

# Utilization of Jackfruit Peel in Preparation of Muffins

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## ABSTRACT

*Artocarpus heterophyllus*, commonly called as “Jackfruit” has utmost importance in tropical and subtropical region. This study has utilized the peel portion of jackfruit in muffins. Peel which is usually discarded is actually rich in nutrients, Vitamin C and plentiful of minerals. Chemical analysis revealed that peel comprises of 5.77% moisture, 1.32% total ash and 0.03% acidity. Apart from this, peel is a rich source of crude fiber that fits well in bakery industry. Present research has utilized peel portion of jackfruit in muffins manufacturing. Along with bakery flour jackfruit peel powder is taken in different ratios ranging from 0-20%. Control sample 0% jackfruit peel powder (T0), 10% peel powder added in total flour (T1), 20% peel powder added in total flour (T2). Out of the three treatments which are prepared T0, T1 and T2. One sample from each treatment is taken and analysed in terms of colour, flavour, texture, aroma and overall acceptability. Data obtained is statistically and graphically analysed and tabulated. This shows that 20% of jackfruit peel stands best in terms of overall acceptability of muffins.

**KEYWORDS:** Jackfruit peel powder, Muffins

## 1. INTRODUCTION

Jackfruit, botanically known as *Artocarpus heterophyllus*, fills in tropical and subtropical areas all through the world. Having a spot with Moraceae family, is neighbourhood to Western Ghats of India and ordinary in Asia, Africa, and a couple of regions in South America. The jackfruit is a different organic product item made out of hundreds to thousands of individual blooms, and the muscular petals of the unripe natural item are eaten. It bears the greatest item, things being what they are, coming to as much as 55 kg (120 pounds) in weight, 90 cm (35 inches) long, and 50 cm (20 inches) in width. A foster jack tree makes around 200 regular items every year, the ready organic product is sweet and is all the more regularly utilized for pastries. There are two primary assortments of Jackfruit. One assortment is little, delicate, stringy and soft with exceptionally sweet carpels; while another assortment of the natural product is fresh, crunchy and not extremely sweet. Green jackfruit has a delicate taste and meat-like surface that fits being known as a "vegetable meat". A major amount of strip is disposed of as waste. Jackfruit strip is one among the under-utilized waste materials. Jackfruit strip contains the high proportion

**How to cite this paper:** Mishwa Patel | Dhanya Joseph "Utilization of Jackfruit Peel in Preparation of Muffins"

Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-7 | Issue-2, April 2023, pp.32-34,

URL:  
[www.ijtsrd.com/papers/ijtsrd53881.pdf](http://www.ijtsrd.com/papers/ijtsrd53881.pdf)



IJTSRD53881

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of cellulose, gelatine, protein and starch. A ton of strips (around 2,714-11,800 kg for each tree every year) is discarded as agrarian waste."The biggest palatable organic product on the planet". The flavour of jackfruit is blend of mango, banana, melon and papaya. There are sure qualities of Jackfruit that make it particular from different organic products. Barely any models are its shape, surface, taste, shading, season, assortments and beginning. Discussing assortments, Jackfruit isn't accessible in only one structure. Improvement in the field of cultivation has made it conceivable to devour this organic product in different structures without changing its attributes. A portion of the assortments incorporate Black Gold, Chena, Cochin, Dang Rasimi, Golden Nugget and Golden Pillow. Jackfruit assortments are not accessible in seedless structure. The state of this organic product is Oval and its surface is Fibrous. Taste structures one of the significant attributes of organic products. Discussing Jackfruit, its taste is sweet.

Jackfruit peel is rich in nutrients, Vitamin C and plentiful of mineral. Jackfruit peel is one among the

under-utilized waste that have potential in the creation of significant worth added items, peel is likewise a rich wellspring of unrefined fiber that fits well in bakery products. The peel powder of jackfruit easily blends with wheat flour. The purpose of this study is to make efficient use of jackfruit peel powder in bakery sector.

