

Consumer Preferences for Florida-Grown Blueberries

Part III: Berry Good for You! Unpacking Health Perceptions and Labels on Blueberries¹

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This report is the third in a multi-part series based on the "Consumer Preferences for Florida-Grown Blueberries" study. The first report in this series is titled "Consumer Preferences for Florida-Grown Blueberries, Part I: Florida Fresh Blueberry Consumer Behavior—Insights on Shopping Locations, Frequency, and Spending." The second report is titled "Consumer Preferences for Florida-Grown Blueberries, Part II: Locally Grown Blueberries in the Marketplace—Insights into Florida Consumers' Awareness of Brand Origin and Purchasing Behavior."

The main objective of this project is to enhance the marketability and competitiveness of Florida-grown fresh blueberries by analyzing consumers' preferences for blueberry quality attributes and publicizing those preferences to improve marketing campaigns. The target audiences include Florida blueberry growers, marketers, and retailers. By identifying the most influential labels and attributes, we provide recommendations to optimize product messaging and labeling, meet consumer demand, and improve the product's market share.

As part of this series, this third report focuses on consumers' health perceptions of fresh blueberries and their responses to nutrition-related labels. Many U.S. consumers are seeking healthier and more sustainable food options (International Food Information Council 2023). This trend drives a shift in consumer choices toward nutritious food, such as fruits and vegetables. Among these, blueberries have become especially popular due to their well-known health benefits (USDA 2019). With increasing production and imports, demand for fresh blueberries has increased significantly over the past decade, and per-capita consumption has more than tripled since 2005, as shown in Figure 1. The rapid growth in blueberry demand can largely be attributed to the increasing pursuit of healthy foods (USDA 2017). Moreover, according to U.S. Highbush Blueberry Council, more than 98% of their survey respondents considered blueberries to be nutritious (U.S. Highbush Blueberry Council 2016).

The growing emphasis on health trends affects not only consumers but also food producers and retailers. By understanding consumers' needs and preferences, producers can develop more effective marketing strategies to enhance demand for nutrient-dense foods like blueberries. Additionally, the insights from this study can help those working to promote healthy dietary patterns better understand the impact of nutrition-related statements on consumer purchasing behavior, ultimately supporting efforts to encourage healthier eating patterns.

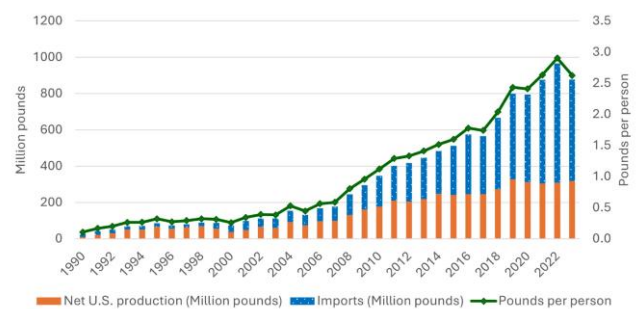


Figure 1. Trends in per-capita use of fresh blueberries in the U.S. Note: Net U.S. production = Domestic – Exports

Credit: USDA, Economic Research Service and author's calculation

This trend toward health-conscious eating can also provide a valuable context for examining how specific nutrition-related messages influence consumer choices in the fresh fruit market. In response to the growing consumer interest in healthy food and its impact on blueberry consumption, we conducted a study to explore consumers' understanding of the health benefits of blueberries and examined the fresh blueberry purchasing behavior of health-concerned consumers. Additionally, we introduce a new label, aligned with Dietary Guidance Statements proposed by the US Food and Drug Administration (FDA 2023), and investigate whether this voluntary nutrition-related labeling statement can promote consumers' preferences for blueberries.

Method

We conducted an online survey of consumers in Florida and distributed it over a two-week period in April 2024 using a reputable market research platform (Qualtrics). Respondents were screened based on the following criteria: (1) currently live in Florida and (2) purchased fresh blueberries in the past six months, a period that falls within the Florida blueberry harvest season (late March to early May). The survey respondents were limited to Florida residents because Florida blueberry growers primarily target the local market. A total of 1,537 respondents were used in the analysis. Compared to the Florida population (estimated based on U.S. Census data), our sample shows a similar distribution in terms of education and race categories, but includes a higher proportion of respondents aged over 55.

Who participated in the study?

In our study, the majority of respondents are between the ages of 55 and 74 (48.7%). Most hold a two-year or four-year college degree, and the sample includes more female respondents (56.2%) than male (43.6%). The most common racial group is White (84.8%) and the most frequently reported household income range is \$50,000 to \$99,999 (38.5%). See Table 1 for detailed demographic characteristics of the sample.

