

## Formulation of Protein Powder from Healthy Seeds and Banana Leaf

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### ABSTRACT:

Formulation is about protein powder which helps in body weight loss. Ingredients such as almond, oats, flax seeds, sunflower seeds, cashew, pistachios and banana leaf powder are used. Healthy seeds are rich in protein, carbohydrates, vitamin, iron, magnesium and fiber. These seeds reduce the risk of diabetes and lower blood sugar level. Powder of dried leaves of banana boosts the immune system, help in digestion of food, cleans the blood and helps in weight loss. Protein powder not only enhance nutritional intake but also maintains overall wellness, decreases overall calories intake and feels satiated for longer time.

**Keywords:** Protein, Almonds (*Prunus Dulcis*), Oats (*Avena Sativa*), Flax seeds (*Linum Usifatissimum*), Sunflower seeds (*Helianthus Annus L*), Cashew (*Anacardium Occidentate*), Pistachios (*Pistacia Vera L*), Banana leaf.

### INTRODUCTION:

Protein is an essential macronutrient that helps build muscle repair tissue & make enzymes and hormones using protein powder may also aid weight loss & help people tone their muscles there are many different types of protein powder including dairy, based & plant based powder. High protein everyday meal for metabolism loss to the best high- protein diet that help you lose weight a protein is nothing more than long chain of amino acids. Protein is said to be complete "when it contains all 9 of the essential amino acids & incomplete when it lactose 1 or more essential amino acid<sup>1</sup>. Protein powder is a supplement that is now commonly only used by professional athletes and people who are serious about training to help them maintain the correct protein intake. Muscle is built from protein so people looking to gain muscle size & strength will often aim to include more protein in their diet. Protein powder are widely used in today's world so that body can get enough protein supplement. If we can maintain a healthy life style. The best use of these is if you are teenager then you are growing and need more protein, if you are recovering from any illness or injury or if you are going to the vegetarian life style. The daily intake of protein powder works as a powerful tool for bodies. Many athletes use protein powders as supplement to

enhance their exercise training program which helps in muscle building .although there are many benefits of using protein powders which have been found after many studies & research. Protein powder are usually made from whey, soy, rice, egg, casein and milk. The idea behind the power of protein powders to make us lose weight is that carb, fat and calorie content is basically kept at metabolic booster which in turn helps in weight loss. Whey protein may be a popular fitness and dietary supplement. It is prepared from whey, which is the liquid that separates from milk during the cheese-making process. Whey protein powder can be prepared by drying filtered whey liquid. Whey protein may be a popular choice among athletes, fitness enthusiasts, and other people eager to build muscle or reduce fat. Studies show it can help recovery from exercise, muscle building and even help lose weight by reducing appetite and boosting metabolism <sup>[3,4,5]</sup> . The whey protein can be taken by mixing it with water or with another liquid of choice. Despite its health benefits, some people are concerned about their safety. Whey protein concentration is different in different animals as sheep and goats have similar concentration but higher than bovine (cow) whey.

### **Experimental**

All the healthy seeds such as almond, oats, sunflower seed, flax seeds, pumpkin seeds, cashew seeds, pistachios seeds, melon seeds are roasted and dried separately in a pan on low flame without burning . Dried banana leaves and seeds are converted into powder form with the help of grinder.

### **MATERIAL AND METHODOLOGY:**

#### **Materials**

Almond, Oats, Flax seeds, Sunflower seeds, Pumpkin seeds, Melon seeds, Cashew seeds, Pistachios seeds, Banana leaf powder, Jaggery powder, Milk powder.

