

Formulation of biscuit having medicinal value and their quality analysis

A Project Work Submitted in Partial Fulfillment of the requirements for the
Diploma in
FOOD PROCESSING TECHNOLOGY

by

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DECLARATION

We hereby declare that the project work entitled "**Formulation of biscuit having medicinal value and their quality analysis**" is an authenticated work carried out by us under the guidance of Mr. Santosh Kumar for the partial fulfillment of the award of the diploma in Food Processing Technology and this work has not been submitted for similar purpose anywhere else except to Department of FPT, Central Institute of Technology, Kokrajhar, Assam.

ANU CHETRY

Date:
Place:

MANURAMA BANIA

Date:
Place:



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CERTIFICATE OF APPROVAL

This is to certify that the work embodied in this project entitled “**Formulation of biscuit having medicinal value and their quality analysis**” submitted by ANU CHETRY, MANURAMA BANIA to the Department of FOOD PROCESSING TECHNOLOGY, is carried out under our direct supervisions and guidance.

The project work has been prepared as per the regulations of Central Institute of Technology and I strongly recommend that this project work be accepted in partial fulfillment of the requirement for the diploma 3rd year.

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Certificate by the Board of Examiners

This is to certify that the project work entitled “**Formulation of biscuit having medicinal value and their quality analysis**” submitted by ANU CHETRY AND MANURAMA BANIA to the Department of **FOOD PROCESSING TECHNOLOGY** of Central Institute of Technology, Kokrajhar has been examined and evaluated.

The project work has been prepared as per the regulations of Central Institute of Technology and qualifies to be accepted in partial fulfillment of the requirement for the **DIPLOMA**.

Project Co-ordinator

Board of Examiners

ACKNOWLEDGEMENT

We feel profound pleasure in bringing out this project report for which we have to go from pillar to post to make it a reality. This project work reflects contributions to many to many people with whom we had long discussions and without which it would not be possible. We must first of all, express our heartiest gratitude to respected Mr. Santosh Kumar (Assistant Prof. Dept of FPT) for providing us all required guidance to complete project.

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ABSTRACTS

It gives us a great pleasure to introduce this project work entitled **“Formulation of biscuit having medicinal value and their quality analysis”**. In this project work, we accomplished the formulation of a biscuit which has medicinal properties by using isabgol husk as ingredients in biscuit dough. This isabgol husk act as a vital role in digestion. Actually biscuits available in market generally cause constipation and digestive disorder. But our formulated biscuits have a property to minimize constipation and digestive disorder. The main aim of our project is to make a healthy biscuit which gives the contribution to a health beneficial.

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1. CHAPTER 1:

INTRODUCTION:

i. Biscuits

Biscuits are a variety of quick breads popular in different forms throughout the world. They are made from a combination of flour, shortening, leavening and milk or water. This simple dough is generally rolled out, cut into small rounds, baked and served hot. Food preferences and ingredients in various regions of the country often determine what type of biscuit is preferred. People in the North enjoy tall, tender flaky biscuits; people from the South like biscuits with a soft, tender crumb.

The original biscuit was a flat cake that was put back in the oven after being removed from its tin, hence the French name "*bis*" (twice) "*cuit*" (cooked). This very hard, dry biscuit was the staple for sailors and soldiers for centuries. During the time of Louis XIV, soldiers' biscuits were known as "stone bread." "Animalized" biscuits were introduced later. They were thought to be very nutritious because they used meat juices as the liquid. In the 19th centuries, travelers' biscuits were hard cakes that kept well wrapped in a kind of tin foil. Feathery, light biscuits originated in Southern plantation kitchens but, now are popular throughout the United States. Rolled biscuits were a staple at most meals, but beaten biscuits became another Southern favorite. Beaten biscuits are made light by beating air into the dough with a mallet or a rolling pin (up to 100 strokes "or more for company"). Beaten biscuits are typically thinner and crispier than baking powder biscuits

Biscuits are high in fat, which makes them flaky, tender and delicious. The average home recipe has 50 percent of calories from fat, so budget fat calories accordingly. The average recipe also derives 43 percent of its calories from carbohydrates and 7 percent from protein.

Biscuits are eaten by all sections of people across the board round the year. They are, thus, mass consumption items with number of varieties and shapes. The market is scattered. There are some dominant national and regional brands. Biscuits can be manufactured at a location which is close to the market.

Market for biscuits is scattered all over the country. There are three distinct market segments viz. urban, semi-urban and rural. Urban and semi-urban markets are dominated by many national and regional brands but even then many local manufacturers have also carved a special niche as their products are fresh, they offer many varieties and they are cheaper.

ii. Isabgol

Isabgol also known as Psyllium Husk is a natural vegetable product, which is retrieved from Isabgol seeds by milling process. It is the upper coating of *Plantago Ovata*, which is purified by sieving and winnowing.

