EXTRACTION OF OIL FROM WATERMELON SEEDS IN REFERENCE OF RICE AND STEW AND SNACKS (DOUGHNUT)

BY

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BEING THE RESEARCH PROJECT SUBMITTED TO DEPARTMENT OF HOSPITALITY MANAGEMENT TECHNOLOGY, INSTITUTE OF APPLIED SCIENCES, KWARA STATE POLYTECHNIC, ILORIN

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CERTIFICATION

This is to certify that this project has been read and approved as meeting part of the requirement for the award of Higher National Diploma (HND) in Hospitality Management Technology, Kwara State Polytechnic, Ilorin.

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DEDICATION

I dedicate this project to almighty God, the creator of heaven and earth who gives knowledge and wisdom and to my parent “may God have mercy upon you as you brought me upon infancy.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

The watermelon (*Citrullus lanatus*) is a tropical fruit that belongs to the Cucurbitaceae family. Widely consumed across the globe, it is particularly loved for its refreshing qualities and high water content, making it an ideal fruit for hydration, especially in hot climates. Botanically, watermelon is classified as a berry, distinguished by its thick outer rind (exocarp), which protects the fruit's succulent, juicy interior. The interior, made up of the mesocarp and endocarp, typically contains vibrant, sweet flesh, which is most commonly red or pink, although some varieties feature yellow or orange flesh. The inner rind, often overlooked, is pale green or white and contains valuable nutrients that can be utilized in various culinary and juicing applications.

Watermelon's composition is predominantly water, making up about 90% of its weight, and 6% sugar, which adds to its sweet taste. This high water content not only makes it a refreshing snack but also contributes to its role as an excellent hydrating food source. Nutritionally, watermelon is packed with essential components such as carbohydrates, healthy fats, proteins, and important minerals like calcium, iron, magnesium, phosphorus, potassium, and zinc. These nutrients make watermelon a powerhouse of health benefits. The fruit is also an excellent source of vitamins, particularly vitamin A, which it provides through beta-carotene, along with vitamin B-complex and vitamin C. Together, these vitamins support immune function, skin health, and overall bodily function.

Watermelon's health benefits are further magnified by its high concentration of antioxidants, particularly lycopene, which is responsible for its vibrant red color. Lycopene has been linked to a reduction in the risk of chronic diseases, such as heart disease and certain cancers. The presence of these antioxidants also helps combat oxidative stress by neutralizing free radicals in the body, which can cause damage to cells and accelerate the aging process. Beyond its health

benefits, watermelon plays a crucial cultural role in many African regions, where it is an essential source of hydration in areas with water scarcity.

While the flesh of the watermelon is the most commonly consumed part, the seeds also hold significant nutritional and therapeutic value. Watermelon seeds are often roasted and consumed as a snack, providing a good source of protein, healthy fats, and minerals. They are also used in traditional medicine for their therapeutic properties. When emulsified with water, watermelon seeds have been utilized to treat various conditions such as catarrh infections, bowel disorders, urinary issues, and even fever. Additionally, watermelon seeds are known to act as natural worm expellers, highlighting their role in maintaining digestive health.

One of the most promising uses of watermelon seeds lies in the extraction of their oil. Watermelon seed oil has garnered increasing interest in both industrial and health-related sectors due to its beneficial physicochemical properties and fatty acid composition. This oil contains valuable unsaturated fatty acids such as oleic acid, linoleic acid, and linolenic acid, which are not only essential for skin care and personal health but also play a role in cooking and biofuel production. Oleic acid, for instance, is renowned for its heart-healthy benefits, while linoleic acid supports skin health and has anti-inflammatory properties.

The quality of watermelon seed oil is measured by industrial metrics such as iodine value and flash point. The iodine value helps indicate the oil's polymerization potential, which is important in determining its suitability for different uses, particularly in cooking and cosmetics. The flash point, on the other hand, helps gauge the oil's safety and purity during extraction, ensuring that it meets the required standards for commercial use.

