Medicon Agriculture & Environmental Sciences
Volume 9 Issue 1 July 2025
Article Type: Review Article
ISSN: 2972-2691

Harmony of Flavors: Alugbati (*Basella alba*)-Langka (*Artocarpus heterophyllus*) Polvoron Blend

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Received: July 01, 2025; **Published:** July 23, 2025

Abstract

This research explores the development and potential of Algubati-Langka Polvoron, aligning with the UN Sustainable Development Goals (SDGs) of Good Health and Well-Being (SDG 3) and Decent Work and Economic Growth (SDG 8). The study aimed to harness the medicinal properties of Algubati and the economic viability of Langka to enhance community health and prosperity.

The study sought to find out the steps and procedures in the preparation of the Alugbati (*Basella alba*)-Langka (*Artocarpus heterophyllus*). By expanding and exploring Algubati-Langka Polvoron, this research pioneers an innovative food product that integrates latent nutritional benefits with economic opportunities. This endeavor exemplifies a strategic alignment of food innovation with sustainable development goals, promoting enhanced food settings, sustainable economic growth, and community welfare.

Keywords: food innovation; food processing; nutrition; experimental research; cabinet dryer

Introduction

When it comes to culinary exploration, combining different flavors frequently results in delightful discoveries that cut across cultural boundaries (Zhang et al., 2025; Spence, 2020). Of these, the Alugbati-Langka Polvoron is a prime example of the skillful fusion of distinct ingredients. A compelling research gap in the study of novel flavor combinations that not only tempt the palate but may also present economic and health benefits is created by society's growing acceptance of gastronomic diversity. For such research, the Alugbati-Langka Polvoron offers a promising path. This experimental confection combines Algubati (*Basella alba*), well-known for its medicinal properties, with Langka (*Artocarpus heterophyllus*), a favorite for its tropical sweetness. This combination promises a symphony of flavors and may improve people's lives as well as the wellbeing of communities.

According to research, Algubati and Langka have a great deal of potential to improve health (NNCP, 2021;Booth & Altomara, 2024). Well-known for its antioxidant properties, algubati has been demonstrated in a 2011 study that was published in the "Journal of Agricultural and Food Chemistry" to lessen oxidative stress and cell damage. Additionally, a 2012 study published in "BMC Complementary and Alternative Medicine" demonstrated its antimicrobial properties against a variety of bacteria and suggested possible anti-inflammatory effects. These results indicate potential for the treatment of inflammatory conditions, but more research is required. Likewise, a 2016 study published in the "Journal of Food Science and Technology" ("Jackfruit, Artocarpus heterophyllus): A comprehensive review of its nutritional composition, health prospects, and industrial applications") noted that Langka is a rich source of vitamins, minerals, and fiber. This nutrient profile is beneficial for maintaining general health and wellbeing, and there may even be potential benefits for blood sugar control. While more research involving humans is required to fully understand these benefits, the results of a 2011 study published in "BioMed Research International" ("Effect of Artocarpus heterophyllus (jackfruit) flour on blood glucose

levels in diabetic rats") suggest that jackfruit flour may help regulate blood sugar levels in rats with diabetes. These findings may be beneficial for people who have diabetes. In summary, both Algubati and Langka offer a range of potential health benefits based on present studies.

The creation of Algubati-Langka Polvoron is in line with the UN Sustainable Development Goals (SDGs), specifically SDG 3 (Good Health and Well-Being) and SDG 8 (Decent Work and Economic Growth), when considering the larger social significance of the undertaking. This research aims to improve people's health as well as the prosperity of communities by utilizing the medicinal qualities of Algubati and the economic potential of Langka. Thus, this experimental study has two goals: first, to investigate the sensory qualities and possible health advantages of Algubati-Langka Polvoron; and second, to evaluate the product's feasibility as a new offering in the food service sector. In line with the UN Sustainable Development Goals, the researchers consider to improve the food setting, encourage sustainable growth, and promote the welfare of people and communities through this endeavor.

Literature Review

Mixing different kinds of foods in cooking has always been a fascinating and creative way of innovating (Caprioli et al., 2024). The Alugbati-Langka Polvoron is harmonizing the world of flavors with a divergent mix that goes beyond cultural boundaries and offers an exceptional type of culinary experience that brightens the taste buds. This literature review explores the existing studies on each component of this experimental treat, specifically Alugbati (*Basella alba*) and Langka (*Artocarpus heterophyllus*), to gain a better understanding of the possible health benefits and sensory qualities of the Alugbati-Langka Polvoron Blend.

