



October 2015

Final Report

2015 Eastern United States Consumers' Perceptions of Florida Strawberries- Survey

Taylor K. Ruth, Dr. Joy N. Rumble, & Sandra Anderson



For More Information

Contact the Center for Public Issues Education at piecenter@ifas.ufl.edu or 352-273-2598

Suggested Citation

Ruth, T. K., Rumble, J. N., & Anderson, S. (2015). *Eastern United States' consumer perceptions of Florida strawberries-Survey*. PIE2015/14-5a. Gainesville, FL: University of Florida/IFAS Center for Public Issues Education.

About the Authors

Taylor Ruth – Graduate assistant, UF/IFAS Center for Public Issues Education and Department of Agricultural Education and Communication

Joy Rumble, Ph.D. – Assistant professor, UF/IFAS Center for Public Issues Education and Department of Agricultural Education and Communication

Sandra Anderson – Research Coordinator, UF/IFAS Center for Public Issues Education

Acknowledgments

This research was funded by the Florida Strawberry Research and Education Foundation.

Several people played key roles in this research and are acknowledged below. We could not have completed this research without the help of these individuals and we thank them for their time.

Ted Campbell – Former Director, Florida Strawberry Growers Association

Sue Harrell – Director of marketing, Florida Strawberry Growers Association

Lisa Lundy – Associate Professor, Department of Agricultural Education and Communication

Kenneth Parker – Director, Florida Strawberry Growers Association

Rick Telg – Director, UF/IFAS Center for Public Issues Education; Professor, Department of Agricultural Education and Communication

Contents

For More Information.....	2
Suggested Citation	2
About the Authors	2
Acknowledgments.....	2
List of Figures	5
List of Tables.....	6
Executive Summary.....	7
Introduction.....	7
Findings.....	7
Background	8
Methods.....	9
Results	10
Demographics.....	10
Age	10
Gender	10
Ethnicity.....	11
Race.....	11
Income	12
Region	13
Purchasing Habits for Fresh Strawberries	14
Where Fresh Strawberries are Typically Purchased.....	14
Frequency of Purchasing Fresh Strawberries	15
Purchasing Seasons	15
Why Respondents Buy Fresh Strawberries.....	17
How Fresh Strawberries are Consumed/Prepared	18
Physical Strawberry Attributes	19
Strawberry Attributes.....	20
Packaging	21
Information on Label.....	21
Information on Label.....	22
Package Choice.....	23
Location Preferences.....	26
Growing Location.....	26

Florida Strawberries	29
Personal Experience with Strawberries	29
Experience with Florida Strawberries	31
Florida Strawberry Knowledge.....	35
Florida Strawberry Knowledge- Growing Season	36
Message Experiment	38
Attitude toward the Message	38
Attitude toward Florida Strawberries	39
Perceived Behavioral Control of Purchasing of Florida Strawberries.....	39
Purchasing Intent of Florida Strawberries	41
Platform Preference.....	44
Message Preference	45
References.....	46
Appendix A- Packages.....	47
Appendix B- Messages	49

List of Figures

Figure 1. Age of the respondents	10
Figure 2. Gender	10
Figure 3. Ethnicity	11
Figure 4. Race	11
Figure 5. Income.....	12
Figure 6. Region.....	13
Figure 7. Where fresh strawberries are typically purchased.....	14
Figure 8. Frequency of purchasing fresh strawberries	15
Figure 9. Seasons fresh strawberries are typically purchased	15
Figure 10. Seasons fresh strawberries are typically purchased by region.....	16
Figure 11. Why respondents buy fresh strawberries	17
Figure 12. How fresh strawberries are consumed/prepared	18
Figure 13. Physical strawberry attributes in consideration when making a purchase	19
Figure 16. Label usage	22
Figure 17. Package choice.....	23
Figure 18. Label choice by region.....	23
Figure 19. Reason for label selection	24
Figure 20. Label choice by region.....	25
Figure 21. Preference for growing location	26
Figure 22. Reason for growing location preference	27
Figure 23. Reason for no growing location preference.....	28
Figure 24. Personal experiences with strawberries.....	29
Figure 25. Personal experiences with strawberries by region.....	30
Figure 26. Experience with Florida strawberries.....	31
Figure 27. Experience with seeing Florida strawberries for sale in local area by region.....	32
Figure 28. Experience with tasting Florida strawberries by region	33
Figure 29. Purchased Florida strawberries in the past year	34
Figure 30. Purchased Florida strawberries in the past year by region	34
Figure 31. Know when Florida strawberries are in season	35
Figure 32. Know when Florida strawberries are in season by region	35
Figure 33. When are Florida strawberries in season?.....	36
Figure 34. When are Florida strawberries in season? (By region)	37
Figure 35. I plan to buy Florida grown strawberries when available	41

Figure 36. I will look to see if strawberries were grown in Florida 42

Figure 37. I will go out of my way to purchase Florida strawberries 43

Figure 38. Message platform preference 44

Figure 39. Message choice 45

Figure 40. Message choice by region..... 45

List of Tables

Table 1. Attitude toward the message 38

Table 2. Attitude toward Florida strawberries..... 39

Table 3. Perceived behavioral control of purchasing Florida strawberries 39

Executive Summary

Florida Strawberry Growers Association/ Eastern United States Consumers' Perceptions of Florida Strawberries - Survey

October 2015

Introduction

Florida is the number one producer of strawberries during the winter months; however, there has been an increase in strawberries imported from Mexico during the winter growing season. Since Florida exports 80% of its strawberries to states east of the Mississippi river, it is important to understand eastern United States consumers' perceptions of Florida strawberries to effectively promote the commodity in out of state markets. A survey was distributed to 1,500 respondents in states east of the Mississippi River in July 2015. The results from the survey are in this report.

Findings

- Majority of respondents purchased fresh strawberries from grocery stores, retail stores, and farmers markets
- Respondents purchased strawberries 2-3 times a month or more often
- Strawberries were either purchased as part of a normal shopping trip or because they caught the eye of the respondent
- Strawberries were typically purchased during the spring and summer
- Most respondents consumed strawberries straight out of the container, without anything added
- The physical attributes of the strawberries were considered by most of the respondents
- Price was considered the most often out of the non-physical attributes, growing location the least
- More respondents looked for the growing location on the label than those who made their purchasing decision based on where the label said the strawberries were grown
- Respondents preferred to purchase strawberries with the Fresh from Florida logo on the label
- Given the choice, respondents preferred to purchase strawberries from Florida or California over those from Mexico
- Freshness, taste, and price were the most important physical characteristics of the strawberries to respondents when making purchasing decisions
- A little more than half of the respondents had reported seeing Florida strawberries sold in their local area
- Less than half of the respondents knew when Florida strawberries were in season, and only 18% of those respondents correctly selected the winter growing season
- Overall, respondents had positive attitudes toward Florida strawberries
- The majority of respondents said they would look for and purchase Florida strawberries in the future, but they would not go out of their way to do so
- Respondents preferred the message "Fresh Florida strawberries, you can have a taste of summer all winter long" but there were no differences between the messages for purchasing intent and attitudes toward Florida strawberries

Background

Florida strawberry growers have seen recent competition from imported Mexico strawberries over recent years (United States Department of Agriculture-Economic Research Service [USDA-ERS], 2013; Wu, Guan, & Whidden, 2012). Florida is the number one producer of strawberries during the winter months, but these are the same growing months for Mexico strawberries. The strawberry industry contributes \$300 million to Florida's economy annually (Florida Department of Agriculture and Consumer Services [FDACS], 2013), but Florida's market share of strawberries has decreased due to increases in competition (Ohlemeier, 2013). Since 80% of Florida's strawberries are shipped out of state (Buchanan, 2013), and strawberries are a type of product that hold little difference amongst them, the Florida Strawberry Research and Education Foundation funded this study to better understand how to promote their products in out of state markets against competitors.

This survey specifically examined:

- Consumers' purchasing habits of strawberries;
- How consumers use strawberry packaging and labels to make purchasing decisions;
- Consumers' preferences for different strawberry growing locations;
- Consumers' familiarity and preference for Florida strawberries;
- Consumers' preferences for messages promoting Florida strawberries in the winter

Methods

An online survey consisting of 58 questions was delivered through the online software company Qualtrics to 2,115 residents who lived east of the Mississippi River. The survey was distributed to 2,115 respondents, and there were 1,500 ($n = 1,500$) usable responses from respondents who had purchased fresh strawberries in the past calendar year. The survey was distributed in geographic regions where Florida strawberries had been shipped to the previous season: New England (Connecticut, Massachusetts, New Hampshire, Rhode Island, and Vermont), Mid-Atlantic (New Jersey, New York, Ohio, and Pennsylvania), South Atlantic (Florida, Delaware, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia), and East South Central (Alabama, Kentucky, Mississippi, and Tennessee; S. Harrell, personal communication, January 24, 2015). Ohio is technically located in the East-North Central region and has not been a part of the Florida strawberry market. However, the state was included in the survey since Florida strawberry growers are trying to enter the Ohio market.

Since non-probability sampling was used, the data were weighted in the SPSS data software so the proportion of the respondents in each region was equal to the proportion of the population in that region in relation to all four regions. Weighting the sample this way was used to reduce any regional biases that might have occurred with relation to Florida strawberry preferences (Baker et al., 2013). However, post-stratification weighting can cause rounding error in the sample when underrepresented cases are weighted higher and over-represented cases weighted lower. SPSS will round the frequency of the demographic category to the nearest integer, which causes inconsistency in the data. Rounding is done to the overall weighted frequency and not to individual cases (Maletta, 2007).

The survey questions in the instrument were researcher developed, based off of a previous focus group study (Ruth & Rumble, 2015). The questions were also adapted from different studies (Holt, 2014; Jeong & Lundy, 2015; Onozaka & McFadden, 2011). There was also an experiment in study to test the affect of different messages on consumers' Florida strawberry purchasing intent. Five-hundred respondents were randomly assigned to each of the three messages promoting Florida strawberries. The survey instrument was reviewed by a panel of experts to account for content and face validity (Ary, Jacobs, & Sorensen, 2010). This report contains the descriptive results to the survey. Questions that were more relevant to marketing Florida strawberries have been broken down by regions.

Results

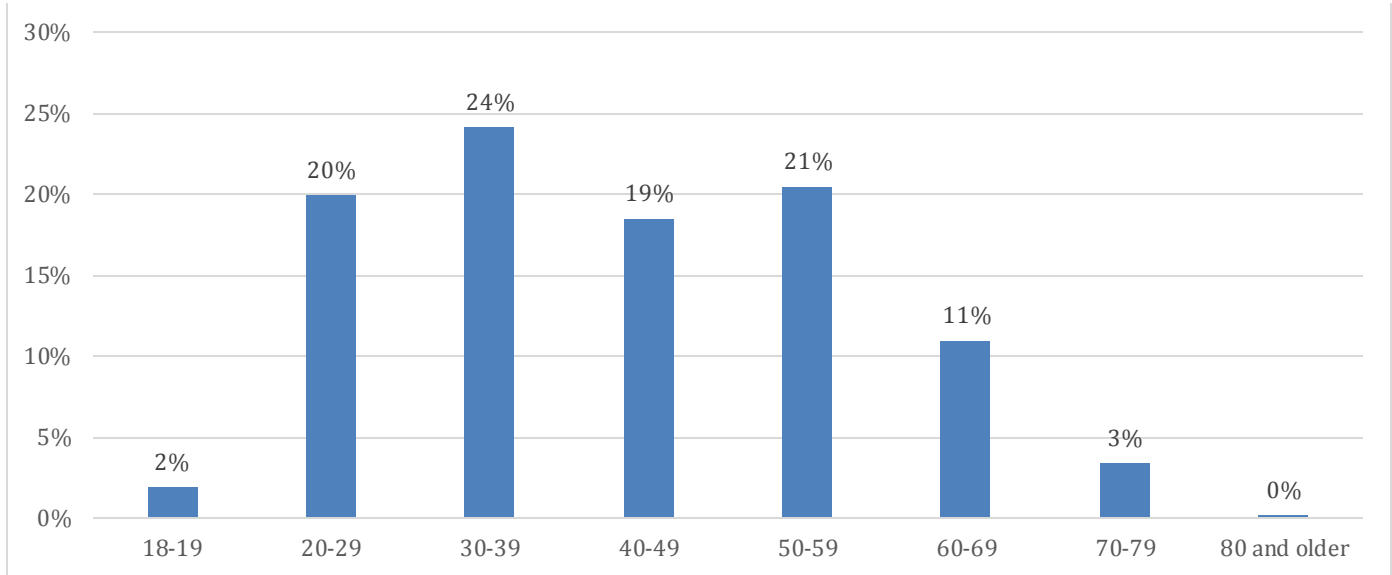
The results to the survey have been described in the following section.

Demographics

The demographic description of the respondents has been included to aid in the interpretation of the results.

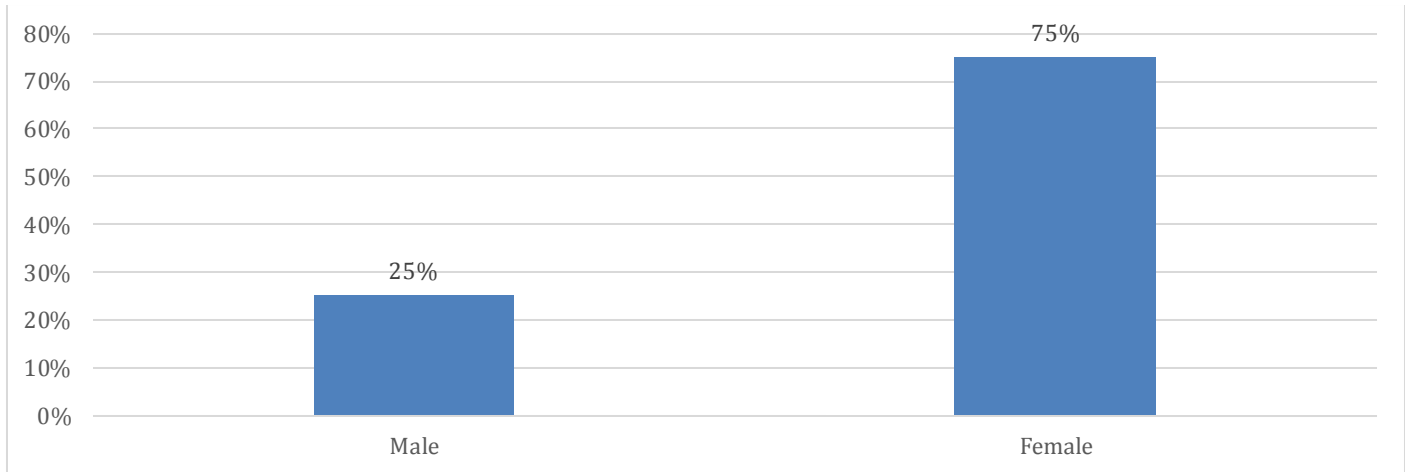
Age
Of the respondents who completed the survey, 44% ($n = 660$) were between the ages of 20 and 39 while 40% ($n = 587$) were between the ages of 40 to 59 (Figure 1).

Figure 1. Age of the respondents



Gender
Twenty-five percent ($n = 376$) of the respondents were male and 75% ($n = 1124$) were female (Figure 2).

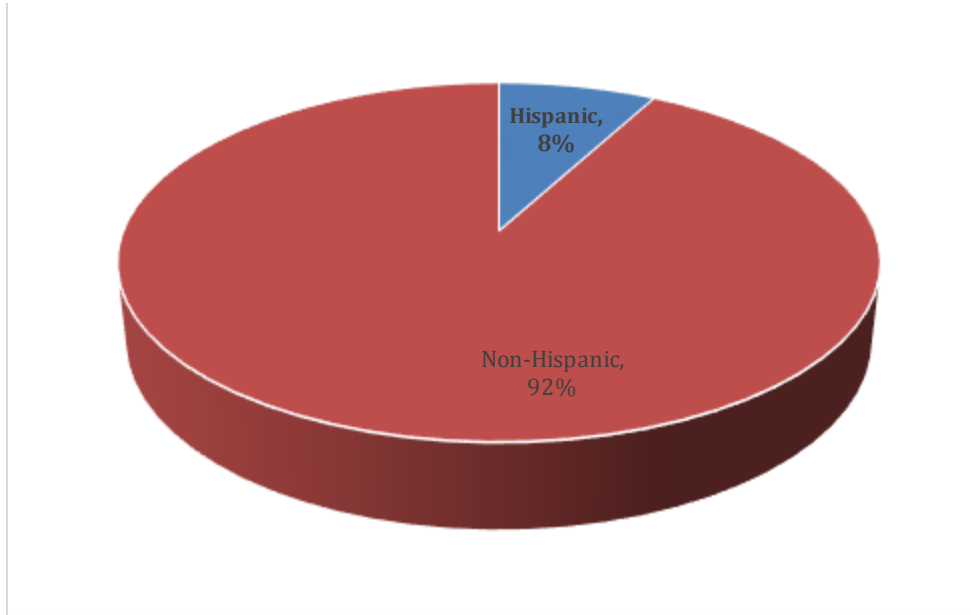
Figure 2. Gender



Ethnicity

Respondents were asked to describe their ethnicity. Only 8% ($n = 118$) reported that they were Hispanic and 92% ($n = 1380$) reported that they were non-Hispanic (Figure 3).