With the increasing recognition of its potential, watermelon seed oil is becoming an important ingredient in various industries, including cosmetics, pharmaceuticals, and food production. The versatility of watermelon, from its flesh to its seeds, highlights its multifaceted value as a crop. By harnessing the full potential of watermelon, not only can its benefits be maximized, but it can also contribute to sustainable practices, reducing waste and adding value to a widely available agricultural resource. This growing interest in watermelon seed oil emphasizes the importance of

watermelon as not only a fruit for consumption but also as a valuable resource with applications across various sectors.

1.2 Statement of Problem

Watermelon seeds, often discarded as waste, are a rich source of nutritious oil with untapped potential in both traditional and modern cooking. However, there is limited awareness of its use in dishes like rice, stew, and snacks such as doughnuts. The challenge lies in exploring how watermelon seed oil can be effectively incorporated into these recipes, ensuring it complements flavor profiles, maintains heat stability, and provides the desired texture. Additionally, refining extraction processes and enhancing oil quality are essential for its successful integration into everyday cooking, offering a sustainable and healthy alternative

1.3 Aims and Objectives of the Study

1.3.1 Aim of the study

The aim of this research project is to add to the existing knowledge on the extraction of oil in watermelon seed in reference of rice and stew and snacks (doughnut). The different ways in which watermelon oil is been consumed.

1.3.2 Objectives of the study

The objective of this study is based on how the aforementioned aim will be achieved which determines the following:

a. To examine methods of extracting watermelon oil.
b. To compare the nutritional benefits of watermelon oil with other oil.
c. To conduct taste tests and gather feedbacks on the new oil.

1.4 Research Questions

i. What are the most efficient and sustainable methods for extracting oil from watermelon seeds, and how do these methods affect oil yield and quality?
ii. How does the nutritional composition of watermelon seed oil compare with commonly used edible oils such as sunflower, olive, and soybean oils?
iii. What are consumer perceptions and acceptability levels of watermelon seed oil in terms of taste, aroma, and overall preference compared to other edible oils?

1.5 Need of the Study

This study is needed to unlock the potential of watermelon seeds, transforming them from waste into a valuable source of oil for culinary and industrial applications. It addresses sustainability, enhances food diversity, and explores solutions to challenges like oxidation, promoting healthier, cost-effective alternatives for traditional cooking and snack preparation.

1.6 Significant of the Study

The significance of this study lies in its potential to promote sustainable practices by utilizing watermelon seeds, often discarded as waste, as a valuable resource. It highlights the economic advantages of developing a cost-effective, locally sourced oil that can reduce dependency on conventional cooking oils and provide additional income streams for farmers and processors. By introducing a novel ingredient to culinary practices, this study contributes to innovation in food preparation while emphasizing the health benefits of watermelon seed oil, which may support heart health and overall wellness. Furthermore, the research supports environmental sustainability by encouraging the efficient use of agricultural byproducts, aligning with global efforts to reduce food waste and enhance resource utilization.

1.7 Scope of the Study

This study will focus on the extraction, stabilization, and culinary application of oil from watermelon seeds. It will investigate the oil's suitability in preparing traditional dishes like rice and stew, as well as its use in frying snacks such as doughnuts. The study will also examine methods to improve the oil's oxidative stability and ensure its quality under various cooking

conditions. Additionally, the study will explore the nutritional benefits and commercial potential of watermelon seed oil, with an emphasis on sustainable practices and the reduction of food waste.