Alugbati (*Basella alba*). The Alugbati, known as Malabar Spinach or Mexican Mint is famously used for its medicinal properties and ability to adapt in cooking (Kumar et al., 2024). Studies has made known that Alugbati is consisting with antioxidants, that aids combat oxidative stress and cell damage (NNCP, 2021; Booth & Altomara, 2024). There is a significant study published in Journal of Agricultural and Food Chemistry" in year 2011 shows that the antioxidants inside of Alugbati casting light on its aptitude to protect cells from oxidative damage. In addition, in 2012 a study published in "BMC complementary and Alternative Medicine" prominence the antimicrobial properties in Alugbati, signifying probable anti-inflamatory effects that need further investigation. The results emphasize the therapeutic potential of Alugbati in dealing inflammatory conditions and backing its inclusion in the Alugbati-Langka Polvoron blend as a significant ingredient.

Langka (*Artocarpus heterophyllus*). Jackfruit, also known as "Langka" is talked generally for its tropical sweetness and nutritional richness. The diversified analysis of its nutritional conformation, industrial applications, and health benefits published in "Journal of Food Science and Technology" in 2016 emphasized Langka's as a nutritional powerhouse, vast with minerals, vitamins, and fiber (Booth & Altomara, 2024). This nutrients is not only packed but it contributes to overall health and welfare but also shows promising supervision in blood sugar levels. While there are more studies including human subjects are needed, comes before findings from 2011 study published in "BioMed Research International" advised that jackfruit flour may have low blood sugar/glucose effects, which could aid individuals with diabetes. These studies highlight the significance of nutritional benefits of Langka and its suitability for inclusion in the Alugbati-Langka Polvoron blend.

Implications for Research

Alugbati-Langka Polvoron, a blend of Alugbati and Langka, represents gastronomic innovation and exploration with potential effects on health and economic growth. This novel delicacy combines the vital qualities and nutritional richness of both Langka and Alugbati, thus it will probably satisfy customers' natural health needs in addition to being a sensory joy. Furthermore, by learning that Alugbati-Langka Polvoron is a product that may be used in the food service business, it is possible to link it with the Sustainable Development Goals of the UN, namely SDG 8 (Decent Work and Economic Growth) and SDG 3 (Good Health and Well-Being). Therefore, further research on the flavor profile, health advantages, and commercial viability of Alugbati-Langka Polvoron is necessary to recognize its potential as a socially and economically significant culinary innovation.

Methods

"Alugbati-Langka Polvoron" is a new confectionery product that combines alugbati and langka. The development process prioritizes high quality, nutrition, and sustainability. Local farmers and cooperatives will be partnered with to source fresh ingredients. Careful recipe development will use science and taste tests to perfect the flavor and texture for Filipino preferences. To maintain nutrients, small-scale manufacturing will use methods like cabinet dryers and dehydrators. The new confectionery nutritional worth will be contrasted with those of the classic varieties. Through surveys, focus groups, and market testing with merchants and dining establishments consumer input will be obtained. Lastly, an evaluation of the product's social and environmental effects will be conducted, and it will be regularly enhanced in light of customer and market developments. This guarantees that consumers of "Alugbati-Langka Polvoron" will receive a tasty, wholesome, and environmentally friendly confectionary product.

