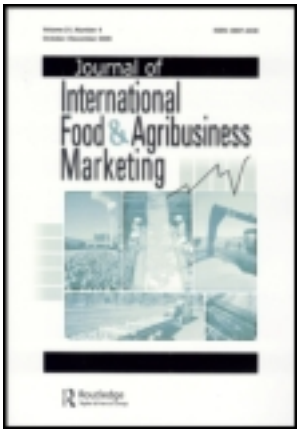

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The Effect of Packaging on the Perception of Minimally Processed Products

Maria I. S. Dantas [a], Valéria P. R. Minim [a], Rosires Deliza [b] & Rolf Puschmann [c]

[a] Universidade Federal de Viçosa, Departamento de Tecnologia de Alimentos

[b] EMBRAPA-Rio de Janeiro

[c] Universidade Federal de Viçosa, Departamento de Biologia Vegetal

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The Effect of Packaging on the Perception of Minimally Processed Products

Maria I. S. Dantas
Valéria P. R. Minim
Rosires Deliza
Rolf Puschmann

ABSTRACT. Packaging plays a fundamental role on consumers' intention to purchase as it may be the first contact between the consumer and the product. The present study used the "Focus Group" methodology to obtain information on consumers' attitudes, opinions, thoughts and concepts about minimally processed products. The results showed that the participants noticed the packaging color and transparency most. Green color was the most appreciated one, while heavily decorated packaging with excessive information on the front panel was least appreciated. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <http://www.HaworthPress.com>*

KEYWORDS. Focus group, minimally processed vegetable, consumer perception, packaging

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Maria I. S. Dantas and Valéria P. R. Minim are affiliated with Universidade Federal de Viçosa–Departamento de Tecnologia de Alimentos. Rosires Deliza is affiliated with EMBRAPA–Rio de Janeiro. Rolf Puschmann is affiliated with Universidade Federal de Viçosa–Departamento de Biologia Vegetal.

Address correspondence to: Valéria P. R. Minim, Universidade Federal de Viçosa–Departamento de Tecnologia de Alimentos, Campus Universitário, 36.571-000, Viçosa, MG, Brasil (E-mail: vprm@ufv.br).

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INTRODUCTION

The need to consume fresh fruit and vegetables for a healthy diet has been emphasized recently and the demand for more convenient fresh foods that are less processed but ready to eat has increased. The food industry has responded to this demand by developing conservation techniques characterized by minimal processing of the product. The objective of the industry is to make fresh products available with an increased shelf life and, at the same time, ensure that the nutritional and sensory qualities are maintained (Vanetti, 2000).

The sensory appearance of the food product and the visual appearance of its packaging greatly influence the product's acceptance, as they can serve as quality cues for consumers (Deliza et al., 2003; Oude Ophuis and van Trijp, 1995; Tuorila and Pangborn, 1988). The packaging attributes can predispose the consumer to buy the product, while the sensory attributes confirm the choice, and can determine purchase repetition (Murray and Delahunty, 2000). Previous literature on packaging and labeling of food demonstrate that these factors are important at point of purchase (Acebrón & Dopico, 2000; Anonymous, 1989; Nancarrow et al., 1998; McCullough & Best, 1980). Many studies dealing with different label aspects have been carried out (King & Cook, 1990; Liebling, 1985; Schutz et al., 1986). However, nutritional information and health benefit are regarded as important package/label elements which influence consumer product perception (Fullmer et al., 1991; Guinard & Marty, 1997; Light et al., 1992; Lundgren, 1979; 1981; Svederberg, 2002; Zarkin & Anderson, 1992). In addition, other studies have been conducted to determine the characteristics of consumers who read food labels and the type of information they seek (Crawford and Worsley, 1986; Mueller, 1991).

The package and/or label of a product may be considered as a source of expectations for consumers. Expectations have been defined from a number of different perspectives, and according to a marketing point of view, a common definition is that expectation is beliefs about a product's attributes or performance at some time in the future (Olson and Dover, 1979; Oliver, 1980). These definitions view uncertainty as a fundamental aspect of expectations. The sources of expectations are memories of actual experiences, perceptions of current stimuli, inferences drawn from related experiences and information from others (Deliza et al., 2003). Focusing on perceptions of current stimuli, the packaging can be considered as a source of expectations for consumers, and it has only a few seconds to make an impact on consumer. In that

time, a pack/label must catch the consumer's eye, communicate its message and convince the shopper that it is the optimum proposition on the shelf (Rowan, 2000). Thus, the label and the packaging play an important role on consumer product perception and acceptance. Early work on beer by Allison and Uhl (1964) showed that products that were indistinguishable in blind test were found to be significantly different in acceptance when re-tested by consumers with brand labels attached.