1.8 Definition of Terms

1. **Watermelon Seed Oil**: Oil extracted from the seeds of the watermelon (*Citrullus lanatus*). It is rich in unsaturated fatty acids, vitamins, and antioxidants, and can be used in cooking, cosmetics, and other industrial applications.
2. **Extraction**: The process of obtaining oil from watermelon seeds, typically through mechanical pressing or solvent extraction methods.
3. **Oxidative Stability**: The ability of oil to resist oxidation, which can cause the oil to spoil, lose nutritional value, and develop undesirable flavors or odors, particularly during cooking or storage.
4. **Culinary Applications**: The use of watermelon seed oil in food preparation, such as cooking, frying, or as an ingredient in various dishes, including rice, stew, and snacks like doughnuts.
5. **Pectin**: A natural substance found in fruits that is commonly used as a gelling agent in food products such as jams and jellies. Pectin is important in achieving the desired texture and consistency in food processing.
6. **Antioxidants**: Compounds that help prevent or slow down the oxidation of oils and other food products. In watermelon seed oil, antioxidants such as vitamin E can help prolong the shelf life and maintain its nutritional quality.
7. **Fatty Acids**: Organic compounds present in oils, including watermelon seed oil. These can be saturated or unsaturated and play a crucial role in nutrition and health. Common fatty acids in watermelon seed oil include oleic acid, linoleic acid, and linolenic acid.
8. **Commercialization**: The process of making a product available to the market and promoting its widespread use, which, in this case, involves the introduction of watermelon seed oil into culinary and industrial markets.
9. **Sustainability**: The practice of using resources in a way that ensures their long-term availability while minimizing waste and environmental impact. In the context of this study,

sustainability focuses on reducing food waste by utilizing watermelon seeds, a byproduct of watermelon cultivation.

LITERATURE REVIEW

2.1 Introduction

Watermelon (*Citrullus lanatus*) seeds, often considered agricultural waste, are emerging as a valuable resource for oil extraction due to their high oil content and nutritional value (Anwar et al., 2020). These seeds, typically discarded during fruit consumption, are rich in essential fatty acids, proteins, and antioxidants, making their oil a viable alternative to conventional cooking oils (Adekunle et al., 2019). In the context of culinary applications, watermelon seed oil holds potential for diverse uses, including cooking rice, preparing stew, and as a key ingredient in snacks like doughnuts.

The extraction of oil from watermelon seeds has gained attention as part of the global shift toward sustainable food production and waste utilization. Studies show that watermelon seed oil is highly versatile, with a mild flavor and light texture that makes it suitable for various cooking processes (Chikwendu & Ejimofor, 2021). Its nutritional profile, particularly its high unsaturated fatty acid content (e.g., linoleic acid and oleic acid), enhances its appeal for both health-conscious consumers and the food industry.

Watermelon seed oil also contains significant levels of tocopherols (vitamin E), which act as natural antioxidants, helping to improve the stability of the oil during storage and enhancing its health benefits. These antioxidants make the oil beneficial for reducing oxidative stress and promoting cardiovascular health when incorporated into diets. Moreover, the oil has a favorable fatty acid composition, with low levels of saturated fats and high levels of polyunsaturated fats, aligning with dietary recommendations for reducing cholesterol levels and supporting overall heart health (Salihu & Ahmed, 2021).

In addition to its nutritional advantages, the oil extracted from watermelon seeds has functional properties that contribute to its culinary versatility. For instance, its light consistency and neutral taste allow it to be used as a frying medium, salad dressing base, or ingredient in baked goods without significantly altering the flavor profile of the final dish. These qualities have made watermelon seed oil a promising ingredient in the preparation of traditional dishes such as rice

and stew, where the oil's lightness enhances the texture and taste of the food without overpowering the natural flavors of spices and ingredients.

From a sustainability perspective, watermelon seed oil extraction offers a practical solution for reducing food waste and promoting circular agricultural practices. The process of oil extraction can be integrated with the production of other watermelon-based products, such as juices or snacks, thereby maximizing resource utilization and minimizing environmental impact (Ezeokoli et al., 2020). This aligns with global efforts to adopt eco-friendly food production practices that prioritize waste reduction and renewable resource use.

As interest in plant-based and minimally processed oils continues to grow, watermelon seed oil holds significant potential for broader applications in the food, cosmetic, and pharmaceutical industries. Its unique nutritional profile and functional properties position it as an innovative alternative in both developed and developing countries, where demand for sustainable and health-promoting food products is increasing. With continued research and development, watermelon seed oil can play a transformative role in enhancing food security, supporting healthy lifestyles, and driving sustainable economic growth.