Results

Consumers' Knowledge of Blueberry Health Benefits

Respondents were asked to determine whether seven statements about blueberry health benefits were true, false, or "I don't know" (Figure 2). We adopted the same statements from Taylor et al. (2016). The majority of respondents correctly identified that blueberries help ward off heart disease (73.0%) and lower cancer risks (64.5%), but only 44.0% knew blueberries improve memory. Less than half recognized that blueberries help revert aging (49.1%) and strengthen eyesight (37.3%), with the remaining respondents either incorrect or unsure. For the false statements, a substantial majority incorrectly believed blueberries improve hearing loss (28.2% correct) and help with achy joints (14.3% correct). This finding highlights gaps in respondents' knowledge about blueberry health benefits. Also, it suggests the need for clearer communication to correct common misconceptions, particularly regarding inaccurate claims (e.g., "improves hearing loss" and "helps with achy joints"). Although the survey included an "I don't know" option to discourage guessing, some responses may still reflect uncertainty or guesswork, which should be considered when interpreting these results.

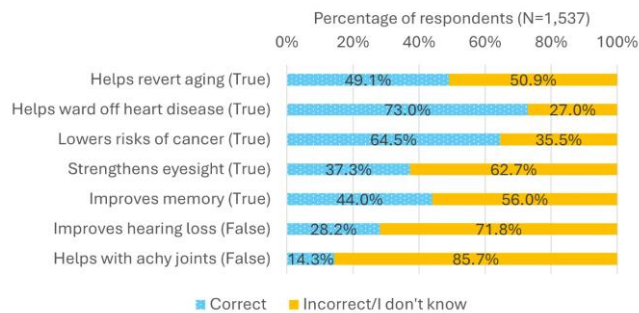


Figure 2. Accuracy of respondents' knowledge of blueberry health benefits.

Credit: Authors' survey data.

Health-Concerned Consumers' Frequency of Purchasing Fresh Blueberries

To further understand consumer heterogeneity, specifically, how health-conscious individuals might behave differently from their less health-conscious counterparts, we assessed respondents' health consciousness using the six-item health concerns scale from Kähkönen and Tuorila (1999). Respondents were asked to indicate their level of agreement on a five-point scale ranging from "strongly disagree" to "strongly agree" for the following statements:

- I am worried about gaining weight.
- Consuming many calories is not acceptable to me.
- I am concerned about excess sugar in my food.
- I am concerned about the sodium content in my food.
- I am concerned about the risk of high blood pressure.
- The risk of coronary heart disease is not negligible.

Based on the point scale, we identified health-conscious consumers (N=805) who scored higher than the average.

Figure 3 compares the purchase frequency of fresh blueberries between in-season and out-of-season periods among health-conscious consumers. It's common for both in-season (over 35%) and out-of-season (around 30%) to purchase fresh blueberries weekly, followed by biweekly and monthly purchases, showing a clear pattern of decreasing frequency (weekly > biweekly > monthly) during the peak season. In contrast, for out-of-season blueberries, there is no significant difference between biweekly, monthly, and less-than-monthly purchase frequencies, indicating a more evenly distributed pattern. Daily purchases are rare for both categories, but slightly more common for in-season blueberries. Very few respondents indicated that they never purchase blueberries, regardless of the season. This suggests that health-conscious consumers maintain a steady interest in blueberries throughout the year but demonstrate a stronger preference for more frequent purchases during the in-season period, possibly due to greater in-store availability.

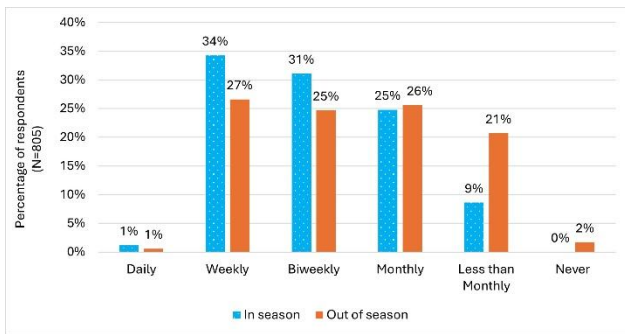


Figure 3. Comparison of health-concerned consumers' fresh blueberry purchase frequency during peak season and off-season. Note: "In season" refers to March through October; "Out of season" refers to November through February. Credit: Authors' survey data.

Consumers' Preferences for Health-Related Labels

We investigated whether blueberries would benefit from additional health-related labels on their packaging. This potential marketing strategy is particularly relevant given the recent draft guidance issued by the FDA on March 24, 2023, concerning Dietary Guidance Statements on Food Labels. The draft provides food manufacturers with recommendations on how and when to use Dietary Guidance Statements on the labels of food products. The recommendations are based on current nutrition science and dietary recommendations such as the Dietary Guidelines for Americans (DGA 2020–2025). Our two statement labels are based on the DGA.