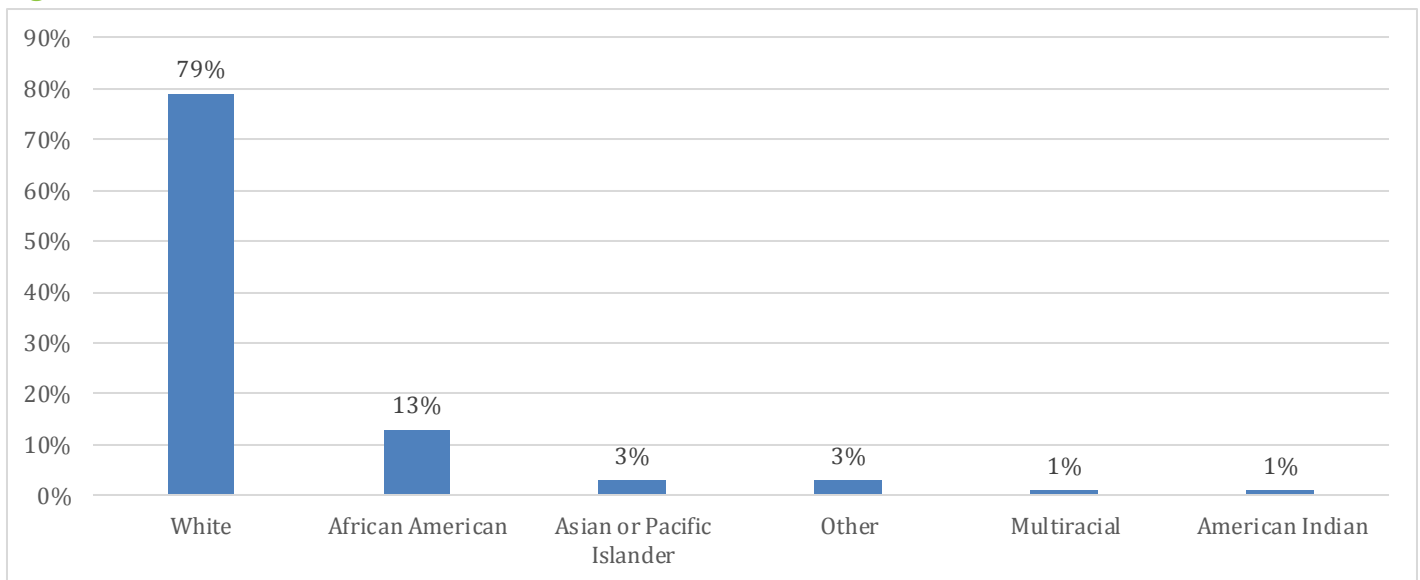
Figure 3. Ethnicity



Race

Figure 4 shows that the majority of the respondents were white (79%, $n = 1189$) followed by African American (13%, $n = 196$).

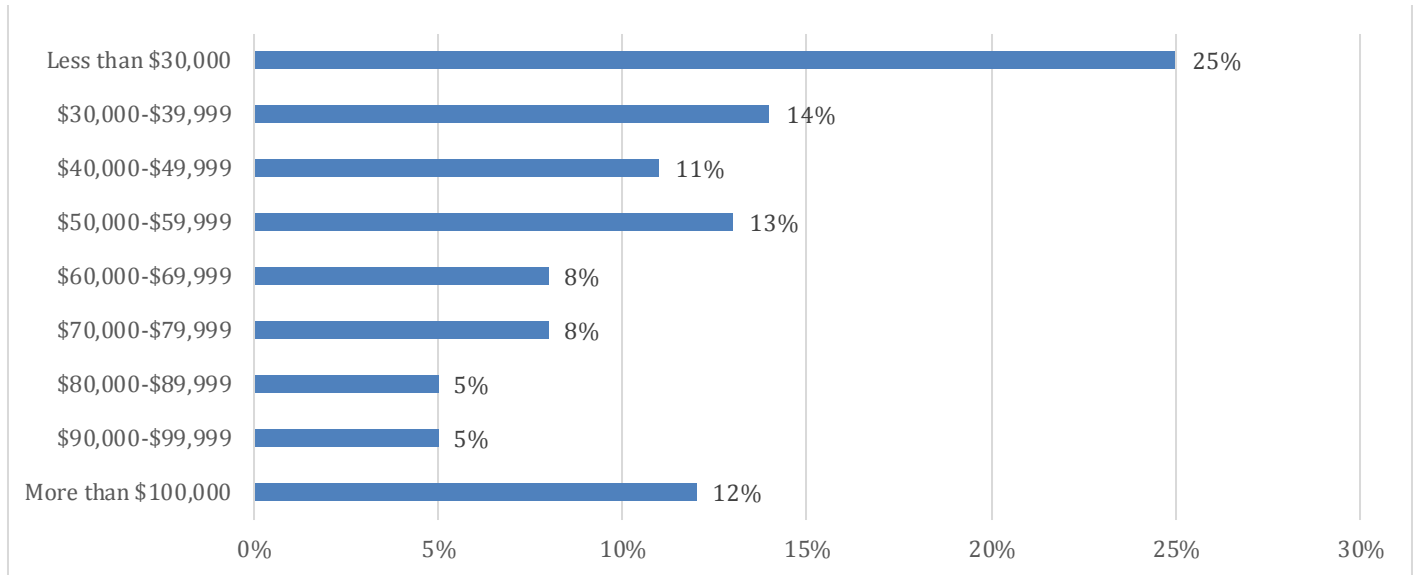
Figure 4. Race



Income

A quarter of the respondents (25%, $n = 368$) earned an annual income of less than \$30,000. A full description of the respondents' income can be seen in Figure 5.

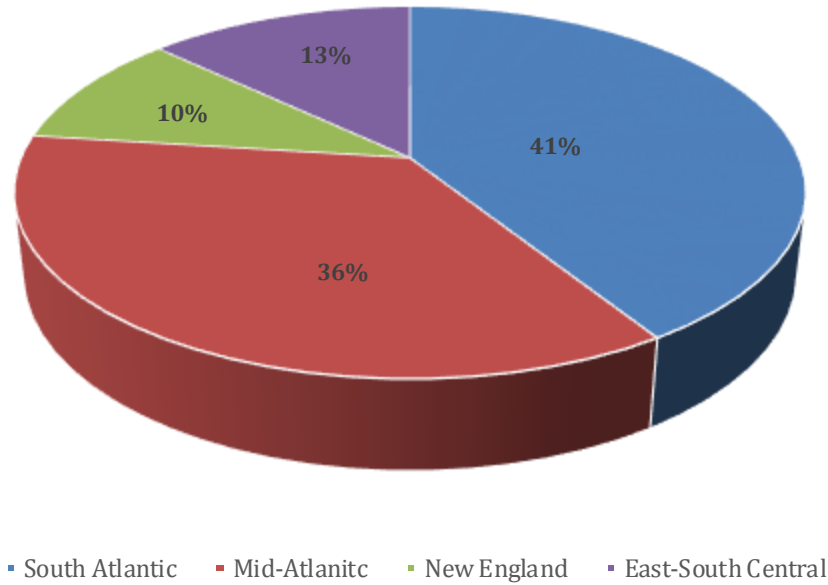
Figure 5. Income



Region

The geographic location of the respondents was recorded as well. The states the respondents' lived in were categorized into the four regions where Florida strawberries were shipped: New England (Connecticut, Massachusetts, New Hampshire, Rhode Island, and Vermont), Mid-Atlantic (New Jersey, New York, Ohio, and Pennsylvania), South Atlantic (Florida, Delaware, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia), and East South Central (Alabama, Kentucky, Mississippi, and Tennessee. The weighted portions can be seen in Figure 6. The largest proportion of the respondents (41%, $n = 621$) lived in the South Atlantic region.

Figure 6. Region



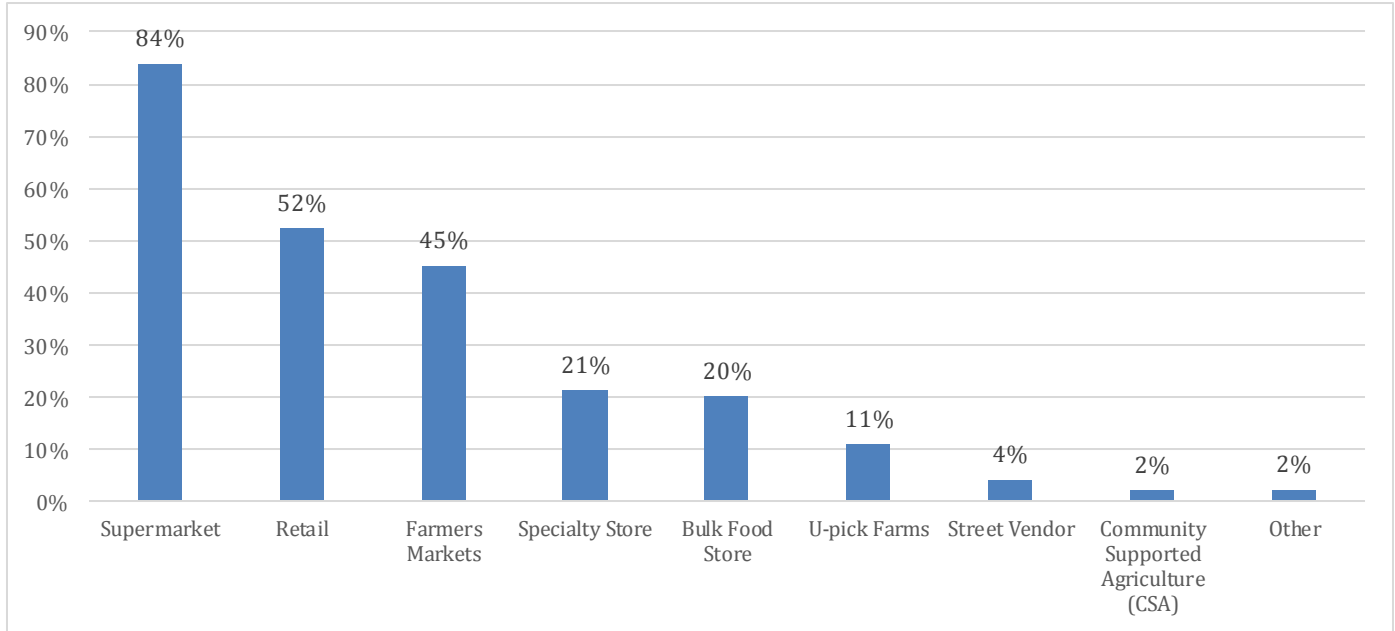
Purchasing Habits for Fresh Strawberries

At the beginning of the survey, the respondents were asked to answer a variety of questions in relation to their purchasing habits of fresh strawberries.

Where Fresh Strawberries are Typically Purchased

Respondents were given a check-all-that-apply question asking where they typically purchased fresh strawberries. The majority (84%, $n = 1259$) reported purchasing strawberries from supermarkets. Fifty-two percent ($n = 779$) reported purchasing strawberries from retail store like Target or Wal-Mart and 45% ($n = 817$) reported purchasing them from Farmers Markets. Data can be seen in Figure 7.

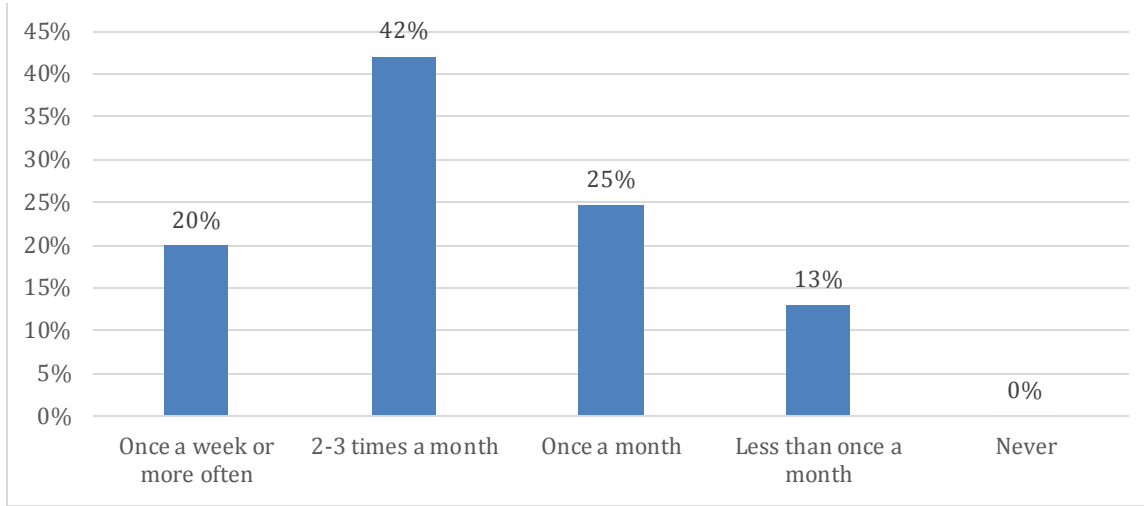
Figure 7. Where fresh strawberries are typically purchased



Frequency of Purchasing Fresh Strawberries

Respondents were also asked to report how often they purchased fresh strawberries in a typical month (Figure 8). The majority indicated that they purchased strawberries two to three times a month or more (62%, $n = 932$).

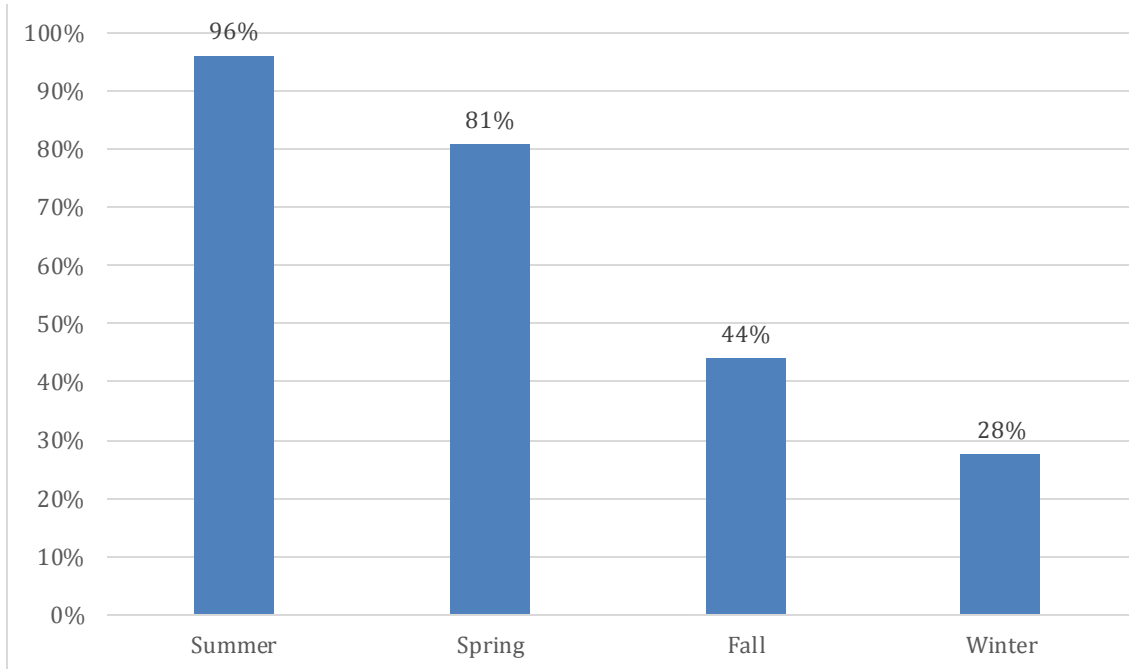
Figure 8. Frequency of purchasing fresh strawberries



Purchasing Seasons

Figure 9 shows which season respondents reported purchasing fresh strawberries. The question was check-all-that-apply, and the majority of respondents said they typically purchased strawberries in the summer (95%, $n = 1433$) and spring (81%, $n = 1208$). Only 28% ($n = 417$) reported typically buying strawberries in the winter.

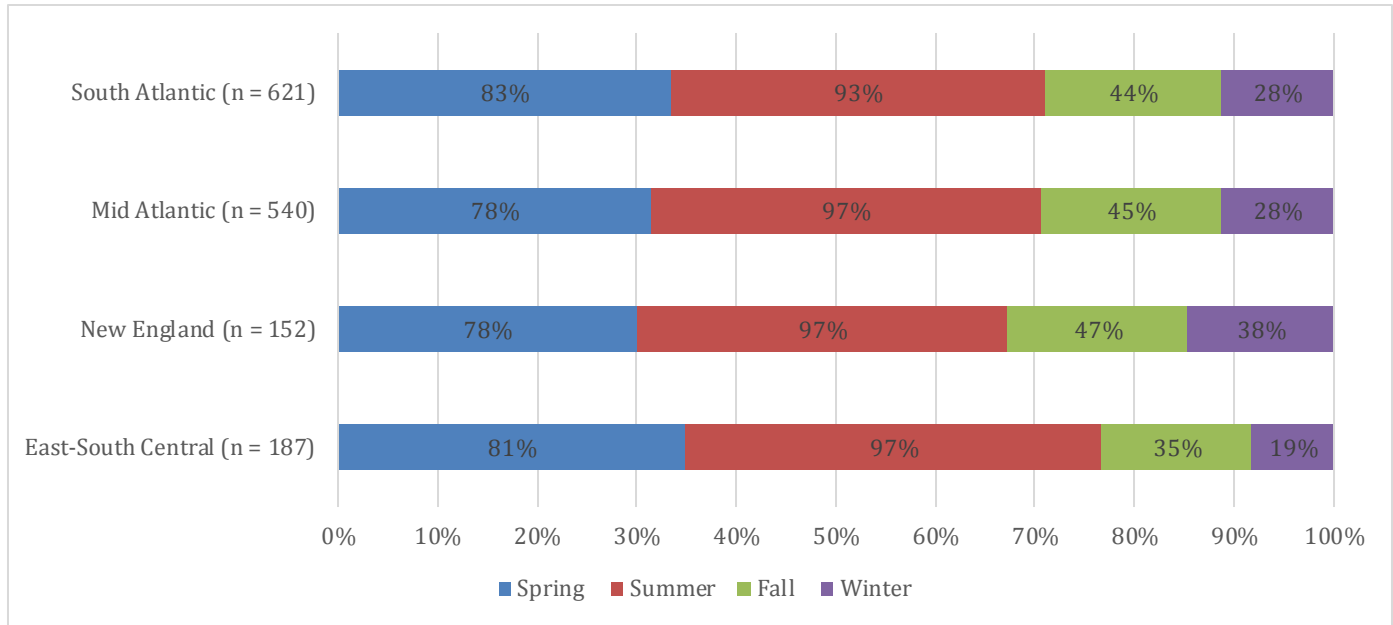
Figure 9. Seasons fresh strawberries are typically purchased



Purchasing Seasons by Region

The purchasing season of strawberries for each region is reported in Figure 10. New England had the highest proportion of respondents purchasing strawberries during the winter months (38%, $n = 57$) and the East-South Central region had the smallest proportion of respondents purchasing in the winter (19%, $n = 36$).