2.2 Characteristics of Avocado Fruit

Shape of Fruit

Similar to avocados, watermelons display diverse shapes, including spherical, oblong, and oval varieties. The shape can depend on the cultivar and growing conditions. For instance, oblong watermelons are commonly preferred for larger fruit sizes, while spherical ones are often associated with compact varieties. This variation in shape makes watermelon versatile for different markets, including household consumption and commercial uses (NCBI. 2022)..

Position and Length of Stalk on Fruit

Watermelons, like avocados, have variability in the position of their stalks. Most watermelons have centrally positioned stalks that connect the fruit to the vine, ensuring efficient nutrient flow during growth. The stalk length of watermelon ranges from short to moderately long, depending on the variety and environmental factors. Unlike avocados, the stalk in watermelon is thicker and sturdier to support the heavier weight of the fruit, which can reach up to 20 kilograms in some varieties (USDA. 2023).

Skin Shine of Fruit

The rind of watermelon often exhibits a shiny surface, particularly in freshly harvested fruits. Similar to avocados with strong, medium, or weak shine, watermelon skin shine can vary depending on the cultivar. Some varieties have waxy coatings that enhance the shine, aiding in moisture retention and protecting the fruit during storage. This shine is a common indicator of freshness and quality in both fruits.

Length and Diameter of Fruit

Watermelon fruit length and diameter vary greatly across different cultivars, similar to avocados. The average length of watermelons ranges from 15 cm to over 60 cm in oblong varieties, with diameters spanning 10 to 30 cm for larger cultivars. This variability allows watermelons to cater to various consumer preferences, with smaller varieties being convenient for single servings and larger ones suited for group consumption.

Weight of Fruit

Watermelon surpasses avocado in terms of weight, as it is one of the heaviest fruits commonly grown. Weights range from 1 kilogram for smaller, personal-sized varieties to over 20 kilograms for commercial cultivars. Similar to avocados, the weight of watermelon is influenced by genetic factors, cultivation practices, and growing conditions, highlighting its adaptability to market demands.

Length and Diameter of Peduncle

Watermelons have thick, short peduncles (stalks), typically measuring between 5 and 10 cm in length and 1 to 2 cm in diameter. Unlike avocados, where peduncle thickness varies from 4-12 mm, the robust peduncle of watermelon supports the substantial weight of the fruit while ensuring its stability on the vine. This structural feature is critical for the successful growth and development of large fruits.

Thickness of Fruit Skin

Watermelon rind, comparable to avocado skin, exhibits variability in thickness depending on the variety. It ranges from 1 cm to over 3 cm in larger fruits. Thick-skinned varieties are particularly valued for their ability to withstand transportation and storage. This characteristic, like in avocados, plays a vital role in protecting the fruit flesh and extending shelf life.

Flesh Attachment to the Skin

Watermelon flesh has a weaker attachment to the rind compared to avocados. The rind is typically easy to separate, allowing for convenient consumption and processing. This loose attachment contrasts with avocados, where flesh attachment can range from slight to strong depending on the variety.

2.3 Nutritional Benefits of Watermelon

Watermelon (*Citrullus lanatus*) is not only a refreshing and hydrating fruit but also a rich source of essential nutrients and bioactive compounds that offer numerous health benefits. Its high water content and nutrient density make it a highly valuable component of a balanced diet. Below are the key nutritional benefits of watermelon (Anwar et al., 2020):

High Water Content for Hydration

Watermelon consists of approximately 92% water, making it one of the most hydrating fruits. Consuming watermelon helps maintain fluid balance in the body, supports thermoregulation, and prevents dehydration, especially in hot climates or during physical activity.

Rich Source of Vitamins

Watermelon is a good source of vital vitamins that contribute to overall health:

- **Vitamin C**: Plays a crucial role in boosting immunity, promoting wound healing, and acting as an antioxidant to reduce oxidative stress.
- **Vitamin A**: Essential for maintaining healthy vision, skin, and immune function.
- **B Vitamins**: Contains small amounts of B-complex vitamins like B6, which aids in brain function and mood regulation.

