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Consumption Pattern of Fenugreek Seeds in Rajasthani Families

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ABSTRACT Fenugreek seeds, commonly known as methi *(Trigonella foenum graecum)* grow abundantly in India, particularly in Rajasthan, where the legume is consumed as food, apart from its use as spice. The study aimed at finding the different types of preparations made from fenugreek seeds and consumed as a food in the traditional families of Rajasthan. Hundred families were surveyed using an interview schedule. The results revealed that different curry preparations using various ingredients were made with fenugreek seeds namely plain *methi* (42%), *papad methi* (76%) *besan methi* (64%), sweet sour methi and others like *methi raita*, *methi ladoo* (7%) and sprouted *methi*. The consumption of these preparations has however, declined in the Rajasthani families over the past 2-3 decades. Owing to the several medicinal effects produced by the herb, its consumption needs to be promoted on a regular basis.

INTRODUCTION

Fenugreek *(Trigonella foenum graecum)* commonly known as *methi,* (in Hindi) has been used as a culinary spice, a flavoring agent and as a medicinal plant for centuries. It is an annual, herbaceous, leguminous, rainfed crop included among the seed spices. It is cultivated abundantly in India and the country occupies 70-80% of the worlds' export share of fenugreek. The state of Rajasthan supplies 83-90% of this share and ranks first in fenugreek production in India (Pruthi 2001; Agarwal et al. 2001).

Fenugreek seeds have a peculiar odour, flavour and a pleasantly bitter taste and are a good source of many nutrients. The seeds have to their credit, in addition to flavour and aroma several medicinal properties. In India, Southeast Asia and many other countries the seeds are soaked in water and then eaten to aid digestion, as a demulcent, carminative, laxative, a diuretic, astringent, to help in menstrual cramps and regulate menopausal symptoms, to check bronchitis, arthritis and to promote breast milk production in nursing mothers. It is used to prevent sharp rises in blood sugar and lower cholesterol (Arya 2000).The incidence of diabetes is very low among the Yemenite Jews due to high consumption of fenugreek seeds which helps in reducing the glucose level by 15 to 18% (Goulart 1995). The leaves are extensively used as a food. The plant is also used to enrich the soil with nitrogen and seeds serve as cattle fodder and insect repellent. It is noteworthy that almost no part of the fenugreek plant is wasted. If processed carefully and handled properly, this herb and its seed products offer immense benefit to mankind (Rajagopalan 2001).

The several medicinal properties of fenugreek seeds have been emphasized time and again. Moreover, its chemical composition and uses find place in *Bhavaprakash Nighantu* i.e. Indian materia medica complied between 1500-1600 A.D. (Bapalal 1968; Pandey 1984). According to it, the seeds contain 26% mucilage, 22% protein comprising of globulin, histidine, and albumin with a good amount of phosphorus, sulphur and also lecithin. Ash contains several minerals. It is said to be equivalent to cod liver oil in nutritional value and cures many ailments, including diabetes. The herb finds extensive mention in *Ayurveda,* as a cure for several ailments, owing to its high nutritive value (Kirtikar and Basu 1993). The seeds contain 50% of soluble and insoluble fibre found essential for good health. The seeds are rich in minerals, vitamin A(1040 IU), choline (1161µg),folic acid(84 µg),but low in sugars (Gopalan et al. 2004). Its niacin content increases upon roasting (Shankarachrya et al. 1973).The oleoresin fraction contains ω-3, ω-6 and ω-9 fatty acids along with many saponins, alkaloids and sterols that serve as a source of pro-oestrogens and inhibit intestinal cholesterol absorption (Heller 2001). Thus fenugreek seeds may serve to be a beneficial health food if consumed regularly.

In India fenugreek seeds are mainly used as a spice and for its medicinal properties, but in Rajasthan they are also used as food. There has

been a common practice in Rajasthan to use pulses and legumes in different forms (whole/flour/sprouted) as due to low rainfall and large barren land the availability of green vegetables was always less in the state. Fenugreek seeds are one such legume which are made into different preparations in traditional Rajasthani families and are consumed as a food along with meals. However, systematic data regarding its consumption pattern is not available. Hence, this study aimed at finding the type of preparations made and the frequency of consumption and changes in consumption over the past 2-3 decades.