## 2. REVIEW OF LITERATURE

A. heterophyllus has been accounted for to contain significant degrees of protein, starch, calcium, and thiamine. Jackfruit contains various chemical constituents as several flavone colouring's, morin, dihydromorin, cynomacurin, artocarpin, isoartocarpin, cyloartocarpin, artocarpesin, oxydihydroartocarpesin, artocarpetin, norartocarpetin, cycloartinone, and artocarpanone. The jackfruit is a rich wellspring of phytochemicals, including phenolic blends, and offers openings for the improvement of huge worth added things. Phytonutrients are ordinary combinations found in plant-based food assortments that give plants their rich pigmentation, similarly as their specific taste and aroma. Phenolic compounds in foods grown from the ground have been proposed to be a huge wellspring of bioactive blends for clinical benefits. Regardless, their phenolic combinations and cell reinforcements activity were disparaged in their inhibitory potential against key proteins material to hyperglycaemia. Typical wellsprings of phenolic combinations and inhibitors of stomach related synthetic substances from food sources have allowed an opportunity to insignificant cost dietary organization for cardiovascular disorders.

## NUTRITION PROPERTIES OF JACKFRUIT

Energy: 95kcal/100g

Protein: 1.72g/100g

Fat: 0.64g/100g

Carbohydrate: 23.2g/100g

Fibre: 1.5g/100g

Sugar: 19.1g/100g

Calcium: 24mg/100g

Vitamin C: 13.7mg/100gm

## 3. MATERIALS AND METHODS

### 3.1. MATERIALS

Flour

Jackfruit peel powder

Milk

Sugar

Baking powder

Baking soda

Butter

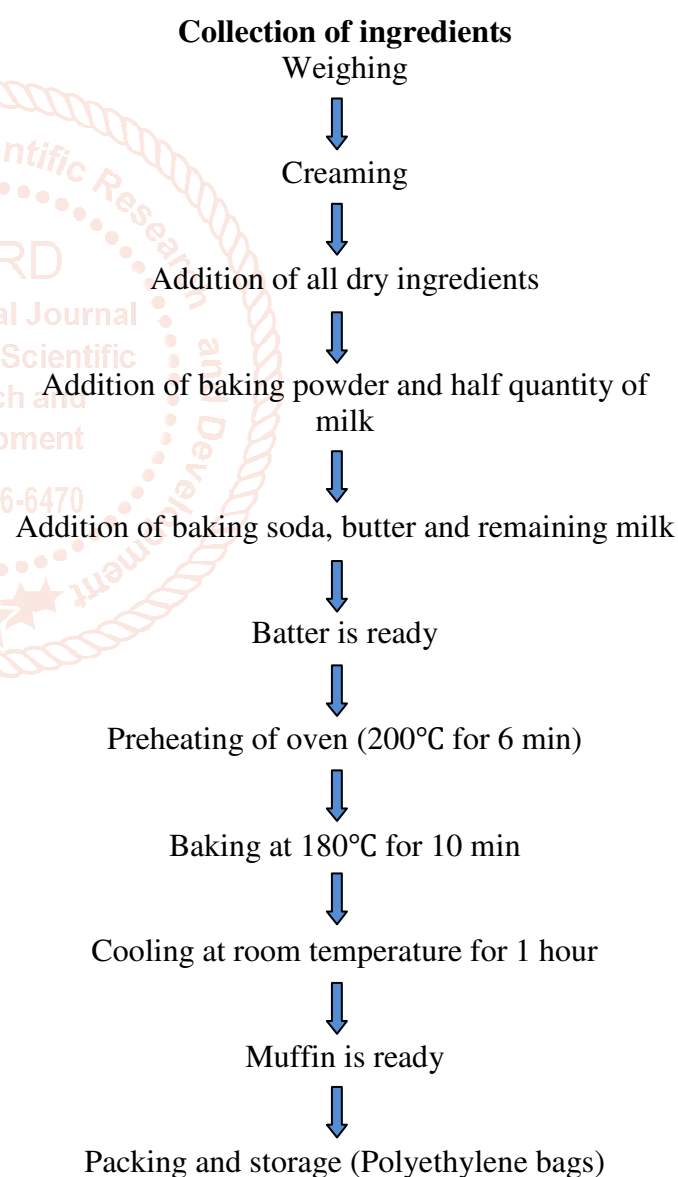
Vanilla essence

## 3.2. METHODS

### 3.2.1. Preparation of jackfruit peel powder

Jackfruit was peeled physically to dispose of the consumable part along with seeds. The peels were cut into more modest pieces. Manually, peeling and cutting is done. Pieces were then blanched at 82°C for 2-3 min, then kept in cool water for few min. (for avoiding browning reaction). Smudged and squeezed with muslin