Packed with Minerals

Watermelon contains essential minerals, including:

- **Potassium**: Supports heart health, helps regulate blood pressure, and maintains fluid and electrolyte balance.
- **Magnesium**: Contributes to muscle and nerve function, bone health, and energy production.

Rich in Lycopene

Watermelon is a primary dietary source of lycopene, a powerful antioxidant responsible for its red color. Lycopene has been linked to numerous health benefits, such as:

- **Cardiovascular Health**: Helps lower the risk of heart disease by reducing inflammation and improving cholesterol levels.
- **Cancer Prevention**: May reduce the risk of certain cancers, particularly prostate and breast cancer, by neutralizing free radicals.

- **Skin Protection**: Protects the skin from damage caused by UV rays, promoting a healthier complexion.

Provides Dietary Fiber

Although watermelon has a relatively low fiber content, the fiber it contains aids digestion, promotes gut health, and helps regulate bowel movements. Its combination of water and fiber also supports a feeling of fullness, making it a healthy snack option.

Contains Citrulline

Watermelon is a natural source of citrulline, an amino acid that offers various health benefits:

- Improves blood flow by converting to arginine, which helps relax blood vessels.
- Reduces muscle soreness after exercise, making it a popular choice among athletes.

Low-Calorie and Weight-Friendly

Watermelon is low in calories (about 30 calories per 100 grams) and contains no fat, making it ideal for weight management. Its natural sweetness satisfies sugar cravings while providing essential nutrients.

Rich in Antioxidants

In addition to lycopene, watermelon contains other antioxidants like beta-carotene and vitamin C, which combat oxidative stress and reduce the risk of chronic diseases such as diabetes, arthritis, and neurological disorders.

2.4 Benefits of Watermelon Oil

Watermelon seed oil, extracted from the seeds of *Citrullus lanatus,* is a nutrient-rich and versatile oil with numerous health, cosmetic, and culinary applications. Its composition of essential fatty acids, antioxidants, and vitamins makes it an excellent alternative to conventional oils, offering a range of benefits across various domains (Ezeokoli et al., 2020).

One of the primary advantages of watermelon seed oil is its potential to support skin health. Its light, non-greasy texture allows it to be easily absorbed into the skin, providing deep hydration without clogging pores. Rich in linoleic and oleic acids, the oil helps to restore the skin's natural barrier, reduce inflammation, and promote elasticity. This makes it particularly beneficial for individuals with dry or sensitive skin. Additionally, the presence of antioxidants like vitamin E protects the skin from environmental stressors, slows the signs of aging, and enhances the skin's overall radiance.

In hair care, watermelon seed oil is highly effective in nourishing the scalp and promoting healthier hair. Its hydrating properties help to combat dryness, reduce dandruff, and prevent breakage. The lightweight nature of the oil ensures that it does not leave a greasy residue, making it ideal for use in hair serums and conditioners. Furthermore, the essential fatty acids present in the oil strengthen hair follicles, encouraging growth and improving hair texture.

Watermelon oil also offers notable health benefits when used in cooking or consumed as a dietary supplement. Its high content of unsaturated fatty acids, particularly linoleic acid, supports heart health by helping to reduce bad cholesterol levels and improve blood circulation. The oil's mild flavor and high smoke point make it suitable for a variety of cooking applications, such as salad dressings and stir-frying, providing a healthy alternative to saturated fats. Its nutrient profile, including vitamins and minerals, also contributes to improved digestion and overall wellness.

Beyond its culinary and cosmetic uses, watermelon seed oil plays a role in promoting sustainability. By utilizing seeds that are often discarded as agricultural waste, the production of watermelon seed oil supports waste reduction and adds economic value to the watermelon fruit. This aligns with global trends toward eco-friendly and sustainable food and beauty practices (Ojewole 2010).

