

Nutritional Quality of Methi (*Trigonella foenum graecum*) Seeds & its Products

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Abstract -A varietal trail comparing of eight varieties of methi seeds (*Trigonella foenum graecum*) powder & its sabji preparation was carried out. The methi seeds varieties was collected from Vegetable Research station, Kalyanpur, Kanpur in rabi season 2001-2002 in randomized block design with three replications. The seed yield 7 nutritional quality of these methi seed powder & its sabji preparation of these eight varieties was studied. The yield of methi seeds ranged between 8.00q/hect. to 19.67q/hect. Whereas the moisture content ranged in seeds 3.89-6.91%. Crude protein ranged from 26.76-33.92%, crude fiber is ranged between 13.96-18.33%. The eight varieties are of the fat ranged between 5.18-6.79%, reducing sugar ranged between 0.29-0.55%. In comparison to seed powder & the seed sabji preparation moisture was found between 40.25 – 59.11%, crude ranged between 23.51-35.01%, crude fat 20.25-26.99%, Ash 3.89-6.91%, Reducing sugar 0.44-0.79%, Crude fibre 19.11-24.05%. the name of these eight varieties are kalyanpur selection, Pusa early bunching, kalyanpur selection-I, Rajendra Sonia, Prabha, Azad-I, Coimbatore-I, Coimbatore-II.

Index Terms – Methi seeds, Fenugreek, nutritional quality, Pusa early bunching, methi modak, crude protein.

1 INTRODUCTION

FENUGREEK is an annual herb, which is being cultivated in Mediterranean areas in India & North Africa. In India it is raised as cold season crop. It has been cultivated as a condiment and as a pot herb in India & North African countries for centuries. Herb is grown also for fodder & for improving the soil in Mediterranean countries, California, South America & some other tropical countries. This is a short duration crop which is non expansive. If plant breeders are successful in developing fenugreek varieties with a high content of Diosegnin, It is a steroidal substance used as a starting material in the synthesis of sex hormone & oral contraceptives. Because of its Diosegnin content, fenugreek helps in lessening certain effects of menopause, such as hot flashes or mood swing. The herb has also been known to be able to increase ovaries libido. Fenugreek seeds have been used for long time in treating certain reproductive & hormonal disorders, facilitate breast enlargement & reduce the problem of menstrual pain. People suffering from sour throat or acid reflux have reported experiencing relief by taking fenugreek. More recent research has shown that the use of fenugreek seeds is very useful in the level of both cholesterol & blood sugar. It is actually be effective in treating diabetes type I & type II. Studies are now being conducted on the benefits that the herb can also offer for cardiovascular disorders. Thus this little known spice could make a twofold economic contribution to solution of the world's population problems by assisting in birth control & at the same time providing addition at food.

As a spice fenugreek also adds to the nutritive value & flavor of food because of this, it is of considerable importance in those countries in the middle & far East where meatless diets are customary for cultural & religious reasons. In Egypt and Ethiopia, Fenugreek is a popular

ingredient of bread known as "Hulba", In Greece the seeds

boiled or raw are eaten with honey. In United States it is used in the preparation of chutneys & in various spice blends, but its most important culinary use in flavoring ingredients of imitation maple syrup, in other receipts like Hearty vegetable Bean soup & Fenugreek beef stew & principal odoriferous constituents of curry powder. In Switzerland used as flavoring cheese, roasted seeds are used as a substitute for coffee in some parts of Africa.

Several confections under the name of methi modak used in cases of dyspepsia & in diarrhea of women at child birth in rheumatism. Fenugreek is also useful to cure disturbances after delivery. It is applied externally for burns, wound & swelling. It also helps to cure cough & difficult breathing. In small pox it given as cold drink. It has antibacterial property, reduce fever, stimulate digestive process and general metabolism. Seeds cure colic flatulence, Dysentery, diarrhea, dyspepsia with loss of appetite, dropsy, liver enlargement, rickets & gout.

2 MATERIAL & METHOD

Eight varieties of methi seeds were grown at vegetable research station, kalyanpur, Kanpur following recommended practices & the seeds were collected in the replications. After the maturity of the pod, the seeds samples were dried at 70°C in a hot air oven & make a fine powder. The powdered samples were used for chemical analysis. The crude protein crude fat, crude fiber estimation was done by AOAC method. True Protein by the method described by Kent Jones & Amos, Ash by the method described by piper & reducing sugar percentage determined by NELSON-SOMOGYI method. Fat content by Petroleum ether (40-60°C) extraction in Soxhlet extractor for six hours. The results were statistically analyzed for significance.

