

# Florida Consumer Preferences for Fruit-Producing Plant Attributes<sup>1</sup>

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## Introduction

Fruit-producing plants are unique from other plants in that they produce edible products. This impacts the importance of plant attributes. Specifically, consumer perception of the benefits of organic production (such as personal and environmental health) may be more important for plants that produce edible end-products. Previous research on this topic has yielded mixed results. While some studies found low consumer interest in organic production (Yue et al. 2011), other studies found strong consumer interest in organic production of edible plants (Hawkins et al. 2012). Limited availability of organically produced edible plants has created special niche markets for these types of plants (Schimmenti et al. 2013). Based on these findings, this report compares the effects of plant type, price, production method, and origin attributes on consumer preferences for fruit-producing plants.

## Methodology and Summary Statistics

The data were collected through surveying Florida plant consumers in June and July of 2014. During the experiment, participants were asked to view images of fruit-producing plants and rate their likelihood of purchasing the plants on a scale of 1 to 7 (1=very unlikely; 7=very likely). The attributes of the plants were described via magnified plant tags in each image presented to the participants. An example of this is shown in Figure 1. Attributes included plant type, price, production method, and origin. A



complete list of plant attributes and attribute levels is presented in Table 1. As participants determined their likelihood of purchase, their eye movements were recorded using eye tracking equipment and software. After viewing the plant images, participants completed a questionnaire containing background, preference, and socio-demographic questions. Participants were recruited through newspaper and Craigslist advertisements, as well as printed fliers distributed at retail garden centers. A total of 95 people participated in the study. Average age for participants was 46 years old and 35% were male. The average household size was 2 people, and the average 2013 household income was between \$41,000 and \$50,000. For education, 32% had earned a GED/high school diploma, 50% had earned an associate or bachelor degree, and 17% had earned a graduate/professional degree.

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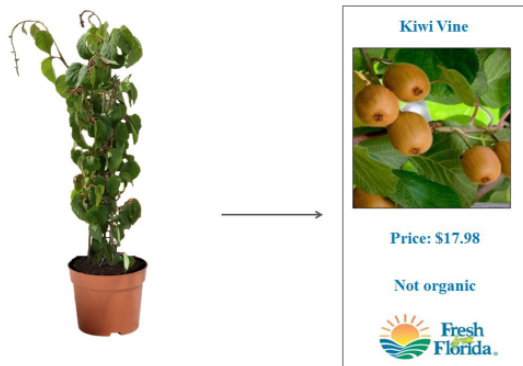


Figure 1. An example of a plant image used to evaluate consumer purchasing likelihood for fruit-producing plants (Note: Attribute sign order was randomized to reduce any order effect on eye movements. Attribute font was blue to match the *Fresh from Florida* logo design and reduce inconsistencies between attributes.)

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## Results

Consumers were more likely to purchase pineapple and blueberry plants than kiwi vines (Figure 2). Compared to conventional plants, consumers reported a higher purchasing likelihood for certified organic or organically produced fruit plants. Consumers were less likely to purchase imported plants than domestic plants (e.g., those labeled *Fresh from Florida*). Overall, consumers were most interested in the organic (certified or not certified) production method attributes of fruit-producing plants.

Total visual duration (TVD) measurements were used to assess consumer visual attention to fruit-producing plant attributes. As a measure of visual attention, TVD is the amount of time (in seconds) that the participant spent viewing each attribute. Visual attention to the plant images improved consumers' purchasing likelihood (Figure 3). Results show visual attention to price reduced consumers' purchasing likelihood. Visual attention to organic production attributes increased consumers' purchasing likelihood for fruit-producing plants. Conversely, visual attention to conventional plant attributes negatively impacted consumers' purchasing likelihood. Visual attention to the *Fresh from Florida* attribute increased consumers' purchasing likelihood, while visual attention to domestic and imported plants decreased consumers' purchasing likelihood for fruit-producing plants. Results from the eye tracking experiment indicate the higher importance of organic production methods for fruit-producing plants. This is not surprising since edible products directly impact human health and consumers associate organic products with improved personal health.