METHODOLOGY

Subjects under Study: A total of 100 traditional Rajasthani families were surveyed, who originally belonged to Rajasthan and had been living here for more than 15 years. The families having an elderly lady (>50 years) who could provide information on fenugreek seed consumption were only selected.

Data Collection: A structured interview schedule was developed to collect the desired information regarding various preparations made from fenugreek seeds, their frequency of consumption, the change in consumption that have occurred over the past 2-3 decades and the reasons for this change. Data was collected from the elderly lady of the family as well as the young females, by personal interview method.

Data Analysis: The information collected was compiled and analysis was carried out through frequencies distribution pattern and percentages of the variables studied.

RESULTS AND DISCUSSION

The results revealed that all the families consumed fenugreek seeds as a food apart from its use as a spice. There were various preparations made, mainly in the form of a curry which is eaten along with *roti* (Indian bread) during meals. The preparations made are namely-*plain methi* (fenugreek curry), *papad methi* (*made with papad*), *besan* (gram flour) *methi*, sweet sour *methi, methi raita, methi ladoo* and sprouted *methi*.

As reported by the respondents the curry preparation basically involved the boiling/pressure cooking of seeds till soft. The cooking water is drained to remove bitterness. The cooked seeds are then seasoned with oil using either cumin seeds or onion and garlic paste, and other spices like turmeric powder, red chilli powder, coriander powder and salt. To obtain variety some other ingredients like *papad/besan* (gram flour)/sugar or jaggery, tamarind or lime are added to make *papad methi*, *besan methi* and sweet sour *methi* respectively. *Methi ladoo* is prepared from roasted fenugreek seed flour by adding sugar/jaggery along with *ghee*. This is mostly consumed during winter for joint pains, arthritis and rheumatism. The other preparations consumed are *methi raita* which is made with curd and sprouted seeds are eaten as such or seasoned with spices (Table 1).

Fenugreek seeds are consumed as food in other parts of the world as well. The Yemenites Jews soak, boil and liquefy the seeds and then use them to fortify soups and sauces and vegetable shakes (Goulart 1995). In Egypt and Ethiopia the seeds are used in sweets and as a supplement to wheat and maize flour for bread making (Al-Habori and Raman 1998). An Egyptian preparation called *Helba* is prepared by soaking the seeds in water till they swell into a thick paste (Heller 2001). Yemenites use the seeds in a seasoning called *zhug*. The Armenians use it with garlic paste and chile pepper in a spice called *chemen*. In the United States, the seeds are used in dishes like hearty bean soup, chutneys, and

Table 1: Processing of Fenugreek seed preparation

Name of the preparation	*Processing steps followed (percentage of families)*				
	Boiled	*Pressure cooked (retain water)*	*Soak and Boil*	*Seasoning used in oil*	
				Onion /garlic	*Cumin seeds*
Plain methi curry (n=42)	76.19	23.8	33.33	54.76	45.23
Papad methi curry (n=76)	65.78	23.68	11.84	23.68	76.3
Besan methi curry(n=64)	68.75	28.12		14.0	85.93
Sweet & Sour methi (n=68)	70.58	23.53	4.41	19.11	80.88
Methi Raita (n=7)			100		
Germinated methi (Sprouts) (n=7)		Germinated			71.4*

* Remaining 28.57% consumed the raw sprouts

a variety of spice blends, in baked goods, icing and meat seasoning. But its most culinary use is as a source of fenugreek extract, the principle ingredient of imitation maple syrup (Uhl 2000). The Greeks boil the seeds and eat them with honey. In Africa they are soaked and used as legume. Also the seeds are roasted and used as a coffee substitute (Pruthi 2001; AKA 2000).

Frequency of Consumption

The frequency of consumption of fenugreek preparation was found to be once a week in 13% families, twice a weak in 6% and more then twice in only 2% families. However, 43% consumed the preparations once a month, 21% consumed 2-3 times a month and 3% more than thrice a month (Table 2).

