AIJSED | This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License
Vol. 3 No. 01 (2023)

Andalasian International Journal of Social and Entrepreneurial Development (AIJSED)

ISSN: 2808-6732 (Online)

Available at: http://aijsed.lppm.unand.ac.id/index.php/aijsed

DOI: https://doi.org/10.25077/aijsed.3.01.1-7.2023

Article

Promoting the Use of Local Pasteurized Whole Milk in Contemporary Beverage Businesses in Padang, West Sumatra: Fostering Nutritional Awareness and Economic Growth

Eli Ratni[1]*, Virtuous Setyaka[2]

[1]Department of Animal Production Technology, Universitas Andalas. Padang, Indonesia
[2]Department of International Relations, Universitas Andalas. Padang, Indonesia

Article Information

Received : 2023-01-27
Revised : 2023-02-22
Accepted : 2023-03-11
Published: 2023-04-18

Keywords

Keyword: beverage industry, community engagement, economic growth, endorse, local milk

*Corresponding Author

eratni@ansci.unand.ac.id

Abstract

In regions like Padang and West Sumatra, where nutritional deficiencies and economic challenges persist, promoting local pasteurized whole milk in contemporary beverage businesses holds promise for fostering nutritional awareness and economic growth. This article describes the efficacy of educational initiatives to encourage local milk use among beverage businesses in Padang. Through a series of community engagement activities held in December 2022, ten coffee shops and business owners were educated on the benefits of utilizing locally produced pure milk in their beverage offerings. The study employs a three-stage approach encompassing preparation, implementation, and evaluation. Results indicate that local pasteurized milk enhances beverage quality, supports local farmers, and aligns with consumer preferences for fresher, ethically sourced ingredients. Moreover, promoting pasteurized milk contributes to a more sustainable and environmentally friendly beverage industry. The findings underscore the importance of promoting local milk products in fostering economic development and improving community well-being. Recommendations are provided for further study and program expansion to maximize the positive impact of such initiatives on local economies and public health.

INTRODUCTION

The livestock sector's development is critical in meeting people's animal protein needs. In Indonesia and other developing countries, the problem of protein-energy deficiency is still the dominant issue related to public health, in addition to the problems of iron anemia, iodine deficiency, vitamin A deficiency, and in other hand that obesity in big cities. In addition to plant foods, humans also need animal foods (fish, meat, milk, and eggs) as a source of protein for nutritional intake. Milk is one of the animal products that contain complete essential amino acids, vitamins, and minerals needed by the body, as well as easy absorption of nutrients by the body.

The food and beverage (F&B) business in Padang City has increased since the Covid-19 pandemic. Contemporary beverage outlets are most in demand by consumers, especially outlets that provide space and supporting facilities for discussions and working with laptops and similar gadgets. The increase in beverage outlets differs from the increase in the supply of drinks made from pure milk, especially milk produced by most local dairy farmers in West Sumatra.

Whole milk is often interpreted as fresh milk in the community. Although the physical condition and color are similar, the definitions of whole and fresh milk differ. Milk from the cattle udder is given a cooling treatment (±4^{0}C) to prevent an increase in the number of bacteria in the milk liquid, called fresh milk. It is called processed milk if fresh milk is given further food processing treatment, such as pasteurization or ultra-high temperature (UHT) process. Whole milk contains 100% fresh milk, whether it only receives refrigeration treatment or advanced processing. If pasteurized and UHT milk in the market has other food ingredients added, such as a mixture of fresh milk and milk powder, water, and flavorings, it is not called whole milk.

Generally, milk consumption in Indonesia is much lower than in neighboring developing countries. It is due to various factors, ranging from liking the product's taste to the culture developing in the community (Hartono et al., 2010). Whole milk products are very little accepted by Indonesian consumers, including consumers in West Sumatra province. Meanwhile, the dairy business still needs to be on an industry scale. If consumption levels are low, then farmers cannot increase milk production. Furthermore, efforts to increase the dairy population are not feasible, and the community cannot apply various technologies related to dairy farming in the field.