Most people do not get enough fibre in their diet. This fibre deficiency results in record number of overweight people, above normal cholesterol level, chronic indigestion and *greater occurrence of colon cancer. Even*

health and diet conscious individuals are amazed to find themselves lacking in fibres.



Fig: 1. Isabgol Husk

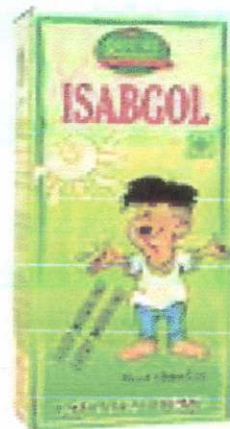


Fig: 2. Isabgol Husk Packet

Isabgol is sourced from the world's best sources of pure psyllium husk, separated by the process of milling. One teaspoon daily at bedtime forms bulk in your digestive system, which in turn smoothens the way for releasing toxic waste from your body. It helps regulate your daily bowel movement and reduces the risk of heart attacks by decreasing serum cholesterol through proper excretion of bile acids. One or two teaspoon full before meals will reduce your consumption of fat and calories. May be taken with milk, juice &/or water.

Isabgol has a remarkable effect on the gastro intestinal system. It is a naturally healthy fibre and is not absorbed in the intestine. It has no known interaction with other drugs, and does not interfere with the absorption of vitamin and minerals. Isabgol is internationally acclaimed as the best agent that relieves constipation with absolutely no side effect

Uses of Isabgol

a. Bowel regulator

Isabgol absorbs water and expands to provide an increase in bulk and moisture content of stool. This encourages normal peristalsis and bowel mobility.

b. Cholesterol

Isabgol is a soluble fiber, which is different from the insoluble fibers that are found in wheat bran and cellulose. These fibers can provide a laxative effect, but may have no effect on cholesterol. Isabgol works by forming a thin layer on the intestines and then preventing the absorption of the cholesterol into the arteries, and excreting it in stool and hence producing moderate but significant improvement in blood levels and of cholesterol.

c. Cleans the Colon

Isabgol cleans the Gastro Intestinal tract of toxins by forming a bulk that promotes evacuation of the bowels. This also removes indigestion, intestinal obstruction and flatulence thus removing lethargy and providing a feeling of well being.

d. *Piles, Cardiovascular Diseases, Hernia and Pregnancy*

Isabgol is also used in piles, fissures and fistulas to bring down the burning

sensation after defecation. It also helps to prevent strain during defecation in those who are suffering from cardiovascular diseases, hernia and pregnancy.

Side effects of Isabgol

Isabgol is not absorbed through the intestines and hence has a purely mechanical action on the body, thus reducing the chances of effects. Caution: Do not use the product in case of nausea vomiting fever or abdominal pain. This product may cause allergic reaction in people sensitive to inhaled or ingested Isabgol. Do not take this product within 2 hours of another medicine, as the desired effect of the other medicine may be reduced.

CHAPTER 2:

AIMS AND OBJECTIVES

1. Our main objectives to formulation of a biscuit by hit and trail methods using isabgol husk, which play an important role in the process of digestion.
2. Making of desired final products (Biscuits having medicinal values).
3. Quality testing of final products both by analytical methods and hedonic testing.

CHAPTER 3:

EXPERIMENTAL PROCEDURE:

A. INGREDIENTS REQUIRED

- a. FLOUR: - This provides most of the bulk of the baked item. For biscuit making the flour should be wheat flour which is high in gluten as this is the substance that gives bread a fine texture and supports the ingredients during rising. The word flour refers to the powder obtained from grinding cereal grains. Although other flours are used in baking, wheat flour is by far the most common. All flours are composed largely from starch and protein, but wheat flour is distinctive in that it has very high levels of protein.

- b. SUGAR: - is most commonly thought of as a sweetener, but in baked goods it is also involved in several other processes. Sugar undergoes a series of complex browning reactions above 160 degrees and the products of this form the brown crust of many baked goods. The reactions are known as Maillard reactions, and are essentially amino acid catalysed caramelisation reactions in which a sugar aldehyde or ketone is converted to an aldehyde or ketone. The sugar usually used is pure sucrose as castor sugar. Occasionally impure forms such as golden syrups, honey and brown sugar are used to give the baking a particular flavor.

