



DIETARY USE OF ETHNO MEDICINAL PLANTS BY TRIBALWOMEN OF MELGHAT DISTRICT

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Abstract:

Tribal women of Melghat, traditionally use ethnomedicinal plants as dietary sources. The objective of the study was to confirm the medicinal and nutritional importance of the plants from the traditional medicinal systems of India. The common recipes of tribal population prepared from medicinal plants were collected by interview cum questionnaire method. Medicinal and nutritional properties were confirmed from *Indian Pharmacopoeia Dravyagunvidnyan* and other available literature. The recipes prepared from *Dhondri*, *Palash*, *Umbaru*, *Gokharu*, and *Semal* were standardized and were subject to palatability test on 9 point hedonic scale in urban area. The palatability test showed that more than 50% of respondents rated the recipes above score 6, thus shows good acceptability of tribal recipes even in urban areas. The scope of the study suggests need for conservation of ethnomedicinal and traditional dietary practices of tribal population.

Introduction

Throughout history, mankind has always tried to develop strategies for properly managing and using natural resources to meet his daily needs (Albuquerque *et al.*, 2005; Case *et al.*, 2005). These practices are being used for generations to generations based on experiences. Traditional knowledge often includes the practice based on the observations over times, but not substantiated by any technical experiments or statistics (Jain, 2004). Since the existence of human civilisation, plants and their products are being used in large number of population living in urban as well as rural areas, for various purposes such as medicine, food, shelter healthcare etc. In the beginning, the sources of medicines were only plants. More than 7000 plants are used in Indian systems of medicines such as *Ayurveda*, *Unani*, *Homeopathy* etc. (Kamble *et al.*, 2010).

The region of *Melghat* is a part of MTR (Melghat Tiger Reserved Project) which is a dense forest, far away from the cities. The tribal women depend upon the forest for daily needs such as food fodder and medicines. The tribal women of Melghat regularly use number of medicinal plants traditionally in their dietary practices. Their knowledge also includes storing and preserving of necessary ingredients which are unavailable throughout the year. In the present study, keeping in view the importance of the indigenous practices, an attempt has been made to collect and study the dietary uses of ethno medicinal plants by tribal women which needs to be documented and popularised.

Methodology

Survey of wild, edible and medicinal plants used for preparing recipes was conducted in the villages of Melghat. Data was collected by questionnaire cum interview method. Interviews of old women, *dai* (a woman who helps in child birth) and *bhumkas* (person who practices with folklore medicine) were conducted to know the medicinal importance of the plants. The medicinal importance of the plants reported by tribal women were confirmed from *Ayurvedic Pharmacopoeia* and *Dravyagunvidnyan Vol II*. On the basis of availability, popularity and medicinal use of the wild plants, the five plants viz., *Umbar* (*Ficus cunia*), *Gokharu* (*Tribulus terrestris*), *Palash* (*Butea monosperma*), *Semal* (*Bombax ceiba / malabericum*) and *Dhondri* (*Bahuni vahni*), were selected for the study. The common recipes prepared by tribals from medicinal plants were collected. Young fruits of *Umbaru* and *Gokharu* were used for preparing achar (Pickel) and *bhaji* respectively whereas flowers of *Palash* and *Semal* were used for the preparation of *Sharbat* and *bhaji* respectively. The seeds of *Dhondri* were used for the preparation of *laddoo*. The following recipes were selected and standardized.

- Umbaru Achar**-Tender fruits (100gms) were washed, drained and cut into pieces. Finely cut green chillies (2-3), red chili powder (10gms), asafoetida (5 gms) and salt to taste and lemon juice were added and mixed well. Oil was heated, cooled down till warm, and added to the mixture. The mixture was kept aside for a day. Next day the mixture was filled into cleaned

glass jar and fresh lemon juice was added till it covers the mixture.

ii) Gokharu Bhaji: Oil (30 gms) was heated in the pan. Mustard seeds, red chillies (2-3) and turmeric powder were added to heated oil. Cleaned and chopped tender fruits of *Gokhru* (250 gms) were added. A small quantity (50 ml) of water was added and cooked. Salt was added. Pan was covered and allowed to cook till fruits become soft.

iii) Palash Sharbat: *Palash* flowers (100gms) were added to 500 ml of boiling water, allowed to boil for a minute and flame was turned off. The decoction was cooled and strained. *Battasa* (250 gms) and pinch of rock salt powder were added and mixed well. This concentrated *Sharbat* was stored in clean jar.

iv) Semal Sukhi Bhaji: The flowers (250 gms) were washed and cut. The oil was heated in the pan and mustard seeds, red chillies (2-3), onions (150gms) and tomatoes (100 gms) Salt were added. Cooked for few minutes. Cleaned and chopped flowers were added. Allowed to cook for 5 minutes.

v) Dhondri laddoo: *Dhondri seeds* (50 gms), wheat flour (200 gms), groundnuts (50 gms) were roasted separately. The seeds and groundnut were coarsely ground. Sugar was powdered. Ghee was heated. All the ingredients were added one by one to the ghee and mixed well. The flame was put off and then powdered sugar was added and mixed well. Small *laddoos* were prepared.

The standardized recipes prepared were subjected to palatability test trials among the 30 housewives of urban areas on 9 point hedonic scale. The data collected for palatability tests were analysed by median and quartile deviation. The nutritional values of plants were collected from available literature.

