PROCESS OF MAKING COCONUT (*Cocos nucifera*) MEAL COOKIES

TECHNICAL FIELD

The present utility model relates generally to plant-based snack products, and more particularly to the utilization of coconut meal, also known as *sapaw*, as the primary ingredient in the preparation of bite-sized, ready-to-eat snack. This utility model introduces a sustainable and nutritious alternative to conventional snack products by incorporating coconut meal with a mixture of egg whites, white sugar, vanilla extract, cream of tartar, and iodized salt. Coconut meal, a byproduct of Virgin Coconut Oil (VCO), is rich in dietary fiber, healthy fats, and essential micronutrients, making it a valuable component for health-conscious and environmentally aware consumers. The Coconut Meal Cookies offer a wholesome, eco-friendly snack option that showcases the versatility and potential of coconut-derived ingredients, particularly from local agricultural sources.

BACKGROUND OF THE UTILITY MODEL

Coconut meal, also known as *sapal* in the Philippines, is the solid residue left after extracting milk from fresh coconut meat. This byproduct, often discarded or used as animal feed, has gained attention for its potential as a functional ingredient in baked goods due to its high fiber, moderate protein, and residual healthy fat content. When properly dried and ground, coconut meal can be transformed into coconut flour, which is increasingly used in baking as a partial substitute for wheat flour. In various studies and product developments such as the Department of Science and Technology (DOST-FNRI)'s initiative in the Philippines, coconut flour derived from sapal has been successfully incorporated into bread, cookies, cakes, and other baked products. Additionally, the residue must be carefully dried to low moisture levels and, if possible, defatted to prevent spoilage and improve shelf life. Coconut meal's use in baking supports sustainability by reducing waste and utilizing a locally abundant resource, making it a viable ingredient in the development of nutritious and eco-friendly food products.

Meringue cookies are traditionally light, crisp confections made primarily from whipped egg whites and sugar, known for their airy texture and delicate sweetness. To enhance the nutritional value and introduce a unique twist to the classic recipe, coconut meal, also known as *sapal*, the fiber-rich by-product of virgin coconut oil, can be incorporated into the formulation. When properly dried and finely ground, coconut meal adds a slight chewiness, subtle coconut flavor, and a boost of dietary fiber and nutrients

without significantly compromising the meringue's structure. The resulting coconut meringue cookies are not only flavorful and visually appealing, with a slight golden hue and crisp exterior, but also offer a more sustainable, fiber-rich alternative to conventional recipes, making them suitable for health-conscious consumers and supporting zero-waste practices in coconut-based food processing.

This utility model focuses on the development of coconut meal cookies, ready-to-eat baked snacks that incorporate coconut meal with whipped egg whites, white sugar, salt, and vanilla extract. The combination of these ingredients results in a flavor that is subtly sweet with a natural, nutty richness characteristic of fresh coconut with a crispy exterior and airy texture while offering an innovative snack option.

One such disclose by patent number PH22018001548U1 the coconut meal tart filling comprising all-purpose cream, condensed milk, egg yolks, sugar, coconut meal and vanilla extract. Another coconut meal food product disclosed by espacenet number PH22018001577U1 dried coconut meal, flour, eggs, salt, pepper, onion and garlic. One meringue cookie using embryo bud of rice and barley sprout disclosed by espacent number KR102162688B comprises rice and barley germ and incorporates it to the egg whites and sugar (meringue).

The claimed utility model offers the advantage of utilizing coconut meal, a locally abundant and underutilized resource to create a nutritious, flavorful, and sustainable alternative to conventional baked snacks. It benefits from incorporating egg whites rich in protein and B vitamins, containing almost no fat or cholesterol making them suitable for health-conscious consumers. Unlike PH22018001548U1 and PH22018001577U1, this model emphasizes a locally inspired flavor profile suited to Filipino tastes, enhancing the country’s coconut industry.

SUMMARY OF THE UTILITY MODEL

The present utility model relates to a unique plant-based snack product made primarily from coconut meal (sapal), offering a nutritious, flavorful, and sustainable alternative to conventional baked snacks. Coconut (*Cocos nucifera)* meal cookies are formulated to enhance the natural taste and aroma of fresh coconut residue while incorporating complementary ingredients such as natural sweeteners, binding agents, and flavor enhancers to improve texture, palatability, and nutritional value. By utilizing coconut

meal, a high-fiber byproduct of virgin coconut oil extraction, this snack not only promotes sustainability through waste reduction but also provides a wholesome option rich in dietary fiber and essential nutrients. The formulation highlights the versatility of coconut meal in baked applications, resulting in a convenient, ready-to-eat product suitable for health-conscious consumers and environmentally responsible food innovation.

The primary objective of this utility model is to create a convenient, ready to eat coconut-based snack that caters to health-conscious consumers, individuals seeking fiber-rich functional foods, and those exploring sustainable alternatives to traditional baked products. Additionally, this innovation aims to maximize the utilization of coconut meal (sapal), a highly nutritious yet often underutilized by-product of virgin coconut oil, thereby promoting sustainability and zero-waste practices within the country's coconut industry.

The present utility model aims to determine the feasibility of utilizing coconut meal as the primary ingredient in the formulation of coconut meal cookies for human consumption. The study explores the potential of repurposing coconut meal, a by-product of virgin coconut oil, as a nutritious, cost-effective, and sustainable food product rather than discarding it as waste.

This innovation differs from conventional snack bite formulations, which typically rely on refined flour or starch-based binders. By integrating coconut meal as the main ingredient, the utility model introduces a fiber-rich, plant-based alternative that aligns with current trends in health-conscious and eco-friendly food production. The primary objective of this utility model is to assess the practicality and consumer appeal of coconut meal cookies as a functional snack product, offering an innovative way to reduce agricultural by-product waste while contributing to nutritional diversity in the snack food industry.

DETAILED DESCRIPTION OF UTILITY MODEL

The present utility model discloses a process for producing coconut meal cookies, which uses coconut meal as a key ingredient to provide a unique, nutritious, and sustainable alternative to plant-based cookies. This process effectively addresses the technical problem of utilizing food waste, coconut meal, while enhancing the nutritional profile of traditional cookies.

The composition of the present utility model consists of the following ingredients:

Ingredients	Quantity (g)	Weight Composition (%)
coconut meal	80.0g	23.11%
egg whites	120.0g	34.67%
white sugar	140.0g	40.45%
cream of tartar	0.42g	0.12%
vanilla extract	5.0g	1.44%
Salt	0.71g	0.21%
TOTAL	**346.13g**	**100.00%**

The preparation of coconut (Cocos nucifera) meal cookies begins by placing the coconut meal in a rectangular baking pan and oven-drying it for 25 minutes at a temperature of 90–100℃. Meanwhile, a meringue mixture is prepared by whipping together egg whites, cream of tartar, sugar, and salt until stiff peaks form. The dried coconut meal is then gently folded into the meringue mixture, followed by the addition of vanilla extract to enhance the flavor. The resulting mixture is transferred into a piping bag and piped onto a baking sheet lined with foil to prevent sticking. It is then baked at 90–100℃ for 50 minutes to 1 hour, allowing the cookies to achieve the desired texture. Once baked, the coconut meal cookies are cooled for at least 10 to 15 minutes before packing.

The level of likeness of coconut meal cookies in terms of its sensory attributes is “Like Very Much” for aroma, appearance, taste and texture. Under room temperature, coconut meal cookies maintain a shelf life of 15 days.