

FORMULATION AND ANALYSIS OF BLACK GRAM AND GREEN GRAM FLOUR CHUNKS

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Abstract:

There are wide varieties of chunks are available such as soybean chunk , black gram or urad chunks , green gram chunks etc . Black Gram (*Phaseolus mungo*) is also known as urad beans is one of the important pulse crops in India and It is rich source of protein as compare to other cereals. Black gram supplies a major share of protein requirement of vegetarian population of the country. Green gram belong to a family of fabaceae. It is the cheapest source of plant protein as compared to the animal source(mainly fish and meat) . Green gram is the good source of proteins, amino acid, vit c, antioxidant ,minerals and have a various health benefits. Chunks are also known as meal maker and it can prepared variety of delicious dishes. chunks has a longer shelf life in dehydrated form.

The present study is conducted to provide a chunks which are rich in protein, carbohydrate , minerals that are prepared by using Black gram and Green gram which are easily available.

Keyword: Chunks , Black gram, Green gram, High Protein, Health benefits

1. INTRODUCTION

Chunks are widely used in Indian cuisines and it also used across the world to prepared healthy foods. Chunks are also known as meal maker. It is quick and easy to cook. A variety of delicious dishes could be prepared with this meal maker like it can add in the pulaos or can make a masala curry which is just taste like a meat curry. Chunks have high protein content equal to that of the meat and contain low fat. Chunks is a versatile substance . It can be made as a substitute to meat and poultry products and the vegetarians can add them with other vegetables and can be prepared excellent healthy dishes. Chunks are readily available in most of the market and used widely as they are relatively low in cost, high protein and content low fat. There are wide variety of chunks are available such as black gram chunks, soy beans chunks , green gram chunks etc. In dehydrated form chunks has longer shelf life but it will spoiled within a several days after being hydrated. Chunk are good source of protein, antioxidant ,mineral, amino acid, omega -3 fatty acid , vitamin D, vitamin B. Chunks are heart healthy food because they are low in calories. Its not only low the calories but also help in lowering the cholesterols in our body. Black gram or Urad dal is one of the famous lentils used in southern Asia, mainly in India .its is rich in carbohydrate and fat. Black chunks are the richest

source of Protein and Vit B.[Sharma,k.n and K.N Namdeo,1999] This lentil are also rich source of iron and folic acid therefore consumption of this lentils is highly recommended for women and also for pregnant women. It is good for skin and hair and it contain various minerals and vitamins which are essential to make skin soft and graceful [khaliq,A., M.K 2006].Black gram contain high quantities of potassium and magnesium which are extremely good for our heart health. It maintained the cholesterol level by keeping the cardiovascular system healthy so that it prevent from atherosclerosis. Its also improve our digestive system. Black gram is also effective in colic disorder, healing piles and it also known to be a good liver stimulant.[Gour, Y.D.,1993]

Green gram are belong to the legume family. It is native to India but later it spread to china and other various part of southeast Asia.[Lavanya, G.R., and B.Toms.2009] This legume are rich in vitamins and minerals. Green gram are one of the best plant protein. Its is the richest source of protein, vitamins, minerals, fiber ,antioxidant and amino acid. Green gram are good sources of potassium and fibre that reduced the blood pressure level. Its contain various nutrients that are good for digestive health. This legume lower the blood sugar level and help insulin work more effectively. Its also lose the weight because of high protein and fiber contain.[Payasi *et al.*,2011]

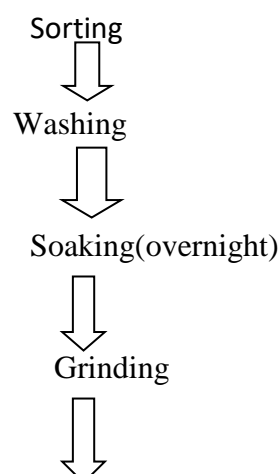
2. Materials and Methods

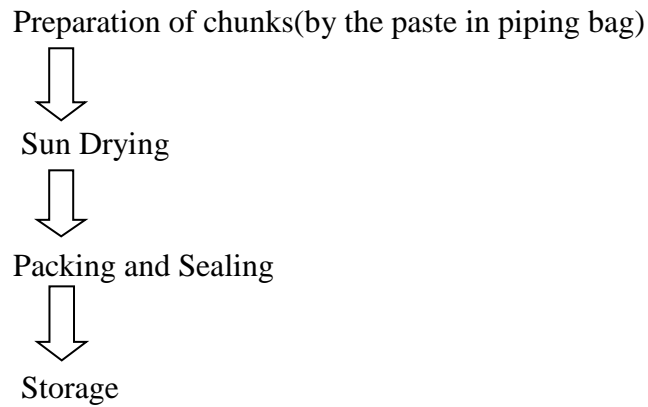
The experiment was carried out in the Advanced Food Technology Laboratory, Department of Food Technology, Uttaranchal college of Applied and life Sciences, Uttaranchal University, Dehradun.