In promoting the use of local pasteurized whole milk in contemporary beverage businesses in Padang, West Sumatra, it is essential to consider the benefits of pasteurization and quality. Heat pasteurization of cow's milk is necessary for rendering this important nutrient source safe for humans, started by Louis Pasteur in 1864 (Currier & Widness, 2018). Pasteurization, particularly high-temperature short-time (HTST) pasteurization, ensures the safety and quality of milk by reducing harmful bacteria (Tunick et al., 2016). This process is central to commercial fluid milk processing and helps extend milk's shelf life (Barbano, 2017). Additionally, pasteurization aids in preventing the transmission of infectious diseases through milk consumption (Maynou et al., 2019).

Furthermore, pasteurized milk in beverage products contributes to the social aspect by giving people more comprehensive access to healthier and higher-quality beverages. Pasteurized milk, with a process that preserves nutritional quality and flavor, allows consumers to enjoy products that taste good and meet higher health standards. It is essential in communities with limited access to high-quality products due to geographical or economic constraints.

Thus, this community service activity had a comprehensive impact, ranging from economic to social aspects. The effect of this activity is not only about improving the quality of contemporary drinks at outlets or coffee shops but also about improving the quality of health and welfare of the community as a whole.

METHODS

Activity Location and Time

Educational activities to use local pure milk produced by West Sumatra dairy farmers for food and beverage business partners were carried out in December 2022. Community engagement activities were held for ten coffee shops and business owners, named as partners then, centered in the outlet of Harmonis Space business location, Padang City, West Sumatra, Indonesia.

Activity Stages

The activity consisted of three stages: preparation, implementation, and evaluation. In the preparation stage, the activity team conducted an initial survey of the partners' locations to learn the type of business, the variety of drinks and contemporary products served, and the partner's experience using various milk for beverage mixing ingredients. In the implementation stage, the team provided education in the form of direct lectures to business managers and outlet visitors. The evaluation stage is where the team of activity and partners discuss and reflect on the effectiveness and efficiency of implementing this community service program.

Implementation Method

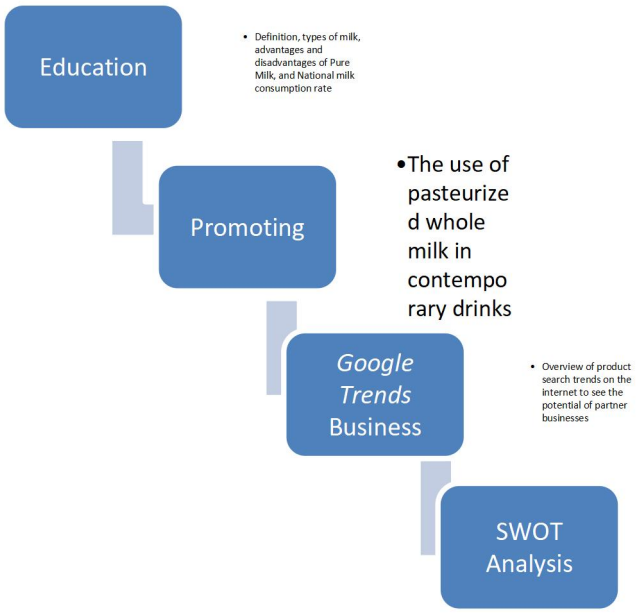


Figure 1. Stages of program implementation

RESULTS AND DISCUSSIONS

The Importance of Using Local Pasteurized Pure Milk in the Beverage Industry

In recent years, the beverage industry has witnessed a significant transformation, where ingredient quality has become a top priority. This trend has affected how consumers choose beverages and manufacturers design and market their products. Amidst this shift, local pasteurized milk has emerged as an essential component in the beverage industry.

