

Taste Profiles that Correlate with Soy Consumption*

Brian Wansink
University of Illinois
Urbana-Champaign, Illinois
350 Wohlers Hall
(217) 244-0208
Wansink@uiuc.edu

JaeHak Cheong
University of Illinois
Urbana-Champaign, Illinois

May 2003

Key Words: Protein-deficiency, soy consumption, taste profiles

* Brian Wansink is Professor of Nutritional Science, of Business Administration, and of Agricultural and Consumer Economics and of at the University of Illinois at Urbana-Champaign -- 350 Wohlers Hall, University of Illinois, Champaign, IL 61820, 217-244-0208, wansink@uiuc.edu. JaeHak Cheong is a graduate student at the University of Illinois. This study was made possible by support from the Illinois Council for Agricultural Research and from the Functional Foods for Health program at the University of Illinois for their support of this project.

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Abstract

Objective: The objective of this study is to determine what taste-related profiles and behaviors are most closely related to people who claim to consume soy primarily because of its taste. Understanding this will help us better understand how to encourage consumption in similar segments of people.

Design: A mail survey was used to examine what characterizes someone who regularly eats soy for taste-related reasons. Three groups of consumers were analyzed, people who ate soy primarily for taste-related reasons, those who ate it primarily for health-related reasons, and those who did not eat it.

Subjects: A randomly selected sample of 606 North Americans

Main Outcome Measures: Soy-related consumption behavior and knowledge

Results: Compared to the other two groups, ANOVAs indicated that people who ate soy primarily for the taste were found to be more likely to appreciate fine food ($p < .01$), dine out more frequently ($p < .01$), live with a great cook ($p < .01$), rate themselves as more adventurous ($p < .01$), and be more of an opinion leader ($p < .01$).

Applications and Conclusions: Instead of focusing efforts on encouraging people to eat soy for health reasons, a more productive method may be to target the types of opinion-leaders who are more likely to prefer it for taste-related reasons. These taste-predisposed segments are likely to believe they live with good cooks are more likely to exhibit behaviors associated with food appreciation, such as dining out and wine consumption.

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Introduction

For consumers in many developed nations, a key issue is not whether they consume enough calories, but whether they consume the appropriate mix of calories. Shortages of meat-related protein can cause nutritional deficiencies even though total calorie consumption is at an appropriate level (Harper 1999). While soy has been suggested as a low-cost, highly available protein source (Barnes 1998), many are hesitant or resistant to consume it (Shork 2000).

Although perceptions that a food is nutritious can influence changes in behavior, such changes can be short-lived if immediate results are not seen or if the food becomes tiring or inconvenient (Logue 1991). In contrast, when new dietary patterns are changed because of taste-related reasons, they have longer-term consequences (Nestle 1998 et al). While some part of the population will adopt new foods into their regular diet simply because they are a healthy alternative, a much larger percentage will do so only if the taste of the product is equal or more preferable to what is currently being eaten (Coletta 1999).

In trying to encourage people in a developed country to adopt a healthy protein alternative such as soy, it is useful to profile the type of people from that country who have already adopted the product. Doing so will provide insights in to how individuals with a similar profile can be targeted and encouraged to consume the product (Wansink and Park 2000). Consider two segments of people who frequently consume soy: One

segment consumes it primarily because of its health benefits, while a second segment consumes it primarily because of its taste. If we can understand why some people like the taste of soy, it might be possible to determine what could be done to encourage more people to consume soy.

The objective of this study is to determine what taste-related profiles and behaviors are most closely related to people who claim to consume soy primarily because of its taste. Understanding this will help us better understand how to encourage consumption in similar segments of people.

Method

To determine what factors are associated with individuals who frequently consume soy, qualitative and quantitative phases were conducted. A qualitative study was first conducted with a non-representative sample of 33 people who had clear taste preferences for soy and who had been recruited through fliers placed in a health food store, a regular supermarket, a health food restaurant, and a college cafeteria. Two eight person focus groups were conducted, and in-depth laddering interviews were conducted with the remaining 17 participants.