Table 2: Details of consumption of Fenugreek seeds as food by families

Particulars		*Percentage of families (n=100)*
Daily		01
Weekly		
a)	Once	
b)	Twice	
c)	>Twice	130602
Monthly		
a)	Once/twice	
b)	Twice/thrice	
c)	>Thrice	432103
Rarely		
a)	Once in six months	
b)	> than six months	0902

Change in Consumption Pattern

The respondents reported change in the consumption of fenugreek seeds over the past 2-3 decades. Fifty seven per cent showed a decline in consumption while in 40 per cent families there was no decline, while 5 per cent families increased their consumption as they found it to be a very nutritive health food. In 41% families the consumption declined from 4-5 times per week to 2-3 times per week and in 20% it declined from once a week to once a month (Table 3). Among the younger age group (6-40 yrs), 88% accepted fenugreek seeds as a spice and only 66% accepted it as a food, while 38 % showed their dislike. The consumption as food was 55% among adults (>18 yrs) while it was only 27% among children and adolescents. The reason for decline in consumption and dislike were reported to be a) more availability of green vegetable now (45%) b) children dislike it due to the bitter taste and secondly have more liking of fast food (53%) c) yet remaining 3% felt that the preparation took a lot of time (Table 4).

Table 3: Changes in consumption pattern of fenugreek seeds as a food in the families since past 2-3 decades

Particulars	*Percentage of families (n=100)*
Consumption of Fenugreek Seeds	
1. Declined	57
2. Not declined	38
3. Consumption increased	05
Declined From	
• 4-5 times a week to once a week	41
• Once/week to once a month	20
Reasons for Decline	
1. More green vegetables available	45
2. Children dislike/taste not developed	30
3. Decrease in no. of family members	15
4. Preparation is cumbersome	03

Table 4: Consumption practices in younger age groups

Particulars	*Number of families =100*
Young Adult Females Consumption Pattern	*n=88*
• As a spice	88
• As a food	66
• Dislike as a food	38
Details of Consumption)	
a) Young Adults	
• All consume	55
• Some consume	22
• Dislike	09
b) Children (< 18 yrs)	*n=78*
• All consume	27
• Some consume	15
• Dislike	58
Reasons for Dislike	
• Bitterness	53
• Preparation not known	02
• Liking for fast food	28
• Less intake of food in general	17

Note: Young adult females were present in 88 families and children <18years in 78 families.

However, only a few Indian studies have reported the incorporation of fenugreek seed powder in different recipes (Raghuram et al. 1992; Sharma and Chouhan 2002). Hooda and Jood

(2004) incorporated raw, soaked and germinated fenugreek flour, at 5-20% levels into wheat flour and developed products like bread, biscuits, noodles and macroni with the blends which were found acceptable.

Implications of Fenugreek Consumption as a Health Food

The increased production of green vegetables and improved transport facilities has made the availability of vegetables easier now in Rajasthan. Furthermore, the advent of convenience foods, ready to eat foods and fast foods has drifted the younger generation away from the traditional preparations which has brought about a decline in their consumption also. Moreover, nutrition transition has given rise to increased consumption of refined carbohydrates and fat which in turn combined with changed life style seems to be responsible for the increased incidence of obesity and related diseases like diabetes, hypertension and other heart problems. Therefore, the present lifestyle changes and food habits further necessitate the inclusion of health foods like fenugreek seeds in the diet. As mentioned earlier the seeds are rich in their nutritive value and have immense medicinal properties. Hence, it is advisable to consume such foods more often in the regular meals. It is ironical that the consumption of traditional recipes like that of fenugreek seeds is on the decline, specially when it is abundantly produced in the country, is inexpensive, available round the year and has good keeping quality.

CONCLUSION

Fenugreek seeds are rich in many nutrients and offer ample health benefits through their medicinal effects. They have been consumed in Rajasthani families as a food in the form of different preparations along with routine meals. However, the recent data shows a decline in the consumption pattern of the traditional preparations of fenugreek seeds and a dislike for the same among the younger age group. The inclusion of such recipes in the routine meals needs to be promoted to maintain a good health.

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