The Dietary Guidance Statements are voluntary nutrition-related labeling statements recommended by the US Food and Drug Administration (FDA) in its draft guidance. This new initiative conveys the message that the food item is part of, or contributes to a nutritious diet, aiming to nudge consumers toward healthier dietary choices (FDA 2023). In line with this new initiative, we introduce two novel voluntary labeling statements to Florida consumers: *Eat 2 cups of fruits a day* and *Choose whole fruits*.

Respondents were asked to choose one of three blueberry packages with different labels, and we estimated consumers' willingness to pay using a statistical model. (We used a mixed logit model to analyze the survey data collected from a discrete choice experiment.) The results indicate that consumers are willing to pay a premium for blueberries labeled with *Choose whole fruits* compared to non-labeled blueberries, while the estimate for *Eat 2 cups of fruit a day* is more uncertain, as its 95% confidence interval includes zero (as shown in Figure 4). In summary, our findings suggest that consumers place greater value on fresh blueberries with specific nutrition-related labels compared to non-labeled ones, highlighting the significant influence of labeling on consumer choice. This also implies

that incorporating specific and actionable messages, such as *Choose whole fruits*, into labels could be a more effective strategy for promoting healthy eating habits and boosting sales. Moreover, the FDA's Dietary Guidance Statements would be a useful approach to motivate consumers to make healthier choices.

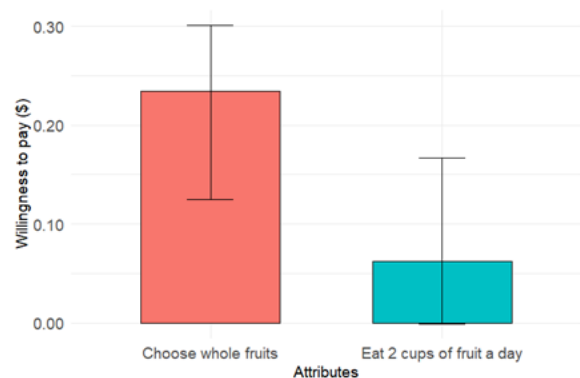


Figure 4. Consumers' willingness to pay for additional nutrition-related labels compared to non-labeled blueberries. Note: Colored bars represent the mean willingness to pay for each attribute. The black vertical lines on top of each bar are error bars, indicating 95% confidence intervals around the mean WTP.

Credit: Authors' survey data.

Concluding Remarks

This report examined consumers' perceptions of the health benefits of blueberries and their preferences for health-related labels on blueberry packages. Our findings show that in general consumers have a good understanding of the health benefits of blueberries for health disease and cancer prevention, but limited awareness of benefits related to eyesight. Considering the relatively low accuracy of consumers' knowledge about health benefits, efforts may be needed to better educate consumers or to tailor advertising to focus on the health advantages of blueberries. We also analyzed the purchasing behavior of health-conscious blueberry consumers, focusing on their purchase frequency during in-season and out-of-season periods. Health-conscious consumers adjust their blueberry purchasing frequency depending on the season. Over 65% of consumers purchase fresh blueberries either weekly or biweekly during the in-season. In terms of adding additional voluntary nutrition-related labels, consumers are willing to pay a premium for blueberry products with such labels than non-labeled ones. This suggests that the FDA's Dietary Guidance Statements could be an effective strategy to encourage consumers to make healthier choices. Finally, although the willingness to pay estimates were derived from a mixed logit model that accounts for observed choice attributes, future research could investigate how these preferences vary by demographic characteristics and health knowledge levels.

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Tables

Table 1. Demographic characteristics of the sample (1,537 respondents).

	Categories	Number of respondents (%)
Age	18-24 years	41 (2.7%)
	25-34	139 (9.0%)
	35-44	222 (14.4%)
	45-54	183 (11.9%)
	55-64	313 (20.4%)
	65-74	434 (28.2%)
	More than 75	205 (13.3%)
Education	High school or equivalent degree	297 (19.3%)
	Two-year degree or some college	567 (36.9%)
	Four-year college degree	418 (27.2%)
	Graduate or professional degree	255 (16.6%)
Gender	Female	864 (56.2%)
	Male	670 (43.6%)
	Prefer not to say	3 (0.2%)
Race	White	1341 (84.8%)
	Black or African American	137 (8.7%)
	Asian	34 (2.1%)
	Other	70 (4.4%)
2023 Household Income	Less than \$49,999	520 (33.8%)
	\$50,000 – \$99,999	591 (38.5%)
	\$100,000 or more	360 (23.4%)
	Prefer not to say	66 (4.3%)
Note: For the race category, respondents were allowed to select one or more races, so the total number of observations is 1,582.		

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