

Community Service: Implementation of Avocado Sponge Cake Making for Agricultural Product Diversification

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Abstract. *Diversification of agricultural products is one strategy to increase the added value and competitiveness of local commodities. Avocado (*Persea americana*) is a tropical fruit that is rich in nutrients, such as healthy fats, fiber, vitamins and minerals. However, the use of avocados in Indonesia is still limited to fresh consumption and simple processing. This research aims to develop an innovative product in the form of avocado-based sponge cake as an effort to diversify agricultural products. The method used includes organoleptic testing. The research results show that the use of avocado in making sponge cake can improve the soft texture, distinctive aroma, color and unique taste. Organoleptic tests show a good level of consumer acceptance with an average score of above 50% in the aspects of taste, color and texture. Apart from that, nutritional analysis shows that avocado cake has a higher content of healthy fats and fiber than conventional cake. Implementation of this product has the potential to open up new market opportunities and provide added value for local avocado farmers.*

Keywords: *product diversification, avocado, sponge cake, food innovation, agricultural products*

1. BACKGROUND

Indonesia is a fertile area and suitable for planting avocado plants (*Persea Americana*). Novitasari *et al.* (2022), showed that avocado plants in Indonesia, especially Central Java, have extraordinary potential. Semarang Regency was recorded as the largest avocado producing area in Central Java, with production reaching 462,427 quintals in 2023 (Central Bureau of Statistics, 2024).

Avocado is a fruit that is easily available and is often consumed by the community at an affordable price and has a high nutritional content (Hartati *et al.*, 2022). The main contents in avocados are fatty acids, carotenoids, phenolics, proteins, minerals, and vitamins (Rahman, 2019). Avocado fruit has several health benefits, including helping maintain weight, preventing constipation, helping control blood pressure, maintaining eye health, and maintaining heart health (Hartati *et al.*, 2022). In addition, avocado fruit also has several properties, such as antioxidant, antidiabetic, and hypolipidemic effects (Tabeshpour *et al.*, 2017).

Avocado fruit is a superior agricultural commodity in Pasekan village, Ambarawa sub-district, Semarang district. However, its utilization only focuses on the sale of plant seeds and

fruit ready for consumption. This shows that avocado agricultural products have not been optimally utilized as food ingredients that have the potential to support nutritional fulfillment and improve the community's economy. , it is necessary to diversify agricultural products to maintain local food security and increase farmers' income. Diversification

Agricultural products have a positive impact on local food security and community nutrition (Widowati & Amalia, 2023). In addition, diversification can open the door for farmers to create added value through processing agricultural products, such as processing crops into processed foods, beverages, or other high-value products.

However, there are challenges that need to be overcome in diversifying farm businesses. One of these is farmers' lack of access to the knowledge, skills and resources needed to manage different types of farming enterprises. Dedication, training, technical assistance, and adequate funding are essential in assisting farmers in developing and managing diversified farming enterprises.

Therefore, the purpose of this service is to provide training to the community in making avocado sponge cake as a way to utilize agricultural products. After the implementation of this activity, it is hoped that the community will be motivated to develop processed pluwang avocado fruit into inspiring products as a household scale business.

2. METHODS

This service activity was carried out on Friday, November 8, 2024 in Praguman hamlet, Pasekan village, Ambarawa sub-district, Semarang district, Central Java. The target of this avocado sponge cake making service is the mothers of Praguman hamlet as an effort to empower the local community and motivate them to develop processed avocado fruit. This product not only has high economic value but is also a creative breakthrough to strengthen the local economy and optimize regional potential.

The equipment used for making avocado sponge cake is a spoon, container, steamer, *mixer*, *ice cream cup*, and stove. The ingredients needed are 5 tablespoons of flour, 2 tablespoons of milk powder, $\frac{1}{4}$ teaspoon of salt, $\frac{1}{2}$ teaspoon of *baking powder*, 1 egg white, 4 tablespoons of sugar, $\frac{1}{4}$ tablespoon of vanilla, 1 avocado and $\frac{1}{4}$ SP (*Super Polymer*) as a developer.

Furthermore, the organoleptic test is carried out using the hedonic method or the level of preference for a food product, including color, taste, aroma, and texture. Organoleptic test is a test conducted using the human senses as the main tool for measuring the acceptance of a

product (Suryono et al., 2018). Organoleptic tests require panelists to achieve the goals of developing a product (Suknia & Rahmani, 2020).

