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## Attributes Of Sorghum Products: "Nasi Bakar and Nasi Bento" Which Affect Consumers among High School

Endang Noerhartati<sup>1\*</sup>, Diana Puspitasari<sup>2</sup>, Endang Retno Wedowati<sup>3</sup>

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**Abstract:** Understanding consumer product attributes can provide a competitive assessment, exceptionally high school students as young consumers. This study uses a descriptive qualitative approach to obtain broad and in-depth information related to the research objectives. Collecting data using observation, interview, and documentation techniques. Sources of data in this study were 105 high school students on sorghum products: "Nasi Bakar and Nasi Bento" The results showed that 1) the parameters of taste, color, appearance, packaging, and nutritional content were important attributes; 2) consumers value the hierarchical importance of various food attributes; 3) attributes of sorghum products: "Nasi Bakar and Nasi Bento" that affect high school students as young consumers; 4) attributes of a product play an important role as a medium to convey product value to consumers.

**Keywords:** Sorghum products; Food attributes; High school students; Consumer preference; Consumer product attributes

### INTRODUCTION

The importance of exploring the attributes of food and beverage products so that consumers better understand these products and will be able to provide the best reviews so that they can consume them sustainably. This product attribute is also intended to show consumers the product's superiority, the difference between one product and another, as part of a promotion, as a basis for testing consumers in product selection (Christofi et al., 2021; Dong, Sharma, Mehta, & Torrico 2021 )

Consumers as objects in entrepreneurial success, as well as activities to promote and market products that will affect purchasing decisions, so producers, in this case, entrepreneurs, must first understand what attributes can trigger these purchasing decisions. Product attributes can also be used as essential attributes for determining price and product quality, can also be extended to food safety and health benefits, and environmental and social attributes of consumers. By knowing the attributes, consumers can appreciate, understand, and identify preferences for these products, benefits for health, and enriches interactions between consumers and food products (Gratz et al., 2021; Zhang & Jakku, 2021).

Rice as a staple food, is very important to maintain its availability, and various new creativity and innovations are needed to meet various consumers and support their sufficiency. The attributes of each food product need to be researched, especially new products as support in promoting the product's advantages and benefits to consumers and as an integral part in increasing the marketing of sorghum products.

Sorghum is an entrepreneurial product that can continue to be developed as an alternative food, as one of the raw materials is sorghum rice and flour, bran, and sorghum stalks. As an entrepreneurship product based on sorghum rice, it is "Nasi Bakar and Nasi Bento Sorghum".

The potential consumers of these products are high school students, who are also aspiring young entrepreneurs (Chavan et al., 2009; Endang Noerhartati et al., 2019)

## METHOD

This study uses a descriptive qualitative approach to obtain broad and in-depth information related to the research objectives. Collecting data using observation, interview, and documentation techniques. Questionnaires were given to 105 students of SMA GIKI 2 Surabaya, students assessed the product attributes "Nasi Bakar dan Nasi Bento Sorghum", and organoleptic tests were carried out with parameters of taste, color, aroma, and appearance, with a score of 1: dislike; score 2: somewhat like; score 3: neutral; score 4: like; score 5: very like, then the data analysis was carried out using descriptive statistical analysis (Satimanon & Weatherspoon, 2010).

## RESULTS

Based on the results of the research, the attributes that are important and trusted by consumers of the product include nutritional content, consumer value of food attributes, taste, color, flavor, appearance, and packaging. The results of testing the product attribute "Nasi Bakar and Nasi Bento Sorghum" are presented in Figure 1.