The results of this qualitative phase of the project indicated that two major reasons people evolved from infrequent to frequent users of soy was because of either health-related reasons (lactose intolerant, heart disease concerns, blood pressure) or because they liked the taste and texture of soy. Since our interest was primarily in those who ate soy because of the taste, most of the qualitative work was focused on determining similarities among the “tasters.” In addition to spending more time

preparing food and enjoying fine dining, this segment claimed themselves to be more adventurous and more likely to be considered an opinion-leader among their peers.

To examine these notions, a survey was mailed to a random North American sample (obtained through a nth household selection process from United States and Canadian phone records) of 1,302 adults, who were given a check for \$6.00 in exchange for completing the study. Of the 1302 surveys mailed, 606 people responded in a timely enough manner to be included in the study (63% female, average age--43 years old). These individuals were asked a series of questions related to how frequently they ate soy products as well as other food-related habits and preferences that had been identified in the qualitative portion of the study (the specific questions are noted in Table 1). The survey instrument had been previously been approved by the Human Subjects Committee of the Institutional Review Board at the University of Illinois at Urbana-Champaign. Parts of the survey had been pilot tested with a group of 132 individuals in person or over the phone to provide a confirmatory test of its reliability and validity.

After screening for whether the person ate meat, each person was asked the number of times he or she was involved in specific target behaviors in an average week, and they were asked questions requiring them to respond as to whether they disagreed or agreed with a series of questions asked on 9-point scales (1=disagree; 9=agree).

Results

In analyzing the data, consumers were grouped by whether they had indicated that they primarily ate soy for health reasons (n=141), taste reasons (n=55), or did not eat soy (n=410). This was determined by using both checked boxes (health, taste, neither), and

by using 9-point Likert scales regarding why they ate soy (1=strongly disagree; 9=strongly agree). Of those 196 people who were frequent consumers of soy (2 or more times a week), 141 could be unambiguously categorized as eating soy primarily for health reasons (71.9%) and 55 as eating soy primarily for taste reasons (18.1%). While some people ate soy for both taste reasons and health reasons, the more important or dominate of the two reasons was used to group these individuals. The taste-related segment consumed soy an average of 2.4 times each week, compared to the health-related segment who consumed it more frequently (3.3).

As Table 1 indicates, the taste profile of people who consumed soy for taste-related purposes was consistently different across many of the measured variables. To a large extent, this confirmed the findings of the qualitative portion of the study. This “taste-related” segment of consumers were more likely to believe they lived with a “great cook,” than the health-related segment or the non-soy eating segment (7.2 vs. 6.1 and 2.3; $F_{2,603} = 19.1$; $p < .01$). In addition, compared to these other segments, they rated themselves as less traditional (3.1 vs. 4.2 and 5.3; $F_{2,603} = 9.8$; $p < .01$), more appreciative of fine food (7.8 vs. 6.3 and 3.8; $F_{2,603} = 47.2$; $p < .01$), more adventurous (5.8 vs. 4.6 and 4.1; $F_{2,603} = 21.9$; $p < .01$), and more likely to be an opinion leader (6.7 vs. 5.8 and 3.4; $F_{2,603} = 18.3$; $p < .01$).

Insert Table 1 Here

In addition to these personality variables, this segment of soy “tasters” was more likely to eat evening meals away from home than were the health-related segment and the

non-soy eating segment (2.0 vs. 1.2 and 0.9; $F_{2,603} = 9.1$; $p < .01$), and they were more likely to enjoy wine with their meal (1.2 vs. 0.7 and 0.3; $F_{2,603} = 7.8$; $p < .01$).

Discussion

We often underestimate the power and importance that the meal preparer or gatekeeper can unknowingly play in establishing and modifying family preferences toward unfamiliar foods (Nestle et al 1998). The findings reported here underscore that a taste-related preference for soy can be a learned preference. That is, given the right circumstances—a great cook—the taste of soy can be one that people learn and grow to like.

While most efforts to change nutrition-related behaviors are focused on mass efforts to a general population (Nestle et al 1998), this study suggests two important considerations. First, there are some profiles of individuals or segments who are more predisposed to changing their consumption behavior in a desired direction than others. To focus nutritional education efforts on a general population will be much less effective than if these efforts are instead focused on a more targeted group. Second, in the case of soy, targeting a taste-oriented segment of consumers who prefer soy can seed potential opinion-leaders who may eventually filter down the influence of these dietary habits on other consumers.