#### **Methodology**

The Oven roast Almonds at 160°C for 4-5 min. or Pan roast on a low flame do not burn. Dry roast flax seeds pumpkin seeds cashew seeds, pistachios seeds, sunflower seeds and oats separately in a pan on low flame do not burn. After roasting let it cool down on a open surface. Combine all the ingredients in a blender jar, grind to get a fine powder. The leaves can be dried indoors or outdoors and this takes about two weeks to dry the banana leaves outside, choose a spot that get consistent worm sunshine and layer four sheet of newspaper on a table, place the leaves upside down on the newspaper without edges touching avoid areas that are higher in humidity since you want the leaves to dry out. Grind the dried leaves of banana and with the help of sieves collect the finest powder of dried banana leaves add to powder of seed. Transfer the powder from 100 to150 micron sieve size and then collect the powder and transfer into a airtight container and was use as required.

## Evaluation and characterization

### 1 . General appearance

The visual identity and overall elegance of a protein powder are what determine its overall appearance, which is important for consumer acceptability and trouble free manufacture

### 2. Dimensions

The dimension of the protein was evaluated using sieves .

### 3. Moisture content determination

A desiccator was use to determine the moisture content . This test was performed to determine the level of moisture in the protein powder when it was dry . The resulting protein powder mixture was precisely weighed and stored in a desiccator . After 24 hours , the formulations were removed , weighed and the percentage of moisture absorption was determined using the formula .

### 4. Stability

Medicinal products are defined as being stable if they can maintain their physical, chemical, microbial, therapeutic and toxicological specifications in a specific formulation in a specific container .

## RESULT AND DISCUSSION:

### 1) Organoleptic properties

Table No.: 01 Organoleptic properties

Sr. No.	Characteristics	Result
1	Colour	Creamy
2	Odour	Pleasant with no burnt smell
3	Taste	Sweet
4	Surface	Smooth and even

### 2) Moisture content determination

Weight of protein powder = 2 gm.

Weight of empty crucible = 45.32 gm

Weight of protein powder + weight of empty crucible = 47.32 gm  
Weight after moisture loss = 47.24 gm

Therefore, the final weight obtained 0.08 gm



Fig.No.1: Almonds, Oats, Flax seeds, Sunflower seeds, Cashew, Pistachios, Banana leaf



Fig.No.2: Protein Powder

Table No.02: Formulation ingredients

Sr. No.	Ingredients	Intended use
1	Almond	Phytonutrient
2	Oats	Hypocholesterolemic laxative
3	Flax seeds	Antiviral , antibacterial
4	Sunflower seeds	Antiaging properties
5	Pumpkin seeds	Anticarcinogenic
6	Melon seeds	Antiproliferative
7	Cashew seeds	Antioxidant
8	Pistachio	Ant inflammatory
9	Banana leaf Powder	Antioxidant , principle ingredients
10	Jaggery powder	Sweetening agent
11	Milk powder	Preservative

Protein powder is healthy and beneficial for weight loss. If you choose the right brand we need protein to build muscle, repair tissue and to make important enzymes and hormones that keep our system balanced. The benefits of protein powder which is commonly made into smoothie or shake go beyond the weight goal that you might have, it can be used to strengthen your immunity system, give your skin to glow that it needed during the period of weight loss. Protein powder can be a good source of nutrition for women because it can help to increase energy level, improve muscle tone, and aid in weight loss.

### Benefits of protein powder

#### Protein increase satiety

Protein delays gastric emptying which means that it stays in your stomach longer than carbs. you will feel hungry much later & feel satiated after eating too. It reduces the hunger hormones, increases the satiety hormones leptin. On top of that, it boosts the appetite reducing hormone GLP-1 peptide YY and cholecystokinin. All this means that you will have less calories, less cravings & more satisfaction of eating.

#### Protein has the highest TEF

After we eat something some calories are used for the purpose of digesting & metabolizing that food this is called thermic effect of food (TEF) protein has the highest thermic effect with 20-30% compared to 5-10% in case of carbs. & 0-3% in case of fats. This means that when we eat too many calories just to digest that food & what remains is only 70-80 usable calories.

### **Protein balances blood sugar**

When you have sufficient protein in a day it will ensure stable blood sugar as it case slow release of sugar in the blood ultimately it helps in losing weight.