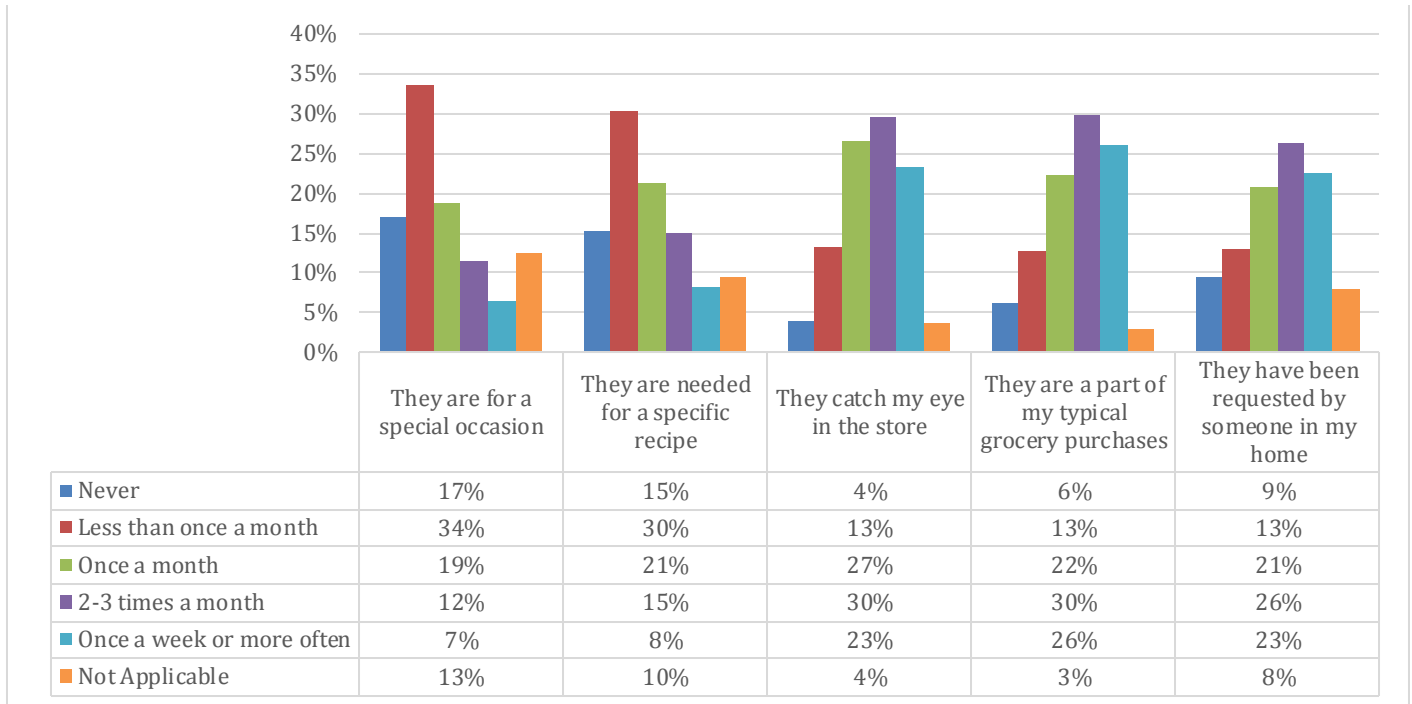
Figure 10. Seasons fresh strawberries are typically purchased by region



Why Respondents Buy Fresh Strawberries

The respondents were asked why they purchased strawberries during a typical month (Figure 11). Respondents were purchasing strawberries two to three times a month or more because they were part of their normal grocery purchases (56%, $n = 842$) or because the strawberries caught their eye in the store (53%, $n = 791$). Less than once a month or never were the respondents buying the strawberries for a special occasion (51%, $n = 762$) or specific recipe (45%, $n = 684$).

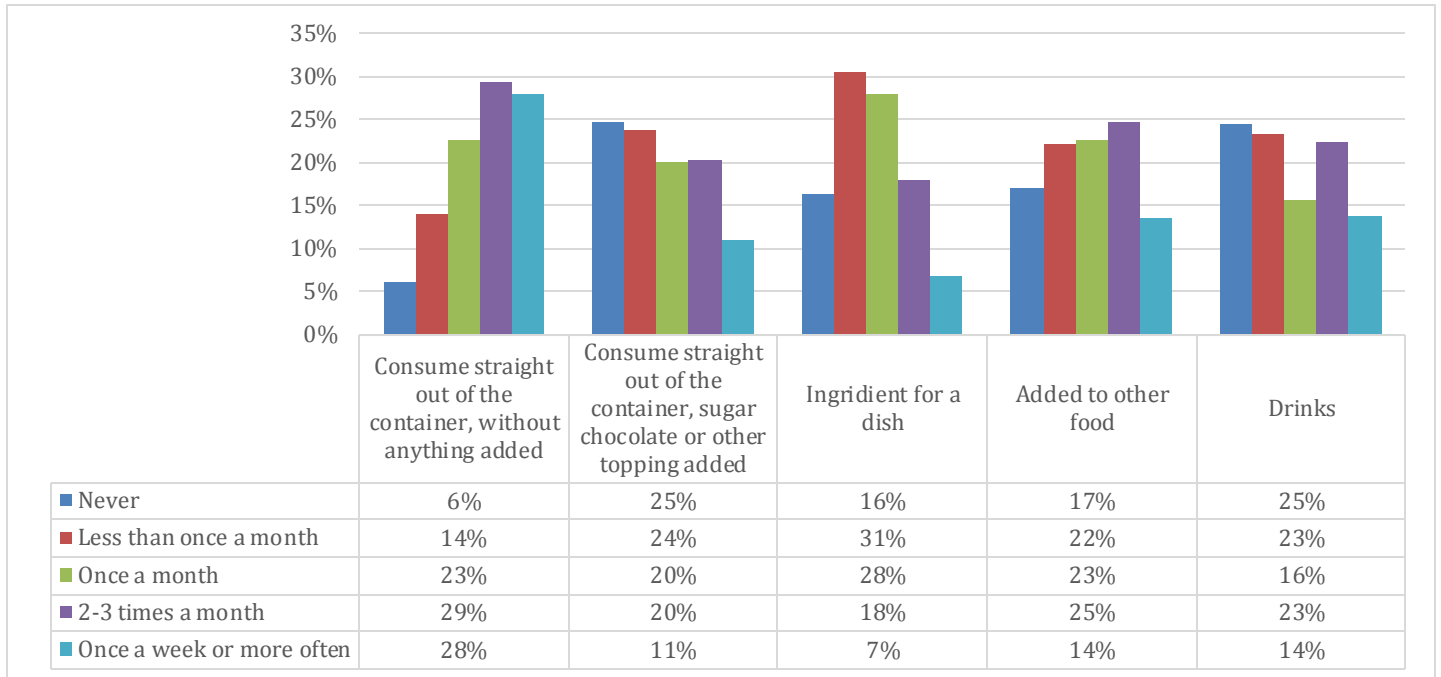
Figure 11. Why respondents buy fresh strawberries



How Fresh Strawberries are Consumed/Prepared

Data was collected on how respondents prepared/consumed their strawberries during a typical month (Figure 12). The majority were consuming the strawberries out of the container, without anything added (57%, n = 856) two to three times a month or more.

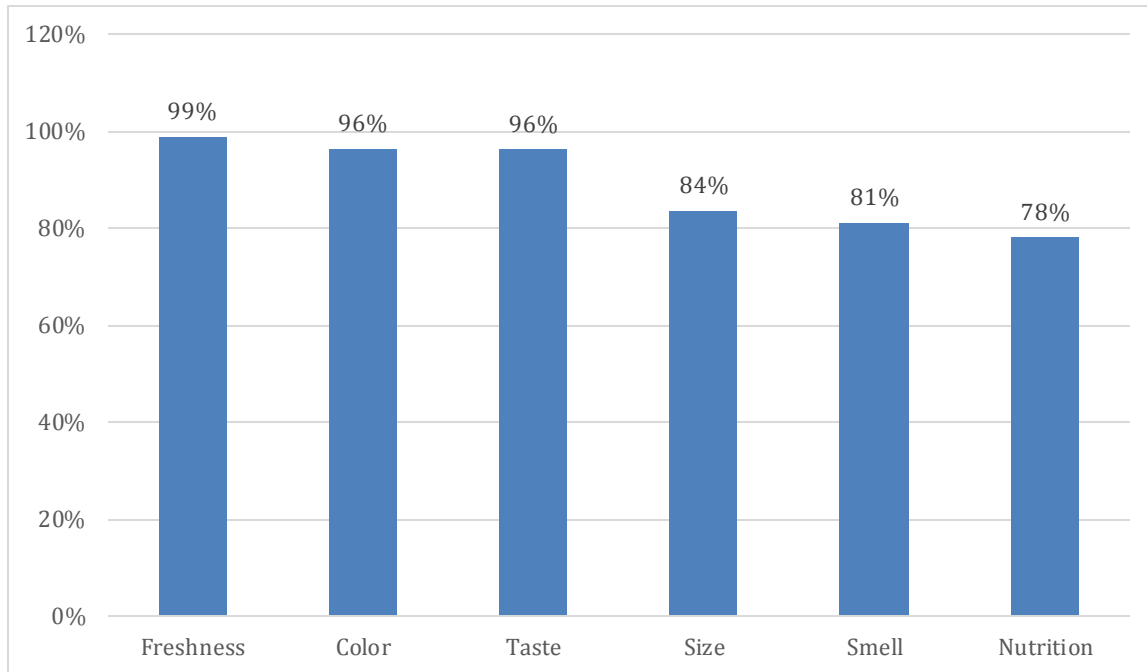
Figure 12. How fresh strawberries are consumed/prepared



Physical Strawberry Attributes

Respondents were asked if they considered different physical attributes of strawberries when making their purchasing decisions with a check-all-that-apply question. Figure 13 shows that all the attributes asked about were considered by the majority of the respondents. Freshness was considered almost unanimously (99%, $n = 1485$) and nutrition was considered the least (78%, $n = 1174$).

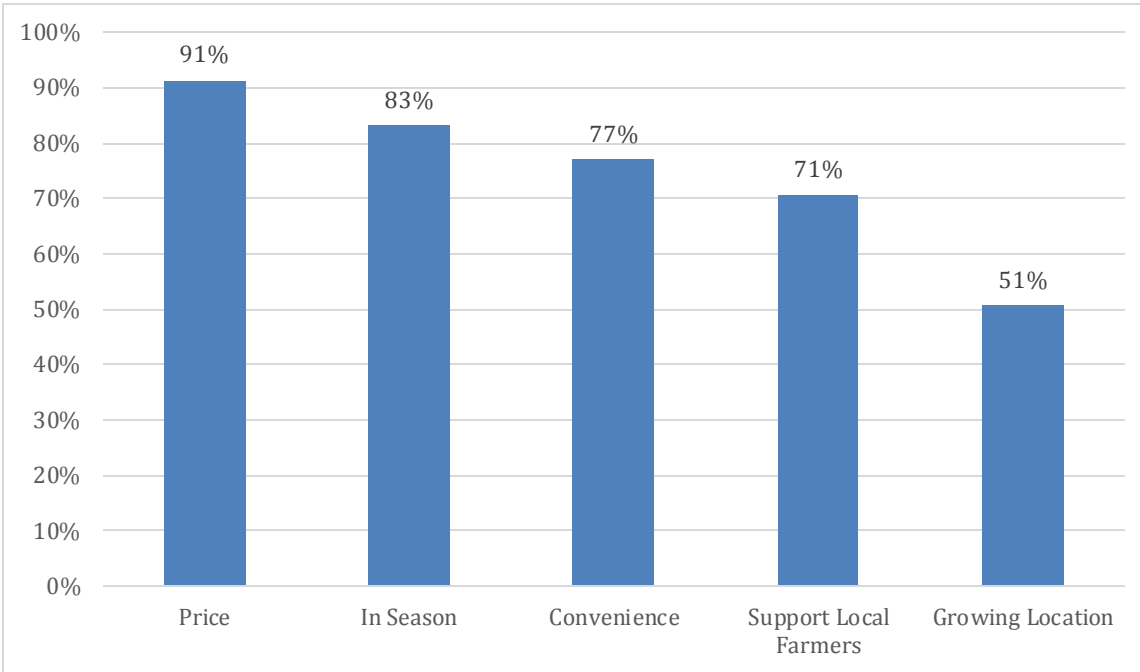
Figure 13. Physical strawberry attributes in consideration when making a purchase



Strawberry Attributes

Respondents were also asked if they considered attributes about their strawberries that were not related to physical characteristics of the fruit. Ninety-one percent ($n = 1372$) reported considering the price and 83% ($n = 1248$) reported considering if the strawberries were in season. Only 51% ($n = 757$) considered the growing location when purchasing fresh strawberries. Figure 14 shows a full description of the results.

Figure 14. Strawberry Attributes taken into consideration when making a purchase



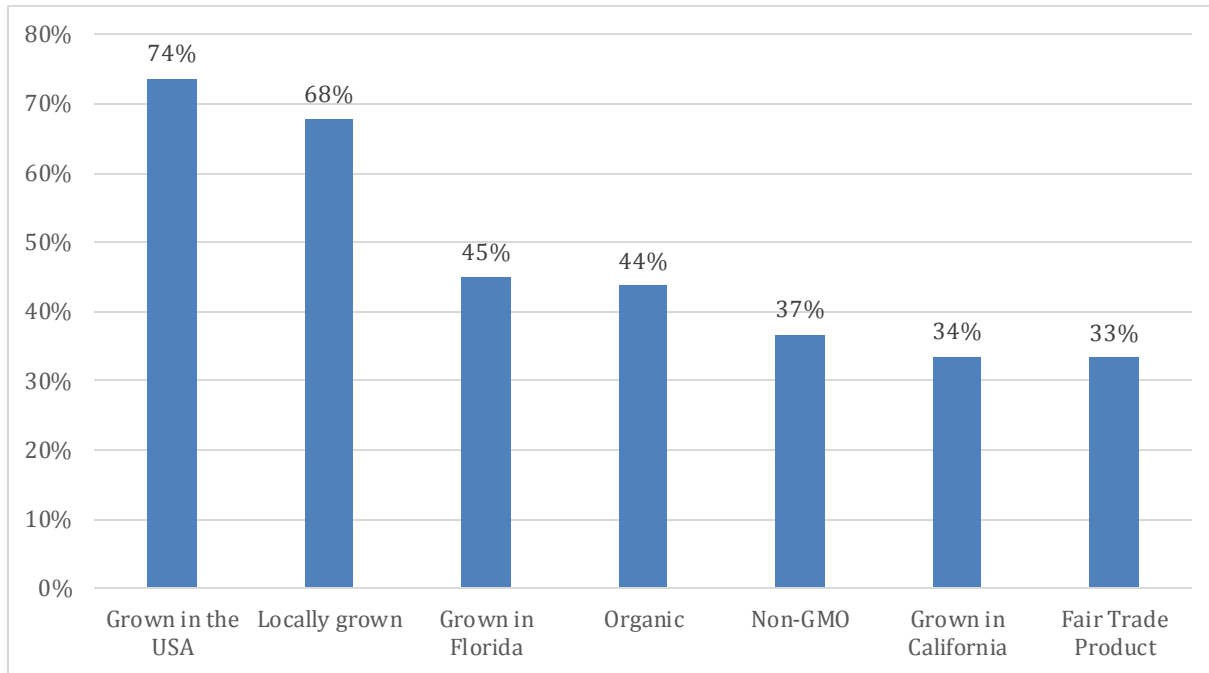
Packaging

After respondents answered questions about how and why they typically purchased strawberries, they were given specific questions related to the packaging and labels of fresh strawberries.

Information on Label

Respondents were asked if they looked for different information on strawberry labels when making purchasing decisions (Figure 15). The majority of respondents looked to see if the strawberries were grown in the USA (74%, $n = 1105$). Additionally, more respondents looked for Florida grown strawberries (45%, $n = 662$) compared to California grown strawberries (34%, $n = 502$). About one-third of the respondents looked for non-GMO strawberries (37%, $n = 552$), and that they were Fair Trade (33%, $n = 499$).