2.1. Materials that are use in the preparation of gram chunks are:

- Black gram
- Green gram
- Black pepper
- Salt
- Asafoetida

FLOW CHART





Flow chart for the preparation of green gram and black gram chunks

2.2. Analytical Procedure

2.2.1. Moisture Content:

It is defined as the amount of water present in domestic gram chunks for determining the moisture content in the sample. To determine the moisture content, first weigh the empty petri dish and add 5 gm of sample then it is kept in the hot air oven at 110degree Celsius for 3 hrs. After the given time the petri dish are kept in the desiccators to cool down. After drying, weight is taken again by using weighing balance

2.2.2. Determination of protein

Protein are organic compound which have large molecular chain of amino acid .Protein content in the sample is determined by using kjeldahl method. This test is to determine the amount of reducing NH₂ and NH present in the gram chunks. Protein are converted into ammonium sulphate in the presence of copper sulphate. Ammonia gas are released and trapped in boric acid. The kjeldhal method has three step and they are digestion, distillation and titration.

2.2.3.Ash Content

It is the process to measure the total amount of mineral present in the food. To the measure the ash content, first weight the empty petri dish and add 2gm of sample then it is kept in muffle furnace for 4 hrs at 450 degree Celsius. After 4hrs weight the crucible again and note down the result

2.2.4. Fat Content

Fat are insoluble in water but soluble in organic solvent like petroleum ether, ethanol etc. Soxtherm extraction system is one of the commonly used method for determination of fat in the sample.this method is very versatile and fast. To determine the fat content in the sample first weight the empty beaker. Take 2gm of the sample and add petroleum ether, then kept the beaker in soxtherm extraction system for 4 hrs. After the extraction of fat, weight the beaker and write the result.

3. Result and Discussion

3.1. Moisture Content

Moisture content in green gram is 11.2% and moisture content present in black gram is 9.2%

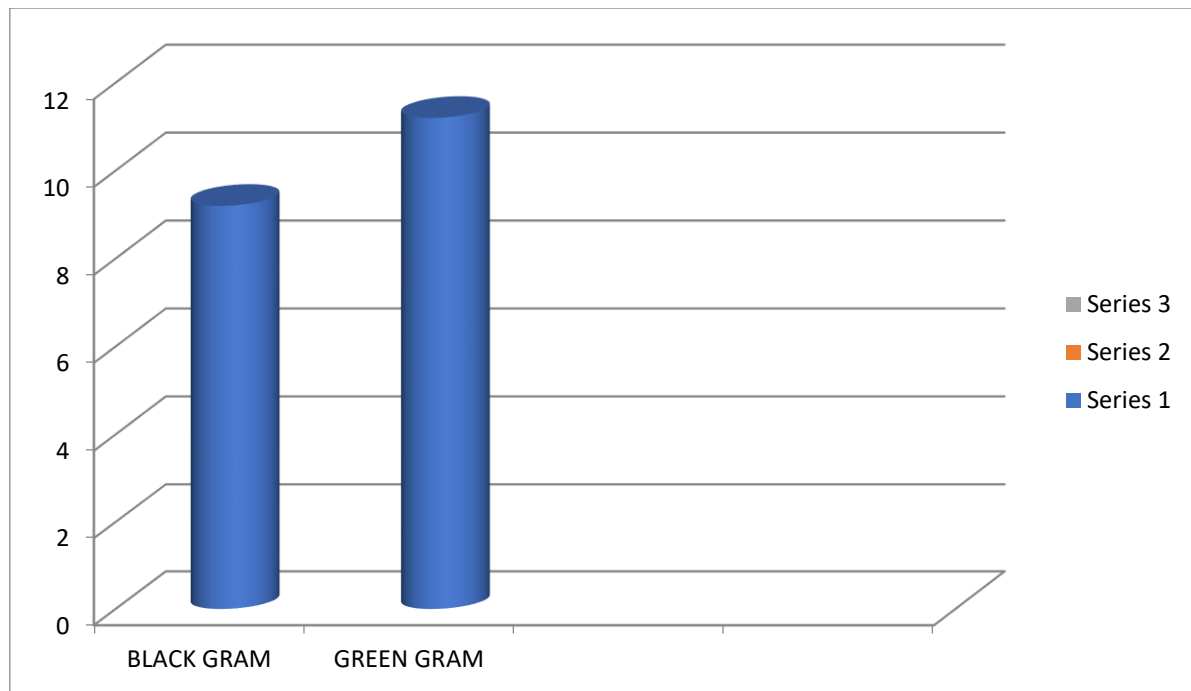


Fig 1: Graphical representation of Moisture Content (%) of black gram and green gram chunks

