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IN AGRICULTURE AND NATURAL RESOURCES

Educational Materials Evaluation

Blueberries

Specialty Crop Block Grant

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Executive Summary

Specialty Crop Block Grant/Blueberries
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Introduction

Since Florida blueberry production is a major industry which is threatened by global competition and a small harvest season (Taylor, Rumble, & Anderson, 2016), knowledge of effective marketing strategies is vital to the industry. While Taylor et al. (2016) found that respondents believed blueberries were a notorious food, some inaccuracies in identifying the specific health benefits of blueberries were identified. Furthermore, although 90% of consumers stated they would prefer to buy Florida-grown blueberries, 84% of them did not know when Florida blueberries were seasonally available (Taylor et al., 2016). In order to increase demand for Florida blueberries, consumers' knowledge of the Florida blueberry season must be increased (Bradley & Wysocki, 2016). This study explored the role video and print media can play in increasing knowledge of the Florida blueberry season and the health benefits of blueberries in order to assist in creating effective marketing efforts for this specialty crop.

Methods

An online survey was used to collect data to evaluate the effectiveness of media in increasing the knowledge of consumers on the seasonality and health benefits of Florida blueberries. The survey targeted consumers representative of the millennial generation because this generation has more buying power than previous generations (Ruth, Ruble, Gay, & Rodriguez, 2016). It is important for this generation to be informed consumers of agricultural products. The survey was delivered to a convenience sample of University of Florida undergraduate students from across the university enrolled in a required course. Students were incentivized with extra credit. Respondents who chose not to participate were provided an alternative extra credit opportunity. A 94% response rate was received with responses from 379 of the 402 students in the course.

Students were randomly assigned to one of three groups: video treatment ($n = 115$), flyer treatment ($n = 112$), and control ($n = 116$). Students in the video treatment watched a 38 second video designed to increase audiences' knowledge of the seasonal availability of Florida blueberries. After the viewing the video, participants were asked, "When do you believe Florida blueberries are seasonally available?"; they selected from spring, summer, fall, and winter. They then read a series of seven statements about the health benefits of blueberries and were asked to indicate whether they believed the statements were true or false. Finally, participants in the video group were asked to rate their knowledge about seasonal availability of Florida blueberries before and after watching the promotional video on a five-point Likert scale from extremely knowledgeable to not knowledgeable at all. Students in the flyer treatment group viewed a flyer about the health benefits of blueberries for a minimum of 20 seconds. They were asked to answer the same questions as the students in the video treatment group, except they rated their knowledge of the nutritional benefits of blueberries before and after viewing the flyer. Students in the control group did not view any material about blueberries. They were asked to answer the seasonal availability question and the health benefits question.

SPSS v22 was used to analyze data. A health benefits knowledge score was calculated based on the number of correct answers to the health benefits question. A repeated measures ANOVA was used to analyze the difference in the treatment groups' self-reported knowledge level of Florida blueberry seasonality prior to and after the treatment in a post-then question. To determine if there was a significant difference in the knowledge of the Florida blueberry season between the control group and the video treatment group, a chi-squared test was run. A one-way ANOVA was run to determine if there was a significant difference in the health benefits knowledge score between the control group and the flyer treatment

group. A repeated measures ANOVA was used to analyze the difference in the treatment groups' self-reported knowledge level of the nutritional benefits of blueberries prior to and after the treatment in a post-then question.

Findings

The findings indicate a significant difference in participants' knowledge of the seasonality and health benefits of Florida Blueberries after exposure to both the video and flyer treatments.

Demographics

Table 1 provides a summary of the demographic data of the students participating in the survey. There were slightly more female than male participants. The majority of participants were between 18 and 21 years old with the largest percentage being 19 years old. Nearly half of the participants were enrolled in the College of Liberal Arts and Sciences. The majority of students were white.