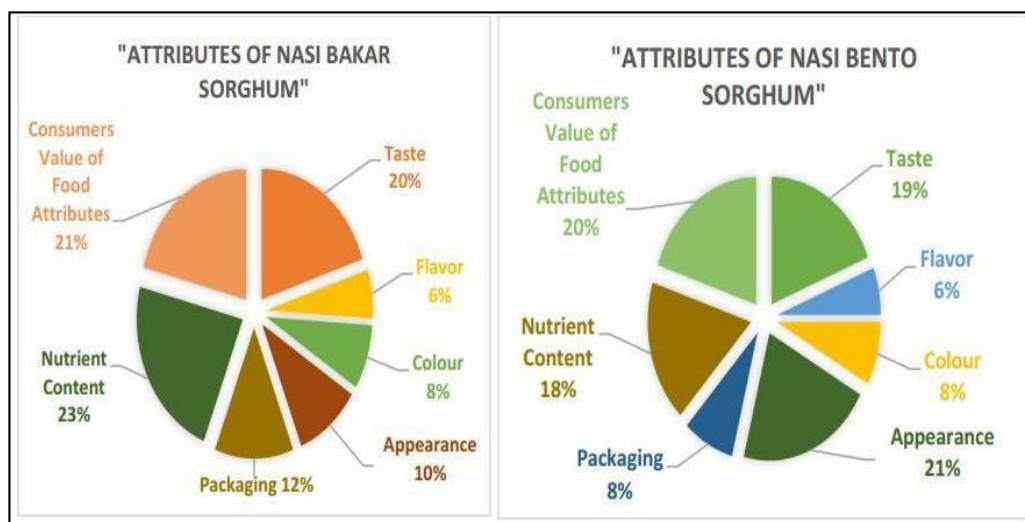


Figure 1. Attributes of "Nasi Bakar and Nasi Bento" Sorghum

In Figure 1, the results of the assessment of the "Nasi Bakar" attribute of sorghum produce the highest percentage on the nutritional content parameter (23%), consumers value of food attributes (21%), taste (20%), packaging (12 %), appearance (10%), color (8%), and flavor (6%). While the results of the attribute assessment of "Nasi Bento" sorghum yield the highest percentage on appearance parameters (21%), consumers value of food attributes (20%), taste (19%), nutritional content (18%), packaging ( 8%), color (8%), and flavor (6%) (Dudinskaya et al., 2021; Ganatsios, Nigam, Plessas, & Terpou, 2021).

**Nutritional content;** sorghum has a calorific value (332 calories), based on this, its nutritional content can be equated with rice (360 calories), wheat (365 calories), and corn (361 calories); carbohydrate content of sorghum (73 g), rice (78.9 g), wheat (77 g), and corn (72.4 g); protein content of sorghum (11 g), rice (6.8 g), wheat (8.9 g), and corn (8.7 g); fat content of sorghum (3.3 g), rice (g), wheat (g), and corn (g); Ca content of sorghum (mg), rice (0.7 mg), wheat (1.3 mg), and corn (4.5 mg); Fe content in sorghum (4.4 mg), rice (0.8 mg), wheat (1.2 mg), and corn (4.6 mg); P content of sorghum



(287 mg), rice (140 mg), wheat (106 mg), and corn (380 mg); and levels of Vit B1 sorghum (0.38 mg), rice (0.12 mg), no wheat, and corn (0.27 mg). Apart from the nutritional content, sorghum is very beneficial for health with the presence of antioxidants, gluten-free, high fiber, low glycemic index, and also contains tannins, so that on this basis it makes sorghum a healthy alternative food for consumers (Dabija et al., 2021; Noerhartati, E., Hernanda, P Y., Mujiyanto, M., Simamora, D., Widiartin, T., Maslihah, M., Karyanto, 2020; E Noerhartati et al., 2020)

*Consumer ratings of food attributes*; food attributes, especially sorghum products "Nasi Bakar and Nasi Bento" are very important to know, considering that these products are new products and must continue to be promoted so that consumers know the advantages, advantages, and benefits of these products, as well as a means of promotion, can be used as a tool to take advantage of these products. the decision to buy the product and also from the producer's point of view can be a means of increasing product sales (Tandon et al., 2021).

*Taste*; the attribute of the taste of a product is a specific choice of consumers for various products, so food producers must adapt, understand, and understand consumer tastes. Taste assessment is based on the presence of chemical responses by the tongue (taste sense), so what has to be done is to explore the terminology rather than the organoleptic attributes that are close to being applied in the production of processed sorghum (Schubert et al., 2021).