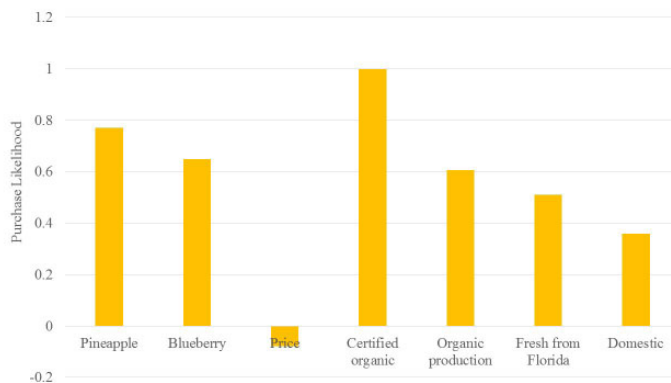


Figure 2. Consumers' purchasing likelihood for fruit-producing plants with different attributes (Note: Purchase likelihood is relative to base variables which are used for comparison: plant type (pineapple, blueberry) results are compared to kiwi vines, production method to conventional production, and origin to imported plants.)

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## Implications for the Environmental Horticulture Industry

Production methods directly influence consumers' preferences for fruit-producing plants. Growers and retailers of fruit-producing plants can easily source, grow, sell, and promote organic fruit-producing plants provided organic production is economically feasible. Also, health

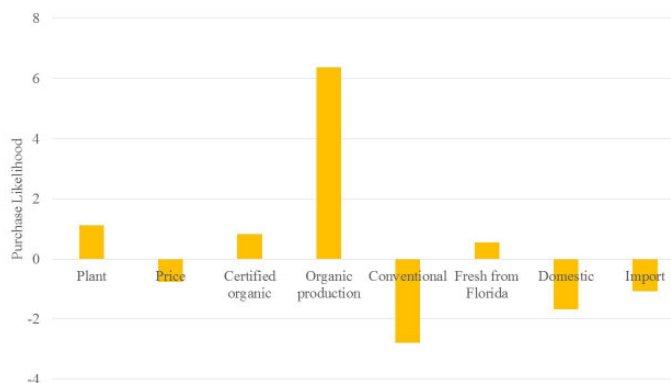


Figure 3. How consumers' visual attention (total visit duration [seconds]) influences fruit-producing plant purchasing decisions

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and environmental benefits should be emphasized in retail promotions of fruit-producing plants. There is the potential to leverage other health benefits (e.g., good source of vitamins) and personal/environmental health-related attributes to differentiate products and increase consumer interest in fruit-producing plants.

Results indicate that growers and retailers should leverage consumer interest in the local/state economy and source their plants from local/state growers when selling to consumers in Florida. *Fresh from Florida* retail displays are

an effective means of communicating the origin of local plants.

Although intuitive, the visual attention data highlight the importance of using healthy, high quality, visually appealing display plants in the retail setting. If the plants are not visually appealing, consumers' purchasing likelihood could be drastically reduced. Furthermore, in-store promotions need to be high quality and visually appealing since they influence consumers' purchasing behavior.

## References

Hawkins, G., S.E. Burnett, and L.B. Stack. 2012. Survey of consumer interest in organic, sustainable, and local container-grown plants in Maine. *HortTechnology* 22:817–825.

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Yue, C., J.H. Dennis, B.K. Behe, C.R. Hall, B. Campbell, and R.G. Lopez. 2011. Investigating consumer preference for organic, local, or sustainable plants. *HortScience* 46:610–615.

**Table 1. Plant attributes and attribute levels used to create plant images evaluating Florida consumer interest and visual attention to fruit-producing plants in the retail setting**

Attributes	Attribute Levels
Plant type	Blueberry bush Pineapple plant Kiwi vine*
Price <sup>z</sup>	\$15.98 \$17.98 \$19.98
Production method <sup>y</sup>	Certified organic Organic production Not organic*
Origin	Fresh from Florida (local/state domestic) Grown in the United States (domestic) Grown outside the United States (import)*

\* Indicates the base variable for the attribute level. Positive and negative results are comparable to the base variables. For example, if import is the base variable for origin and Fresh from Florida is positive, participants are more likely to purchase Fresh from Florida plants than imported plants.

<sup>z</sup>Price points were based on retail observations (i.e., big-box stores, grocery stores, and independent garden centers) in central Florida.

<sup>y</sup> Certified organic = plants are certified as organically produced.

\* Organic practices = plants are produced in an organic manner but are not certified as organic.