3 METHI SABJI PREPARATION

50g. Methi seeds were cleaned well & boil in 150ml water for 10 min at 400C temp. the water is removed & boiled seeds put in sieve in air chopped onion were fried till golden brown & put the seeds in the pan for 5 min. then garnish with coriander leaves. Serve this with chapattis & boiled rice & khichadi for various panelists to judge the score. The main importance of the seed sabji is reduced bitterness & increased digestibility.

4 RESULT AND DISCUSSION

From the Eight varieties best yield was recorded by PRABHA 19.67q/hect & the second best variety was Azad-I yielded 15.75q/hect. The variation in the yield of Methi seeds will be attributed to the genetically and phonological characters. The moisture % in the seeds is of utmost importance, if the moisture % is higher to a certain level it may creak the fungus effect on the seeds, while on storage i.e. lower the % better for quality point of view The different varieties when tested in the lab after harvest had varying moisture level to the significant level in variety co.-I, registered the lowest moisture 9.67% being at par with

Rajendra Sonia 9.83% & Prabha 9.90%. The higher moisture was registered by kalyanpur- selection, which was significantly highest with rest of the varieties. The highest crude protein was registered in the variety Pusa early bunching & kalyanpur selection. Max crude fat was found is the variety KS-I 6.79% which was significantly superior than rest of the varieties except RS (6.54%) which was at Par. It is noteworthy here that variety Prabha which showed max. yield however showed lower fat 5.63% than KS-I & RS. In Ash content point of view variety RS yield max. Ash 5.49% followed by PEB 5.21% whereas lowest ash was shown in the variety Prabha 3.28% remaining varieties were significantly superior than this variety. Max reducing sugar was recorded in KS-I which was significantly higher than rest of the varieties i.e. 0.55%. Three varieties are on the second position i.e. by variety KS, PEB & Co-II (0.43, 0.41 & 0.41 respectively). The lowest reducing sugar 0.29% was however noted in variety CO-I. The highest crude fiber was noted in the varieties. Next better variety was KS-I which was also significantly better than rest of the varieties. The lowest crude fiber was registered in the variety KS i.e. 13.96%.

TABLE 1: Varietal Effect on yield & quality attributes of Methi Seed powder

Varieties	Yield of seed q/hect	Moisture %	Crude Protein %	Crude Fat %	Ash %	Reducing Sugar %	Crude Fibre
Kalayanpur selection	14.02	4.97	32.88	5.27	3.76	0.43	13.96
Pusa Early Bunching	15.20	6.77	33.92	5.57	5.21	0.41	18.33
Kalyanpur Selection-I	12.95	6.91	26.76	6.79	4.10	0.55	16.13
Rajandra Sonia	11.00	5.91	32.80	6.54	5.49	0.39	15.87
Prabha	19.67	3.89	27.33	5.63	3.28	0.31	14.05
Azad - I	15.75	6.21	27.89	5.59	4.81	0.33	14.55
CO-I	8.00	5.89	27.28	5.18	4.28	0.29	15.96
CO-II	8.09	4.88	22.44	5.37	4.44	0.41	14.02
CD. at (5%)	2.08	0.69	0.61	0.41	0.45	0.02	0.19

TABLE 2: The Varietal Effect on quality attributes of Methi Sabji preparation

Varieties	Moisture %	Crude Protein %	Crude Fat %	Ash %	Reducing Sugar %	Crude Fibre
Kalayanpur selection	43.45	32.84	23.13	4.97	0.58	19.11
PEB	59.11	35.01	25.51	6.77	0.79	24.05
K.S. I	56.08	27.33	25.55	6.91	0.75	22.04
R.S	40.25	33.86	20.25	5.91	0.56	21.96
Prabha	49.98	28.42	25.04	3.89	0.55	20.03
Azad - I	56.15	29.01	24.03	6.21	0.44	20.70
CO-I	51.93	27.93	26.99	5.89	0.46	22.32
CO-II	57.35	23.51	25.68	4.88	0.50	20.05
CD. at (5%)	1.18	0.75	0.76	0.69	0.05	0.16

The lowest moisture 40.25% on cooking was recorded in variety RS followed by variety KS 43.45%. It is noteworthy feature here with variety RS had the next least moisture % in the seed & the lowest in the cooked product, crude protein in cooked product was also significantly influenced by varieties. Likewise is seed powder variety PEB had highest crude protein followed by RS & KS. The max crude

protein% was found in the variety Co-I which was significantly superior to rest of the seven varieties.

Ash charring the product the ash which is the digestion of mineral matter was obtained under different varieties & had the significant variation which as variety KS-I having the max. 6.91%. The max, reducing sugar was observed in variety PEB 0.79% closely followed by variety KS-I 0.75% both being significantly superior than rest of the varieties.

The Highest crude fiber was found in PEB which is significantly higher than rest of the varieties.

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