The instrument used is the development of organoleptic theory from the elements of color, taste, aroma, and texture as well as the development of hedonic theory (Suryono et al., 2018). A total of 22 panelists sensorially tested avocado sponge cake samples. Then fill out a questionnaire via *google form* to assess their level of preference for color, aroma, taste, and texture. The organoleptic instrument uses a 5-level Likert scale for each questionnaire item. The test scale used with a value of 1 = very dislike, 2: dislike, 3: neutral, 4: like, and 5: very like.

3. RESULTS AND DISCUSSION

How it Works

Making avocado sponge cake takes about 40 minutes. The first step in making the sponge cake is that all tools and ingredients are prepared. Next, one egg white, vanilla, sugar, and SP (*Super Polymer*) are put into the container and stirred with a mixer until well mixed and fluffy. Then flour, milk powder, salt, *baking* powder are added and stirred until smooth. The avocado flesh is taken using a spoon and put into the dough and mixed again until it is completely mixed. The dough is put into the prepared cup. Then steam the dough for 30 minutes over medium heat. Then the avocado sponge cake is ready to be served.

Organoleptic and Hedonic Test

The level of panelist preference for avocado sponge cake products is obtained through organoleptic tests and hedonic tests which include elements of color, taste, aroma, and texture with a 5-level Likert scale.

Color

Color is the first impression that appears and is assessed by panelists (Arziyah et al., 2022). Color is the first organoleptic parameter in presentation because it uses the sense of sight (Lamusu, 2018).

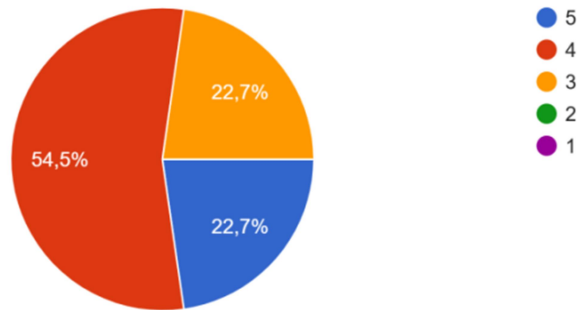


Figure 1. Organoleptic test percentage of avocado sponge cake color

Based on Figure 1, it can be seen that 54.5% like the color of the avocado sponge cake. , 22.7% considered that they really liked the color of the avocado sponge cake and 22.7% chose neutral. The color of the avocado sponge cake is influenced by the quality of the avocado fruit used. Factors such as avocado type, maturity level, and flesh color influence the color of the avocado sponge cake (Susanti et al., 2022).

Aroma

Aroma in the food industry is considered important because it can quickly provide assessment results about whether the product is acceptable or not (Susanti et al., 2014).

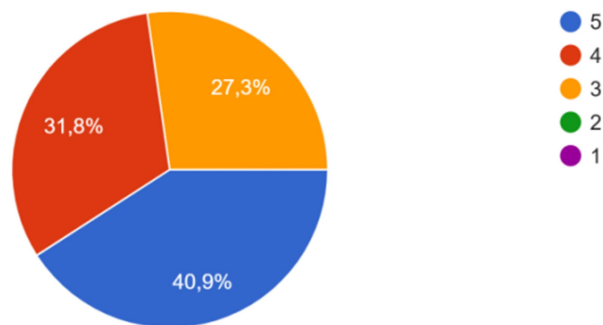


Figure 2. Organoleptic test percentage of avocado sponge cake aroma

Based on Figure 2, 40.9% chose very like, 31.8% chose like, and 27.3% gave a neutral assessment of the aroma of avocado sponge cake. The aroma of avocado sponge cake itself is influenced by the raw materials used, the processing process, and the ratio of ingredients used (Purba et al., 2021).

Taste

In general, food ingredients do not consist of just one flavor, but rather is a combination of various flavors in an integrated manner so as to create a complete taste (Susanti et al., 2022).

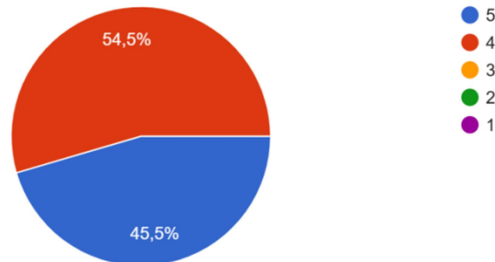


Figure 3. Organoleptic test percentage of avocado sponge cake flavor

Based on Figure 3, as many as 54.5% gave a like rating and 45.5% chose very like the taste of avocado sponge cake. The taste of avocado sponge cake is influenced by several factors, namely the quality of the avocado fruit, the steaming process, additional ingredients, and the ratio of ingredients used (Purba et al., 2021).