There are several advantages to using local pasteurized whole milk. Firstly, the freshness of the product is a crucial factor. Locally produced and processed milk usually reaches consumers faster than imported milk, ensuring a fresher flavor and higher nutritional quality. This positively impacts the final taste of beverage products, such as coffee lattes or smoothies, where milk quality is a crucial determinant.

In addition, the use of local milk supports the economy of local farming communities. By purchasing milk from local farmers, the beverage industry helps increase farmers' income and promotes sustainable farming practices. This aspect aligns with the increasing consumer awareness of the importance of responsible and ethical consumption.

From an environmental perspective, local milk has a lower carbon footprint than imported milk. Reduced transport distances mean reduced greenhouse gas emissions, which is of growing concern to environmentally conscious consumers. These benefits the planet and helps beverage manufacturers build a greener and more sustainable brand image.

The Role of Pasteurized Pure Milk in Improving the Quality of Contemporary Beverage Products

The pasteurization process is critical in ensuring the quality and safety of milk used in the beverage industry. Discovered by Louis Pasteur in the 19th century, this process involves heating milk at a specific temperature for a considerable amount of time and then cooling it rapidly. The aim is to kill harmful microorganisms without significantly altering the milk's nutritional composition and flavor. The result is a safer product from a health perspective and a longer shelf

life, which manufacturers and retailers need. Additionally, the competitive nature of the beverage industry drives the dairy sector to improve product quality and shelf life to meet consumer demands and compete with other products (Boor, 2001).

Pasteurized milk has improved contemporary beverages' flavor profile and texture (Ratni et al., 2022). In coffee, for example, quality milk adds richness and depth of flavor and helps create the perfect texture for latte art. For tea and smoothies, pasteurized milk's smooth, creamy consistency can enhance the smoothness and balance of the overall taste (Figure 2).



Figure 2. The Education Process and Partners Conducting Taste Tests and Visual Appearance of the Use of Pure Milk in several Featured Products

Overview of Business Potential

Activity partners are also educated and practice directly describing consumers' search for pure milk products, UHT milk, pasteurized milk, and milk coffee with the help of internet technology. Based on Figure 3, it is known that milk coffee products, on average, have the highest number of other products, while pure milk and pasteurized milk are in the lowest line. This condition has been based on the market for the last year (2022), so milk coffee products in high demand have great potential to be combined with pasteurized whole milk for better product quality. One of the features of Indonesian coffee is the volcanic soil type of the coffee plantation, which makes the coffee beans denser and has a distinctive flavor (Rosyid, 2019).

A SWOT analysis of implementing a local milk promotion program in a beverage business can provide a deeper understanding of the internal and external factors influencing the program's success. Below are the SWOT analysis results for the local milk promotion program in a Padang, West Sumatra beverage business (Table 1). As a strength and opportunity, local pasteurized whole milk can serve as a nutritious base for dairy beverages, providing essential nutrients like fat, protein, and lactose (Ramezani et al., 2021). The sensory attributes of milk, such as natural taste, are key drivers of consumer preference for fluid milk products (Schiano et al., 2017). Fortifying pasteurized milk with heme iron can enhance the beverage's nutritional value and sensory acceptability (García et al., 2022).

