

Development of Healthy Cookies With Reduced Levels of Sugar, Fat, and Sodium

I. Title of Research: Development of Healthy Cookies With Reduced Levels of Sugar, Fat, and Sodium

II. Research Team Members

Department	Name	Position
Biological Science and Technology	Wen-Ling Shih	Professor

III. Development Idea

The development concept of our healthy cookies revolves around achieving a balance between taste and nutrition. We aim to satisfy modern consumers' cravings for snacks while providing essential nutrients. To achieve this, we have focused on the following key points:

- 1. Natural Ingredients and Minimal Processing: We use whole grains to provide abundant dietary fiber and vitamins, while minimizing the use of artificial additives.
- 2. Nutritional Balance and Variety: Our cookies are formulated to offer a balanced nutritional profile with a diverse range of ingredients.
- 3. Specific Functional Benefits: We incorporate ingredients that promote specific health benefits, such as high fiber content for improved digestion and high protein for muscle growth.
- 4. Diverse Flavors and Textures: We combine various flavors and textures to create a satisfying and enjoyable eating experience.
- 5. Tailored to Specific Needs: Our cookies are designed to meet the nutritional requirements and preferences of different consumer groups, including those seeking soft and easy-to-chew options.

IV. Technological Competition and Industrial Application

Modern consumers' increasing emphasis on

healthy eating has fueled the rapid growth of the healthy cookie market. To stand out in this highly competitive market, companies must not only offer delicious flavors but also possess strong technological capabilities. In terms of ingredient selection and recipe design, we prioritize whole grains to provide abundant dietary fiber and B vitamins. Natural sweeteners such as honey, maple syrup, and dried fruits are used to reduce refined sugar intake. Additionally, the inclusion of natural nuts and seeds offers healthy fats and minerals. To cater to consumer demands, we offer functional cookies with features such as high fiber, high protein, and low glycemic index, while utilizing various production methods to create diverse flavors and textures. By incorporating agricultural by-products into our cookies, we enhance product value, build consumer trust, and differentiate our offerings from competitors.

V. Merchandise Statement of Achievement

Currently, we are employing alcohol and water extraction methods to extract components from five types of natural nuts. The antioxidant capacities of these extracted components will be measured. Subsequently, the extracts with varying antioxidant levels will be incorporated into healthy cookies. Sensory evaluations will then be conducted to determine the optimal ingredient ratios and their impact on the overall taste of the cookies.



Fig 1: Healthy Cookies