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Preventive Health Maintenance Information Brought to You by Your Local Fruit and Nut Producers

by Hoy F. Carman

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When we were children, our mothers told us that “eating an apple a day keeps the doctor away,” that “carrots contribute to good eyesight,” and we saw “Popeye” gain amazing strength from consuming cans of spinach. This was reinforced by please “eat your vegetables; they are good for you,” but we also remember that food and vitamins that were good for us often did not taste very good! Regardless, these appeals were effective. Spinach growers credited Popeye with a 33% increase in U.S. spinach consumption—and saving the spinach industry in the 1930s (King Features, 2006).

Fast forward to the 21st century. Now many consumers have moved past accepting generalities and want to know the dietary and health contributions of specific food products. There is a significant and growing market segment that is concerned with consuming a diet that will reduce the incidence of important sources of mortality, including obesity, cancer, heart disease, and diabetes. These same health issues are a public policy priority, and government provides general diet recommendations to improve public health. Many commodity groups, looking for a “New Popeye” to spur their product demand, believe in the “special beneficial attributes” of their products, but are faced with U.S. Food and Drug Administration (FDA) requirements that product and health claims be factually correct. Several have moved to fund diet and health research designed to discover and document relevant special product attributes. This article describes the diet and health research efforts of the Almond Board of California, the California Avocado Commission, the California Strawberry Commission, and the California Walnut Commission.

Developing Health-Oriented Research and Promotion Programs

Producer-funded research by California’s marketing orders and commissions has traditionally focused on production problems and, to a much lesser extent, marketing issues. At the same time, generic promotion programs were based on messages about the origin, taste, and appearance of the fruit, vegetable, and nut products. Public relations activities included news releases about product availability, new recipes, articles on choosing, storing and preparing the products, and other newsworthy events. References to health attributes of commodities were based on U.S. Government diet recommendations such as the “Food Pyramid” or references to vitamin or nutrient content. The California Walnut Commission (CWC) was one of the first mandated marketing programs to fund health and nutrition research in 1992, when it decided to counter diet recommendations urging consumers to reduce or constrain consumption of nuts because of their high oil content. The Almond Board of California (ABC), the California Avocado Commission (CAC), and the California Strawberry Commission (CSC) initiated funding for health and nutrition research in 1995, 1997, and 2003, respectively. A review of budgets for the five-year period 2000/01 to 2004/05 indicates that these four organizations spent a total of over \$8.1 million on health and nutrition research.

Health and Nutrition Research Expenditures and Topics

Annual health and nutrition research expenditures for the four commodity groups recently totaled over \$2.77 mil-

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lion, ranging from 2.5 to 7.0% of total annual budgets (Table 1). Note that health and nutrition research has tended to be an addition to traditional production and marketing research rather than a substitute. The same four groups spent about \$3.8 million on production research during the 2004/05 crop year.

Health and nutrition research topics pursued by the four commodity groups have similarities as well as differences (Table 1). Each commodity group has or is seeking evidence on the value of consuming their product on reducing the risk of heart disease. Each of the four commodity groups has evidence that product components may lower the risk of certain cancers and each of the commodities contains antioxidants that are known to slow the aging process and protect against heart disease and various forms of cancer. Almonds, avocados, and walnuts can be a component of a diet to control weight gain, and each can be part of a diet for managing and controlling diabetes. Following is a short summary of research interests for each commodity.

Walnuts

Initial studies funded by the CWC concentrated on the relationships between walnut consumption and the risk of coronary heart disease and walnut consumption and cholesterol levels. Focusing on relationships between walnut consumption and heart health, the CWC funded a combination of epidemiological and clinical studies conducted by leading universities in the United States, France, New Zealand, Spain, Norway, and Japan and published in medical, nutrition, and scientific journals. These studies indicate that walnuts reduce LDL cholesterol and heart disease risk, the fatty acids in

Table 1. Health and nutrition research expenditures and areas of interest mentioned by four California commodity groups.