Texture

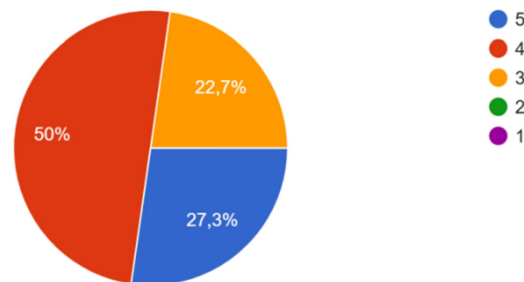


Figure 4. Organoleptic test percentage of avocado sponge cake texture

Based on Figure 4, 50% chose like 27.3% chose very like, and 22.7% chose neutral to the texture of the avocado sponge cake. The texture of the avocado sponge cake is influenced by several factors, namely the maturity of the avocado fruit, the combination of flour use, egg beating, the use of additional ingredients, and the process of steaming the dough (Susanti et al., 2022).

4. CONCLUSION

Based on the results of this service activity, it can be concluded that the community, especially mothers of Praguman hamlet, Pasekan village, have understood diversification of avocado preparations. The community has understood that avocados are nutritious food and can be utilized in various preparations. In addition, the community already has skills in processing avocado sponge cake. Avocado sponge cake products are liked by the community in terms of color, taste, aroma, and texture. This activity provides new knowledge for the community so that they can maximally utilize the avocado natural resources available in Pasekan village.

REFERENCES

- Arziah, D., Yusmita, L., & Wijayanti, R. (2022). Analisis mutu organoleptik sirup kayu manis dengan modifikasi perbandingan konsentrasi gula aren dan gula pasir. *Jurnal Penelitian dan Pengkajian Ilmiah Eksakta*, 1(2), 105–109.
- Badan Pusat Statistik, J. T. (2024). Statistik pertanian hortikultura Provinsi Jawa Tengah 2021-2023. Badan Pusat Statistik Provinsi Jawa Tengah.
- Hartati, S., Yunus, A., Nandariyah, N., Yuniastuti, E., Pujiasmanto, B., Purwanto, E., Samanhuri, S., Sulandjari, S., Ratriyanto, A., & Prastowo, S. (2022). Diversifikasi tanaman pekarangan dengan tanaman alpukat untuk meningkatkan gizi keluarga. *SEMAR (Jurnal Ilmu Pengetahuan, Teknologi, dan Seni Bagi Masyarakat*, 11(2), 161–166.
- Lamusu, D. (2018). Uji organoleptik jalangkote ubi jalar ungu (*Ipomoea batatas* L) sebagai upaya diversifikasi pangan. *Jurnal Pengolahan Pangan*, 3(1), 9–15.
- Novitasari, R., Anggraini, T., & Hervani, D. (2022). Diversifikasi produk olahan pangan dari biji buah alpukat (*Persea americana* MILL). *Jurnal Teknologi Pertanian*, 11(2), 106–117.
- Purba, R., Damanik, M., & Emilia, E. (2021). Pengaruh substitusi tepung terigu dengan tepung biji alpukat (*Persea americana* Mill) terhadap tingkat kesukaan cookies. *Jurnal Sains Boga*, 4(2), 47–56.
- Rahman, S. (2019). Effect of avocados to LDL cholesterol as a preventive risk of atherosclerosis. *Atherosclerosis*, 4, 6.
- Suknia, S. L., & Rahmani, T. P. D. (2020). Proses pembuatan tempe home industry berbahan dasar kedelai (*Glycine max* (L.) Merr) dan kacang merah (*Phaseolus vulgaris* L.) di Candiwesi, Salatiga. *Southeast Asian Journal of Islamic Education*, 3(1), 59–76.
- Suryono, C., Ningrum, L., & Dewi, T. R. (2018). Uji kesukaan dan organoleptik terhadap 5 kemasan dan produk Kepulauan Seribu secara deskriptif. *Jurnal Khatulistiwa Informatika*, 5(2), 95–106.

- Susanti, A., Tamrin, T., Kuncoro, S., & Warji, W. (2022). Pengaruh konsentrasi gula dan daging buah terhadap mutu serbuk instan jus alpukat (*Persea americana* Mill). *Jurnal Agricultural Biosystem Engineering*, 1(4), 426–433.
- Tabeshpour, J., Razavi, B. M., & Hosseinzadeh, H. (2017). Effects of avocado (*Persea americana*) on metabolic syndrome: A comprehensive systematic review. *Phytotherapy Research*, 31(6), 819–837.
- Widowati, S., & Amalia, R. (2023). Diversifikasi pangan lokal untuk ketahanan pangan: Perspektif ekonomi, sosial, dan budaya. Penerbit BRIN.