



## **Project Report**

On

**Development of Instant Soup Mix Powder**

### **Submitted To:**

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### **Date of Submission:**

18 December, 2018

## Letter of Transmittal

Date: 18 December, 2018

To

Prof. Dr. Bellal Hossain

Head

Department of Nutrition and Food Engineering

Faculty of Allied Health Sciences

Daffodil International University

### **Subject: Submission of Project report.**

Dear Sir,

I would like to take this opportunity to thank you for the guidance and support you have provided me during the course of this report. Without your help, this report would have been impossible to complete. Daffodil international university has many more respective persons, for providing me all most supervision during m my thesis in the organization. To prepare the report I collected what I believe to be most relevant information to make my report as analytical and reliable as possible. I have concentrated my best effort to achieve practical knowledge and experience gathered during report preparation will immeasurably help in my future professional life. I request you to excuse me for any mistake that may occur in the report despite of my best effort.

I would really appreciate it you enlighten me with your thoughts and views regarding the report. Also, if you wish to enquire about an aspect of my report, I would gladly answer your queries. Thank you again for your support and patience.

Yours Sincerely,



Md. Niamul Islam

ID: 151-34-342

Department of Nutrition and Food Engineering

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## LATTER OF AUTHORIZATION

To  
The professor Dr. Md. Bellal Hossain  
Department of Nutrition and Food Engineering  
Faculty of Allied Health science  
Daffodil International University

**Subject: Declaration regarding the validity of the project work**

Dear Sir,

This is my truthful declaration that the “**Project Report**”. I have prepared is not a copy any Internship Report previously made any other students.

I also express my honestly confirmation in support to the fact that the said thesis report has neither been used before to fulfill my other course related not it will be submitted to any other person a authority in future.

Yours Sincerely,



Md. Niamul Islam

ID: 151-34-342

Department of Nutrition and Food Engineering

Faculty of Allied Health science

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## Certificate of Approval

I am pleased to certify that the project report on **Development of Instant Soup Mix Powder**. Conducted by Md. Niamul Islam bearing ID: 151-34-342 of Department of Nutrition and Food Engineering has been approved for Defense/Viva-voce. Under my supervision Md. Niamul Islam worked in Lovello Ice Cream at Taufika Foods and Agro Industries Ltd.

I am pleased to hereby certify that the data and test presented in the report are authentic work of Md. Niamul Islam. I strongly recommended the report present by Md. Niamul Islam for further academic recommendation and defense/viva-voce. Md. Niamul Islam bears a strong moral character and a very pleasant personality. I wish her all success in life



Pro. Dr. Md. Bellal Hossain

Head

Department of Nutrition and Food Engineering

Faculty of Allied Health science

Daffodil International University

## ACKNOWLEDGEMENT

In the preparation of this report, I would like to acknowledge the encouragement and assistance given to me by a number of people. At first, I would like to express my gratitude to almighty God for enabling me the strength and opportunity to complete the report in the scheduled times successfully. I am taking this privilege to deliver my gratefulness to each and every person who is involved with me in every phase of my life.

I am grateful to my parents without whom I cannot be here. Without the support of my parents, I could not be able to achieve my objectives and goals.

My deep gratitude and sincere thanks to the honorable Dean, Faculty of Allied Health Science, **Professor Dr. Ahmed Ismail Mustafa** for this kind cooperation and encouragement to accept this Degree. I am taking this privilege to deliver my gratefulness to each and every person who is involved with me in every phase of my life.

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## **Executive Summary**

### **Abstract**

Different types of soup powder available in the market. All the soup powders were made from combination of different vegetables. Therefore, research was conducted to prepare the highly nutritious soup powder from combination of different fruits and vegetables such as carrot, beans, peas, lentils, dates, tomato, corn starch, and oats. All are dried by oven drying.

Hot water blanching was done to stop enzyme actions. The final product soup powder was evaluated for cooking quality, appearance, nutritional characteristics and sensory quality. The proximate analysis shows the chemical composition such as moisture, ash, protein and fat content were 6.5%, 6.66%, 8.9%, 2.2% respectively. Corn flour was added as a thickening agent. And also coriander powder and pepper powder was added to give the spicy texture. The results for sensory evaluation were highly accepted.

## Chapter-2

### INTRODUCTION

Soup is a generally warm food that is made by combining ingredients such as vegetables green leaves with juice, water, or an-other liquid. Hot soups are additionally characterized by boiling solid ingredients in liquids in a pot until the flavors are extracted, forming a broth. Traditionally, soups are classified into two main groups: clear soups and thick soups.