### **Protein helps build muscle & so lose fat**

Protein helps you build muscle mass & loss fat the main job of protein in to repair & grow . It also improves your metabolism which means you develop more efficient calorie burning ability.

### **Diabetes**

Today most of the people are affected by type 2 diabetes and it is one of the growing health problems over the world. It become concern for teenagers and children's. Healthy nutrition practices may play role in managing and helping type 2 diabetes .Here, whey protein is the high biological, high quality and value protein which is good choice for the people who has diabetes whey protein helps to controls blood glucose level and also provides additional beneficial for weight management which is concern for type 2 diabetes<sup>[1]</sup>

### **Cardiovascular health**

Heart disease is considered as one of the most leading disease which cause death for both men and women. It is essential to maintain health and nutrition diet and also regular exercise to maintain the healthy cardiovascular system<sup>[2]</sup>. In this way, whey protein is a part of that nutritious diet, which keeps a person healthy. High blood pressure(hypertension) is one of the leading heart diseases and it may cause stroke. Whey protein helps to fight against the hypertension. Elevated cholesterol is one of the factors that is associated with the heart disease. Here , whey protein helps to reduce cholesterol.

### **Flax seed**

It helps to lower intake of calories daily. It helps us to suppress your appetite by making you feel full .flax seed contain good amount of alpha-linolenic acid(ala) a type of plant –based omega-3 fat. Ala is considered essential because it's a type of fat your body cannot produce, this means you can get it through your diet.

### **Almond**

Monosaturated fat content ,oleic acid, palmitoleic acid content are considered a fat-burning food. Almonds are rich in protein, fibers and nutrients. Almond reduce cholesterol.

### **Pumpkin seed**

Major fatty acid were steric, oleic and linoleic acid. Pumpkin seed rich in zinc as compare other seed which is more important for fat burning.

### **Sunflower seeds**

Fill with protein, fibers and essential minerals like vitamin-e , foliate and copper this seed can make for a healthy bet for sustainable weight loss. sunflower seed contain flavonoids, phenolic acid.

### **Cashew seeds**

In addition to lowering rates of ldl cholesterol. Cashew may helps to prevent heart disease due to their high magnesium content. proper magnesium intake may reduce the risk of ischemic heart disease, with offen occurs when the heart does not received enough blood.

### **Melon seeds**

The seeds are high in fiber, iron magnesium and protein. Protein is a vital weight loss tool as it builds muscle which you burn calories to maintain. Decent amount of micronutrients iron and zinc, fibers and protein. This nutrients help to reduce the risk of heart disease, diabetes, boost immunity and help with weight loss.

### **Pistachios**

Pistachios are rich in fiber and protein both of which increase feeling of fullness and help you eat less. Pistachios is a great source of healthy fats, fiber protein, antioxidant and various nutrient including vitamin b6 and thiamine. They lower cholesterol and blood sugar level and improve guts.

### **Oats**

They feeling full due to their high fibres content can increase satiety with meals. These can helps to control hunger level and reduce over eating. Oats contain beta- glucan, type of soluble fibres that has been shown to promote weight loss.

### **Banana leaf**

Banana leaf contain glutamic, aspartic, glutaric, glyceric, glycolic, glyoxylic, alpha-ketoglutaric acid. banana leaf have anti-cancer activity, enhance digestion, have anti-diarrheal activity, may at as antioxidant, have antibacterial and antifungal activity, may heal wounds.

## **CONCLUSION:**

In conclusion, based on the above-mentioned study, we can say that Protein Powder with ingredients like banana leaves, Almonds, Oats, Melon Seeds, Pista Chios, Sunflower Seed, Pumpkin seeds, Flax Seed which have a smooth in texture, pleasant to the taste, and have patient compliance and safety for Weight loss. The Shape, size, taste, texture, dimensions, moisture content and stability of the formed protein powder were all analyzed. We concluded

from the study that Protein powder gives the formulation a smooth, creamy texture and give a greater therapeutic effect.

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### **CONFLICT OF INTEREST:**

None

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