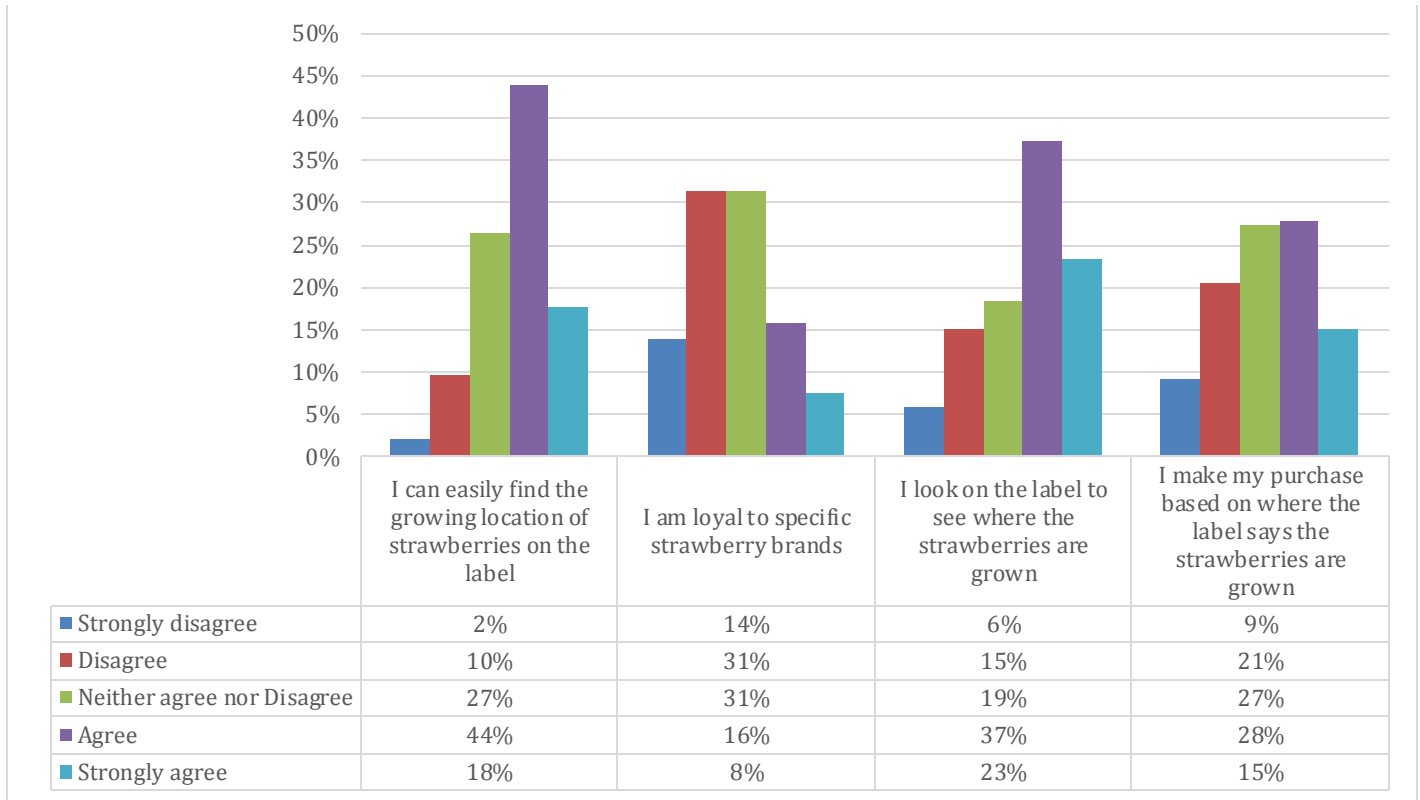
Figure 15. Look for information on labels



Information on Label

Respondents were also asked how they used strawberry labels when making purchasing decisions and how easy the labels were to use (Figure 16). The majority of respondents agreed or strongly agreed that they could easily find the growing location on the strawberry labels (62%, $n = 919$). Only 24% ($n = 349$) agreed or strongly agreed they were loyal to specific brands. While 60% ($n = 904$) agreed or strongly agreed they looked for the growing location of strawberries, only 43% ($n = 642$) agreed or strongly agreed they made their final purchasing decision on where the strawberries were grown.

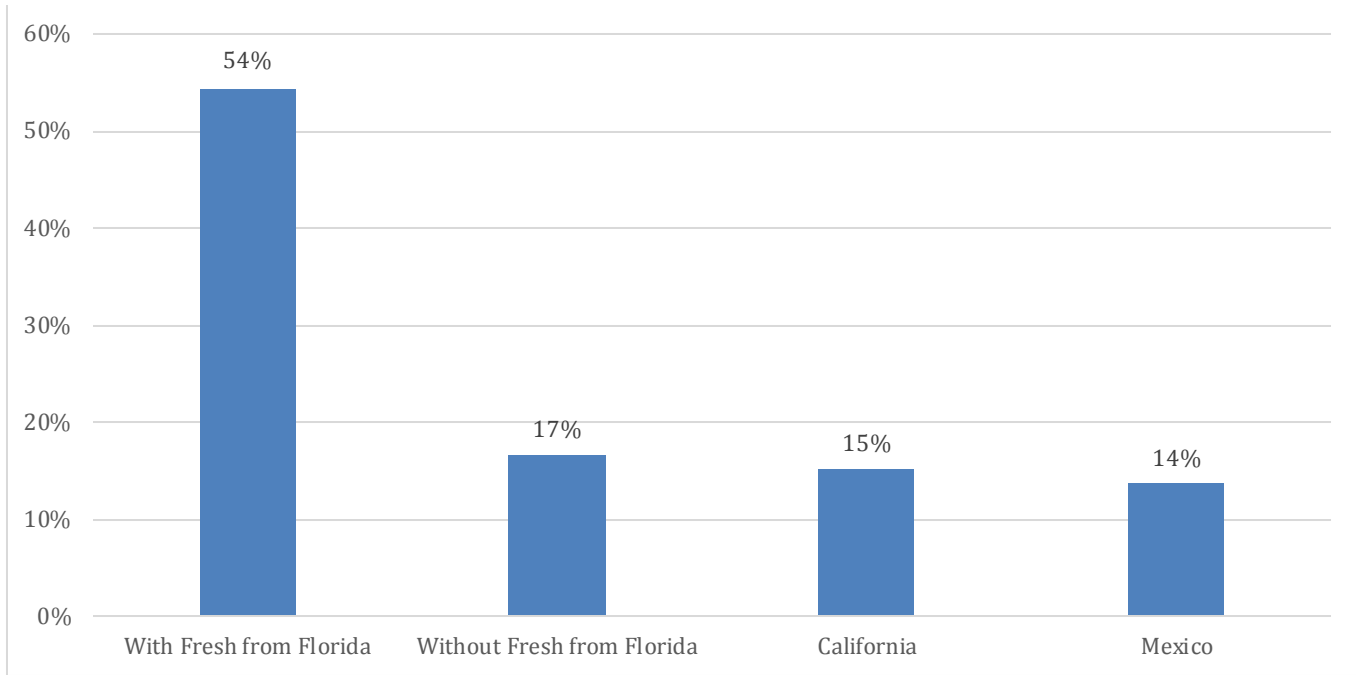
Figure 16. Label usage



Package Choice

Respondents were given the choice between four different packages of strawberries. They were identical with the exception of the labels (Appendix A). Only the growing locations were different: Mexico, California, and Florida. There were two packages from Florida, one looked like the other labels and the other had the Fresh from Florida logo on it. Respondents were asked to pretend they were in a grocery store and to take no more than 10 seconds to select a package. The majority selected the package with the Fresh from Florida logo (54%, $n = 813$; Figure 17).

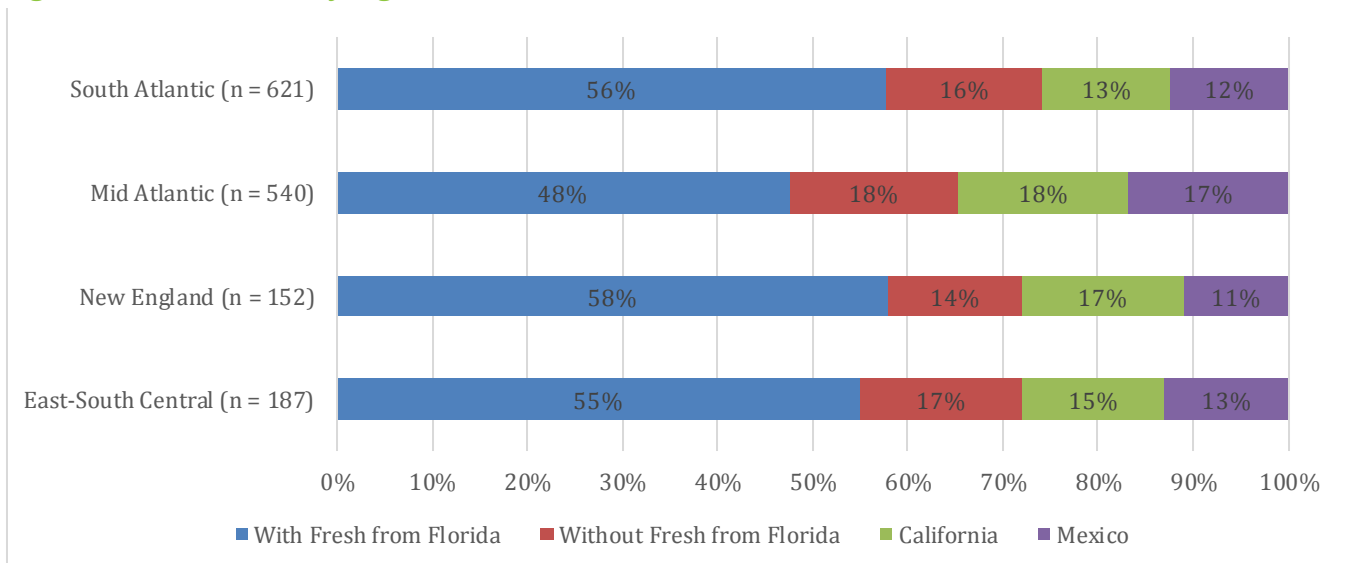
Figure 17. Package choice



Package Choice by Region

Figure 18 shows the strawberry package preference of the respondents by region. The Mid-Atlantic region was the only one where the majority of respondents did not select the package with the Fresh from Florida logo on the label (48%, $n = 258$).

Figure 18. Label choice by region

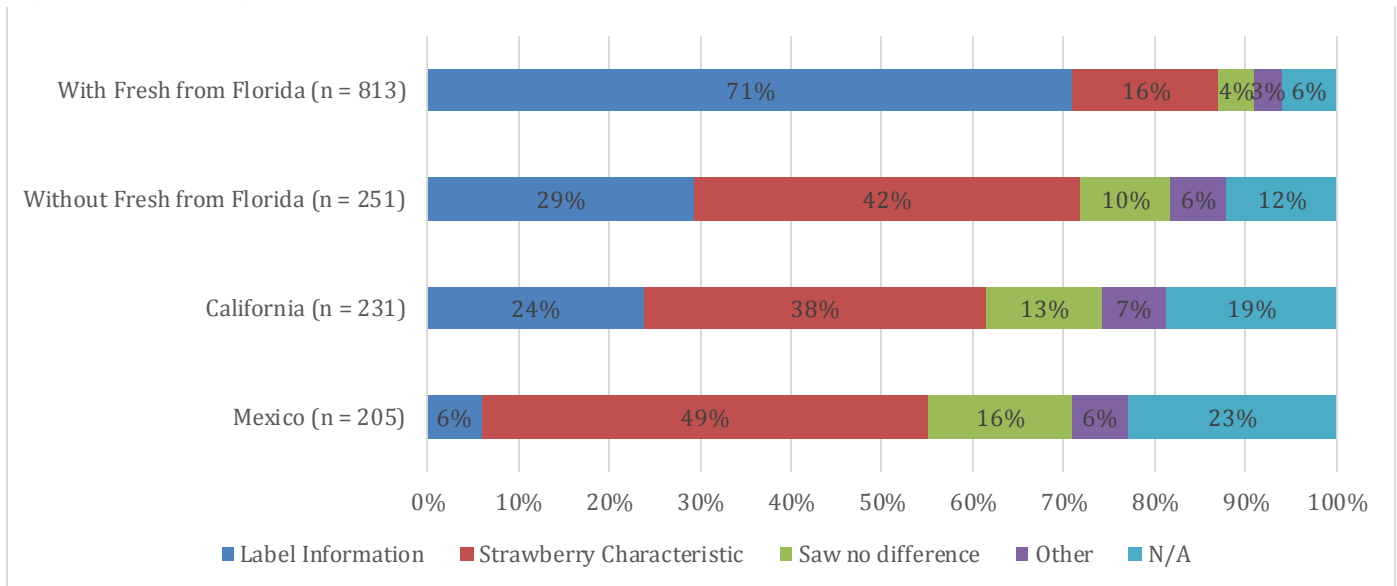


Reason for Label Selection

Respondents were asked why they selected the strawberry package they did with an open response question. The answers were coded with a numeric indicator in SPSS in order to run descriptive statistics. If the respondents talked about the growing location, Fresh from Florida label, or the look of the label, their response was coded as *label information*. If the respondents talked about the color, size, shape, taste, or freshness of the strawberries, the response was coded as *strawberry characteristic*. Please note that all strawberry images were identical. Some respondents reported that they *saw no difference* between the strawberry packages, and their responses were coded as such. If the selection reason was for anything not previously mentioned, the response was coded as *other*. Some respondents wrote non-relevant information in the open response box or their answer was not specific enough to distinguish between the packaging and the strawberries. These responses were coded as *N/A*.

The reason respondents selected the strawberry packages are reported in Figure 19. The results are displayed by package preference. The results clearly show that the majority of the respondents who selected the package with Fresh from Florida did so because of the information on the label (71%, n = 577).

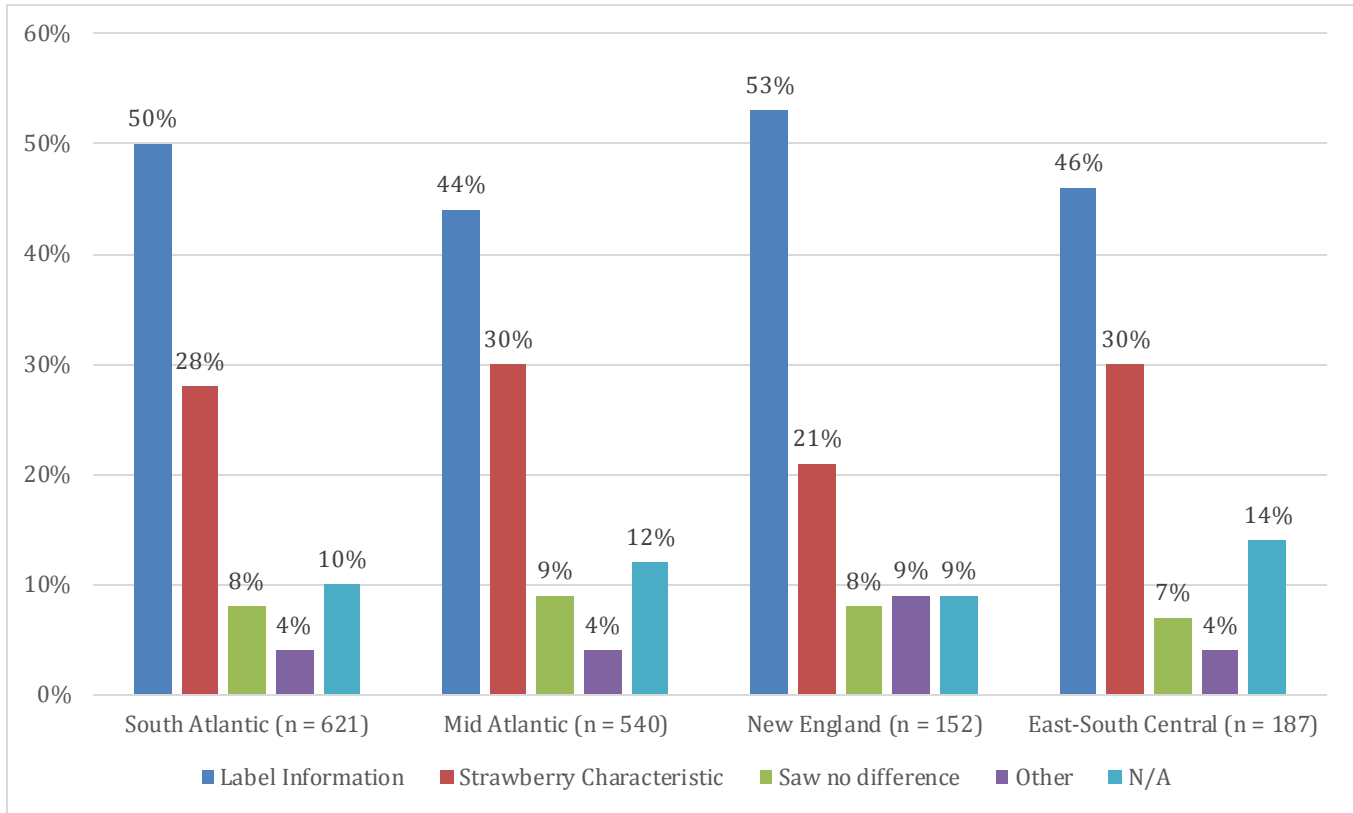
Figure 19. Reason for label selection



Reason for Label Selection by Region

The reason respondents selected the strawberry packages has been broken down by region and reported in Figure 20. The majority of the respondents in the Mid-Atlantic (44%, n = 240) and East-South Central (46%, n = 86) did not make the selection of the strawberry package based on the label information.

