

Notes

Focus-group Sessions Suggest both Kids and Adults Enjoy Fresh Carrots

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Carrots (*Daucus carota*) are an important dietary component. Beta carotene, a vitamin A precursor and major carrot nutrient, has long been associated with eyesight maintenance (Work and Family Life, 2001). Not only is beta carotene necessary for good vision and preventing eye-debilitating diseases such as cataracts, glaucoma, and infection (Goulart, 1996), but also eating carrots has been credited with lowering the risk of heart disease among male physicians compared with a control group (Nutrition Action Health Letter, 2001) and reducing the risk of colon (Slattery et al., 2000) and lung (Michaud et al., 2000) cancers.

With a decline in several smaller North American carrot production areas, some growers are seeking new uses for the products they grow best. For example, while the production area in California has increased by about 29%, Michigan area experienced a 39% decrease from 1994 to 2000 (U.S. Department of Agriculture, 2002). This trend was also evident for production volume of carrots and price ton for the two states. With a year-round production schedule, California is able to satisfy most of customer demand. Two large California firms were estimated to produce between 75% and 85% of all U.S. carrots, with Michigan firms supplying a low percentage to specialized businesses during their four months of production, from August through November (Michigan Carrot Committee Report, 2001).

Carrots are a popular snack, with peeled precut bags of raw carrots available in supermarkets year-round. The convenience of these carrots meets the need for a nutritional snack and eliminates the time needed to peel, cut, and package them (Johnson, 2001). Carrots can be prepared many ways for meals by being cut, sliced, or shredded or by being added to stews, roasts, vegetables, rice, or pasta

for side dishes (Johnson, 2001). Because carrots are such a beneficial, versatile product, we initiated this study with the primary objective to examine how parents in a test market representative of the U.S. on average prepare meals for their children by using carrots and how this vegetable competes with other food and snack items. We also wanted to determine how adults include carrots in their diet. Additionally, we asked questions regarding perceptions of certified organic versus conventionally grown products (to investigate potential interest in these products) and whether adults from the test-market would purchase, eat, and serve foods fortified with carrot extract and purees.

Focus-group interviews are often implemented by businesses desiring extensive and/or qualitative input from different customer groups. Because both children and adults eat carrots, potentially for different reasons, we developed two-focus group sessions. These were conducted by MORPACE International, Inc., a professional market research firm in Farmington Hills, Mich., on 26 Oct. 2000, and examined the issues outlined above. Potential participants were contacted by telephone from a random list of residents in the Detroit area, which is considered a feasible test market with a population that closely resembles that, on average, of the U.S. (Waldrop, 1992). Businesses that collect test market information often extrapolate to other cities as an indication of how well the product tested might perform. To qualify for inclusion, the participants needed to respond to the following questions with at least one affirmative answer: 1) had served fresh carrots to their children within the last 3 months, or 2) had eaten fresh carrots within the last three months. Those qualifying were then asked to participate in the focus-group sessions. Participants were paid \$50 for their time. Sessions were videotaped with permission. The study was approved by the University Commission on Research Involving Human Subjects.

The first focus-group session included 12 children, ages 8 to 10 years, and lasted 30 min. During the session, children were asked what vegetables they ate, which of those they liked, if they ate carrots how they were consumed (e.g., as snacks or with a dip or in a salad). Questions were asked of the group, not systematically to individual participants, but most participants volunteered an answer or response to most questions. Verbal comments from most children indicated that they preferred raw, fresh carrots to either frozen or canned carrots. These carrots were eaten as snacks or salad ingredients. Cooked carrots were eaten as a side dish at mealtime. As a snack, raw, peeled, cut, and bagged carrots, known as baby carrots, dipped in dressings or sauces were preferred because of their small size. The children also tasted two samples of carrots that were sliced into coin shapes: certified organic carrots and conventionally grown carrots. Six of the 12 children indicated that overall they preferred the conventionally grown carrots, four preferred the organically grown carrots, and two expressed no preference.