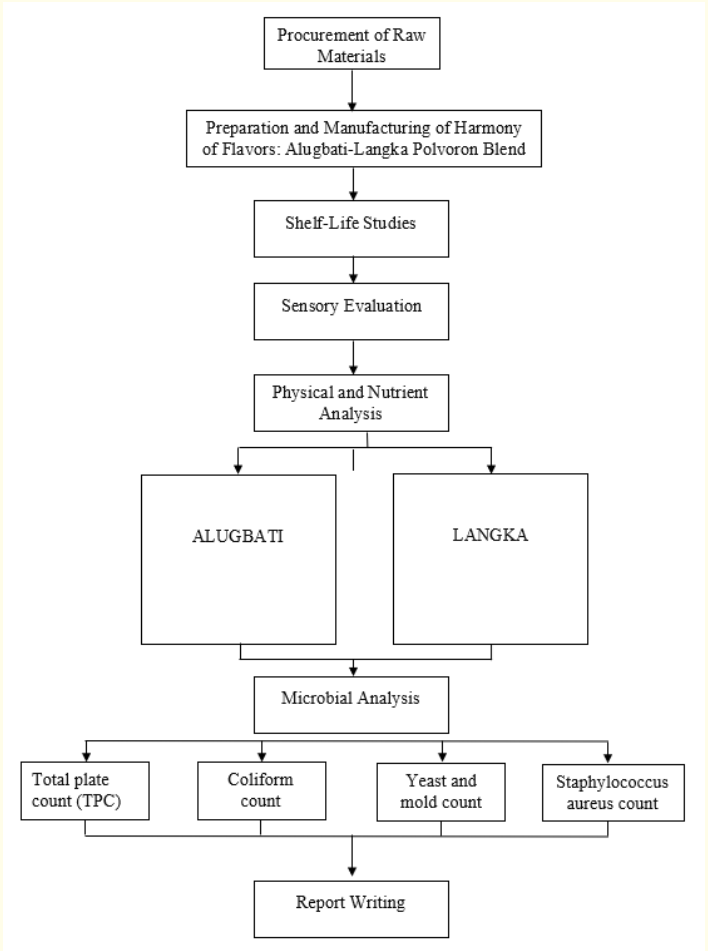

Figure 1: Flowchart for Research Design.

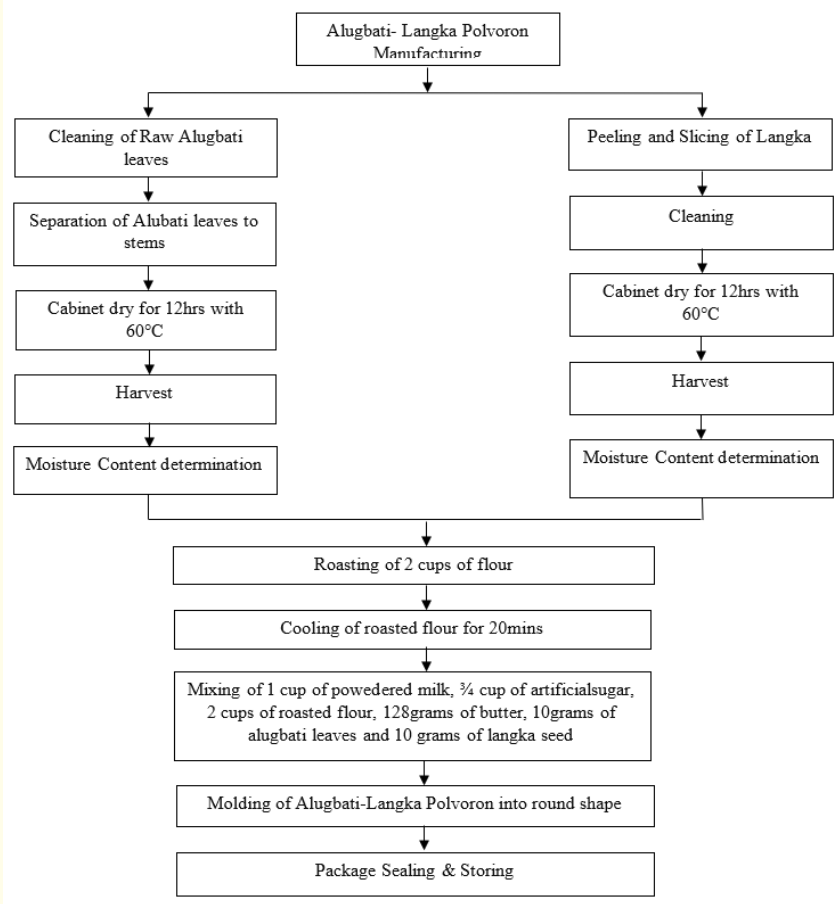

Figure 2: Flowchart for Preparation of "Alugbati-Langka Polvoron".