Figure 20. Label choice by region



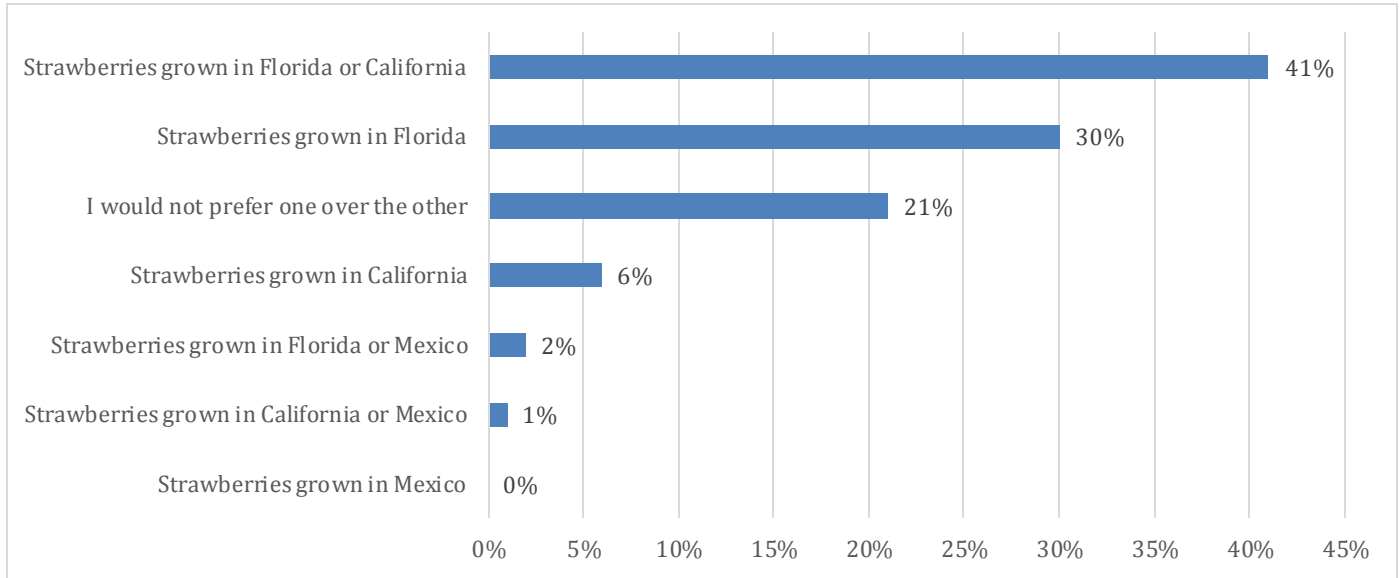
Location Preferences

Respondents were asked a series of questions to determine their preferences for different growing location of strawberries.

Growing Location

Respondents were asked which strawberries they would purchase if they were given the choice between strawberries grown in Mexico, California, or Florida (Figure 21). The largest proportion of respondents said they would prefer to purchase strawberries grown in Florida or California (41%, $n = 608$) or strawberries grown in Florida (30%, $n = 449$). Additionally, 21% ($n = 318$) of the respondents said they would not prefer one growing location over the other.

Figure 21. Preference for growing location

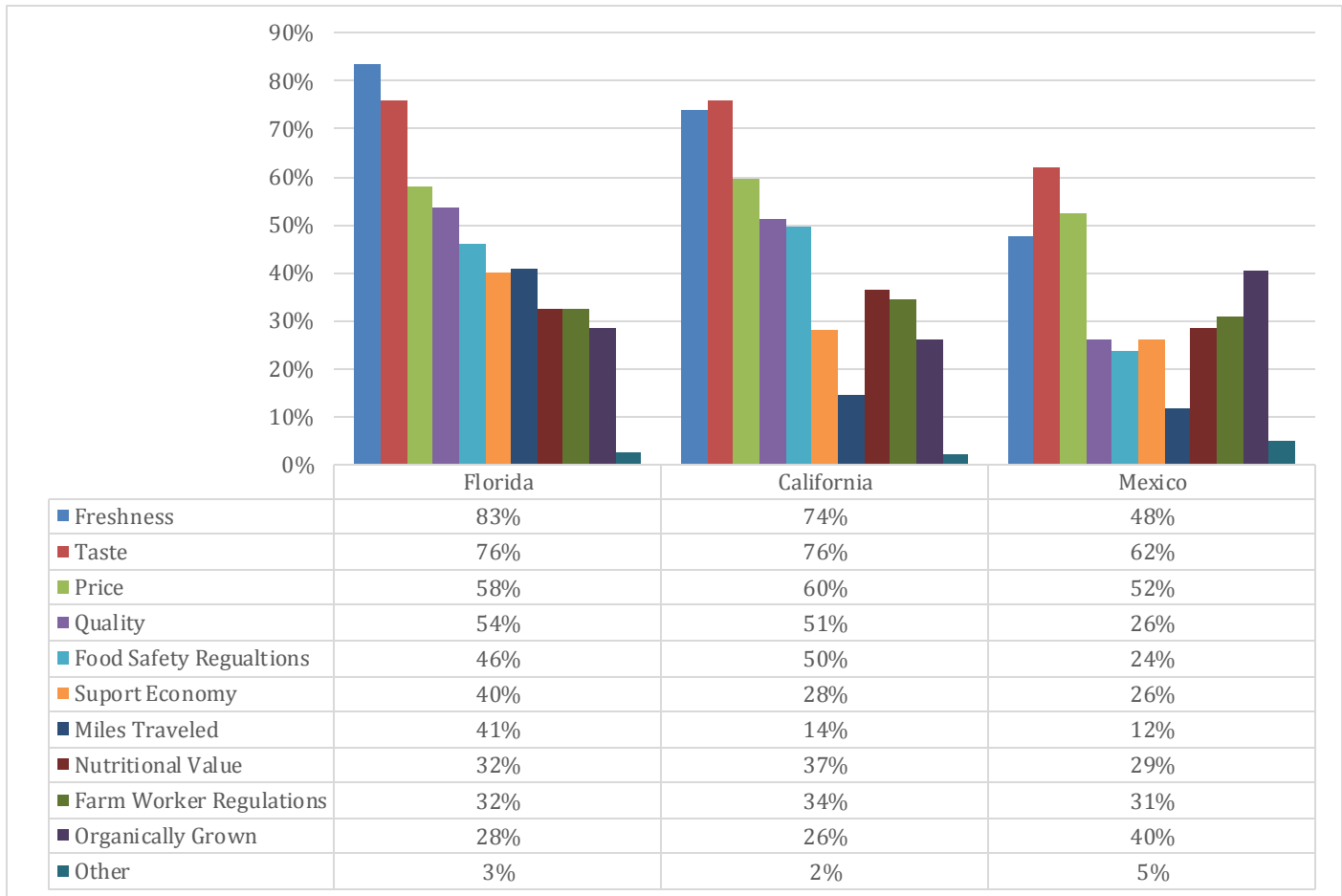


Reasons for Growing Location Preferences

Respondents were asked why they would purchase strawberries grown in the locations they chose from Figure 21. If respondents selected any answer that included Florida, they were asked to answer the question about Florida strawberries. Similarly, they were asked questions about California or Mexico if they selected an answer with that growing location in it. There were 1082 respondents who selected an option with Florida, 707 respondents who selected a choice with California, and 42 who selected a choice with Mexico. Respondents who did not prefer one growing location over the other will be discussed in the next section.

The percentages in Figure 22 are reflective of the percentage of respondents who selected that growing location, not the total percentage. Freshness, taste, and price were the top three reasons respondents preferred to purchase strawberries from those growing locations. Taste was selected the most by respondents preferring California (76%, $n = 536$) and Mexico (62%, $n = 26$) strawberries. Respondents who preferred Florida strawberries reported freshness as the most frequent reason for their selection (84%, $n = 903$). Another notable difference was among respondents who said they would prefer to purchase Mexico strawberries because they were organically grown (40%, $n = 17$), which was a higher proportion compared to Florida (29%, $n = 308$) or California (26%, $n = 184$) preferences.

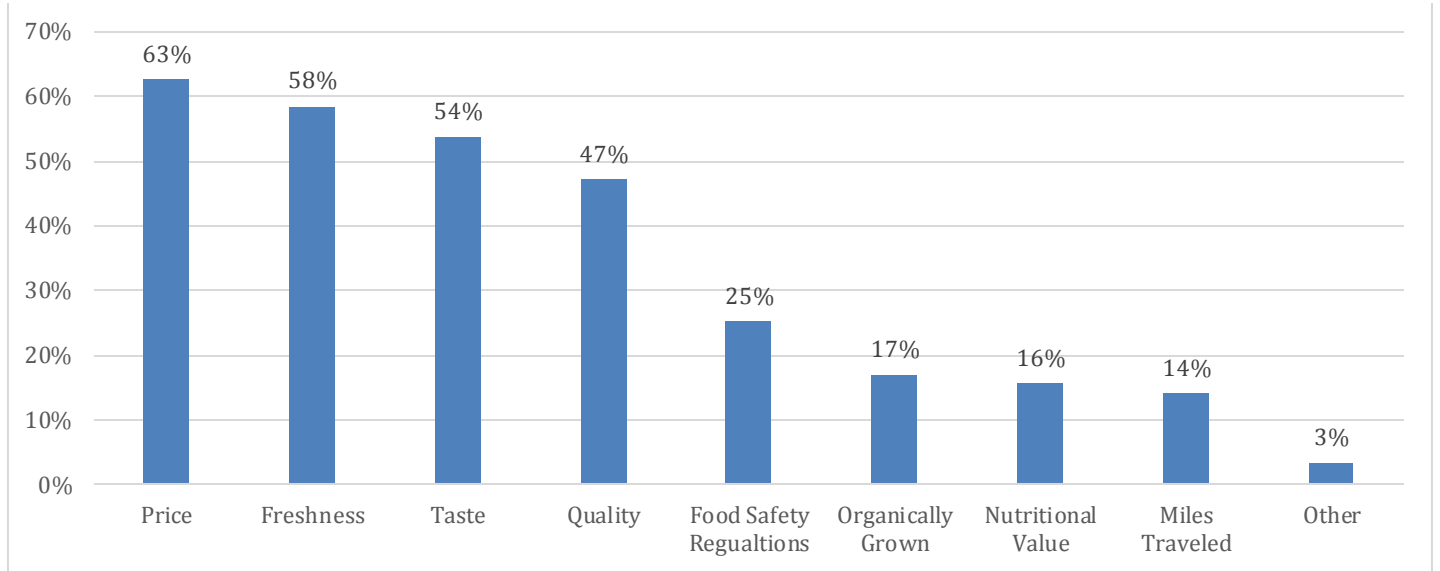
Figure 22. Reason for growing location preference



Reasons for No Growing Location Preference

Figure 23 shows the reasons why respondents selected they would not have a preference for any of the strawberry growing locations ($n = 318$). The reasons respondents would not prefer one location over another were price (62%, $n = 199$), freshness (58%, $n = 186$), and taste (54%, $n = 171$).

Figure 23. Reason for no growing location preference



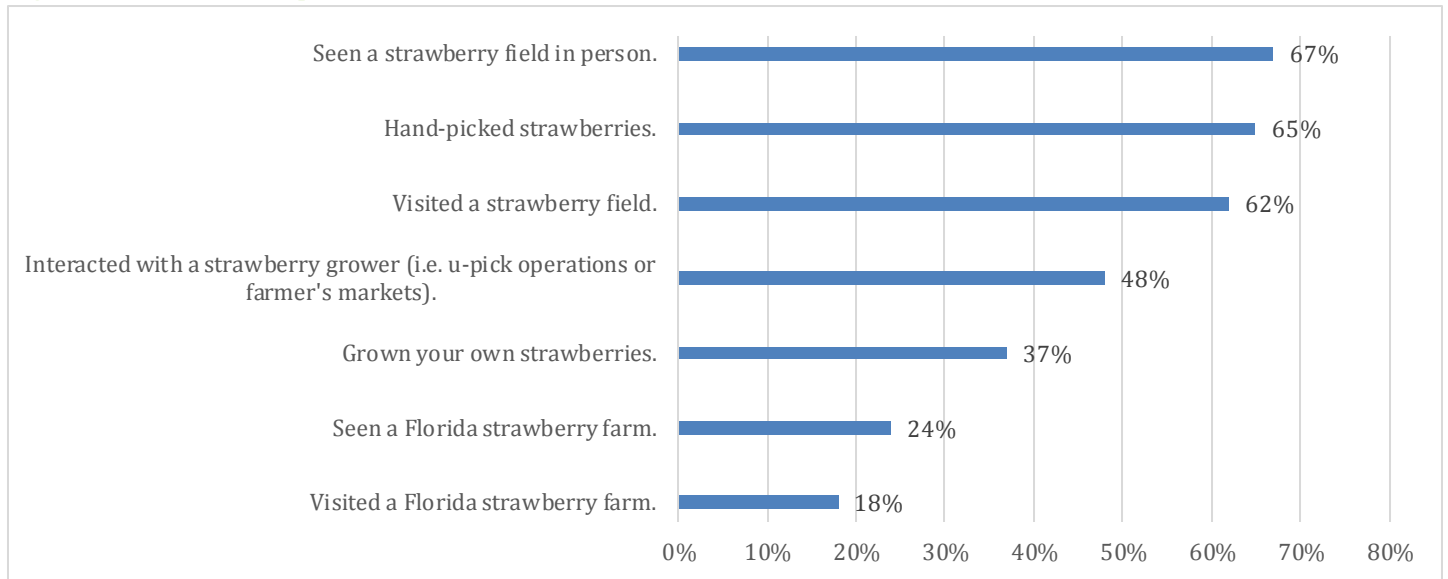
Florida Strawberries

The end of the survey asked specific questions about Florida strawberries to understand the respondents' awareness, preferences, and purchasing intent toward Florida-grown strawberries.

Personal Experience with Strawberries

The respondents were asked a variety of questions to understand their past experience with strawberries. The majority of respondents had seen a strawberry field in person (67%, $n = 1005$), hand-picked strawberries (65%, $n = 973$), or visited a strawberry field (62%, $n = 932$). Only 24% ($n = 362$) had seen a Florida strawberry farm, and 18% ($n = 263$) had actually visited a Florida strawberry farm. Figure 24 shows the results regarding different strawberry experiences.

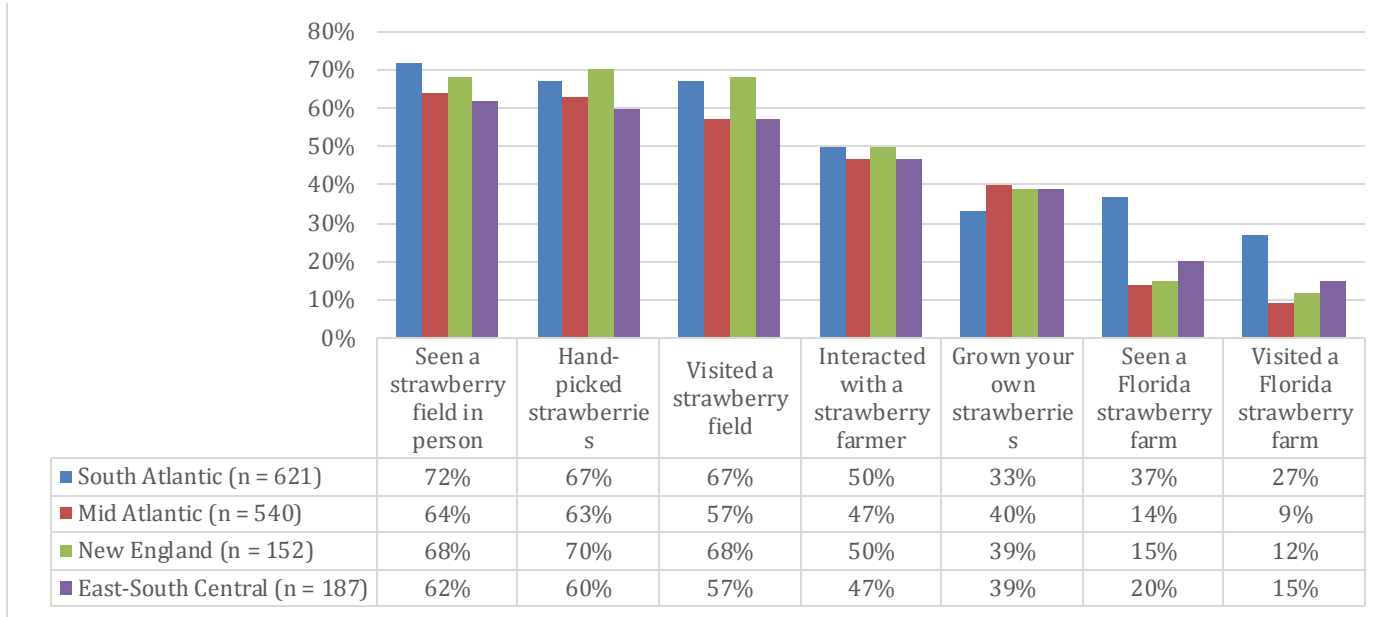
Figure 24. Personal experiences with strawberries



Personal Experience with Strawberries by region

Respondents' personal experiences with strawberries are presented by region in Figure 25. The biggest difference between the locations was that a higher proportion of South Atlantic respondents had seen a Florida strawberry farm (37%, n = 228) or visited a Florida strawberry farm (27%, n = 167) compared to the other regions.