AIJSED | This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

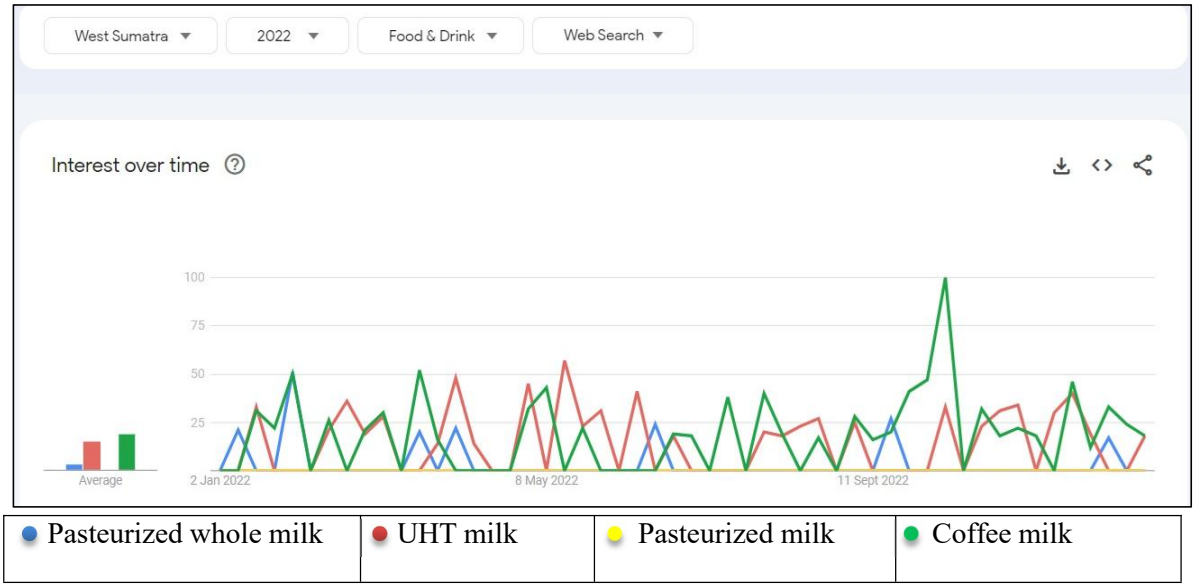


Figure 3. Google Trends for Pure Milk, UHT, Pasteurised, and Coffee Milk Products

Table 1. SWOT analysis for beverage business using pasteurized whole milk

SWOT ANALYSIS	
STRENGTHS	WEAKNESSES
1. Quality of Local Milk 2. Local Support 3. Product Innovation	1. Relatively High Price 2. Limited Supply 3. Low Consumer Awareness
OPPORTUNITIES	THREATS
1. Health and Sustainability Trends 2. Government Support 3. Increased Consumer Awareness	1. Competition with Imported Products 2. Government Policy Changes Related to Milk Imports 3. Economic Uncertainty

Linkage of this Activity to the Values of Community Service

Educational activities on using local pasteurized whole milk in the beverage industry play a role in improving product quality and have a significant social impact, especially in the context of community service. This activity is critical to raising public awareness about supporting local products. Through this activity, consumers can understand the direct benefits of buying local products for their quality of life and the local economy.

Education and demonstration of the benefits of local pasteurized milk help in the development of the local economy in a sustainable way. By increasing the demand for local milk, these activities directly improve the income and welfare of local farmers. It is an essential step in creating a healthy economic cycle, where the beverage industry's growth also contributes to the success of the local agricultural sector.

Furthermore, pasteurized milk in beverage products contributes to the social aspect by giving people more comprehensive access to healthier and higher-quality beverages. Pasteurized milk, with a process that preserves nutritional quality and flavor, allows consumers to enjoy products that taste good and meet higher health standards. It is essential in communities with limited access to high-quality products due to geographical or economic constraints. The results of research by Sulistyaningsih (2014) show that the product attributes that most influence consumers' purchases are taste attributes and flavor variants.

Moreover, the economic aspect of promoting local pasteurized whole milk should be noticed. Investing in pasteurization tools and training for dairy farmers can enhance the productivity of the dairy sector, leading to economic growth in the region (Utomo et al., 2020). Studies have shown a significant positive relationship between investment and economic growth in regions like West Sumatra (Amar et al., 2022). As such, this activity holistically supports the community service mission - from the economic to the social aspects. It is about improving the quality of beverages, the overall quality of life, and the community's well-being.

CONCLUSIONS

The conclusion of this activity in optimizing local economic potential also supports the mission of community service holistically, covering both economic and social aspects. It includes raising community awareness about the importance of supporting local products for a better quality of life and local economy. Partners receive education, which is beneficial for future business development. The report suggests the importance of continuing to encourage innovation and the use of technology in the economic sector, with the integration of sustainable approaches to maintain a balance between economic growth and environmental protection. It also suggests expanding the positive impact of activities by involving more local communities in the decision-making process and implementation of economic programs. Partners should conduct demonstrations of the use of whole milk in various beverage products, with multiple taste and visual product trials.

