

FORMULATION DEVELOPMENT, PHYSICOCHEMICAL & NUTRITIONAL ANALYSIS OF AYURVEDIC VEGAN NUTRIMIX POWDER FOR BUILDING MUSCULATURE & TO IMPROVE HEALTH

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INTRODUCTION

Athletes and members of commercial gyms and other physically active people take supplements to increase muscle mass, boost strength to stave off future illnesses and enhance athletic performance. Protein supplements are concentrated forms of high-protein foods that are used in bodybuilding and as dietary supplements to meet protein requirements in a lean body.

47% of Indians take protein supplements in powder form. Each person's daily protein requirement is different, depending on their body mass. Adults who are healthy and sedentary typically require 0.8 grams of protein. In comparison, individuals who strive to gain muscle mass through intense exercise require 1.4 to 1.6 grams of protein per kilogram of body weight per day.

Protein powders available in the market include plants (such as soybeans, peas, rice, potatoes, or hemp), eggs, milk, whey protein, vitamins, minerals, artificial flavours, thickeners, and added sugar.

There are certain drawbacks to recent market protein powder in addition to its benefits. Recent market protein powder shows upset stomach, which can lead to unhealthy weight gain, kidney problems, hormone imbalances, liver damage, etc.

Due to their widespread availability and relative affordability as compared to ingredients derived from animals, plant protein supplements are frequently used. Therefore, it is necessary to produce a plant-based, Ayurvedic Vegan Nutrimix Powder with minimal side effects and increased nutritional content to counteract the adverse effects of commercial protein powders.

According to the *Charak Samhita*, medicinal plant sources such as *chanak*, *mung*, *mash*, *shatavari*, *bala*, *ashwangandha*, *vidari*, and *kushmanda* have qualities like *rasayana*, *balya* and *bruhan*. These ingredients help in building musculature, increase immunity and maintain overall health.

The aim of this study is to prepare ayurvedi vegan nutrimix powder that is not only free from sugar, gluten and cholesterol but also act as an immunity Booster and is effective in healthy weight gain and muscle building.

OBJECTIVES

1. To formulate and develop Ayurvedic Vegan Nutrimix Powder.
2. To do the physicochemical analysis, the prepared product
3. To assess the final product based on nutritional parameters.

METHODOLOGY

1. **Study Design:** Pharmaceutical & Drug Research.
2. **Duration of Study:** 2 months.

MATERIALS AND METHODS

1. Materials

Drug

Table No. 1: Showing Ingredients with their Quantity for Nutrimix Powder.

Sr.No	Name of Raw Drug	Quantity for 100 g
1	<i>Chanak</i> (Chickpeas)	25 g
2	<i>Mung</i> (Green gram)	25 g
3	<i>mash</i> (black gram)	25 g
4	<i>Shatavari</i> Powder	05 g
5	<i>Bala</i> powder	05 g
6	<i>Vidari kanda</i> powder	05 g
7	<i>Kushmanda</i> powder	05 g
8	<i>Pimpali</i> Powder	05 g

2. Methods

- a) **Collection of raw materials** - Raw drugs will be sourced from the local market.
- b) **Pharmaceutical method** - The preparation of Ayurvedic Vegan Nutrimix Powder based on traditional Ayurvedic concepts.
 - ✓ The above grains are roasted and ground into fine powder.
 - ✓ The plant material is ground too separately.
 - ✓ After grinding, all the ingredients are mixed well.
 - ✓ Now take the weight of the mixture with a weighing machine.
 - ✓ Packed in an airtight container.
- c) **Physicochemical analysis of formulation:** The Ayurvedic nutrimix powder was analysed based on the following parameters.
 - Organoleptic Study
 - Moisture content
 - Ash content
 - Acid Insoluble Ash
 - pH
 - Water Soluble Extractive
 - Alcohol-Soluble Extractive
- d) **Nutritional evaluation of Ayurvedic Vegan Nutrimix Powder**
 - Crude Protein content
 - Fat content

- Crude fibre content
- Carbohydrate content
- Calories content

RESULT AND DISCUSSION

Organoleptic study of a drug refers to the evaluation of a drug by colour, odour, size, shape, taste and special features, including touch, texture, etc, with the help of sense organs. The obtained results of the Nutrimix powder are shown.

Table No. 2: Showing Organoleptic Characters for Nutrimix Powder.

Sr.No.	Description	Observations
	Colur	Yellowish cream
1.	Odour	Faint
2.	Taste	Sweet astringent

Physicochemical analysis of Nutrimix powder was conducted. This test includes determination of pH, loss on drying, total ash content, acid insoluble ash, water soluble extract, and alcohol soluble extract.

