55
What three tests does milk go through before reaching consumers?	41.11	88.10
Which of the food groups is not found on MyPlate? **	71.74	83.33

*Question were statistically significant at the .05 level using the Fisher's Exact Test and Wilcoxon Signed-Rank Test.

**Questions were statistically significant at the .05 level using the Wilcoxon Signed-Rank Test.

V. Conclusions and Recommendations

Events such as the Farm Bureau's Ag Day in the Park had a positive impact on the perceptions of the public regarding agriculture. On all 10 perception items the attitudes toward various facets of agriculture were higher after the event than before the event. The difference in perceptions were statistically significant on six of the 10 statements.

The knowledge of agriculture also increased. While the participants did possess some knowledge of agriculture prior to the event, the majority of their "after" scores were higher. On eight of the nine test items the knowledge of agriculture was higher after the event than before the event. The difference in knowledge was statistically significant on six of the nine scores.

This study provides evidence there is a need to further continue to educate the general public regarding agricultural concepts and how the industry positively impacts society's everyday life. The data collected from respondents cannot be generalized statistically to any particular population. However, the findings in this study provide practical implications for the agriculture community and the local Farm Bureau to determine the knowledge and perception deficiencies.

References

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