The parents of these children were interviewed next for about 1 h. They were asked to confirm their children's answers. In the discussions that followed, the parents stated that although they served their children a variety of vegetables (which included lettuce, corn, and a wide variety of other vegetables); however, the children ate only those they liked. All parents responded that they purchased fresh

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carrots. Most purchased frozen carrots, and a few bought canned carrots. The way they used carrots was associated with whether they bought unpeeled whole carrots or baby carrots. Several parents concerned about their children's nutritional needs would puree or chop vegetables and disguise them in food items such as spaghetti sauce or meatloaf. Regardless, parents expressed concern that their children were not eating correctly to get the proper nutrition. Lastly, the parents could not precisely describe what was meant by organic; however, most parents believed vegetables were healthier if grown without chemicals. These parents were price-sensitive and less likely to purchase certified organic carrots for themselves if the vegetables were more expensive than conventionally grown carrots. Price was less of a factor when parents considered purchasing nutritious food for their children.

The second focus-group session included 10 adults, ages 18 to 65 years, and lasted 1 h. Adults answered questions similar to those answered by the parents in the children's focus-group session. Carrot consumption was different according to seasonality, with more raw carrots eaten during the summer and more cooked carrots eaten during the winter. One participant stated that he purchased baby carrots rather than unpeeled carrots because he detected a sweetness in the small carrots. Others, however, perceived the baby carrots as dry or slimy. These adults would purchase carrots grown in Michigan rather than carrots grown in other locations, even at a slightly higher price. They would also purchase foods fortified with carrot juice and purees if the taste of the food was unchanged. Responses were varied when adult participants were asked to rate taste, texture, and color of the two samples. Few participants, both children and adults, expressed a preference for either the organic or traditional carrot samples they tasted. The majority expressed no difference in any of the three attributes about which we inquired.

The results of these focus-group sessions revealed that both children and adults included carrots as a staple in their diets. Despite the verbalization of some problems (e.g., slime on carrots developing in the refrigerator), there was an expressed preference for fresh carrots, especially the baby carrots, which were often used for dipping in sauces for snacks. Individually packaged baby carrots with dipping sauces in the marketplace create even more convenient snack preparation.

Parents and adults in these focus-group sessions were

price-sensitive when considering how food, both conventional and organic, is grown and where it is produced. When a purchasing decision involved children's health and nutritional needs, price became less important than the children's welfare. Some consumers expressed an interest in buying organic carrots, and only one participant had purchased them. Of those expressing an interest, some voiced concerns about paying more for organic produce when they perceived no differentiable benefit.

Increasing the amount of beta carotene a child eats involved a considerable amount of discussion. Parents were interested in talking about ways to get the nutritional benefits of carrots (beta carotene) into their children. This focus may prompt researchers to investigate consumer perceptions of food fortified with this valuable nutrient. Future research should concentrate on developing products which include carrots to boost their nutritional value and on making it easier for parents to incorporate fresh carrots into nutritious meals.

Literature cited

- Goulart, F.S. 1996. O say, can you see: 12 ways to improve your vision. *Total Health* 18(2):20–21.
- Johnson, M. 2001. Veggie might. *Restaurants Inst.* 111(21):69.
- Kudwa, B. 2001. Michigan Carrot Committee report. Mich. Carrot Comm., DeWitt, Mich.
- Michaud, D.S., D. Feskanich, E.B. Rimm, G.A. Colditz, F.E. Speizer, W.C. Willett, and E. Giovannucci. 2000. Intake of specific carotenoids and risk of lung cancer in 2 prospective U.S. cohorts. *J. Clin. Nutr.* 72:990–997.
- Nutrition Action Health Letter. 2001. Broccoli rules. *Nutr. Action Health Let.* 28(6):11.
- Slattery, M.L., J. Benson, K. Curtin, K.N. Ma, D. Schaffer, and J.D. Potter. 2000. Carotenoids and color cancer. *J. Clin. Nutr.* 71:575–582.
- U.S. Department of Agriculture. 2002. Vegetables annual summaries 1995–2001. USDA, Natl. Agr. Stat. Serv. 18 Dec. 2002. <<http://jan.mannlib.cornell.edu/reports/nassr/fruit/pvg-bban/vgan0102.txt>>.
- Work and Family Life. 2001. Tried and true ways to protect your eyesight. *Work and Family Life* 15(7/8):7.
- Waldrop, J. 1992. All-American markets. *Amer. Demogr.* 14(1):24–30.