fabric to eliminate an overabundance amount of water. Thusly, the jackfruit peels were dried in a shade place. There size reduces in overnight & excess moisture were also decreases. Dried pieces were then grind into fine powder. Obtained fine powder is used in product preparation and used in chemical analysis of dry jackfruit peel.

### FLOW DIAGRAM FOR MANUFACTURING OF MUFFINS



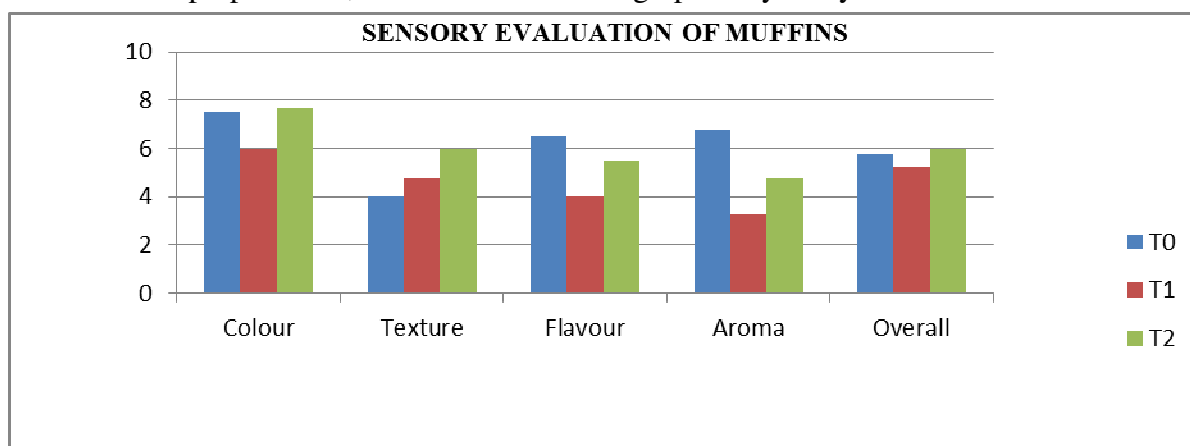
**Figure: Flow diagram for manufacturing of muffins**

## 4. RESULTS & DISCUSSION

Addition of different % of jackfruit peel powder is used to produce muffins, varying ratio are as follows -

control sample 0% jackfruit peel powder(T0), 10% peel powder added in total flour(T1), 20% peel powder added in total flour (T2). Out of the three treatments which are prepared T0, T1 and T2. One

sample from each treatment is taken and analysed in terms of colour, flavour, texture, aroma and overall acceptability. Data obtained is statistically and graphically analysed and tabulated.



**FIGURE: SENSORY EVALUATION OF MUFFINS**

## 5. CONCLUSION

Jackfruit is rich source of nutrients and can be utilized as vegetables and pickles. It is widely accepted by people and gain importance in fruits and vegetable sector. But least we know is about it's by products i.e., Peel of Jackfruit. Peel, unlike jackfruit is not edible raw, even though it is nutritious, significant source of minerals and fibres. Attempts have been made to formulate jack fruit peel powder to incorporate in various food preparations. This study involves the incorporation of jackfruit peel in various bakery products. Jackfruit is separated from peel portion, followed by drying of peel and then grinding in to fine powder. Different ratios of wheat flour and jackfruit peel are made, 0% jackfruit peel, 10%, 20%. Then muffins were made from organoleptic evaluation, 20% ratio founds satisfactory in terms of colour, flavour, aroma, structure and overall acceptability.

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