3.2. Protein content

Protein content in green gram is 23.8% and black gram is 24.5%

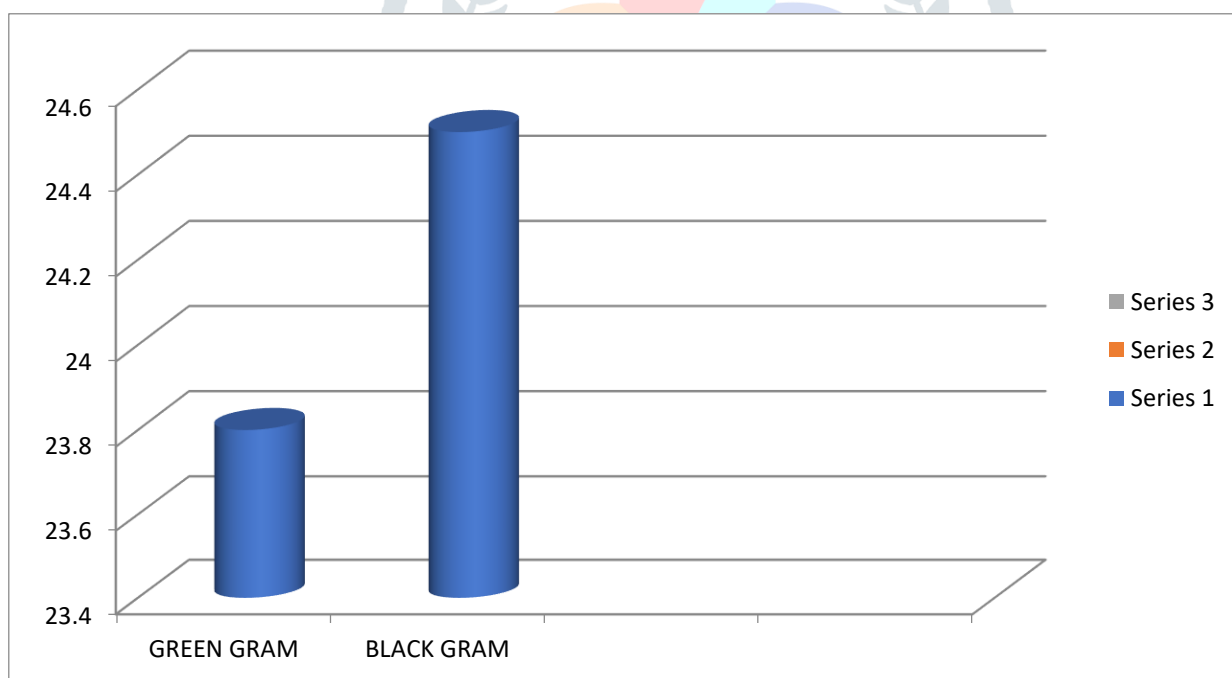


Fig 2: Graphical representation of protein content (%) of green gram and black gram chunks