Expenditures, 2004/05	Commodity			
	Almonds	Avocados	Strawberries	Walnuts
Amount	\$1,200,000	\$444,754	\$605,000	\$525,260
Percent of Total Budget	5.0	2.5	7.0	6.8
Research Area				
Cardiovascular Disease	X	X	X	X
Weight & Obesity	X	X		X
Cancer Prevention	X	X	X	X
Diabetes	X	X		X
Antioxidants	X	X	X	X
Aging	X	X	X	X
Prostate Health				X
Bone Health				X

walnuts improve the function of arteries, walnuts reduce cell adhesion molecules and enhance the circulatory system, and that omega-3 fatty acids in walnuts reduce inflammation in arteries. More recent studies indicate that melatonin in walnuts protects against cancer and heart disease, omega-3s reduce blood pressure, arterial inflammation, the stickiness of platelets and have antidepressant-like effects, walnuts can help in weight management, that consumption of walnuts are protective for people with type 2 diabetes, and that the form of vitamin E found in walnuts might halt the growth of prostate and lung cancer cells. Walnuts have high concentrations of antioxidants, which help the body ward off cancer, heart disease, and diabetes, as well as arthritis, osteoporosis, and Alzheimer's disease. The Scientific Research Update for Health Professionals, posted on the CWC website, includes results for 23 professional studies published between 1992 and 2005.

The CWC used their research results to secure an FDA qualified health claim for walnuts on July 15, 2003 that was separate from the

health claim for other nuts. The final wording for the claim, issued in March 2004, states: "Supportive but not conclusive research shows that eating 1.5 ounces per day of walnuts as part of a diet low in saturated fat and cholesterol may reduce the risk of heart disease. See nutrition information for fat content."

Almonds

The ABC initiated nutrition research in 1995 with studies on cardiovascular disease, decreased cancer risk, glucose metabolism, and analysis of the nutrient content of almonds. The number of research projects expanded to 12 in 1997-1998, and gained an international flavor with ABC-funded studies at the University of Toronto Medical School and at Beijing Medical University. The most important outcome of the nutrition research program for almond industry promotion was securing the FDA qualified health claim for almonds on July 15, 2003 that states: "Scientific evidence suggests but does not prove that eating 1.5 ounces per day of almonds as part of a diet low in saturated fat and cholesterol may reduce the risk of heart

disease.” Shortly after approval of the FDA health claim, an article published in the *Journal of the American Medical Association* on a study known as the Portfolio Eating Plan, found that eating a diet high in heart-healthy foods, including almonds, is as effective in managing cholesterol as taking a starting dose of lovastatin, a cholesterol-lowering statin drug (Jenkins et al., 2003).

The ABC has ongoing research relationships with more than 20 scientific organizations and universities around the world. Cardiovascular research has the largest research budget (24%), followed by research on the composition of almonds (20%), research on antioxidants (19%), cancer research (14%), and research on weight (3%) (www.almondsarein.com). Research projects on topics in the above areas include food allergies, Vitamin E, the chemical composition of almond skins, colon cancer, cholesterol levels and reduction, the effect of almonds on glycemic control and insulin response, and the effects of almond consumption on appetite, energy and weight. The ABC website lists references for 46 publications reporting nutritional characteristics and research results on potential health benefits of consuming almonds.

Avocados

In 1997, the CAC made a strategic decision to proactively communicate the health and nutritional benefits of avocados through their public relations and outreach programs and to fund nutritional research. Research focused initially on a detailed analysis of the composition and nutrient content of avocados, including fatty acids, vitamins, and minerals. Recent emphasis has shifted to quantifying and qualifying various phytochemicals (i.e. phyosterols, carotenoids, glu-

tathione), as well as their health benefits and effects on disease processes. The CAC communicates the results of ongoing research to health and nutrition professionals in publications and on their website. For example, three of the seven short articles in the Summer/Fall 2006 issue of *California Avocado Healthy Times* are based on recent research publications (See CAC website: www.avocado.org/healthy_living/healthcare_professionals.php).