In conclusion, watermelon seed oil is a highly beneficial product with a wide range of applications. Its ability to enhance skin and hair health, provide heart-friendly nutrients, and contribute to sustainable practices underscores its growing popularity in both the food and beauty

industries. The oil's versatility and nutrient-rich profile make it a valuable resource for health-conscious individuals and an important element in sustainable development.

CHAPTER THREE
METHODOLOGY

3.0 Introduction

This chapter presents the methods they were adopted by the researcher in carrying out the research work. This chapter also contains source of data, instrument used for data collection and techniques for the analysis.

3.1 Research Design

The study is based on descriptive and experimental research aimed at extraction and utilization of oil from watermelon seeds in preparing rice, stew, and snacks such as doughnuts and also sensory analysis of the product from randomly selected respondents in Kwara state Polytechnic

3.2 Area Study

The study was carried out within hospitality department of Kwara State Polytechnic where the major respondents were selected.

3.3 Population

The population for the study refers to as the students and lecturers of hospitality management department of the polytechnic. Both the staff and the student of the polytechnic opinions on the extraction and utilization of oil from watermelon seeds in preparing rice, stew, and snacks where solicited to know their perception regarding the jam through sensory analysis twenty (20) people which comprised of student and lecturers were selected as the sample size of the study based on simple random sampling.

3.4 Sampling Techniques

A simple random sampling techniques was used, which means that the entire sample frame add an equal chances of being selected to represent the target population.

3.5 Research Instrument

The instrument used for this data was structured questionnaires. Semi structured was used as a primary research instrument the questionnaires included close ended which makes it simple for respondents and for easy analysis of the data. The open ended questionnaires also allowed respondents to suggest and provide further and better detail information on their perception concerning the extraction and utilization of oil from watermelon seeds in preparing rice, stew, and snacks.

3.6 Method

Preparation

1. Clean and dry the seeds: Remove any pulp or debris from the watermelon seeds and dry them thoroughly.

2. Grind the seeds: Grind the dried seeds into a fine powder to increase the surface area for extraction.

Extraction

1. Soxhlet extraction: Place the ground seeds in a Soxhlet thimble and extract with ethanol in a Soxhlet apparatus. The ethanol will solubilize the oil, and the Soxhlet apparatus will continuously cycle the solvent, allowing for efficient extraction.

2. Alternative extraction: If a Soxhlet apparatus is not available, you can use a simple solvent extraction method. Mix the ground seeds with ethanol in a flask, stir or shake, and then separate the solvent layer containing the oil.

Post-Extraction

1. Filter the extract: Filter the ethanol-oil mixture to remove any solids.

2. Evaporate the solvent: Use a rotary evaporator or distillation setup to remove the ethanol from the oil. Collect the oil residue.

Safety Precautions

1. Handle ethanol with care: Ethanol is flammable and can cause skin and eye irritation. Use proper safety equipment and ventilation.

2. Follow laboratory protocols: Ensure you follow established laboratory safety protocols when working with chemicals and equipment.

Materials Needed

1. Watermelon seeds

2. Ethanol (solvent)

3. Soxhlet apparatus or a suitable extraction setup

4. Rotary evaporator or distillation setup

5. Glassware and safety equipment

6. Filter paper

CHAPTHER FOUR

4.0 DATA PRESENTATION AND DATA ANALYSIS

4.1 DATA PRESENTATION

This chapter is based on the analysis of the extraction and utilization of oil from watermelon seed in preparing rice, stew, and snacks such as doughnuts.

The sensory evaluation is aimed at studying the suitable and acceptability which are categorize into five (5) namely: excellent, very good, good, fair, and poor. These acceptance and rejection criteria were parade before the component of qualities namely: taste, appearance, colour, texture, aroma and palatability. Sensory evaluation is utilization of oil from watermelon seed in preparing rice, stew, and snacks such as doughnuts by taste panel which comprises of the staff and student of Kwara State Polytechnic Ilorin.