Considering the exposed above, optimizing the acceptance of a product requires not only the identification of the sensory properties consumers consider important, but also the packaging/labeling attributes they do. These attributes can be achieved by qualitative research from which information on consumers' attitudes, opinions, perception, thoughts, habits and practices can be obtained.

The qualitative data are collected by observation, or by individual or group interviews (Stewart & Shamdasani, 1990; Svederberg, 2002), and even the Internet can be used in the referred qualitative interviews (Holge-Hazelton, 2002). Qualitative research has to achieve reliability and validity as the two primary criteria. Cooper (2001) presented and discussed several tactics for improving those two criteria.

Focus Group is one of the most used qualitative research methods (Calder, 1977; Casey & Krueger, 1994). It is based on group dynamic concepts through which the discussion is stimulated by the interchange of commentaries (Galvez and Resureccion, 1992). Although it is a qualitative technique that does not allow definitive conclusions or precise estimate of the results, it enables various opinions and behaviors to be detected and identified (Baranowski et al., 1993). However, the results from Focus Group research should be regarded as preliminary. Compared with the individual interview, the Focus Group technique enables researchers to collect more data in a shorter time at a lower cost (Brug et al., 1995).

Focus Group can be used as a valuable tool when quality needs to be defined in a product at a stage in which consumer tests are not desirable. McEwan (1994) used Focus Group to investigate consumers' attitude and awareness of olive oil compared with other cooking oils. Considerable amount of information was obtained, which indicated a greater valorization of olive oil by American consumers. Focus Group sessions are also very useful in research programs during the exploratory phase, when there is little information on the study topic (Deliza, 1996). Auld et al. (1994) used Focus Group to obtain preliminary data to elaborate effective messages for consumers on the use of pesticides in agriculture and food safety. Deliza et al. (1999) used Focus Group to identify the

relevant characteristics of fruit juice packaging for the consumer. Focus Group sessions were carried out by Costa (1999) as a preliminary step to identify the parameters considered important by consumers on the vegetable oil packaging perception for later on include them in the quantitative sunflower oil study.

Focus Group sessions were used in the present study to investigate the impact of packaging of minimally processed spring greens on consumers' attitude, opinion, thoughts and concepts.

MATERIAL AND METHODS

Consumers

Four Focus Group sessions were conducted and each group consisted of seven or eight consumers, totaling 31 participants. The influence of income and level of education on the intention to purchase minimally processed products was investigated by forming a group consisting mainly of consumers with less formal education (primary education) and family income of one to five minimum Brazilian wages. By forming homogeneous groups of consumers, there was no reluctance among them to publicly express different opinions. These characteristics was clearly stated by Calder (1977) considering the tool as a phenomenological approach.

The recruitment questionnaire involved more than 50 consumers between 20 and 69 years of age randomly distributed in the municipality of Viçosa in Brazil. The only other requirement to selection of the 31 participants was that they were the principal purchase decision makers in the home, and to have expressed their willingness to participate in the study. Thus, all individuals came regularly to supermarkets and consumed salads and vegetables daily. They were volunteers for the study, and received no monetary incentive for their participation. The same moderator carried out all the sessions. After each session, participants answered a questionnaire on demographic and attitudinal information. The sessions were in a room with space for 15 people to seat comfortably. The participants sat around a rectangular table to enable interaction, visual contact and harmony in the discussion. Each session lasted 90 minutes on average.

During the introduction, the moderator explained the proposal of the Focus Group, the role of the moderator and the general objective of the study. Each participant introduced himself to the group to create a

friendly atmosphere. The participants were assured that there was no right or wrong answer for the questions and were encouraged to express their opinions, even if they were not in line with those of other members of the group.

Focus Groups Conducted

The discussion began asking consumers questions on behavior while shopping and their attitudes about food product packaging. Two issues were central to this study: (1) what packaging attributes consumers consider when choosing minimally processed vegetables; and (2) what kind of information should be presented to consumers to please them, and contribute to a higher intention to purchase. After introducing and discussing questions 1, 2, and 3 (Table 1) in the group, four commercial packages of minimally processed products available in the Brazilian market were presented separately. Each product presentation was followed by a series of questions that had been previously prepared (questions 4 to 10–Table 1).

The commercial packages were unknown to participants. The diversification in packaging color, printing, and mainly information were the criteria used to select commercial samples in this study, aiming at providing elements to a rich consumer discussion about the subject. Three hundred grams of fined chopped spring greens were put inside each packaging and sealed to mimic a real minimally processed spring green. Table 2 describes the four products (packaging), showing their diversities in terms of information (hygiene, way of preparing, conservation, organic, production method, etc.) related to physical characteristics. Such characteristics can only serve as quality cues when they are communicated in some form to consumer.