Strawberries

The California Strawberry Commission's health and nutrition research and promotion programs are a change in strategy stemming from changing industry structure. Prior to 2003, the CSC jointly promoted California strawberries with major retailers. This strategy began to conflict with large shippers who were establishing their own brands and also sponsoring joint promotions with retailers. In a major strategic change in 2003, the CSC established a health and nutrition research program and shifted its marketing emphasis to consumer-oriented promotion based on the health benefits of consuming fresh strawberries. The CSC introduced a new promotion campaign, the “Red Edge” campaign, that targets health and nutrition professionals, the consumer, and trade media through trade events, and media materials that communicate findings from CSC-sponsored research on the health benefits of consuming fresh strawberries. In their recent request for proposals, the CSC states: “The primary goal of the California Strawberry Commission nutrition research program is to develop the scientific basis for a qualified health claim in chronic disease prevention. Improved understanding of the bioactive components of

strawberries, bioavailability, and mechanism of action are considerations. Priority areas are cardiovascular health, cancer prevention, cognitive function, and obesity.” The CSC accepts proposals for up to three years of research funding. The CSC website has references and links to nine research papers related to their research program.

Health and Nutrition Promotion

The promotion strategy used for health and nutrition varies by commodity. Public relations programs have proven to be very effective for dissemination of health and nutrition research results and are used by each of the four commodity groups. Based on laboratory testing of advertising themes, the California Walnut Commission (CWC) concluded that the message on the health benefits of walnuts is best communicated through a third party such as a magazine, newspaper, doctor, nutritionist, or other credible source. The advertising emphasis has been on quality, taste, and uses for walnuts in meal preparation, with public relations used for the health and nutrition message. The CAC also focuses on the use of public relations to disseminate the health and nutritional message for avocados rather than using paid advertising and promotion. The CAC's public relations program, emphasizing health and nutritional benefits associated with avocado consumption, has garnered the attention of news organizations and has been widely disseminated with a modest expenditure of funds. In addition, most consumers place much more credibility on a news story about health and nutrition benefits of consuming a product than they do on advertising with the same message.

The Almond Board of California (ABC) began disseminating results from their nutrition studies through their public relations program during 1997-1998. The 1998 Almond Almanac noted that expenditures of \$761,000 on public relations gained exposure that would have cost over \$1.72 million using traditional advertising and promotion. During 1998-1999, public relations expenditures increased to \$1 million, but the advertising value equivalency of exposures related to health benefits of consuming almonds increased to \$7 million (Almond Almanac, 1999). The health message was extended to ABC advertising in Japan during 1998-1999 and to Europe in 2000-2001.

With FDA approval of a qualified health claim for almonds on July 15, 2003 and a “partnering” agreement with the American Heart Association (AHA) that permits use of the AHA logo in almond advertising, the ABC focused on a health message in most of its advertising and promotion. The copy for one 2004 magazine advertisement, for example, reads “California Almonds; Admired by Great Chefs & Prominent Cardiologists Alike” (Almond Almanac, 2004). Note that 2003-2004 advertising and public relations expenditures based on the health and nutrition message accounted for about two-thirds of the ABC budget (\$16 million).

Success Encourages Imitation

Marketing program innovations improve the competitive position of commodity groups. Health and nutrition research for almonds, avocados, strawberries, and walnuts, funded by the respective marketing

programs, has reported results that document the value of consuming each product. These results are of interest to health conscience consumers and are widely circulated through unpaid newspaper and magazine articles, diet recommendations by health professionals, and recommendations by health organizations such as the American Heart Association and the American Diabetes Association. The value of media space devoted to health and nutrition aspects of these four products is a large multiple of the public relations budgets. In addition, news stories for these commodities are more believable than advertising to many consumers.

There is anecdotal evidence on the value of health and nutrition research, but empirical studies of the impact of research results on product demand are not available. For example, the CWC firmly believes that McDonald’s May 2005 decision to add a fruit and walnut salad to its menu in its 13,700 U.S. restaurants was due to the availability of research on the health and nutritional benefits of walnuts. The positive impact of commodity group advertising and promotion on demand has been documented for many products, but the effects of a health and nutrition message versus alternatives have not (Kaiser, Alston, Crespi, & Sexton, 2005). Never-the-less, the perceived success of health and nutrition research programs for increasing product demand is encouraging other commodity groups to undertake similar health and nutrition research.

For More Information

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