The comment from people that were given the product to taste are carefully interpreted and recorded in tabular forms.

Rice and Stew (50-50)

Sample number of observes are 20

GRADE	**Excellent**	**Very good**	**Good**	**Fair**
Appearance	6	14	-	-
Texture	-	6	14	-
Taste	-	16	4	-
Aroma	-	-	16	4
Palatability	-	16	-	4

Research findings, 2025

The scale : Excellent, Very good, Good and Fair

GRADE	**Excellent**	**Very good**	**Good**	**Fair**
Appearance	30%	70%	-	-

Texture	-	30%	70%	-
Taste	-	80%	20%	-
Aroma	-	-	30%	70%
Palatability	-	80%	20%	-

Research findings, 2025

4.2 ANALYSIS OF THE TABLE (1)

The tastes of rice and stew were rated good by 70% respondent and very good by 30% respondent and appearance was rated excellent by 30% respondent and very good by 70% respondent. The colour was rated very good by 80% respondent and excellent by 20% respondent. The texture was rated very good by 80% respondent and good by 20% respondent. The aroma was rated very good by 70% respondent and good by 30% respondent.

snacks (doughnuts) (70-30)

Sample "2" Number of Observation are 20

GRADE	**Excellent**	**Very good**	**Good**	**Fair**
Appearance	8	12	-	-
Texture	8	8	4	-
Taste	10	6	4	-
Aroma	-	10	10	-
Palatability	10	10	-	-

Research findings, 2025

The scale= Excellent-very good, good and fair

The result of the table two shows that 10 observe that were given the production to taste

GRADE	**Excellent**	**Very good**	**Good**	**Fair**	**Poor**
Appearance	40%	60%	-	-	-
Texture	40%	40%	20%	-	-

Taste	50%	30%	20%	-	-
Aroma	-	50%	50%	-	-
Palatability	50%	50%	-	-	-

Research findings, 2025

4.3ANALYSIS OF THE TABLE (2)

The taste of the doughnuts was rated excellent by 50% and very good by 30% and good by 20% respondent. The appearance was rated excellent by 40% and very good by 60% respondent. The aroma was rated very good by 50% and good by 50% respondent. The texture was rated excellent by 40%and very good by 40% and good by 30% respondent.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This research work has focused on the use of the extraction and utilization of oil from watermelon seed in preparing rice, stew, and snacks such as doughnuts, the method and procedure for the processing production and preparation. It is also focus on the nutritional quality of watermelon oil. In order to she is more light on the benefits and nutritive value of applying watermelon oil.

Utilizing watermelon seed production offers a unique opportunity to create a nutritious and innovative product that stands out in the market. Watermelon seed rich nutritional profile, including healthy fats, vitamins, and minerals, can enhance the health benefits of traditional meals. Its nice texture contributes to a smooth and spreadable consistency, making it a desirable component for oil.

5.2 Conclusion

In view of this research work, it is believed that the use of watermelon seed is well accepted. The watermelon oil are also good source of potassium magnesium, antioxidiants, vitamin K, vitamin E and vitamin C.

However, the inclusion of watermelon oil requires careful consideration of factors such as flavor balance, texture, preservation, and consumer acceptance. Proper recipe development, quality control, and adherence to food safety standards are essential to ensure the final product is both delicious and safe for consumption.

By leveraging the nutritional benefits and unique properties of watermelon seed, oil producers can cater to health-conscious consumers and those seeking novel food experiences. With effective marketing and consumer education, watermelon oil has the potential to become a popular and distinctive addition to the range of fruit spreads available in the market

5.3 Recommendations

Everyone in the hospitality industry should adopt this research work in order to promote hospitality and oil making in industry and to boost the national economy out one of the works which can be used as menu on hotels and restaurants.

This research work should be adopted by public in order to improve their diet and health. Despite all benefits derived from the use of watermelon in prepared oil, individual caterer should strive to research into how many of our foods can be processed by watermelon oil if this our economy will change for the better. This increases our standard of living.

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