Results And Discussion

Confirmation of Medicinal plants from the database

The medicinal value reported by the tribals for the five selected plants viz., Umbar (*Ficus cunia*), Gokharu (*Tribulus terrestris*), Palash (*Butea monosperma*), Semal (*Bombax ceiba/malabericum*) and Dhondri (*Bahunia vahni*), were confirmed from Ayurvedic databases and has been presented in Table 1.

Table 1 : Medicinal properties of plants reported by tribals and from ayurvedic databases

Sr . No	Local names	Botanical names	Medicinal Value Reported By Tribal Women	Medicinal Value From Ayurveda Databases
1	Umbaru	<i>Ficus cunia</i>	Used for asthma, stomachache and cough	Vermicide, carminative, on diarrhoea, dysentery, stomachache, piles; astringent, in toothache; pneumonia, diabetes, lung diseases, bronchitis and cough
2	Gokharu	<i>Tribulus terrestris</i>	Seasonal tonic, used for body aches especially joint pains	Fruits - Diuretic, used on painful micturition, urinary disorders, impotency, spermatorrhoea (excessive ejaculation), hemicranias (unilateral headache), diarrhoea, respiratory system, fever, asthma, leucorrhoea. Seeds - Cooling, diuretic, used in kidney diseases
3	Palash	<i>Monosperma Butea</i>	Used for maintaining water level in body, used in	Used for treating elephantiasis, night blindness and other

			summers to prevent sunstroke, used when less urination is observed in patients.	defects of sight and urinary diseases. Used as astringent and for skin diseases.
4	<i>Dhondri (Apta/bosha)</i>	<i>Bauhinia vanlii</i>	Energetic, tonic, given on stomach ache, used as food when other food material is unavailable due to heavy rains. Roots are used as toothbrush	Seeds – Aphrodisiac (food which enhances sexual desire), tonic, used in dysentery, stomach disorders. Roots- used for pyorrhoea
5	<i>Semal</i>	<i>Bombaxceiba</i>	Impotency, weakness, skin problems, used on urinary diseases.	Astringent, demulcent (agent which forms a soothing membrane over the mucous membrane, diuretics (produces urine),

Nutrient	Umbar	Gokharu	Semal		Dhondri	
			Fresh weight*	Dry Weight**	Fresh weight**	Dry Weight*
Carbohydrates	10.8gms	8.9gms	1.48 gm	10.36 gm	5.05 gm	5.66 gm
Protein	1.2gms	7.2gms	0.73 gm	5.1 gm	14.7 gm	18.38 gm
Fat	0.6gms	0.5gms	0.75 gm	0.5 gm	15.3 gm	17.2 gm
Energy	53	68	15.59	66.61	217.8	251.3
Fiber	6.4gms	-	2.58 gm	18.1 gm	5.81 gm	6.52 gm
Ascorbic Acid (Vitamin -C)		41 mg				
Anthocyanin			3.89 mg		0.24 mg	
Lycopene			0.19 mg		1.16 mg	
Carotenoids			800 mg		3.6 mg	
Vitamin A			133 IU		600 IU	
Retinol			0.4 gm		0.018 gm	
Calcium	187 mg	1550 mg		0.273 gm		0.095 gm
Potassium				0.18 gm		0.136 gm
Sodium				1.039 gm		0.736 gm
Phosphorus	39 mg	82 mg		0.04 gm		0.005 gm
Iron		9.2 mg		0.04 gm		0.116 gm

Nutritive Value of Selected Medicinal Plants

Along with the ethnomedicinal value of the wild plants, the nutritional importance of the plants was also recorded. It was observed that the the plants were rich in minerals and vitamins. The nutritive value of the plants is presented in Table 2. However, the nutritive value for palash flowers were not found in literature.

Table 2 Nutritive value of the ethnomedicinal plants

Source- *Nutritive value of Indian foods, ** Nutraceutical evaluation of some folk food plants of Vidarbha region.

Table 2 shows that among the selected medicinal plants, *Gokhru* was richest source of calcium, iron and ascorbic acid. Similarly *Semal* and *Dhondri* also contained higher amounts of pigments and Vitamin A. The dietary use of ethnomedicinal plants by tribal people suggests the flow of their traditional knowledge from generations till date.

Palatability testing of recipes

The recipes prepared from selected medicinal plants were tested for palatability on 9 point hedonic scale by the 30 housewives of urban area. The results of the hedonic tests have been presented in Table 4.

Table 4: Palatability test Scores for Recepties of medicinal Plants on 9 point Hedonic Scale

Scores	Description	Uambar Achar	Gokharu Bhaji	Palash Sharbat	Dhondri laddoo	Semal Bhaji
9	Like extremely	3	3	1	3	2
8	Like very much	9	4	4	9	7
7	Like moderate	8	2	6	7	5
6	Like slightly	2	5	6	5	2
5	Neither like nor dislike	2	2	5	2	7
4	Dislike slightly	2	6	5	1	3
3	Dislike moderately	2	2	1	1	1
2	Dislike	1	3	1	1	2

	very much					
1	Dislike extremely	1	3	1	1	1
Median		7	5	6	7	6.5
Quartile Deviation		0.5	1	2	2	1.5

The result of the palatability test revealed that all the recipes were well accepted hence scored higher scores. The median of 6 shows that more than 50% of respondents scored the recipes above score 6. *Dhondri laddoo* scored the highest median of 7 where as *Gokharu bhaji* scored the lowest median of 5.

Conclusion

It can be concluded from the study that the tribal traditional dietary practices are based on traditional medicinal systems of India and need to be conserved. These medicinal plants were also found to be rich sources of nutrients. Most of the tribal recipes prepared from medicinal plants showed the higher acceptability of the recipes in urban areas also.

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