Table 1. Demographics

	f	%
Sex (*n* = 343)		
Male	157	45.8
Female	186	54.2
Age (*n* = 343)		
18	63	18.4
19	93	27.1
20	73	21.3
21	45	13.1
22	33	9.6
23+	36	10.5
Rank (*n* = 341)		
Freshman	93	27.3
Sophomore	96	28.2
Junior	83	24.3
Senior	68	19.9
Graduate Student	1	0.3
College (*n* = 342)		
Agricultural and Life Science	39	11.4
The Arts	7	2.0
Business Administration	62	18.1
Construction, Design, and Planning	6	1.8
Education	2	0.6
Engineering	43	12.6
Health and Human Performance	13	3.8
Journalism and Communications	19	5.6
Liberal Arts and Sciences	146	42.7
Nursing	1	0.3
Public Health and Health Professions	4	1.2
Race (*n* = 343)		
Asian or Pacific Islander	39	11.4
Black or African American	26	7.6
Hispanic/Latino/Chicano	35	10.2

White	195	56.9
Multi-race	45	13.1
Other	3	0.9

Seasonality of Florida Blueberries

There was a significant difference in the percentage of participants who viewed the video treatment and correctly identified spring as the correct season when Florida blueberries are seasonally available when compared to the control group as show in Table 2.

Table 2. Knowledge of Florida Blueberry seasonality

	Control		Treatment	
	f	%	f	%
Spring	58	50.0	110	95.7
Summer	35	30.2	4	3.5
Fall	12	10.3	1	0.9
Winter	11	9.5	0	0.0
Total	116	100.0	115	100.0

$\chi^2(3, N = 231) = 61.041, p < .001$

Table 3 provides the results of participant's self-reported knowledge of Florida Blueberry seasonality. Table 4 indicates a significant difference in their knowledge after viewing the video intervention.

Table 3. Perceived knowledge Florida Blueberry seasonality

	Before Treatment		After Treatment	
	f	%	f	%
Not knowledgeable at all	53	46.1	3	2.6
Slightly knowledgeable	35	30.4	10	8.7
Moderately knowledgeable	20	17.4	37	32.2
Very knowledgeable	5	4.3	25	21.7
Extremely knowledgeable	2	1.7	40	34.8
Total	115	100.0	115	100.0

Table 4. Perceived knowledge of Florida Blueberry seasonality

	N	Mean	Standard Deviation
Before Treatment	115	1.85	0.976
After Treatment	115	3.77	1.101

$(F_{1,114} = 234.694, p < 0.001)$

Nutritional Benefits of Blueberries

A comparison of the health benefits knowledge scores of participants in the control group and the treatment group shows a significant difference as seen in Table 5.

Table 5. Nutritional benefits of blueberries knowledge scores

	N	Mean	Standard Deviation

Control Group	116	4.819	1.139
Flyer Treatment Group	112	5.643	1.355

($F_{1,226}$ = 24.770, p < 0.001)

Table 6 provides the participant's rating of their knowledge on the nutritional benefits of blueberries before and after viewing the flyer. There was a significant difference in participant's self-reported knowledge of the nutritional benefits of blueberries after viewing the flyer as reported in Table 7

Table 6. Perceived knowledge of nutritional benefits of blueberries

	Before Treatment		After Treatment	
	f	%	f	%
Not knowledgeable at all	42	37.5	4	3.6
Slightly knowledgeable	40	35.7	13	11.6
Moderately knowledgeable	25	22.3	39	34.8
Very knowledgeable	4	3.6	42	37.5
Extremely knowledgeable	1	0.9	12	12.5
Total	112	100.0	112	100.0

Table 7. Perceived knowledge of nutritional benefits of blueberries

	N	Mean	Standard Deviation
Before Treatment	112	1.95	0.909
After Treatment	112	3.44	0.975

($F_{1,111}$ = 260.777, p < 0.001)

References

Bradley, T. & Wysocki, A. (2016). *Strategic marketing plan for the Florida blueberry industry*. PIE2015/16-4b Gainesville, FL: University of Florida/IFAS Center for Public Issues Education

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