Results and Discussion

The expanding and exploration of Alugbati-Langka Polvoron brings substantial endeavor associating food innovation with latent nutritional benefits and economic prospects. Moreover, The study is designed to examine all the sensory aspects and probable nutritional advantages of this innovative confection, that aligns with the UN Sustainable Development Goals (SDGs) of both Decent Work and Economic Growth (SDG 8) and Good Health and Well-Being (SDG 3).

Sensory Qualities and Consumer Response

Sensory analysis of Alugbati-Langka Polvoron spotlights its inimitable flavor, merge by the earthy taste of Alugbati with the tropical sweetness of Langka. Consumers who purchase Alugbati-Langka Polvoron feedbacks are gathered through solicited and unsolicited methods like surveys, focus groups, and market testing highlighted its demand as a distinguishing delicacy that tempts the Filipino taste when tasting Alugbati-Langka Polvoron. The stability was reached in recipe development make certain that the assets of traditional Polvoron were kept while bringing the groundbreaking flavors that well-received by the consumers. This optimistic reception advocates a very good market potential for Alugbati-Langka Polvoron in the food service sector.

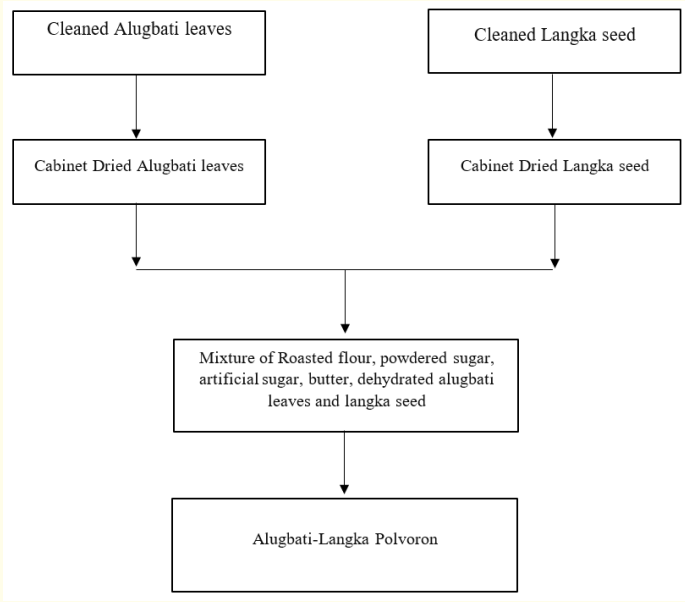

Figure 3: Different stages of "Alugbati-Langka Polvoron".

Health Benefits and Nutritional Analysis

Nutritional analysis shows that the Alugbati-Langka Polvoron gives not only exeptional delicacy but a latent health benefits. The Alugbati is recognized for its antioxidant assets and latent anti-inflammatory effects, to give to the confectionary's health profile. In studies for Alugbati have established its ability to fight oxidative stress, antimicrobial property, and supporting its attachment in health awareness products like Polvoron. Moreover, Langka is showered in vitamins, minerals, and fiber, more distant improves the nutritional worth of a product. likely for Langka to help in blood sugar regulation, while mainly studied in animal models, recommends more health benefits that could appeal to consumers health awareness.

Economic and Social Impact

In alignment with Sustainable Development Goals (SDG 8), the progress of Alugbati-Langka Polvoron has nurtured the partnerships with local farmers and co-ops for obtaining raw materials. The partnership supports maintainable practices, local economic growth, and giving positively to the communities well-being. In the production methods used, includes the use of cabinet dryer to dehydrate the ingredient for preservation, and sustainability in food processing.

Future Directions and Recommendations

Continuous studies into the long-term health impacts of Alugbati and Langka, particularly through human studies, would improve understanding and possibly broaden the appeal of Alugbati-Langka Polvoron among the consumers health awareness. Moreover, growing market testing and consumer education efforts could benefit in initiating a robust market occurrence for this innovative product.

Conclusion

The Alugbati-Langka Polvoron is a successful fusion of sustainability, nutritional richness, and culinary inventiveness. Its creation and release onto the market not only satisfy consumers' sensory needs but also support the aims of global sustainability and potential health advantages. By combining Alugbati and Langka into a traditional Filipino confection, this research and development contributes to the extensive discussion on the practice of cooking diversity and sustainable food practices, highlighting the potential of food exploration to create products that are both socially and commercially impactful.

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