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Nutritional and Therapeutic Potential of Superseeds and it used in Preparation of Ready to Eat Food-Superseeds Dalupma/Uppindi

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Abstract: ***Superseeds are tiny or small in size but are really full of nutritional and power of fulfilling micronutrients especially vitamins, minerals and amino acid.Naturally obtained from fruits, vegetables and crops plant seeds which are good for health and become therapeutic diet of person. The presentstudy was carried out in two main concept "Ready to eat" and "product enhances with superseeds". Ready to eat food products are defined as the product is fully and partially cooked when it's pack. Now a day is more popular and demand by people because it's make life easier and time saver for cooking. To developed and standardize the product with superseeds (chia seeds, flax seeds, hemp seeds, pumpkin seeds). Adding superseeds, split chickpeas and black gram in traditional food upma to enhance the properties of seeds (chia, hemp, pumpkin and sunflower) in the form of superseeds dal upma as breakfast or snack which is used for therapeutic dietof person and fulfilling the micronutrients especially for vegan or keto diet people. Chia seedsare rich in calcium and omega fats. Hemp seeds are rich in omega fatty acids (both omega 3 and omega 6). Pumpkin seeds are rich source of zinc. Flax seeds are rich in omega fatty acids and dietary fibres.Nutrition evaluation of product energy (441 Kcal), protein (18.64 g), carbohydrates (68.86 g), dietary fibres (3.45 g), fats (7.14 g), zinc (7.81 mg),), calcium (583 mg) and omega fatty acids (17.86g).***

Keywords: Ready to eat, superseeds (chia seeds, hemp seeds, pumpkin seeds and flax seeds), therapeutic diet, nutritional evaluation

1. Introduction

Among the fastest growing food sector in developed and developing countries are more demanding of packed food and ready to eat food meals. Ready to eat (RTE) food product are well designed according to food meals, traditionally and concept of time saver. It is prepared food while packing, it may be frozen, refrigerator or store as room temperature or added preservative or drying process methods for increase the self- life of products.Product enhances with superseeds and knows the properties within dishes. I having taken four superseeds are chia seeds, hemp seeds, pumpkin seeds and flax seeds. Adding split chickpeas (Chana dal) and split black gram (Urad dal) in traditional south Indian dish- Upma. Making the upma innovative and healthy.

Chia Seeds (*Salvia hispanica***),** is a grain from wheat beans, and it is edible seeds. Chia seeds are high in fiber and protein, vitamins and minerals. It is gluten free. And good source of calcium and omega fats. A rich source of Omega-3 fatty acids, it helps reduce cholesterol, enhances cognitive performance and reduces inflammation. A good source of fiber, it satiates hunger and lowers cravings. It has antioxidant properties and prevents cancer. It can be used as an egg substitute to lower cholesterol and increase nutrient content.

Hemp Seeds (Bhang Seeds) (*Cannabis sativa*),are rich in unsaturated fats which is healthy fat and essentially fatty acids. These seeds are loaded with a range of vital minerals including the energy -boosting iron, bone-building, calcium, and magnesium and high-quality plant protein.It is a perfect protein source containing all the essential amino acids that our body cannot produce.Rich in soluble and insoluble fiber which helps clean our system.Its helps in digestion, balances hormones and improves metabolism. Excellent source of essential fatty acids including Omega-3, Omega-6 and gamma linolenic acid. Its 'reduces inflammation and benefits those with arthritis and cardiovascular disease andhelps in better blood circulation.

Pumpkin Seeds (*Cucurbitaceae*) are a rich source of zinc. It strengthens the immune system and enhances cell growth. It helps in insulin regulation and diabetes control. It improves skin cells and eye health. Pumpkin seeds may help prevent certain categories of cancer. It has full of antioxidants that may help protect their blood sugar levels control.Rich in fiber.It reduces high cholesterol level and maintains high blood pressure.

Flax Seeds (*Linum usitatissimum*),are shiny nutty seeds have an earthy aroma and a host of health benefits. It is good source of fiber; it prevents constipation, aids digestion and helps control hunger. It containing rich source of antioxidants and aids in preventing cancer. It helps in reducing menopausal symptoms and hot flushes. And lowers bad cholesterol and reduces hypertension. It helps in weight loss due to its high fiber content and provides a longer satiety value.