TABLE 1. Scheme for the “Focus Group” Session

1.	Do you use food label as a source of information for the product you buy?
2.	What do you notice on the food label?
3.	What most attracts your attention?
4.	What do you think of this package? (presented one by one)
5.	What do you consider important in these packages?
6.	Would you like to see other information on the label/package?
7.	What do you understand by the expression “fresh cut”?
8	Would you pay more for this product?
9.	Would you buy it if the information organic product was on the label?
10.	What do you expect the product to be like in this package?

The Focus Group sessions were written down and recorded by an assistant for subsequent analysis.

TABLE 2. Description of the Products Used in This Study

Features of the Packages				
Product	**Color of the printing**	**Information**	**Brand**	**Product Visibility**
1	Pink	• Quick and easy to prepare, ready to eat, easy salad, no preservatives or additives, 100% natural, keep refrigerated. • Few information on hygiene and quality.	Brand A	Low
2	Blue	• Quick and easy to prepare, ready to eat, easy salad, no preservatives or additives, 100% natural, keep refrigerated. • No information on hygiene and quality.	Brand A	Low
3	Green	• Vegetable washed three times, no preservatives, ready to eat, keep refrigerated. • Information on hygiene and quality on the back of the package. • The *fresh cut* expression was present.	Brand B	High
4	Yellow	• Vegetable washed three times, no preservatives, ready to eat, keep refrigerated. • Information on hygiene and quality on the back of the package. • The *fresh cut* and *organic* expressions were present.	Brand B	High

Data Analysis

The content from the four Focus Groups was analyzed according to Krueger (1988). More than 50 pages were generated from the interviews. This transcription was carefully read, making notes of key ideas and quotes that captured trends in the responses. Next, a compilation of the responses related to each label was prepared, following the questions of the interviews. It was considered the words used by consumers, as well as the tone, context, nonverbal responses, and specificity of responses. A report that stressed main points and included selected comments was written based on their discussion. No statistical analysis was performed on the data due to the qualitative nature of focus group. Percentages are shown only as an alternative method of data presentation.

RESULTS AND DISCUSSION

Consumer Profile

The demographic data of participants are shown in Table 3. The predominant age group of the interviewed consumers was 30 to 49 years (75%) and it was mostly female. Fifty-two percent were university graduates or postgraduates, and only 10% reported a family income higher than 20 minimum Brazilian wages.

Responses of "Focus Group" Sessions

The main packaging characteristics observed by participants while shopping were reported as being price, "best before," brand and nutritional information. Participants were nearly unanimous in identifying price as what they observed most when they are doing shopping. This

TABLE 3. Demographic Characteristics of Participants

Characteristic	%
Age (years)	
20-29	6
30-39	39
40-49	36
50-59	6
60-69	13
Sex	
Male	35
Female	65
Family income (minimum wage)	
1-5	23
> 5-10	35
> 10-20	32
> 20	10
Education level	
Primary	19
Secondary	19
University incomplete	10
Graduate	42
Post-graduate	10

result was also presented in other studies (Abadio, 2003; Deliza et al., 1999; McEwan, 1994; Monroe, 1973; Pecher and Tregear, 2000). Despite price was not shown on the products, this result can be expected considering the economical situation of the Brazilian consumers, together with the novelty abut the product (minimally processed vegetables). It was an unfamiliar product and it should have a fair price to be declared to be bought by consumers. The following quotes are illustrative: "*I would only buy it if I consider the price good value for money*," "*This kind of product is a novelty for me, so I wouldn't pay much money to try a new product*," "*It is very convenient and practical but I would only spend a bit more than I normally do to buy it*."

A summary of the responses of the sessions regarding the products used in this study is presented in Table 4.

The color and transparency were most noticed by the participants when they analyzed the minimally processed product packages. Green was the most appreciated color, as it was associated with natural and healthy. Color is a key attribute which might affect not only consumer liking and/or intention to purchase, but also the sensory properties, as reported by Deliza et al. (1999).

Packages that allowed greater visibility of the product pleased the participants more, while packages with a lot of printing and information on the front panel, which covered the product, were less appreciated. It was unanimous among participants in all four groups.

The lack of information about production method and composition of nutrients were also mentioned by consumers. Participants declared that such kind of information is important, mainly for an unfamiliar product. It has been emphasized by them that when a label presents information that could improve the perceived product quality, bringing a benefit to consumer, it is worth to be declared. They commented: "*I look for the nutrient composition when I read food labels/packaging*," "*it is nice to know a bit about how the product was prepared. It brings me confidence on the food producer*." Similar results were presented by Deliza et al. (2003) in their study carried out on pineapple juice obtained by high pressure technology, and also by Ford et al. (1998), showing the positive reaction to HACCP with American consumers. Providing information on production method and composition of nutrient contributed positively on consumer product perception.