*Color*; is the attribute of color that characterizes food and becomes the main attraction for consumers. Color is the first impression of a food product which is a characteristic that determines the food product by consumers. " Nasi Bakar and Nasi Bento" sorghum have the distinctive color of sorghum, namely red for red sorghum, and white for white sorghum, this is a special attraction for consumers (Campbell et al., 2021).

*Flavor*; the attributes of the flavor of sorghum products are very distinctive, and this requires understanding from consumers that sorghum is different from other products. The quality of food products, one of which is determined by the parameters of the aroma of the food, where is influenced by the substances contained in the sorghum product (Wang et al., 2021).

*Appearance*; the attribute of Appearance, for the product "rice bento", is an important attribute, this is very relevant to the desires of consumers from various groups, ranging from children, teenagers, or the elderly. The physical condition of a food product greatly determines the appearance of the product. The variety of serving of sorghum bento rice makes this product an alternative choice for consumers (McClements et al., 2021).

*Packaging*; packaging attributes to maintain better shelf life, cleanliness, ease of consumption, and transportation. Consumers appreciate the attributes of food choices from packaging, choosing the right packaging will attract consumers, it is necessary to promote their products, provide more education about healthy food, and show the advantages of sorghum products compared to other products. (Metcalf, Wiener, & Saliba 2021; Saunders, Guenther, Saunders, Dalziel, & Rutherford, 2021)

The results of the organoleptic tests "Nasi Bakar and Nasi Bento Sorghum" are presented in Figure 2.

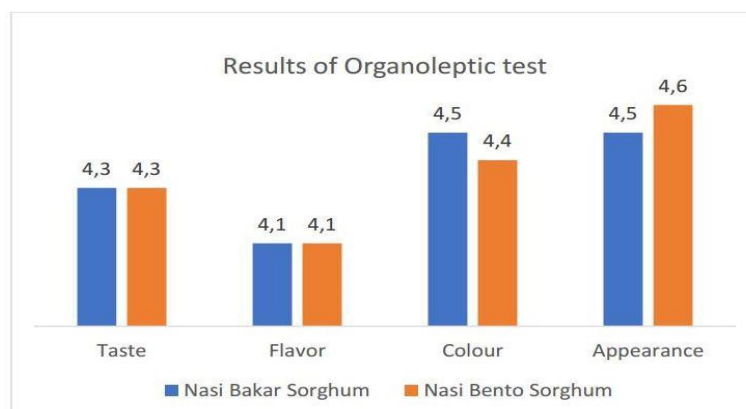


Figure 2. Organoleptic test Results of "Nasi Bakar and Nasi Bento" Sorghum

In Figure 2, organoleptic testing is a test of liking for the product, and the results obtained from the organoleptic test of the sorghum roasted rice product, the taste parameter has a score of 4,3 (liked), the color score was 4,5 (very liked), the aroma score was 4,1 (liked), the appearance score was 4.5 (liked very much). While the results of the organoleptic test of the sorghum bento rice product, the taste parameter has a score of 4,3 (liked), the color score was 4,1 (liked), the aroma score was 4,3 (liked), the appearance score was 4,6 (very like). This means that the products of grilled rice and sorghum bento rice can be accepted by consumers, as well as organoleptic testing of the appearance parameters of the rice sorghum bento very favored by consumers, is presumably because variations in product presentation are the choice of consumers (Adeyeye, 2016; Agustina & Fadhil, 2021; Wulandari et al., 2017).

## CONCLUSIONS

Parameters of taste, color, appearance, packaging, and nutritional content are important attributes, consumers assess the hierarchy of interests of various food attributes, product attributes of sorghum: "Nasi Bakar and Nasi Bento" that affect high school students as young consumers, and attributes of a product as a medium for conveying the value of the product to consumers, as well as an important element that is used as the basis for making purchasing decisions.

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