Black Gram (URAD DAL) *(VignaMungo),* very nutritive and use in ayurvedicmedicine. Good source of containing dietary fiber which help in digestion and can easily digest. It's having many health benefits such as boost energy,

improves skin health and hair. Good for heart patient and improves of bone mineral density.

Chana Dal (*Cicer Arietinumb),* are high in protein which make outstanding replacement meat in vegan diet. Rich source of fiber, vitamins and minerals which help in good digestion system and maintain the weight.

Objective

Developed the product with superseeds (chia seeds, hemp seeds, pumpkin seeds and flax seeds) and dal (Chana dal and urad dal) and find nutritional value of product.

2. Material and Methods

The experiment was carried out in Research Laboratory of Department of Food Science and Nutrition, School for Home Science, BBAU, Lucknow. The required sample for the experiment is chia seeds (50 gram), flax seeds (50 gram), hemp seeds (50 gram), pumpkin seeds (50 gram), split chickpeas (100 gram) (Chana dal), black gram (100 gram) (urad dal), curry leaves (10 gram), green chillies (10 gram), black mustard seeds (rai) (2 tablespoons),semolina (Rava/ sooji) (300 gram), ghee (3 tablespoons) and salt according to taste.

Preparation of superseeds dal upma:

- Socked the urad and chana dal about 2-3 hours, and then dry the dal in sun drying process 2-3 days. Then grind the dal and make it powder form.
- Dry roast all the superseeds- chia seeds, hemp seeds, pumpkin seeds, flax seeds and semolina keep it room temperature to cool down.
- Pour ghee on pan, add black mustard seeds, green chillies and curry leaves.
- Then added all the superseeds (chia, hemp, pumpkin and flax), and all the ingredientssuch as powder form chana dal and urad dal and semolina.
- Mix well and sauté for 5-10 minutes and at last salt according to taste.
- Allow it cool down in room temperature, then packed in small plastic pouch in one meal and according to one person 25 gram (air tight packaging with plastic small pouches). While packing and storing for long periods of time 3-6 months, there is no preserved added. It is purely home-made food meal.

Nutritional Analysis

The product was nutritionally experimentsin RFRAC (Regional Food Research Analysis Centre) Lucknow. Proximate analysis was determined by Kjeldahl method and Atomic Absorption Spectrometry (AAS).

3. Results and Discussion

The nutritive value of product- super seeds dal upma as per 100 gram

Energy	441 Kcal
Protein	18.64 g
Carbohydrates	68.86 g
Dietary fibres	3.45 g
Fat	7.14 g
Zinc	7.81 mg
Calcium	583 mg
Omega fatty acid	17.86 mg

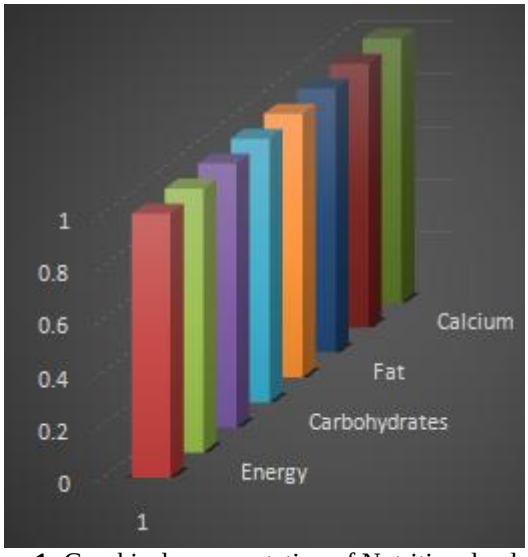

Figure 1: Graphical representation of Nutritional value of Superseeds Dal Upma

4. Conclusion

Developing the traditional food upma into high protein , fiber and adding superseeds (chia seeds , pumpkin seeds , hemp seeds , flax seeds) and Dal (chana dal , urad dal) enhance the properties of micronutrients and completing the meal of therapeutic diet and keto diet person. The superseeds dal upma having more good ratio of chana dal and uraddal. Which are highly plant protein based .Chia seeds are high in protein and fiber and good source of calcium and omega fats . Hemp seeds are high quality plant protein and rich source of calcium and magnesium. Pumpkin seeds are rich source of Zinc . Flax seeds are good source of fibers and omega fatty acids (both omega 3 and omega 6). Both chana dal and urad dal are good source of dietary fibers and hoghprotein which make excellent replacement of meat in vegan diet.

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