

TO FORMULATE AND EVALUATE PREPARED "ANTI-OBESITY HERBAL POWDER" CONTAINING MORINGA OLEIFERA LEAVES AND TRIGONELLA FOENUM SEEDMaya Y. Gaikwad^{1*} and Archana B. Thakare²¹Lecturer, SMBT Institute of D. Pharmacy, Dhamangaon, Nashik.²Student, SMBT Institute of D. Pharmacy, Dhamangaon, Nashik.***Corresponding Author: Maya Y. Gaikwad**

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ABSTRACT

Obesity is condition in which amount of body fat is increased rapidly. Obesity measured and reported in terms of body mass index (BMI). The main cause of obesity is a disproportion between intake and outflow of fat. WHO estimates traditional medicine mostly plant drugs provide the health needs of nearly 80 % of world population. A imperative pharmacological activity of moringa is its anti-obesity potential. The anti-obesity potential of moringa or specific components isolated from moringa such as quercetin, iso-quercetin, quercetin 3-o-molonyglucoside, astragal in have been identified in moringa that show anti-obesity activity. Another herbal drug used in formulation is Fenugreek seed which having free radical scavenging activity. Both the herbs having potential anti-obesity activity so we formulate powder containing Moringa oleifera leaves and Trigonella foenum seed to get synergistic effect.

INTRODUCTION

Obesity is a medical condition involving an excess accumulation of body fat. Excessive fat accumulation is characterized by obesity and occurs when energy consumption is higher than energy expenditures. Obesity is condition in which amount of body fat is increased rapidly obesity measured and stated in terms of body mass index (BMI). The main cause of obesity is an imbalance between intake and outflow of fat.

WHO estimates traditional medicine mostly plant drugs cater to the health needs of nearly 80% of world population. To the extent that it may have an adverse effect expectancy increases health problems.

Many anti-obesity drug have adverse effects so many trials have been recently conducted to find and develop new anti-obesity drugs through herbal medicine that would minimize the side effects. Obese individuals have not only trial long term plans for weight loss such as modification of lifestyle, but also the surgical and medicinal intervention. Obesity can leads to many chronic disease, such as type 2 diabetes, cardiovascular disease, strokes, hypertension, hyperlipidemia, and contribute the certain types of cancer. Obesity can also adversely impact the individual psychologically causing mental health disorders, social discrimination and physical inability.

Moringa oleifera

Moringa oleifera tree is a common highly nutritious that has been widely used in folk medicine, due to its numerous pharmacological potential. It is known the Miracle tree.

Moringa oleifera has been reported for several pharmacological properties such as antioxidant, anticancer, anti-diabetic, anti-obesity, anti-inflammation, anti-allergic, anti-asthmatic, anti-ulcer, anti-epileptic and anti-pyretic effect.

An important pharmacological activity of moringa is its anti-obesity potential. The anti-obesity potential of moringa or specific components isolated from moringa such as quercetin, iso- quercetin, quercetin 3-o-molonyglucoside, astragal in have been identified in moringa that show anti-obesity activity.

Moringa oleifera leaves contain many biological active compounds. That contributes to disease and disorders. Leaf hydro-ethanolic extract reduced the mRNA expression of PPAR α 1, PPAR- γ , and HMG-CoAR (Responsible for lipid homeostasis) Aqueous leaf extract also inhibited formation of both non-fluorescent and fluorescent advanced glycation end products. By reducing monosaccharide, in addition to reducing the oxidation of thiols and protein carbonyl content.

Overweight problem is the most common nutrition

related health condition. Many attempts have been done to prevent and control such problem and minimize its serious health risks.

In fact *Moringa oleifera* is said to provide 7 time more vitamin c than oranges, 10 times more vitamin A than carrots, 9 times more protein than yoghurt, 25 times more than spinach.

The leaves of moringa are rich in minerals like calcium, potassium, zinc, magnesium, iron and copper *Moringa oleifera* leaves have a low calorific value and can be used in the diet of the obese. *Moringa* can be used to cure more than 300 disease and has long been used in herbal medicine in India.