The established French classifications of clear soups are bouillon and consommé. Thick soups are classified depending upon the type of thickening agent used: *purées* are vegetable soups thickened with starch; *bisques* are made from puréed shellfish or vegetables thickened with *cream*; cream soups may be thickened with béchamel sauce; and thickened with eggs, butter, and cream.

Other ingredients commonly used to thicken soups and broths include rice, lentils, flour, and grains; many popular soups also include carrots and potatoes. Vegetable, chicken base, potato, pasta and cheese soups are also available in dry mix form, ready to be served by adding hot water and sometimes fresh ingredients such as meat or vegetables.

Our objective of the work is to make nutritious instant mix soup powder from carrot, beans, peas, lentils, and dates. In the preparation of soup powder corn flour, coriander powder, pepper powder, onion, garlic, salt are also used.

Bean is one of the most important legumes crop grown in winter session. It is considered medicinal effects and used for blood purification. Bean contains carbohydrate 16 gm, protein 6 gm, fat 5 gm, calorie 130, sodium 23% and fiber 9%.



Instant soup mix powder can be used as ready to eat food. It is convenient and low cost energy rich food, containing digestive and dietary constituent or principles of vital importance. It has high nutritional, value long shelf life and excellent taste. It was thought to improve the nutritional as well as sensory quality of soup mix powder.

## Literature Review

In this chapter, an attempt has been made to assimilate the previous works within the framework of present study, which were helpful to interpretation of results. What is commonly known is our country. It is the most important in Bangladesh from production and consumption point of view.

Instant soups are a wide group of dried foods, which play an important role in the nutrition of people as they satisfy the present and future consumer requirements. Vegetable soup is a high water containing food. An easy and convenient way of making a soup is to use a soup base in the form of granule and powder material apart from the cumbersome way of peeling vegetables, cutting, chopping, hot extraction, cooking with thickening agent, seasoning and garnishing further before serving.

Soup is often served as the starter, first course or entree before the main meal as it stimulates appetite and provides quick nourishment, which is mainly responsible for the improvement of appetite and gastrointestinal responses (Cecil et al., 1999). Also, it may be considered as the best nutrient vehicle for the all sections of the society.

The main objective were,

- ✚ To standardized the methodology for development of nutritious instant soup mix powder.
- ✚ To study the organoleptic properties of instant soup mix powder.
- ✚ To study the nutritional quality of instant soup mix powder.
- ✚ To study the shelf life and techno economic feasibility of nutritious instant soup mix powder.

## **MATERIALS AND METHODS**

### **MATERIALS:**

The present investigation was carried out in the department of Nutrition and Food Engineering. Materials are include,

- ✓ Carrot
- ✓ Beans
- ✓ Peas
- ✓ Lentils
- ✓ Dates
- ✓ Sugar
- ✓ Salt
- ✓ Milk powder
- ✓ Corn starch
- ✓ Coriander

### **Selection of raw material:**

Vegetables such as carrot, bean, onion, peas, garlic were collected from local market. Other seasoning ingredients such as onion, garlic, black pepper. Also used dates, sugar, lentils, skim milk powder, xanthine gum and salt.