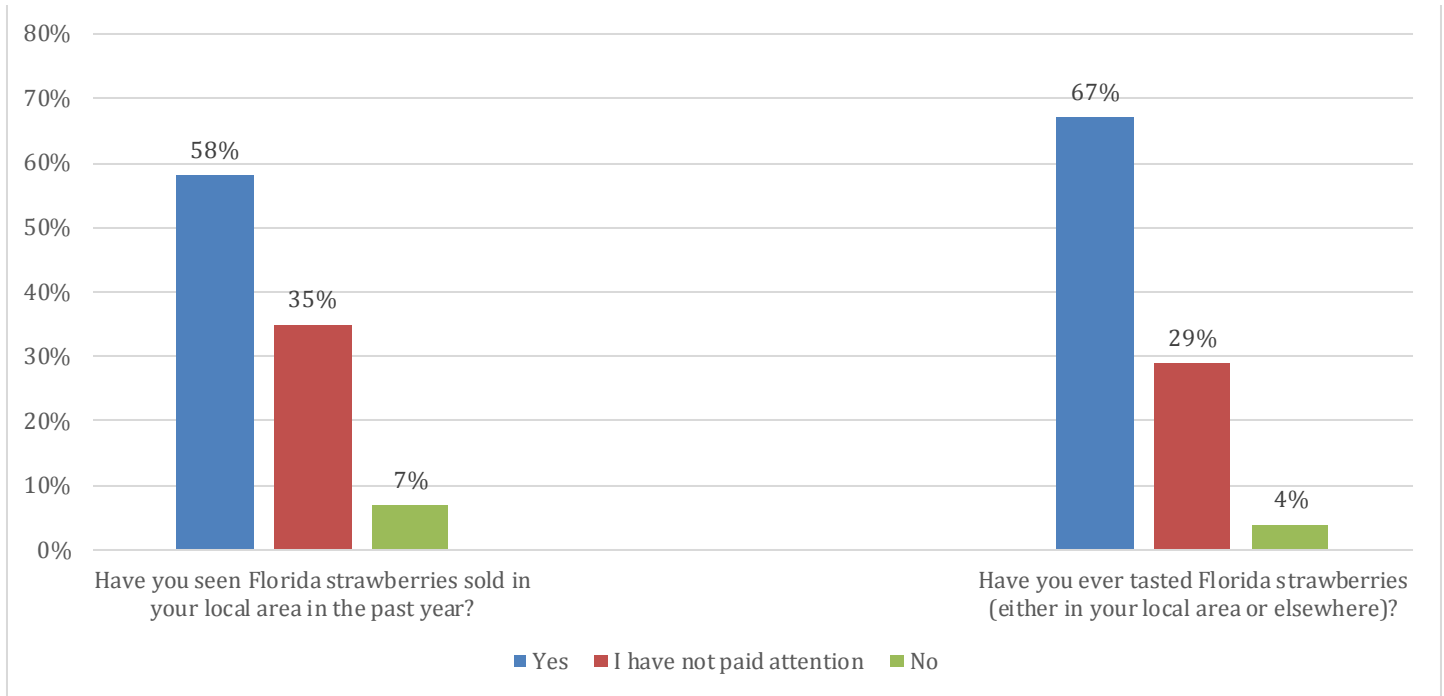
Figure 25. Personal experiences with strawberries by region



Experience with Florida Strawberries

Respondents were asked more specific questions in regard to their experiences with Florida strawberries. More than half of the respondents (58%, $n = 876$) reported seeing Florida strawberries sold in their local area over the past year (Figure 26). Sixty-seven percent ($n = 1012$) reported tasting Florida strawberries at one point in their life. Approximately one-third of the respondents did not pay attention to if they had seen Florida strawberries in local stores (35%, $n = 526$) or tasted them (29%, $n = 435$).

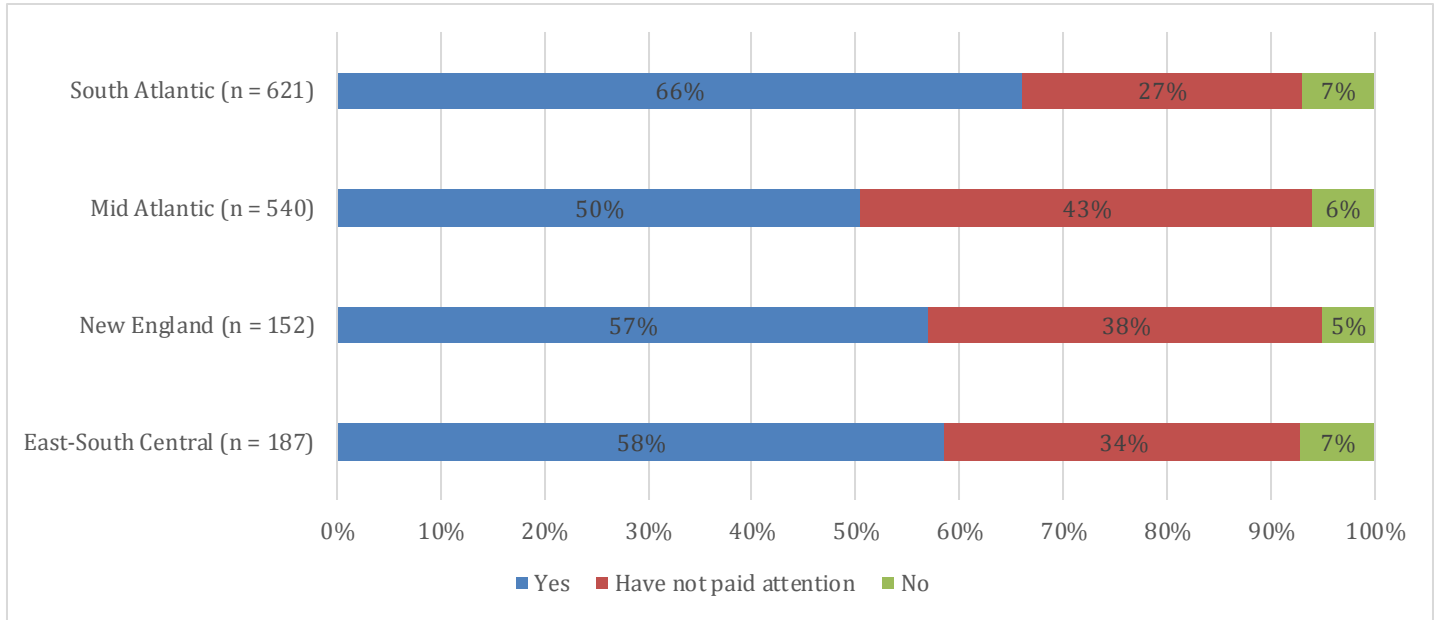
Figure 26. Experience with Florida strawberries



Experience with seeing Florida Strawberries for Sale by Region

The South Atlantic region had the highest proportion of respondents who had seen Florida strawberries for sale in their local area over the past year (66%, $n = 408$; Figure 27). At least half of the respondents in all four regions had seen Florida strawberries for sale, but the Mid-Atlantic had the greatest proportion of respondents who had not paid attention to if the strawberries came from Florida (43%, $n = 243$).

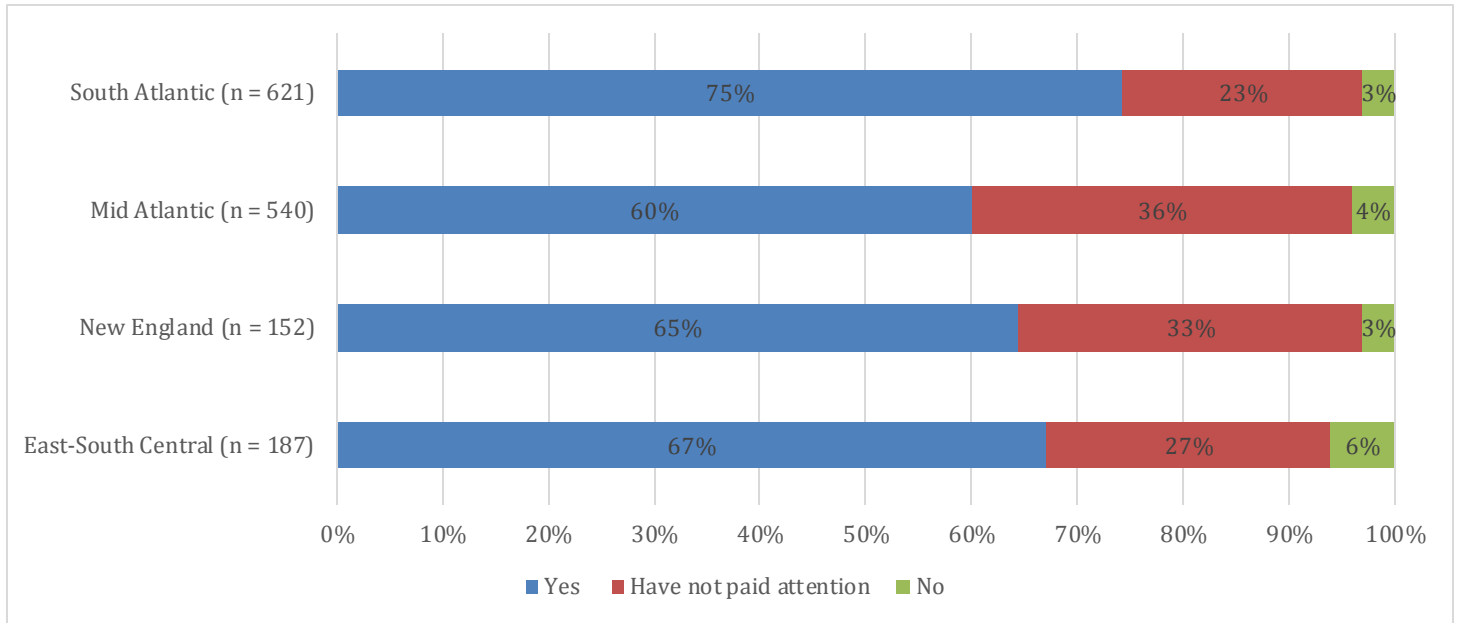
Figure 27. Experience with seeing Florida strawberries for sale in local area by region



Experience with tasting Florida Strawberries by Region

Figure 28 shows that the highest proportion of respondents who had tasted Florida strawberries, either in the local area or elsewhere, were from the South Atlantic region (75%, n = 463). However, the majority of respondents in all four regions had tasted Florida strawberries before.

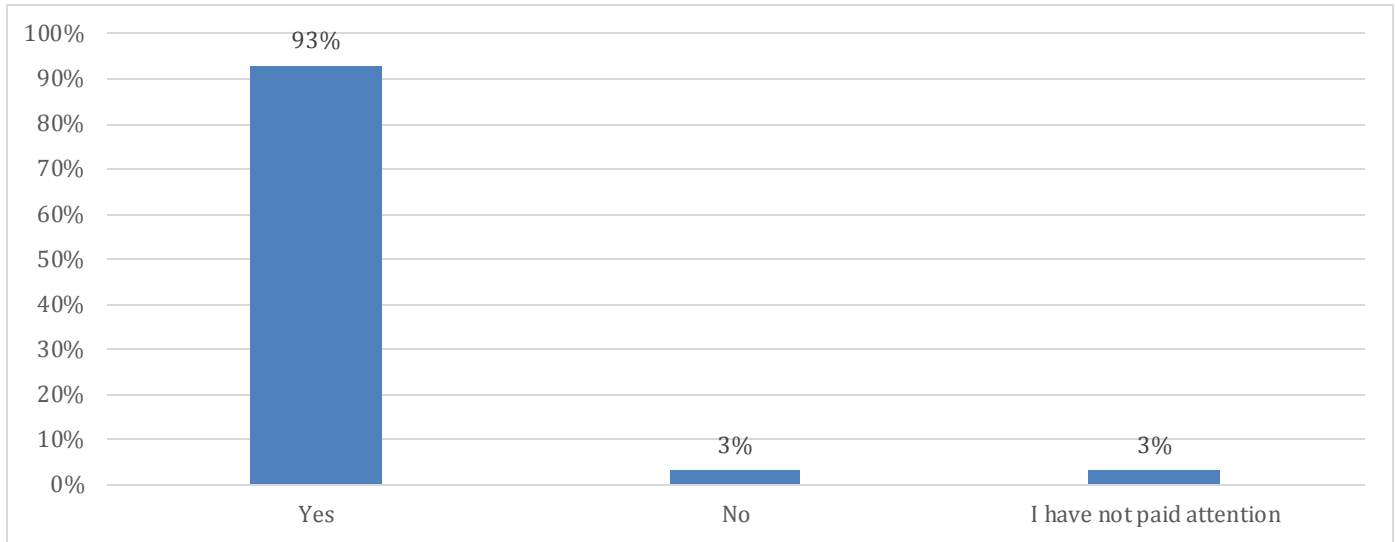
Figure 28. Experience with tasting Florida strawberries by region



Purchased Florida Strawberries

Respondents who said they had seen Florida strawberries sold in their local area ($n = 876$) were asked if they had purchased them in the past year (Figure 29). The large majority of the respondents indicated they had purchased strawberries if they had seen them for sale (93%, $n = 824$).

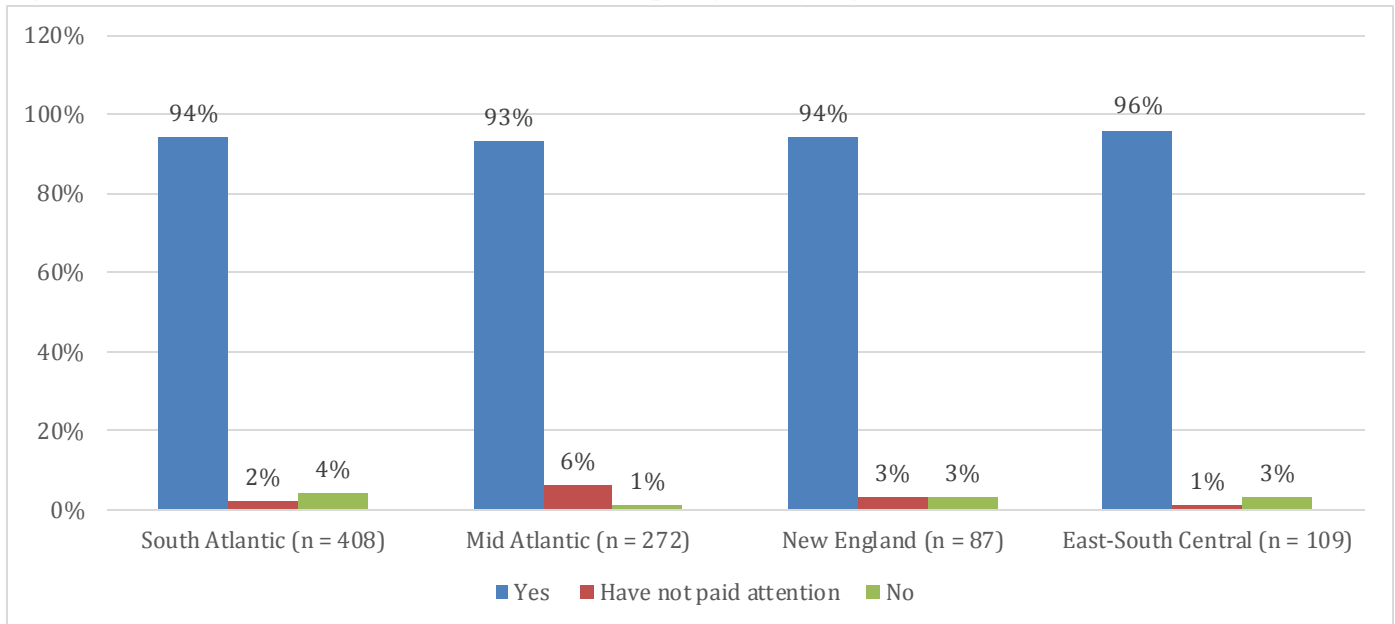
Figure 29. Purchased Florida strawberries in the past year



Purchased Florida Strawberries by Region

Figure 30 shows the proportion of respondents who recall purchasing Florida strawberries if they had seen them for sale by region. There were really no differences between regions, and at least 93% of the respondents could recall purchasing Florida strawberries in each region if they had seen them for sale.

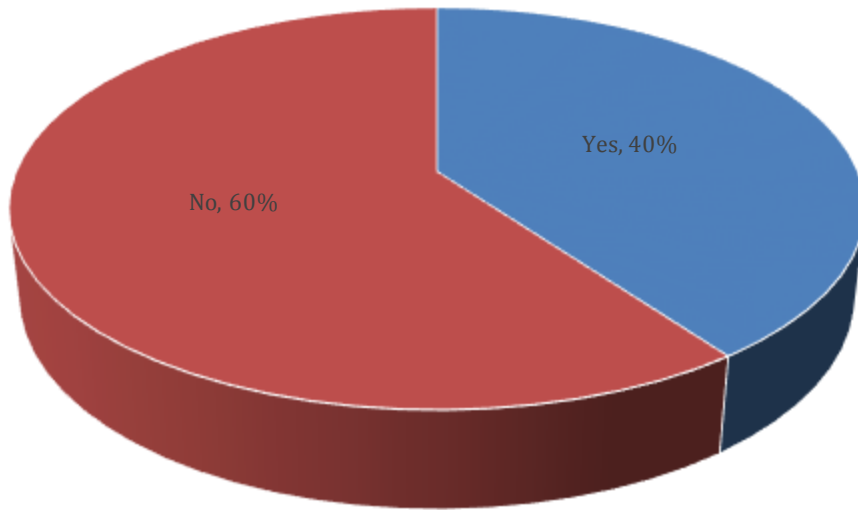
Figure 30. Purchased Florida strawberries in the past year by region



Florida Strawberry Knowledge

Respondents were also asked if they knew when Florida strawberries were in season. Less than half of the respondents (40%, n = 599) reported knowing when Florida strawberries are in season (Figure 31).

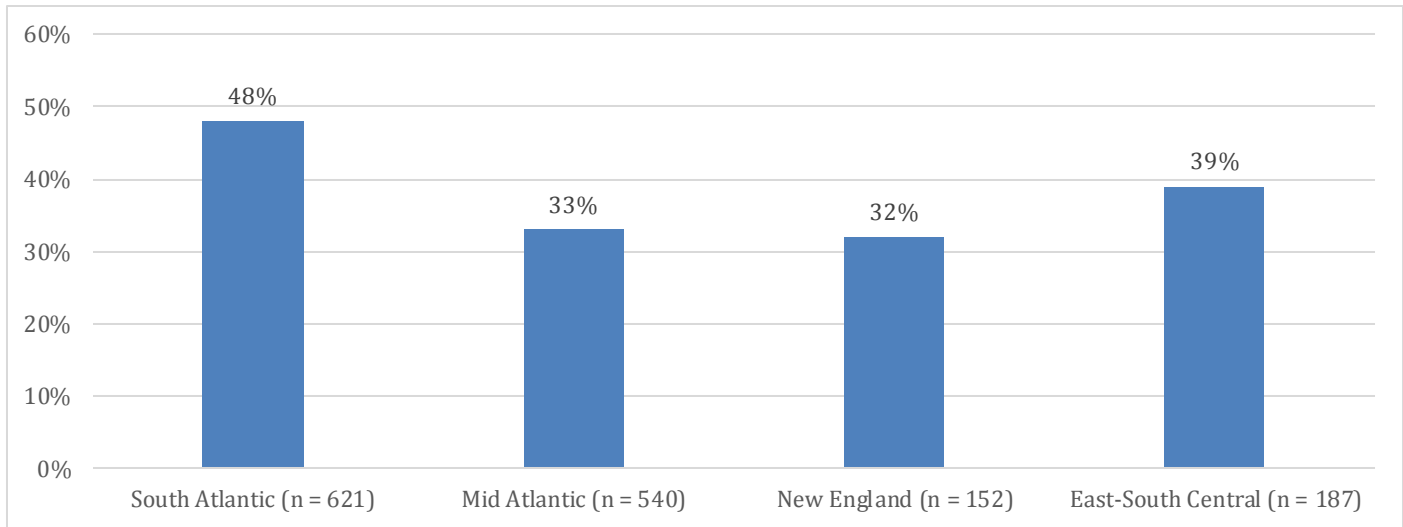
Figure 31. Know when Florida strawberries are in season



Florida Strawberry Knowledge by Region

The proportion of respondents who reported knowing when Florida strawberries are in season were broken down by region and presented in Figure 32. The highest proportion of respondents who reported knowing the Florida growing season were from the South Atlantic region (48%, n = 299) and the lowest proportion were from the New England Region (32%, n = 48).