Information on hygiene, product quality, preparation method (ready to eat, quick to prepare) and conservation were also considered very important, and essential for the perceived quality. This result can be supported by others presented in the literature (McEwan, 1994; Hodgson

TABLE 4. Summary of Responses of the Sessions

	Packaging 1	***Packaging 2***	***Packaging 3***	***Packaging 4***
Price	I would only buy this product if I haven't got any other option.	I would buy if the price was very low–something like a special promotion.	I would buy it if it wasn't very expensive.	I would buy it if it wasn't very expensive. I wouldn't pay more for being organic.
Packaging color	It is not attractive, mainly for vegetable products.	This is more attractive than the previous one.	This one is very attractive. The green color suggests something natural, appropriate for vegetables.	It is not good because it seems that the product is yellow, and old.
Transparency of the packaging	The packaging is full of drawings which make the viewing of the product difficult.	The packaging is full of drawings which make the viewing of the product difficult.	It was possible to see the product more easily, as there was less writing on the front of the packaging.	It is nice to be able to see the product properly.
Information	The size of the font is very small, which makes it difficult to read the information. Besides, the packaging lacks information such as composition of nutrients, "best before," and production method. It should have more emphasis on the information about hygiene and quality as it is very important for the decision making.	The high amount of information on the front of the label jeopardizes the reading. There is no information on the composition of nutrients, "best before," production method, hygiene, and quality.	This product has all the needed information. The information about the production method gives trustworthiness to the product.	The information "organic product" can confuse consumers who do not know the meaning of that word.
Health	It is a healthy product because it is natural and there are no preservatives.	The product seems to be healthy but I do not know whether it is safe.	The product is healthy because it is natural, it does not have preservatives, and it is safe in terms of hygiene.	The product is healthy because it is organic. It is safe in terms of production method.

and Bruhn, 1993; Oude Ophuis and van Trijp, 1995). Some examples of consumer responses included: "*It is important to me to know how to keep the product at home, after buying it*," "*This is a new product for me, so all the explanations about it have to be presented on the packaging*."

Participants were asked what the expression *fresh cut*, printed on some packages, meant to them. All of them in the low income and education group, which represented nearly 30% of the interviewees, said they did not understand the meaning. Generally, it has been understood as something fresh. Just a small number of participants interpreted the expression as a healthy product, revealing that only for the referred small number of people, the term *fresh cut* was considered as a benefit to the consumer. This result indicates that consumers want food producers to state clearly on a product label/packaging what the product contains to help them in making a purchase decision based on quality. After explaining the meaning of the expression, the majority of participants said they would pay more for this product as long as the difference in price was not very high compared to the product "in natura."

As one of the packages presented in the focus group sessions contained the information *organic product*, participants were asked whether they would buy it or not. Three out of four consumer groups answered "yes" and only one group of participants answered "no." It is worth to inform that the "no" group belonged to the low income and educational level consumer group. Similarly, it has to be stated that some participants thought that *organic product* had to do with fertilizers, pesticides or chemical additives, i.e., they didn't know the meaning of the expression, and quoted: "*I suggest that the expression organic product is replaced by another that expresses better what the producer is doing*."

That was a quite interesting result, which has to be explored and take into account by food producers. One can see from this study that there was no advantage in declaring on the label a product characteristic which was not understandable by consumers. In a recent work carried out by Abadio et al. (2003), it has been demonstrated that the explanation about the meaning of the used technology in the fruit juice processing (high pressure) was useful in increasing the product intention to purchase, declared by Brazilian consumers. Similarly, one can hypothesize that an explanation about the meaning of *organic product* would be valuable for the product, contributing to a higher quality perception. Although many issues consumers consider important these days when evaluating products, they have to understand and perceive the benefits of them.

The expectation created by the packaging was analyzed by asking participants to describe what the product from these packagings would be like. The majority of them declared that they expected a natural, attractive, and fresh product, however, a reduced number of participants said that the fact that the product was chopped gave the impression that it was hiding something. As it has been reported before, this study used an unfamiliar product for participants (minimally processed vegetables), and this may explain why some consumers considered that a chopped product–ready to prepare–was masking (or hiding) some undesirable characteristic. It has been declared that "*I am not familiar with buying chopped vegetables, I like to chop them myself because doing so I can see exactly what is inside*," "*I would need to get used to it, and it takes time*."

CONCLUSION

Knowing the consumers and understanding their needs and behavior is the key for the success of a new product on the market. In this study, the consumers showed that the price, packages' color, product visibility, type and amount of information on the front panel were important aspects that influenced their choices and product perception. Thus, based on the results of these Focus Group discussions, it was possible to identify relevant packaging attributes and their relations with physical product parameters. Thus, understanding consumer product perception through the identification of relevant quality indicators and attributes is vital for anyone who wants to produce and sell some food.

As part of a broad study, this research generated useful data to continue investigating the impact of minimally processed spring greens packages' components on consumers' intention to purchase.

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