Evaluating the Acceptance of McIntosh Apples in El Salvador

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Since 1970, apple exports from Massachusetts have declined substantially. While Massachusetts' exports are falling, Washington's exports are growing. Meanwhile, over the last five years, Central America has seen a dramatic growth in apple importation; however no apples from Massachusetts have been reported. This could be a result of the lack of information and lack of marketing research due to barriers such as language, culture, costs and others. The goal of the research presented in this was to evaluate the acceptance of McIntosh apples in El Salvador.

In order to determine the consumers' acceptance of McIntosh apples, ten bushels of U.S. Extra Fancy grade, 120-count size McIntosh apples from Carlson's Orchard in Massachusetts were shipped to El Salvador in December of 2010. Walmart of Central America and Mexico collaborated with this study by allowing the use of five stores in different market segments of El Salvador and by lending the services of employees to support the UMass team with the apple evaluation. In addition, a survey was conducted in the apple section of the produce area inside each store. Nine Spanish-speaking Salvadorians were trained to conduct the surveys, which were purposefully administered during Christmas time (December, 22, 23 and 24), since this is the time of greatest apple consumption in the El Salvadorian market. A McIntosh apple was given to each interviewee who was a current consumer of fresh apples. After eating the apple, each consumer completed the survey to assess its appearance, consisting of size, color, and quality, and then its taste, consisting of sweetness, tartness, juiciness, freshness, and texture. Having assessed these organoleptic characteristics, the interviewees were then asked to assess their current apple purchases in relation to the McIntosh apple. Each respondent was then asked if they would purchase McIntosh apples and if so, what size apple he or she preferred and what price they were willing to pay.

Figure 1. Consumers participating in McIntosh taste evaluations in a Walmart in El Salvador.

Of the 729 surveys conducted, all characteristics assessed (using a Likert scale) averaged above a rating of 8.0 (size 8.39, color 8.43, tartness 8.04, crispness 9.12, juiciness 9.45, and texture 9.19) (Figure 2). Consumers enjoyed the juiciness and the texture of the apple, followed by the crispness and its apparent quality. They also were attracted to the red and green colors of the apple, which gave them the sensation of Christmas time. The size and the sweet and tart flavors were also very well received.

In relation to the size that consumers like to buy, 4% preferred small sized (175 to 216 apples per

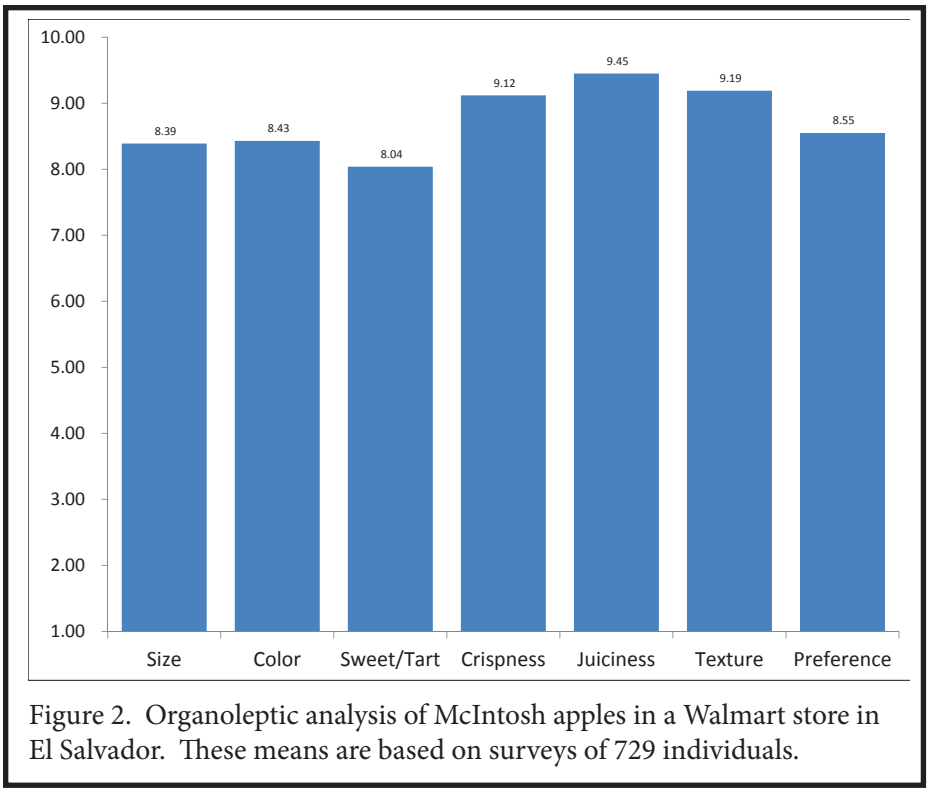

Figure 2. Organoleptic analysis of McIntosh apples in a Walmart store in El Salvador. These means are based on surveys of 729 individuals.

carton/count), 80% said they prefer to buy a mid-sized (120 to 150 apples per carton/count), and 16% reported liking the large sized apples (75 to 113 apples per carton/count). In response to whether or not the consumers preferred McIntosh to their current apple purchases, the mean of 729 surveys on a scale of 1 to 10 was 8.55, indicating a strong preference for this "new" variety. According to these results, preferences for McIntosh apples varied with income class. Almost all apple consumers preferred McIntosh apples, but the highest preference was observed with consumers of middle-income levels who are professionals that work in government or private offices. The apple size that this group of consumers preferred is medium, between 113 – 150 counts, yet color does not influence their apple purchases.

Massachusetts apple growers should try to reach middle-income consumers in El Salvador and Central America, as they have average to above-average income and they represent a large number of people. However, selling apples to middle-income consumers would put Massachusetts' apples in direct competition with several large firms that import apples.

This study revealed that Central American consumers are open to new apple varieties even if they have never seen them before. New England growers can provide considerable amounts of fresh McIntosh apples to the growing Central American apple market with the quality, appearance, flavor, and texture that consumers find desirable, according to this study. McIntosh apples sold to Central America may be preferred in the size categories of lesser demand in the US, specifically those between 113 and 150 count. There are also other Massachusetts and New England varieties that have potential in Central American markets, specifically the Macoun, Cortland, and Empire.

The main threat that Massachusetts growers may face in the Central American market is competition, mostly from apples grown in Washington and Chile. Additional competition is likely from other McIntosh-producing states, therefore the Massachusetts apples must be competitively priced. Relative to other apple-producing regions, Massachusetts orchards have lower yields per acre with higher costs per carton than the US national average. New England producers and wholesalers also lack knowledge of the language and culture of the Central American market, making further studies necessary to acquire information about pricing, competitiveness and exports in this market.

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