- c. . BUTTER AS FAT: - Fat has five major roles in baking. How well it will perform each of these functions depends largely on the “slip point” the temperature at which fat begins to melt. The roles of fats are – shortening, creaming, layering and flavor.
- d. BAKING SODA: - sodium bicarbonate has the property of releasing carbon dioxide when it is heated. To avoid an imbalance between the acidic and basic materials, i.e. an important PH, baking powder is more commonly used.
- e. BAKING POWDER: - Baking powder is essentially a mixture of NaHCO_3 and a weak solid acid or solid acid or acid salt. When the mixture dissolves in water and the temperature is raised, CO_2 is released.
- f. SALT: - salt is added to enhance the flavor of cakes and breads and to toughen up the soft mixture of fat and sugar.
- g. SKIMMED MILK POWDER: - Skimmed milk powder is the milk powder produced by evaporating the water from the skimmed or 0.5 %fat milk by heat treatment. By using the Spray drying method, the skimmed milk is introduced in a chamber where hot air is circulated. Soon the milk globules lose their moisture and fall off as fine powder. It is then collected and packaged. It is a creamy fine powder to feel, white in color. It can be mixed easily with water to reconstitute it. It is used as an ingredient in biscuit making to give a good flavour in biscuit.

- h. ISABGOL HUSK: - Isabgol also known as Psyllium Husk is a natural vegetable product, which is retrieved from Isabgol seeds by milling process. It is the upper coating of Plantago Ovata, which is purified by sieving and winnowing.

B. MACHINE USED DURING BAKING

a. TRAY DRYER:

Tray Dryers are useful in Pharmaceutical, Chemical, Dyestuffs, Food and Automobile Industries. A Tray Dryer is an enclosed, insulated housing in which Trays are placed on heating media is Hot Air, and heat transfer is direct from hot gases or Electric heaters to wet raw material with help of specially designed Air circulation fan arrangement to maintain the constant temperature in the dryer and ensures uniform circulation of hot air. This will enhance the Drying of raw material & reduces the Drying time drastically.



Fig: 3. Tray Dryer

C. STEPS FOR BISCUIT MAKING:

1. Mixing all the ingredients in a big container.
2. Making of dough with a good emulsification.
3. Forming a desired size and shape of a dough with the help of an extruder.
4. Baking of dough in a tray oven at a temperature of 180°C .
5. Cooling for some time to get crunchy characteristics.
6. Final product

CHAPTER 4:

EXPERIMENTAL RESULTS:

In the first day of biscuit making, we took ingredients-

Flour—120 gm

Sugar- -20 gm

Salt—1 gm

Skim milk powder—20 gm

Butter—20 gm

Baking soda—10 gm

Isabgol husk—5 gm

We took baking temperature 150°C.

Here we found that the dough took more time to baked and form a biscuit. The flavor and texture that occur was of less taste than an actual biscuit.

In the second day of experiment, we took the amount of ingredients-

Flour—120 gm

Sugar- -25 gm

Salt—0.5 gm

Skim milk powder—25 gm

Butter—25 gm

Baking soda—10 gm

Isabgol husk—5 gm

We baked at temperature of 170°C.

Here due to the increase in amount of butter fat, the biscuit get a good texture and a better taste than the first one.

In the third day of biscuit making, we took ingredients-

Flour—120 gm

Sugar- -30 gm

Salt—0.5 gm

Skim milk powder—25 gm

Butter—30 gm

Baking soda—7 gm

Isabgol husk—5 gm

We baked at temperature 180°C.

Here we found that in the increase of the butter content the biscuit goes of getting a better flavour and texture. And the increase in sugar content gives a browning reaction and gives a good brown colour in biscuit.

In the fourth day of biscuit making, we took ingredients-

Flour—120 gm

Sugar- -30 gm

Salt—0.5 gm

Skim milk powder—30 gm

Butter—40 gm

Baking soda—7 gm

Isabgol husk—5 gm

We baked at temperature 200°C.

Here we found that in the increase of the butter content the biscuit goes of getting a better flavour and texture. And the increase in sugar content gives a browning reaction and gives a good brown colour in biscuit.

In the fifth day of biscuit making, we took ingredients-

Flour—120 gm

Sugar-- 30 gm

Salt—0.5 gm

Skim milk powder—30 gm

Butter—50 gm

Baking soda—7 gm

Isabgol husk—5 gm

We baked at temperature 180°C.

Here we found that in the increase of the butter content the biscuit goes of getting a better flavour and texture. And the increase in sugar content gives a browning reaction and gives a good brown colour in biscuit. In this stage, we get a biscuit with a good texture with the amount of the ingredients taken.

CHAPTER 5:

CONCLUSION:

In this project work, we accomplished the formulation of a biscuit which has medicinal properties by using isabgol husk as ingredients in biscuit dough. This isabgol husk act as a vital role in digestion. Actually biscuits available in market generally cause constipation and digestive disorder. But our formulated biscuits have a property to minimize constipation and digestive disorder. The main aim of our project is to make a healthy biscuit which gives the contribution to a health beneficial.

CHAPTER 6:

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