Instead of focusing efforts on encouraging people to eat soy for health reasons, a more productive method may be to target the types of people who are more likely to prefer it for taste-related reasons. Past research suggests that people who eat foods for taste-related reasons are more likely to continue with these dietary changes than one who

simply does so for health reasons (Wansink 2002). Part of the importance that this “taste-related” segment claims to live with “great cooks” is that any exposure they have to soy is likely to be favorable. Repeated exposure is likely to develop preferences in a way that highly varied experiences will not.

How are these taste-predisposed segments located? As Table 1 indicates, it appears that these people are likely to believe they live with good cooks are more likely to exhibit behaviors associated with food appreciation, such as dining out and wine consumption. While such variables may not have practical analogues with economically disadvantaged segments of the population, they do suggest that people who eat soy for taste-related reasons exhibit evidence of being more appreciative of quality dining experiences compared to their peer group.

Applications

- Instead of focusing efforts on encouraging people to eat soy for health reasons, a more productive method may be to target the types of opinion-leaders who may unknowingly may be predisposed to prefer it for taste-related reasons.

- While people who eat soy for taste-related reasons do not eat soy as frequently as those who do so for health-related reasons, the qualitative prestudies indicated they may be – in the long run – the more loyal and consistent consumers. In effect, instead of consuming soy as a means to an end they consume it as an end in itself.

- These taste-predisposed segments often claim to live with good cooks, and they exhibit behaviors associated with food appreciation, such as dining out and wine consumption. In dealing with such a person, a tailored, taste-related argument toward

consuming soy is likely to be more effective than a more traditional health-related argument that is generically made.

References

- Barnes, S (1998), "Evolution of The Health Benefits of Soy Isoflavones," *Proceedings of The Society for Experimental Biology and Medicine*, 217(3), 386-392.
- Coletta, F. A. (1999), "Road Map For Functional Foods: Central Challenge and Major Priorities," *Nutrition Today*, 34 (4), 166-169.
- Harper, AE (1999), "Nutritional Essentiality: Evolution of The Concept," *Nutrition Today*, 34 (6), 216-222.
- Logue, A. W. (1991). *The Psychology of Eating and Drinking: An Introduction* (2nd ed.). New York: Freeman.
- Nestle, M., R. Wing, L. Birch, L.DiSogra, Adam Drewnowski, Suzette Middleton, Madeleine Sigman-Grant, Jeffery Sobal, Mary Winston, Christina Economos, (1998), "Behavioral and Social Influences on Food Choice," *Nutritional Reviews*, 56:1 (May), 50-74.
- Roberfroid, MB (1999), "Concepts in Functional Foods: A European Perspective," *Nutrition Today*, 34 (4), 162-165.
- Shork, D (2000), "A Matter of Taste: How SoyaWorld Captured 60% of The Dairy Alternative Market," *Marketing (Maclean Hunter)*, 105 (20), 14.
- Wansink, B. (2002), "Changing Eating Habits on the Home Front: Lost Lessons from World War II Research," *Journal of Public Policy and Marketing*, 21:1 (Spring), 90-99.
- Wansink, B and Park S (2000), "Accounting for Taste: Prototypes that Predict Preference," *Journal of Database Marketing*, 7:4, 308-320.

Table 2
Taste-related Profiles Associated with Soy Consumers

	Non-soy Consuming Segment (n=410)	Health- related Segment (n=141)	Taste-related Segment (n=55)	F-Value (d.f.=2,603)
Beliefs About Soy				
I live with (or am) an above average cook	3.7	5.8	6.7	12.2*
I live with (or am) a great cook	2.3	6.1	7.2	19.1*
I am traditional	5.3	4.2	3.1	9.8*
I appreciate fine food	3.8	6.3	7.8	47.2*
In general, I am an adventurous person	4.1	4.6	5.8	21.9*
I believe that I eat healthier than most	4.1	8.3	5.9	33.7*
I am an opinion-leader among my peers	3.4	5.8	6.7	18.3*
Number of evening meals eaten away from home during the average week	0.9	1.2	2.0	9.1*
Number of evening meals which contain a meat during the average week	6.7	4.8	6.1	8.7*
Number of evening meals with which you drink wine during the average week	0.3	0.7	1.2	7.8*
Number of evening meals you eat a soy-related food during the average week	0.2	3.3	2.4	18.1*

* p<0.01