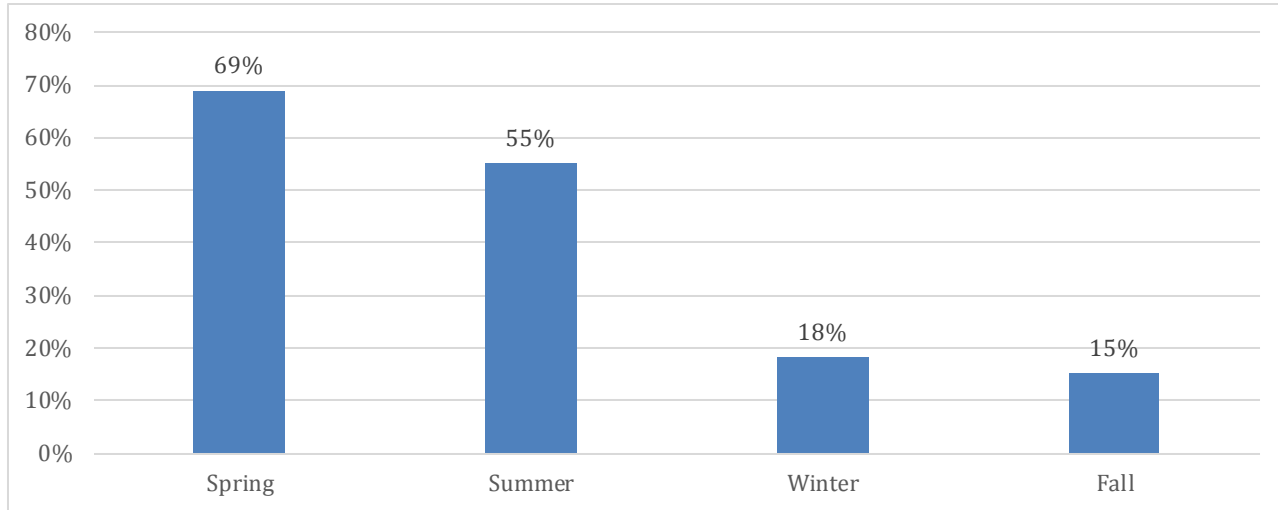
Figure 32. Know when Florida strawberries are in season by region



Florida Strawberry Knowledge- Growing Season

Respondents who answered yes to knowing when Florida strawberries are in season ($n = 599$) were then asked which season in particular Florida strawberries would be in season (Figure 33). Respondents could select multiple seasons. The majority of respondents thought Florida strawberries were in season in the spring (69%, $n = 414$) and summer (55%, $n = 329$). Only 18% ($n = 109$) thought Florida strawberries were in season during the winter.

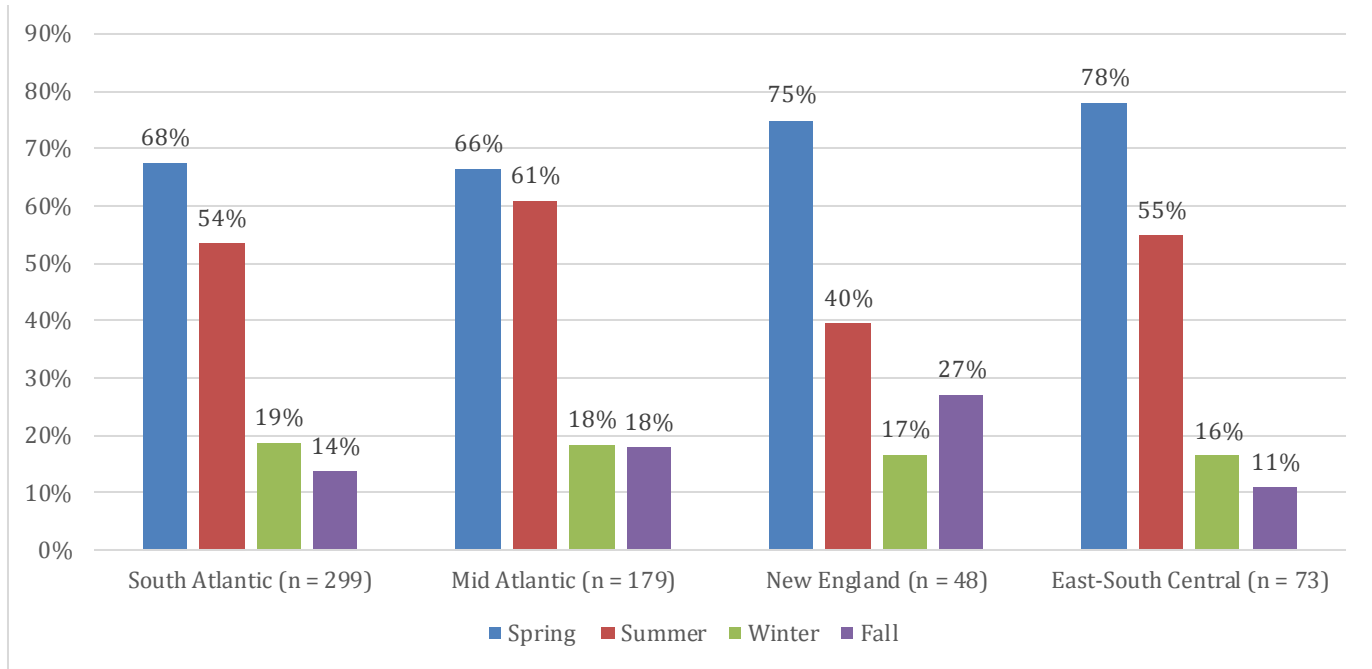
Figure 33. When are Florida strawberries in season?



Florida Strawberry Knowledge by Region - Growing Season

Figure 34 shows the results of what seasons respondents believed that Florida strawberries were in season by region. As explained previously, this question was only displayed to respondents who selected yes to knowing when Florida strawberries are in season. A high proportion of New England (75%, $n = 36$) and East-South Central (78%, $n = 57$) respondents believed that Florida strawberries were in season during the spring. However, less than 20% of the respondents in all four regions believed that Florida strawberries were in season during the winter.

Figure 34. When are Florida strawberries in season? (By region)



Message Experiment

Respondents were randomly assigned to one of three groups in the survey ($n = 500$ per group). Each group was shown only one message (Appendix B). The messages were as follows:

- “Proud to share our fresh Florida strawberries with your family and ours” (Family Message)
- “Fresh Florida strawberries, you can have a taste of summer all winter long” (Seasonal Message)
- “Florida strawberries, grown with you in mind” (Control Message)

The following section will report the results per message for the respondents' attitude toward the message, attitude toward Florida strawberries as a result of the message, and their perceived behavioral control of purchasing Florida strawberries after reading the message.

Attitude toward the Message

Respondents were asked about their attitude toward a message promoting Florida strawberries. A bipolar, semantic differential scale was used to collect this data. Negative adjectives were assigned a 1 and positive adjectives were assigned a 5. Table 1 reports the results of respondents' attitudes toward the message. The overall attitude was also calculated by summing the six attitudes in the scale and dividing by six. All attitudes were positive, and there was little difference between the messages. The overall attitude score for toward Family message was 4.35 ($SD = .63$). The overall attitude toward the Season and Control messages were 4.32 ($SD = .70$) and 4.16 ($SD = .75$) respectively.

Table 1. Attitude toward the message

Statement	Family <i>M (SD)</i>	Season <i>M (SD)</i>	Control <i>M (SD)</i>
Good: Bad¹	4.68 (.59)	4.64 (.71)	4.50 (.78)
Valuable: Worthless¹	4.32 (.81)	4.39 (.85)	4.20 (.90)
Dishonest: Honest	4.51 (.78)	4.28 (.92)	4.26 (.91)
Meaningful: Not Meaningful¹	4.27 (.95)	4.15 (.97)	4.06 (1.04)
Not Reputable: Reputable	4.29 (.83)	4.19 (.94)	4.16 (.91)
Not Informative: Informative	4.02 (1.04)	4.29 (.99)	3.74 (1.18)
Overall Attitude	4.35 (.63)	4.32 (.70)	4.16 (.75)

Note. 1 indicates negative attitude and 5 indicates positive attitude; ¹ Indicates item was reverse coded. For interpretation, 1.00- 1.50 = very negative, 1.51- 2.50 = negative, 2.51- 3.50 = neutral, 3.51- 4.50 = positive, and 4.51-5.00 = very positive.

Attitude toward Florida Strawberries

A bipolar, semantic differential scale was used to measure respondents' attitudes toward Florida strawberries after reading a message. Table 2 reports the results; negative adjectives were assigned a 1 and positive adjectives were assigned a 5. The overall attitude toward Florida strawberries was derived from adding the individual attitude scores from the scale and dividing by seven. All of the respondents had positive attitudes toward Florida strawberries, regardless of the message they saw. Respondents had very positive attitudes toward the nutrition of Florida strawberries ($M = 4.51 - 4.59$). The overall attitude toward Florida strawberries was 4.40 ($SD = .58$) for the Family message, 4.34 ($SD = .63$) for the Season message, and 4.34 ($SD = .60$) for the control message, which were all positive attitudes.

Table 2. Attitude toward Florida strawberries

Statement	Family <i>M (SD)</i>	Season <i>M (SD)</i>	Control <i>M (SD)</i>
Sweet: Sour ¹	4.49 (.74)	4.50 (.77)	4.49 (.71)
Nutritious: Not Nutritious ¹	4.59 (.65)	4.52 (.73)	4.51 (.69)
Not Fragrant: Fragrant	4.13 (.98)	4.11 (.98)	4.08 (.98)
Fresh: Not Fresh ¹	4.54 (.79)	4.45 (.87)	4.49 (.83)
Dirty: Clean	4.49 (.72)	4.38 (.83)	4.43 (.83)
Low Quality: High Quality	4.46 (.77)	4.40 (.82)	4.44 (.77)
Affordable: Not Affordable ¹	4.13 (.88)	4.05 (.92)	4.01 (.97)
Overall Attitude	4.40 (.58)	4.34 (.63)	4.34 (.60)

Note. 1 indicates negative attitude and 5 indicates positive attitude; ¹ Indicates item was reverse coded. For interpretation, 1.00- 1.50 = very negative, 1.51- 2.50 = negative, 2.51- 3.50 = neutral, 3.51- 4.50 = positive, and 4.51 -5.00 = very positive.

Perceived Behavioral Control of Purchasing of Florida Strawberries

Perceived behavioral control of purchasing Florida strawberries was measured to determine if the respondents believed they had control over their decision to purchase Florida strawberries. A bipolar, semantic differential scale was also used in this question. Negative statements were assigned a 1 and positive statements were assigned a 5. The message did not produce any major differences in perceptions of behavioral control, but all perceptions were at least positive. Respondents had very positive perceptions toward the idea of it being possible for them to purchase Florida strawberries. The Family message had a score of 4.60 ($SD = .72$), the Season message was equal to 4.58 ($SD = .72$), and the Control message equaled 4.59 ($SD = .73$). The most negative perception for the Family and Control message was that buying Florida strawberries was in the respondents' control ($M = 4.22$, $SD = .98$ and $M = 4.13$, $SD = 1.60$ respectively). The most negative perception for the Season message was that Florida strawberries were affordable ($M = 4.18$, $SD = 1.94$). However, these perceptions were still positive.

Table 3. Perceived behavioral control of purchasing Florida strawberries

Statement	Family <i>M (SD)</i>	Season <i>M (SD)</i>	Control <i>M (SD)</i>
Possible for me: Not possible for me ¹	4.60 (.72)	4.58 (.72)	4.59 (.73)
Easy for me: Not easy for me ¹	4.43 (.83)	4.45 (.80)	4.42 (.83)
Not affordable to me: Affordable to me	4.26 (.90)	4.18 (.94)	4.22 (.92)
Not in my control: In my control	4.22 (.98)	4.29 (1.00)	4.13 (1.60)
Up to me: Not up to me ¹	4.38 (.94)	4.36 (.98)	4.37 (.96)

Eastern United States Consumers' Perceptions of Florida Strawberries - Survey

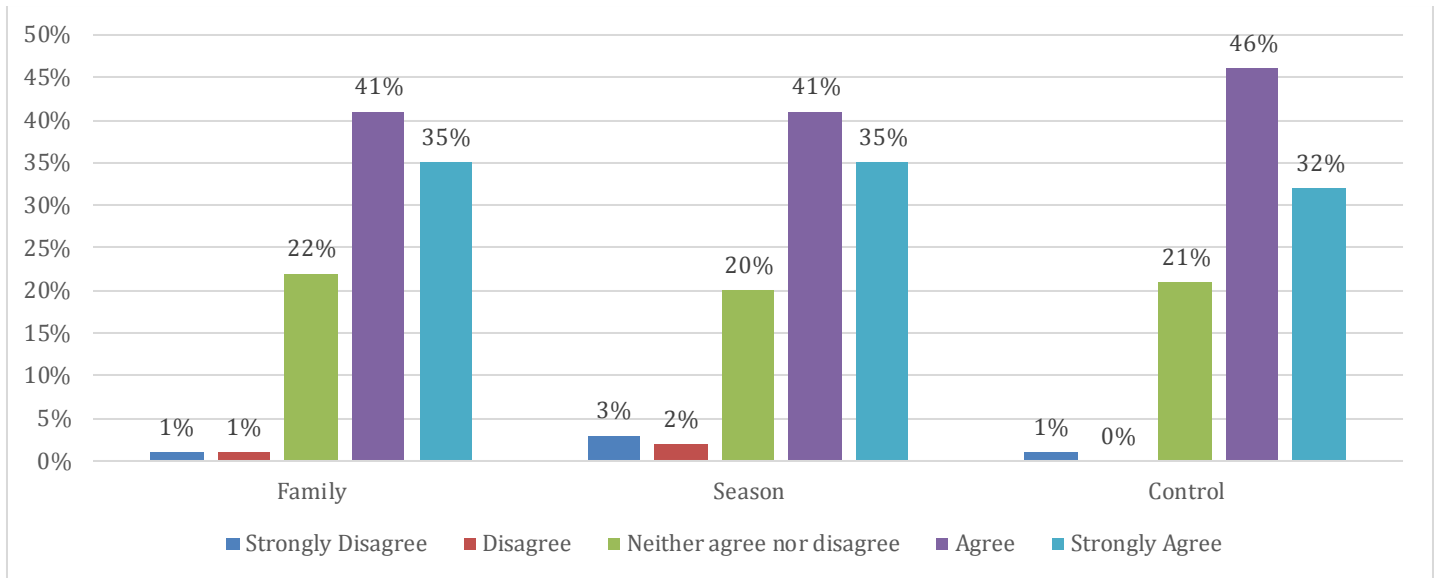
Note. 1 indicates negative attitude and 5 indicates positive attitude; ¹ Indicates item was reverse coded. For interpretation, 1.00- 1.50 =very negative, 1.51- 2.50 = negative, 2.51- 3.50 = neutral, 3.51- 4.50 = positive, and 4.51 -5.00 = very positive.

Purchasing Intent of Florida Strawberries

The respondents were asked about their purchasing intent of Florida strawberries at the end of the survey. To measure intent, respondents were asked how much they agreed with statement that said they would purchase Florida strawberries when available, would look to see if strawberries were grown in Florida, and would go out of their way to purchase Florida strawberries.

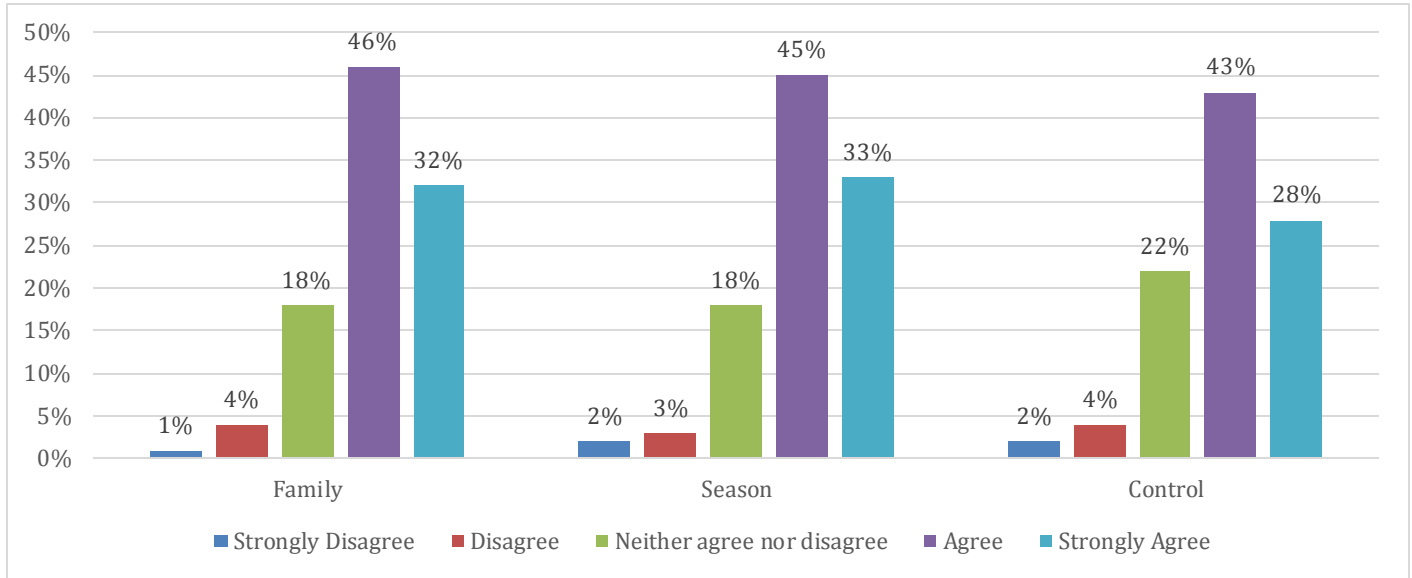
Figure 35 shows the respondents' agreement to the statement "I plan to buy Florida grown strawberries when available." Over 75% of the respondents who saw the Family (76%, n = 380), Season (76%, n = 380), or Control (78%, n = 390) message agreed or strongly agreed that they would purchase Florida strawberries when available.