REFERENCES

Amar, S., Satrianto, A., & Kurniadi, A. (2022). Determination of poverty, unemployment, economic growth, and investment in West Sumatra province. International Journal of Sustainable Development and Planning, 17(4), 1237-1246. https://doi.org/10.18280/ijsdp.170422

Barbano, D. (2017). A 100-year review: the production of fluid (market) milk. Journal of Dairy Science, 100(12), 9894–9902. https://doi.org/10.3168/jds.2017-13561

Boor, K. (2001). ADSA foundation scholar award fluid dairy product quality and safety: looking to the future. Journal of Dairy Science, 84(1), 1-11. https://doi.org/10.3168/jds.s0022-0302(01)74445-1

Currier, R.W. and J.A. Widness. 2018. A Brief History of Milk Hygiene and Its Impact on Infant Mortality from 1875 to 1925 and Implications for Today: A Review. *Journal of Food Protection, 81*(10), 1713–1722. https://doi.org/10.4315/0362-028X.JFP-18-186

García, D., Changanaqui, K., Vásquez, R., Neira, E., Suarez, J., Morán, J., … & Tuesta, T. (2022). Heme iron-fortified flavored milk: quality and sensory analysis. Brazilian Journal of Food Technology, 25. https://doi.org/10.1590/1981-6723.17621

Hartono, B., Hari, D. U., dan Nova, A. 2010. Analisis Faktor-Faktor Yang Mempengaruhi Konsumen dalam Membeli Produk Susu Pasteurisasi Kabupaten Kudus. Buletin Peternakan. Vol. 34(2): 123-130.

Maynou, G., Chester-Jones, H., Bach, A., & Terré, M. (2019). Feeding pasteurized waste milk to pre-weaned dairy calves changes fecal and upper respiratory tract microbiota. Frontiers in Veterinary Science, 6. https://doi.org/10.3389/fvets.2019.00159

Ramezani, M., Ferrentino, G., Morozova, K., & Scampicchio, M. (2021). Multiple light scattering measurements for online monitoring of milk fermentation. Foods, 10(7), 1582. https://doi.org/10.3390/foods10071582

Ratni, E., Lendrawati, V. Setyaka, Arief. (2022). Animo Masyarakat terhadap Konsumsi Susu Murni sebagai Dasar Pemilihan Strategi Produksi Susu Sapi Perah di Kota Padang. Laporan Penelitian. Universitas Andalas: Padang.

Rosyid. 2019. Kopi Terbaik di Indonesia Masuk ke Pasar Dunia. Gatra. https://www.gatra.com/detail/news/387964-Kopi-Terbaik-di-Indonesia-Masuk-ke-Pasar-Dunia

Schiano, A., Harwood, W., & Drake, M. (2017). A 100-year review: sensory analysis of milk. *Journal of Dairy Science*, *100*(12), 9966–9986. https://doi.org/10.3168/jds.2017-13031

Sulistyaningsih, D. 2014. Perilaku Konsumen Terhadap Produk Susu Murni Pasteurisasi MomoMilk. Tesis. IPB University: Bogor.

Tunick, M., Ren, D., Hekken, D., Bonnaillie, L., Paul, M., Kwoczak, R., … & Tomasula, P. (2016). Effect of heat and homogenization on in vitro digestion of milk. Journal of Dairy Science, 99(6), 4124-4139. https://doi.org/10.3168/jds.2015-10474

Utomo, P., Sosiawati, E., & Fauziyah, F. (2020). Diversification of dairy cow milk products: case studies in Sendang village, Tulungagung Regency. Prosiding Seminar, 127. https://doi.org/10.32503/prosidingseminar.v0i0.18

© Eli Ratni,Virtuous Setyaka (2023)