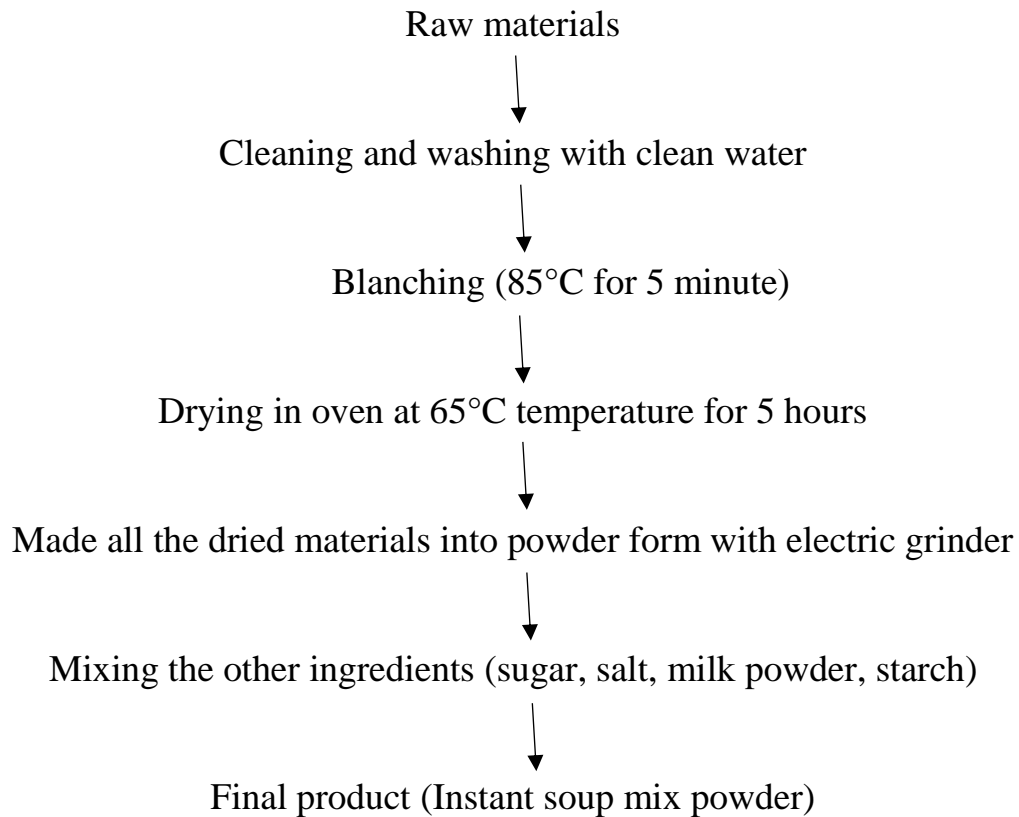
### **Blanching**

Blanching is a process which inactivate the enzyme. Blanching temperature is about 85 degrees Celsius for 5 minutes.

### **Formulation of Instant Soup Mix**

Firstly, collect the raw materials then washed and cut into slices. The slices were peeled which were steam blanched for 4 minutes at 85 degrees Celsius. After completing the blanching cooled it immediately. and dehydrated in tray drier at 65°C until it completely get dried. carrots were sliced then dried. All the dehydrated vegetables were milled and sieved to the thickness of 0.5mm using NO.16 sieves. After drying all ingredient were grinded by the grinding machine. Then It was kept in air tight container for further use.

## Formulation of flow chart of Instant Soup Mix



### Percentage of ingredient

- ✓ Carrot-15%
- ✓ Bean-15%
- ✓ Peas-15%
- ✓ Lentils-15%
- ✓ Dates-15%
- ✓ Starch-3%
- ✓ SMP-2%
- ✓ Sugar-7%
- ✓ Salt-0.50%
- ✓ Coriander-2%
- ✓ Chili powder-5%
- ✓ Others-5.5%

## Storage

The storage of instant soup mix powder is storage for two month at room temperature into the plastic box or air tight container.

## Selection of Packaging

Two types of container plastic box or polyethylene bag were parching from local market and used for storage purpose.

## Methods

### Sensory evaluation of instant soup mix

The sensory evaluation of instant soup mix was made be hedonic rating for sensory quality attributes and overall acceptability using according to the method as described by a 9 point hedonic scale.

**Table-1: Score card for hedonic scale**

SI no	Hedonic Scale	Score/points
1	Like extremely	9
2	Like very much	9
3	Like moderately	9
4	Like slightly	7
5	Neither slightly	5

6	Dislike slightly	4
7	Dislike moderately	3
8	Dislike very much	2
9	Dislike extremely	2

### **Nutritional evaluation of instant soup mix powder**

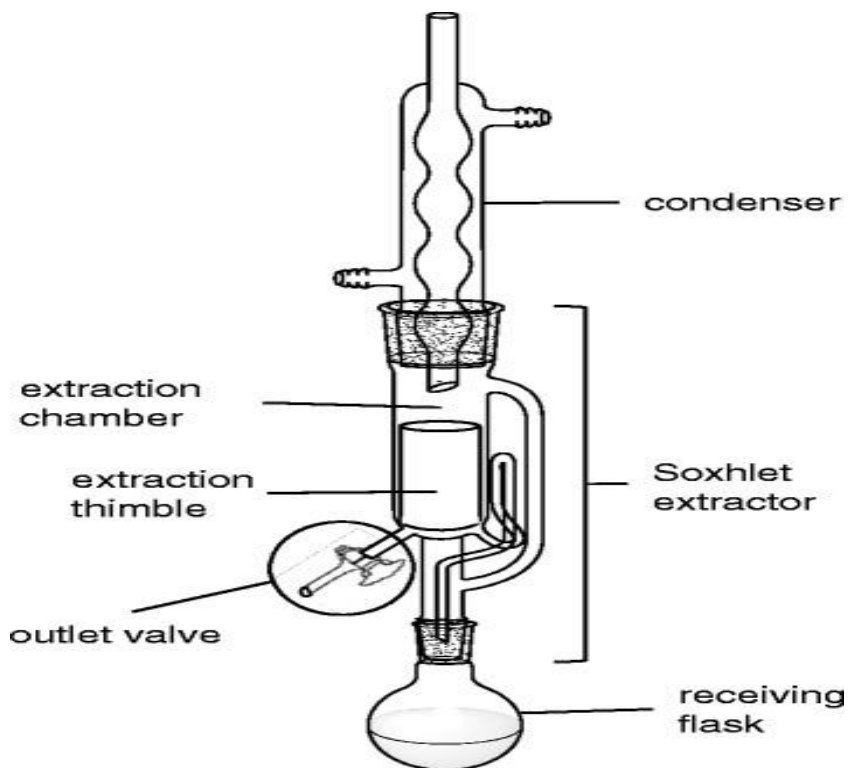
The proximate analysis of various process food grain, dried milk powder and products were carried out to certain the quantity of different biochemical constituents in the materials.