Preservation by drying dehydration improves the shelf life of moringa leaves without change in nutritional value.

Taxonomical position:

Kingdom: Plantae
Clade: Tracheophytes
Clade: Angiosperms
Clade: Eudicots
Clade: Rosids
Order: Barassicales
Family: Moringaceae
Genus: *Moringa*
Species: *M. oleifera*



Fig. 1: Moringa oleifera.

Fenugreek seeds have long been used as herbal medicine for metabolic and nutritive dysfunction. Fenugreek is a one of the oldest cultivated medicinal plants. Further studies evaluate the seed having antioxidant properties.

Fenugreek belongs to the Fabaceae family and has been used as an important species since ancient times. About 70 to 90 different species of fenugreek are being cultivated around the world. Fenugreek is also consider as a rich source of dietary fibers and other important nutrients needed for proper growth and develop.

Medicinal properties of fenugreek such as anti-carcinogenic, anti lithogenic, antioxidant, hypocholesterolemic, anti-diabetic, antimicrobial, anti-obesity and immunological properties make it important components to be used in food and pharmaceutical industries.

Fenugreek also provide natural tonic to cure several types of lifestyle related disorders, cardiovascular, hypercholesterolemia, hyperglycemia, cancer, liver ailments and sexual disorders such as testosterone deficiency syndrome.

Fenugreek has a waste diversity both nutrient and

bioactive components which are required for improving the health functioning of biological system 58 % carbohydrates, 26 % protein, 0.9 % fat, 25 % fibres.

Fenugreek has different minerals likes potassium, magnesium, calcium, zinc, manganese, iron, vitamins, beta carotene, and copper. As fenugreek is rich in several phytochemical, alkaloids, carbohydrates, steroids, saponin, amino acids it can used for nutritional, Nutraceuticals, medicinal and therapeutic purpose.

Galacto- mannan that is present in the seed of fenugreek capture and excrete the sugar from body, before it moves in the blood this caused the loss of weight.

Taxonomical position:

Kingdom: Plantae
Clade: Tracheophytes
Clade: Angiosperms
Clade: Eudicots
Clade: Rosids
Order: Fabales
Family: Fabaceae
Subfamily: Faboideae
Genus: *Trigonella*
Species: *T. foenum-graecum*



Fig. 2: Trigonella foenum-graecum.

MATERIAL AND METHOD

Plant materials: Moringa oleifera leaves (Family: Moringaceae) and Trigonella graecum seed (Family: Fabaceae).

Collection and preparation: Moringa oleifera leaves were obtained in large quantities from the village Shenit, Nashik and fenugreek seed were obtained from the

market of Lahavit. The leaves were shade dried by spreading over a sheet of paper under a ceiling fan for a week. The dried leaves were ground in an electric mixer into fine powder and pass from the sieve. Also the fenugreek seed were ground in an electric mixer into fine powder and passes from fine sieve. And mix well by the trituration method and stored in clean strike glass container.



Fig. 3: Formulation procedure.

Table 1: Evaluation parameters.

Sr. No.	Evaluation test	Result
1	Colour	Greenish yellow
2	Odour	Astringent
3	Taste	Bitter
4	pH	6.7
5	Flow property	Ø 26.1
6	Bulk density	0.57
7	Tapped Density	0.62
8	Hausner's ratio	1.08
9	% Compressibility index	8.06

RESULT AND DISCUSSIONS

Herbal anti-obesity powder containing the Moringa oleifera leaves and fenugreek seed powder was formulated successfully. Evaluation taste was carried out for colour, odour, taste, pH, flow property, Bulk density, Tapped density, Hausner's ratio, and percentage compressibility index.

Conclusion: In conclusion, the present study provided experimental evidence for the anti-Obesity activity of

Moringa oleifera and fenugreek seed. From the present study it can be concluded that Moringa and fenugreek powder is beneficial to the weight management.

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