3.3. Fat Content

Fat content in green gram is 4.5% and black gram is 0.5%

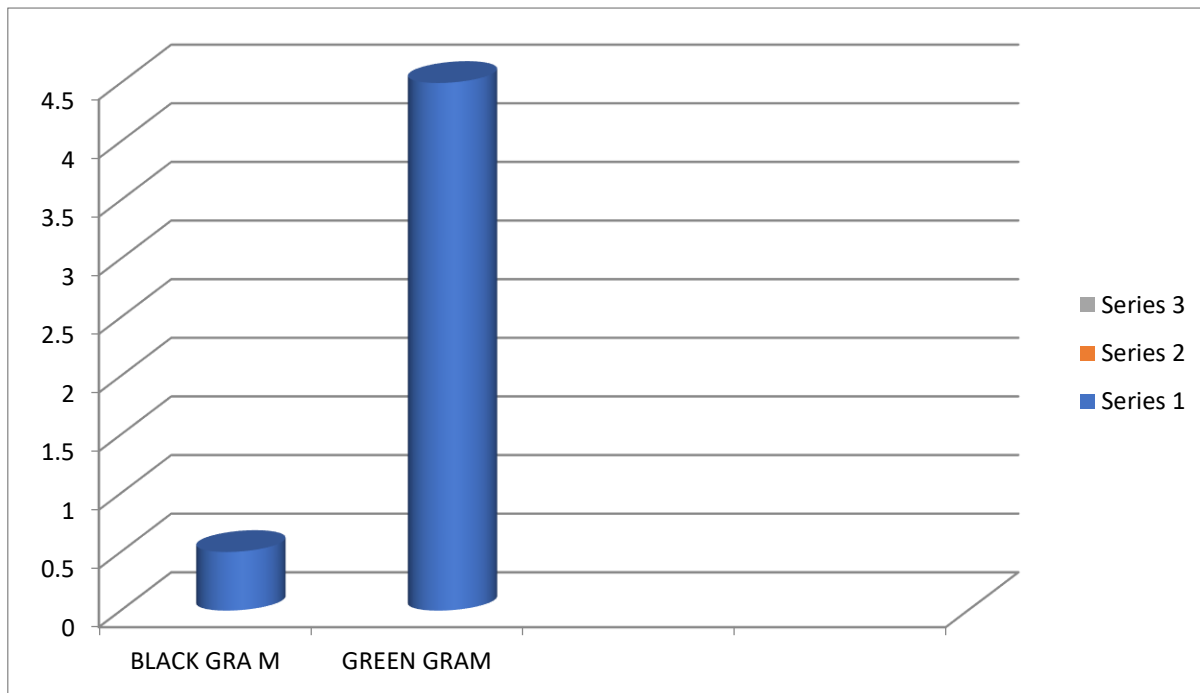


Fig 3: Graphical representation of fat content in black gram and green gram chunks

3.4.Ash Content

Ash Content in green gram is 3.7 % and black gram is 4.2%

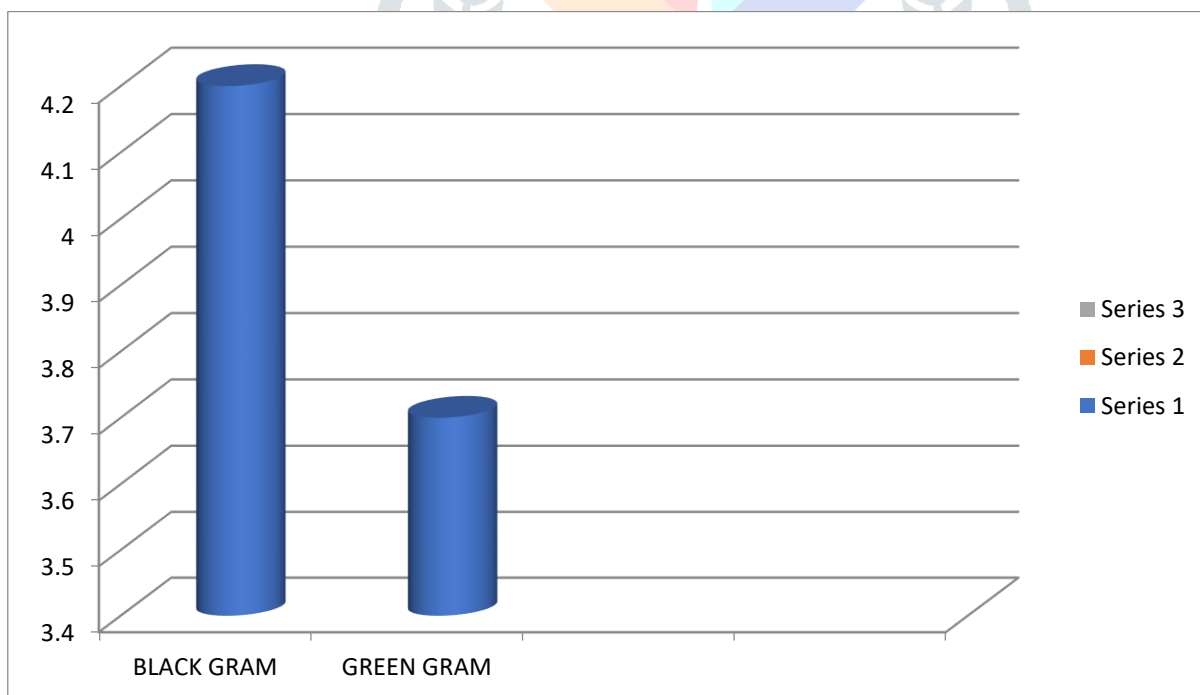


Fig 4: Graphical representation of black gram and green gram chunks

4. Conclusion

Chunks are dried product of green gram and black gram which are prepared by soaking , drying and mixing of spices. Chunks such as soya bean chunks, black gram chunks, green gram chunks provides the body with

essential nutrients for its good function. Its is good source of protein. The present study shows that the chunks can be alternate for food processing industry and they are good source of preservation.

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