## Analysis and Result

### Fat analysis

#### Procedure

- ✚ First of all, rinse all the glass apparatus by petroleum ether and dry it in the oven at 102°C and after removing it keep in the desiccator.
- ✚ Weight 5 gram of grounded and dried sample and place it in the thimble.
- ✚ Place the thimble in the soxhlet extractor.
- ✚ Take a 150ml round bottom flask and clean it and fill the flask with 90 ml petroleum ether.
- ✚ Place the whole setting on a heating mantle and allow the petroleum ether to boil.



- ✚ Continue the extraction process for several hours, almost 6 hours.
- ✚ Remove the condensing unit from extraction unit and allow the sample to cool down. Finally, it removes all the lipid.
- ✚ Collect almost all the solvent after distillation.
- ✚ Place the sample in the oven and after removing it place in the desiccator.
- ✚ Take the weight of the sample.
- ✚ As a result, we get a defat sample.

Result: Fat content of Instant Soup Powder is 2.2%



## Analysis of Moisture

### Procedure:

5 gram of sample were accurately weighted in pre weighted moisture plate were put in sample. Dried at 105 degrees Celsius for 1 hours in hot air oven till the weight of moisture plate was constant. Then it was cooled in a desiccator for 30 minutes and again weighted.

### Calculations:

$$\text{Moisture} = \frac{\text{Difference in Weight of moisture plate}}{\text{Weight of sample}} \times 100$$

Result: Moisture content of Instant Soup Powder is 6.5%

## Analysis of Ash

5 gram of sample was accurately weighted into a pre weighted silica crucible. Then it was heated first over a low flame till all the materials was completely charred, followed by the ash in a muffle furnace for about 6 hours at about 600 degrees Celsius. After 6 hours cooled it for 2 hours then weighted for calculation.

Calculations:

$$\text{Ash} = \frac{\text{Weight of Ash}}{\text{Weight of sample}} \times 100$$

Result: Ash content of Instant Soup Powder is 6.66%

## Discussion

The present investigation on **development of nutritious instant soup mix powder** is carried out with the objective to know the storability, sensory and nutritional characteristics of the product. The nutritional value of ingredients which is used to made high nutritious instant soup mix powder are discuss below.

In particular, soups are a great option nutritionally as they combine a high nutrient density with a low energy density – this means that we get lots of key nutrients including vitamins and minerals for relatively few calories. At a time where foods with a high-energy density and low-nutrient density such as white bread, snack foods, sugar-based drinks and high-fat fast foods dominate our intake, a low-calorie option that fills us up is a much better option for optimal health.

Studies have repeatedly shown that when diners consume a low-calorie vegetable-based soup before their main meal, they consume up to 20% less calories at a meal. The reason is simple. Basically the soup helps to fill us up so we eat less. Nutritionally this is also beneficial as the nutrients found in vegetables including many water soluble vitamins such as vitamin B, C, K as well as dietary fiber and a range of minerals, also helps to regulate the digestive tract and ensure that we get the number of key nutrients we need each and every day.

In addition to this, eating soup has an extra benefit from a weight and fluid retention perspective; soups that have a base of leeks, onions and celery are also particularly high in the mineral potassium. As potassium helps to bind excess sodium, it helps to rid the body of excess fluid. As many of us carry fluid and regularly feel bloated thanks to a high-salt diet and a lack of activity, dropping as little as 500g of body weight after a few vegetable soups, even if it is just fluid can make us feel lighter and leaner instantly.