Figure 35. I plan to buy Florida grown strawberries when available



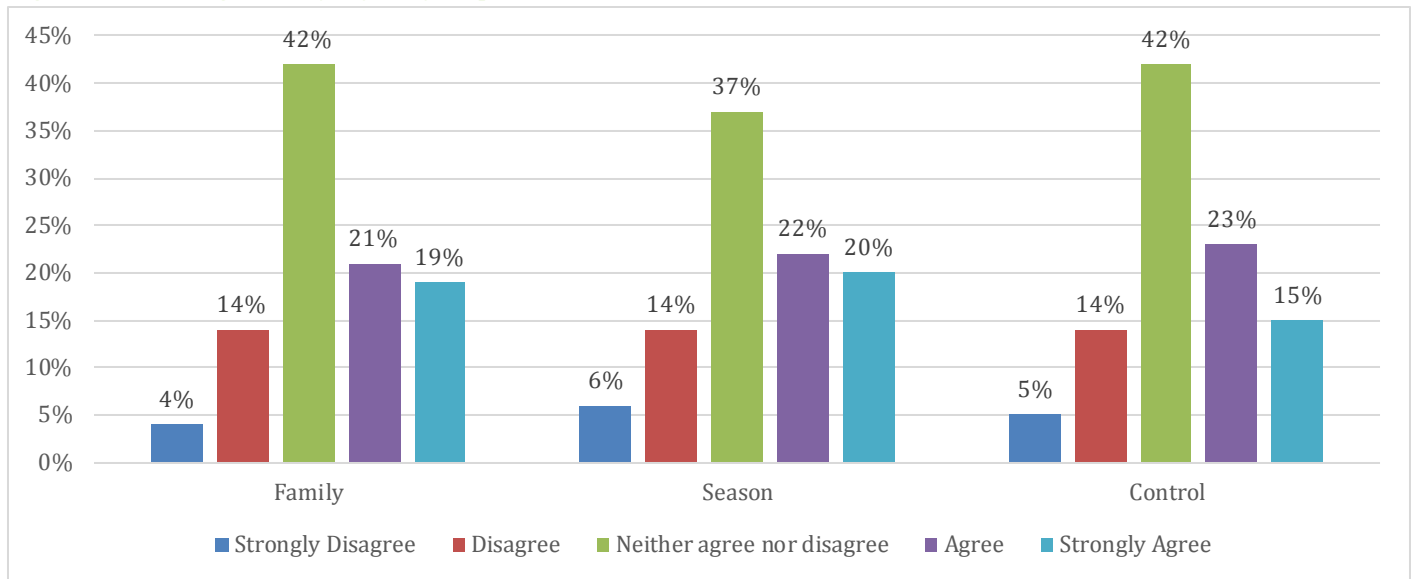
Respondents were also asked if they would look to see if strawberries were grown in Florida to determine purchasing intent. There were little differences between the message groups. The Family and Season message groups did have more respondents agreeing or strongly agreeing that they would look for the Florida growing location (78%, $n = 387$ and 78%, $n = 386$ respectively). For the control group, 71% ($n = 360$) agreed or strongly agreed with the statement. Responses can be seen in Figure 36.

Figure 36. I will look to see if strawberries were grown in Florida



The final purchasing intent question asked respondents if they would go out of their way to purchase Florida strawberries. The respondents did not agree with this statement as much as the previous ones (Figure 37). Only 40% ($n = 201$) of respondents who saw the Family message, 42% ($n = 211$) of those who saw the Season message, and 38% ($n = 193$) of those who saw the Control message agreed or strongly agreed with the statement.

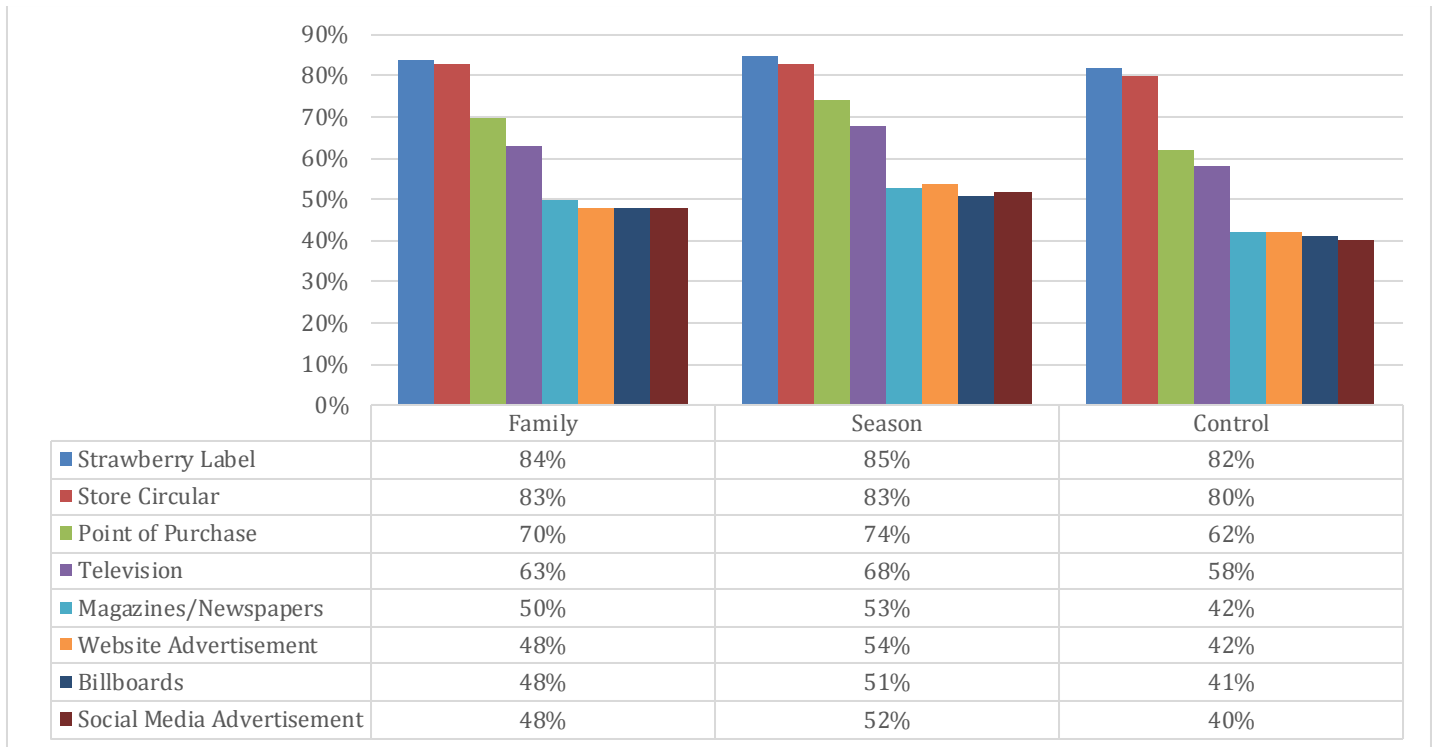
Figure 37. I will go out of my way to purchase Florida strawberries



Platform Preference

Respondents were asked if different platforms would encourage them to purchase Florida strawberries in the winter if it displayed the message they had viewed previously. The question was asked in a yes/no format. The strawberry label and store circulars were the most preferred plat forms across all three messages. Eighty-four percent ($n = 420$) of the respondents who viewed the Family message selected the strawberry label, as did 85% ($n = 421$) who viewed the Season message and 82% ($n = 413$) who viewed the Control message. Store circulars were selected by 83% ($n = 414$) of the Family respondents, 83% ($n = 415$) of the Season respondents, and 80% ($n = 399$) of the Control respondents. The results can be seen in Figure 38.

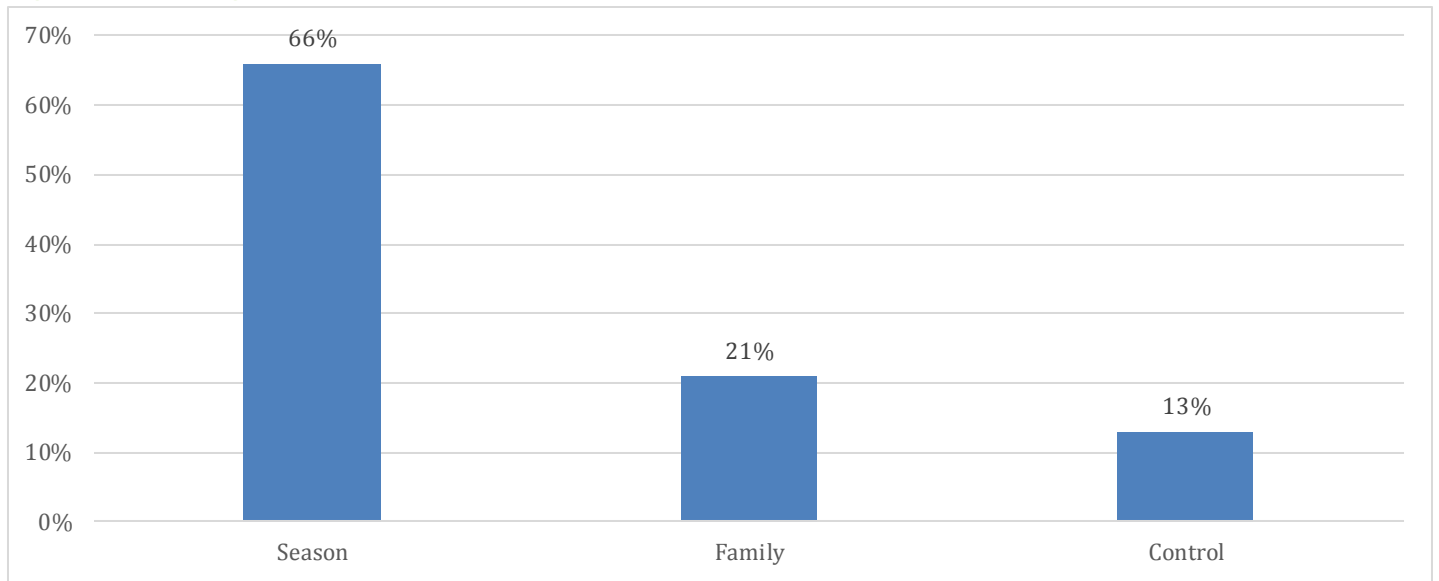
Figure 38. Message platform preference



Message Preference

After completing the questions related to the message they saw, all respondents ($n = 1,500$) were shown the three messages and asked which one would most likely cause them to purchase. Results to this question can be seen in Figure 39; two-thirds (66%, $n = 993$) of the respondents preferred the season frame.

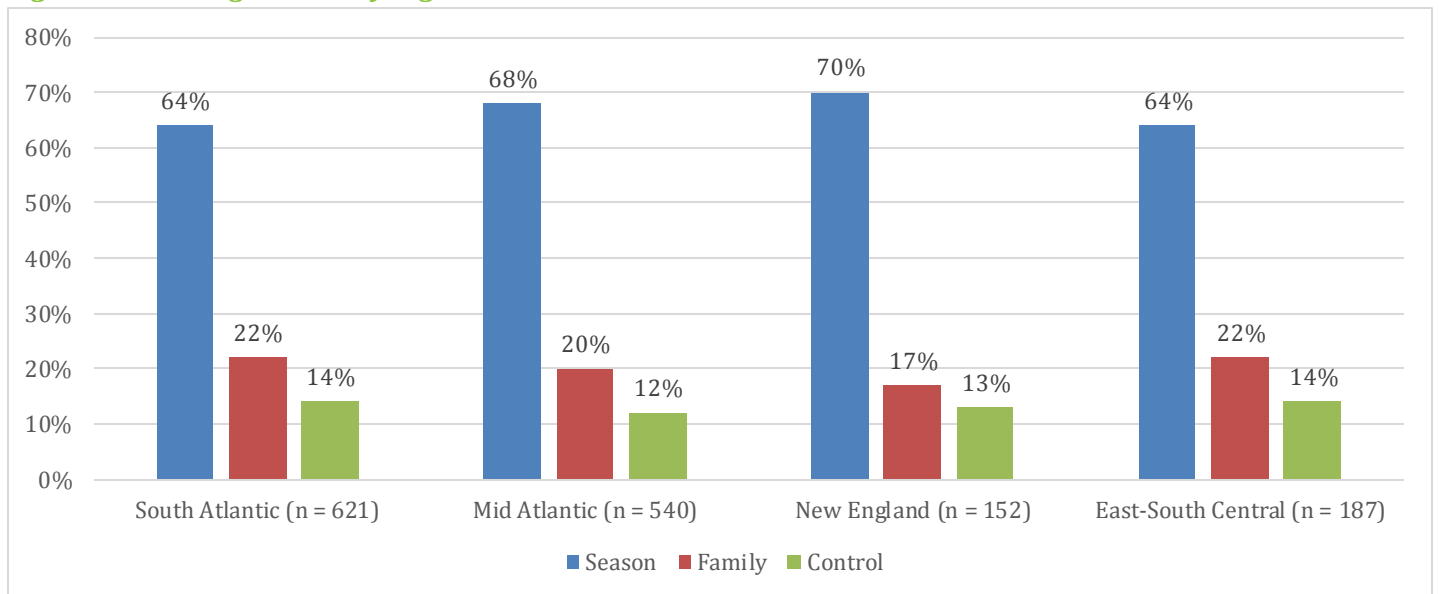
Figure 39. Message choice



Message Preference by Region

Figure 40 presents the message preference of respondents from each region. All four region preferred the Season message, but the New England region had the highest proportion of respondents who selected the Season message (70%, $n = 106$).

Figure 40. Message choice by region



References

- Ary, D., Jacobs, L. C., & Sorensen, C. (2010). *Introduction to research in education* (8th ed.). Belmont, CA: Wadsworth.
- Baker, R., Brick, J., Bates, N., Battaglia, M., Couper, M., Dever, J., ... Tourangeau, R. (2013). Summary report of the aapor task force on non-probability sampling. *Journal of Survey Statistics and Methodology*, 1(2), 90-143. doi: 10.1093/jssam/smt008
- Buchanan, J. (2013, November 6). Florida strawberry growers expand market offerings. *Highlands Today* [Tampa]. Retrieved from [http://highlandstoday.com/\[State\]-strawberry-growers-expand-market-offerings-20131106/](http://highlandstoday.com/[State]-strawberry-growers-expand-market-offerings-20131106/)
- Florida Department of Agriculture and Consumer Services. (2013). *Florida agriculture by the numbers*. Retrieved from [http://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Agriculture_Statistical_Directory/2012/2012%20FL%20Ag%20by%20the%20Numbers\(FASD\).pdf](http://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Agriculture_Statistical_Directory/2012/2012%20FL%20Ag%20by%20the%20Numbers(FASD).pdf)
- Holt, J. A. (2014). *The effect of media channels on consumers' intentions to buy local food: An exploration of the theory of planned behavior and media channel perceptions* (Unpublished doctoral dissertation). University of Florida, Gainesville, FL.
- Jeong, Y., & Lundy, L. K. (2015). Evaluating food labels and food messages: An experimental study of the impact of message format and product type on evaluations of magazine food advertisements. *Journal of Applied Communications*, 99(1), 52-66. Retrieved from http://journalofappliedcommunications.org/images/stories/issues/2015/jac_v99_n1_article4.pdf
- Maletta, H. (2007). Weighting. *SPSS Tools*. Retrieved from <http://www.spsstools.net/Tutorials/WEIGHTING.pdf>
- Ohlemeier, D. (2013, December 2). Food safety - Florida battles Mexican strawberries. Retrieved from <http://www.produceops.com/food-safety/Florida-battles-Mexican-strawberries-234089101.html?page=2>
- Onozaka, Y., & MaFadden, D. T. (2011). Does local labeling compliment or compete with other sustainable labels? A conjoint analysis of direct and joint values for fresh produce claims. *American Journal of Agricultural Economics*, 93(3), 693-706. doi:10.1093/ajae/aar005
- United States Department of Agriculture- Economic Research Service. (2013, June). *U.S. strawberry industry*. Retrieved from <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1381>
- Wu, F., Guan, Z., & Whidden, A. (2012). *Strawberry industry overview and outlook*. Unpublished manuscript, Gulf Coast Research and Education Center, University of Florida, Gainesville, Florida. Retrieved from <http://www.fred.ifas.ufl.edu/pdf/webinar/Strawberry.pdf>

Appendix A- Packages





Appendix B- Messages

Family Frame



Proud to share our
FRESH FLORIDA STRAWBERRIES
with your family and ours

Seasonal Frame



FRESH FLORIDA STRAWBERRIES,
you can have a taste of summer all winter long

Control Frame



FLORIDA STRAWBERRIES,
grown with you in mind