Table No. 3: Showing Physicochemical Analysis of Nutrimix Powder.

Sr.No.	Description	Results
1.	Moisture content	0.05 %
2.	Total Ash content	3.87 %
3.	Acid insoluble ash	0.23 %
4.	pH	5.7
5.	Water Soluble Extractive	19.44 %
6.	Alcohol Soluble Extractive	73.99 %

The proximate analyses of Nutrimix powder play a crucial role in assessing its nutritional significance. The chemical composition of Nutrimix powder for their moisture content, crude protein, Fat, total carbohydrates and crude fibre is shown in the table below. The results of the proximate composition (Table) revealed that nutrimix powder has high amounts of protein, moisture, total carbohydrates, fat and crude fibre.

Table No. 4: Showing Nutritional Analysis of Nutrimix Powder.

Sr.No.	Description	Results
1.	Protein content	17.34
2.	Fat Content	2.4
3.	Fibre content	5.92
4.	Carbohydrate content	41.52
5.	Calories content	243.59

CONCLUSION

In recent years, food scientists and professionals have developed and evaluated a substantial number of functional foods tailored to specific populations. Researchers are exploring underutilised plant-based drugs, which offer excellent nutrient sources. In this study, an Ayurvedic Vegan Nutrimix Powder was developed, consisting of ingredients such as chanak, mung, and mash, which may offer good nutritional quality.

REFERENCES

1. Agnivesh, Charaka Samhita, Ed. Vd. Yadavaji Trikamji Acharya, Chaukhamba Sanskrit Sansthan, Varanasi, Reprint, 2004.
2. Sushrut, Sushruta Samhita, with Nibandhasangraha Commentary of Sri Dalhanacarya Ed. Vd. Yadavaji Trikamji Acharya & Narayana ram Acharya "Kavyatirtha", Chaukhamba Orientalia, Varanasi, 8th Edi, (2005).
Dhanwantari Nighantu; Editor Acharya P.V. Sahrma; Comm. Dr. Guruprasad Sharma; Pub.Chaukhamba Orientalia Varanasi; Reprint: 2008.
3. Shri Chandraraj Bhandari, Vanaushadhi Chandrodaya, chaukhamba Sanskrit sansthan, Varanasi, Edition 7,1993.
4. Dr. Tripathi Ashtanghridaya, Chaukhamba Sanskrit Prakashan, Delhi, Edition 2012.
5. Prof. Krushnchandra Chunekar Bhavprakash Nighantu-Bhavprakash Nighantu (Chaukhamba BharatiAcademy), Edition-2010.
6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4118305/#:~:text=Results,and%2093.1%20from%20the%20SB>).
7. <https://blog.naturalwellbeing.com/4-types-of-people-who-could-benefit-from-protein-powder>.
8. https://en.m.wikipedia.org/wiki/Protein_supplement.
9. <https://www.medicalnewstoday.com/articles/323093>.
10. <https://www.health.com/what-is-protein-powder-7372048>.
11. <https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/are-you-getting-too-much-protein#:~:text=How%20much%20protein%20do%20you,per%20kilogram%20of%20body%20weight> ht.
12. <https://iamherbalifenutrition.com/healthy-weight/protein-powder-benefits/>.
13. <https://www.health.harvard.edu/staying-healthy/the-hidden-dangers-of-protein-powders>.
14. <https://www.hdfcergo.com/health-insurance/wellness-corner/Is-protein-powder-bad-for->

you.

15. <https://www.healthline.com/nutrition/10-health-benefits-of-whey-protein>.
16. <https://health.clevelandclinic.org/is-whey-protein-good-for-you/>.
17. <https://www.webmd.com/vitamins/ai/ingredientmono-833/whey-protein>.
18. <https://www.cbc.ca/radio/whitecoat/what-you-need-to-know-about-protein-supplements-and-if-you-need-them-1.6756834>.
19. <https://thehealthychef.com/blogs/wellbeing/10-ingredients-that-should-never-be-in-your-protein-powder>.
20. <https://www.healthline.com/nutrition/is-powder-bad-for-you#basics>.
21. <https://www.felixhospital.com/blogs/potential-side-effects-of-excess-intake-of-protein-supplements>.
22. <https://www.stylecraze.com/articles/side-effects-of-protein-supplements-you-should-know/>.
23. <https://www.eatthis.com/protein-powder-dangers-every-day/>.