Soup can be a simple meal addition – a way to ensure that the family gets all of their vegetables and nutrition; a filling afternoon snack or an entire lunch or light evening meal, especially when beans, potato or sweet potato are the base providing heavier carbs as well as chicken, lean sausage or some mincemeat for protein. It is important to remember that rice, noodles, legumes and pasta do add considerable carbohydrates and calories to your soup and are likely to negate any weight loss benefits. On the other hand, broth-style, vegetable-based soups have virtually no calories and can be consumed relatively freely (but of course you do need to count any bread).

While bulking meals up with low calorie options such as vegetable soup on a regular basis is a great way to load up on nutrition in general, for those wanting to drop a couple of kilos quickly, replacing the evening meal with a vegetable based soup is a safe way to do it. The low energy content helps to keep your total calorie intake low, while the bulk prevents you from feeling hungry and deprived the way you would if you were eating very little on a regular diet, or using meal replacement shakes.



For those wanting a more intense regime, a vegetable soup can replace two meals a day for five to seven days without any negative side effects. Although much of the weight loss will be fluid, sometimes all we need to feel leaner and healthier is a flatter stomach and a kilo or two less on the scales.

Naturally, homemade soups are the best option. This way you can control the type and amounts of vegetables that you use to make your soup as well as choosing to use salt-reduced stocks and few other additives. Pre-made soups and packet soup mixes tend to be exceptionally high in sodium (salt) with the average packet soup containing a massive 800-1200mg of sodium or a third to half of your total daily sodium limit. Premade soups also tend to be relatively low in protein and high in carbohydrate thanks to their base being potato starch. If you must seek out a pre-made soup option, look for varieties that contain <20g total carbohydrates per serve and <800mg of sodium.



## Bean

Bean is a type of small, green legume in the same plant family like peas and lentils is a high source of protein, fiber, anti-oxidants and phyto-nutrient. In most part of the world they are less popular than other bean varieties like chick peas or black beans. Mung beans have some huge health benefits to offer.

Now a day's mung beans are beginning to pop up the protein powders, canned soups and in the restaurant dishes state-side also. So there is what we need to know about mung beans:

- ✚ Mung beans have high source of nutrient including manganese, potassium, magnesium, copper, zinc and various B complex vitamins.
- ✚ They are also very filling food, high protein and dietary fiber rich.
- ✚ We can find mung bean in powder form, as whole uncooked beans, bean noodles, and also as sprouted seeds.
- ✚ The dried seeds may be eaten raw or cooked (whole or split)
- ✚ Fermented and ground into flour
- ✚ Because of high nutrient density, mung beans are considered that useful in defending against several chronic diseases, age related disease, including the heart disease, cancer, diabetes and obesity



## Nutritional value of beans:

- Calorie: 130
- Carbohydrate: 16gm
- Fat: 5 g
- Protein: 6 g
- Fiber: 2.1 g (9%)
- Calcium: 39.9 mg (4%)
- Iron: 1.8 mg (23%)
- Sodium: 530.1 mg (23%)

## Peas



## Nutritional value of peas

- Calorie: 120
- Fat: 3 g (5%)
- Saturated fat: 0.5g (3%)

- Protein: 24 g
- Calcium: 6%
- Iron: 35%
- Sodium: 29%

## **Carrot**



### **Nutritional value of Carrot**

- Calorie: 120
- Carbohydrate: 18gm (7%)
- Fat: 5 g (6%)
- Saturated fat: 3.5g (18%)
- Protein: 1g
- Fiber: 3g (11%)
- Calcium: 34 mg (2%)
- Potassium: 204 mg (4%)
- Iron: 1 mg (6%)
- Sugar: 11gm



## Conclusion

The instant soup mix powder is made from those ingredients which is full of nutrient. It's made from peas, beans, lentils, carrots, dates, sugar, and corn starch. It is considered to be the best as ready to eat food for infants, children and pregnant women or lactating women.

Soup is consumed as energetic food which helps keep our body fit and fine. It covers all needs of nutritional requirement of human body. It energizes and refreshes whereas others fast food causes damage to our body. Soup is beneficial across all ages groups. It is a perfect blend of balanced nutrient that makes healthy for the intestine, having a low glycemic index is good for all.

A fantastic combination as magnesium helps calcium to get better absorbed into the body this makes it excellent for bone, health, prevention and treatment of osteoporosis. super healthy for growing children and adults iron deficiency is a leading problem and can cause severe health issue. Taking iron supplement can sometimes be too toxic to the liver and cause constipation. natural iron is best for health. Soup also source of fiber. All of us know that fiber cleans out the colon and stomach prevent the constipation and aids fat loss and energy level.

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