

Abstract:

Production of U.S. carrots, like other agricultural products, moved to southern California to capitalize on more favorable climate and labor conditions, resulting in new challenges for Michigan growers. Many Michigan carrots were unsuitable for the primary market (fresh baby carrots), but culls still have nutritional and economic value. The purpose of this study was to develop and conduct consumer evaluations of two carrot-enhanced products: orange juice and pizza sauce. Carrot-enhanced foods, identified as a use of carrots from focus-group interviews, helped parents meet their desire for providing nutritious meals while disguising what children may perceive to be unpalatable or undesirable vegetables. We hypothesized that boosting or adding nutrition from carrots could be an important benefit to parents. To test this idea, researchers added carrots to two products that children and adults often consume: orange juice and pasta sauce. A combination of 25% percent carrot juice and 75% juice from frozen concentrate was utilized. Five spaghetti sauce recipes were tested before deciding to use a pre-formulated spaghetti sauce packet. In October, 2001, 113 adult (over age 18) volunteer participants evaluated randomized samples of orange juices and pasta sauces, with and without carrots. In evaluating the color, mouth feel, flavor, and overall acceptability of the juices and sauces, >50% of the participants liked (rated 4 or 5 on 5-point Likert scale) both carrot-enhanced products. In paired t-tests, participants liked the color, mouthfeel, flavor, and overall acceptability of the non-enhanced sauce product more than the carrot-enhanced sauce. A cluster analysis resulted in two distinct groups: "Carrot Likers" and "Carrot Buyers". "Carrot Likers" liked the carrot-enhanced sauce more than Cluster 2 members but had not purchased fresh carrots in the prior two weeks nor were as likely to have fresh carrots on-hand. Cluster 2 was labeled "Carrot Buyers" because they were more likely to have bought carrots in the two weeks prior to the survey, were more likely to have carrots on-hand, but less likely to have eaten them as a snack and did not like the carrot-enhanced pasta sauce as well. Positive evaluations of the products by some consumers with different preferences lead to the preliminary conclusion that the pasta sauce only may have potential to be targeted to a distinct consumer segment.