

Herbal remedies used by *Warlis* of Dahanu to induce lactation in nursing mothers

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Warlis largely depend on traditional medicine mostly based on plant remedies for a wide range of ailments and health related problems. Breast feeding is a major source of nourishment for the tribal infants and it is carried for a prolonged period. Lactation inducing remedies are commonly used by the nursing mothers to meet the nutritional requirement of their children. Some of the galactagogue are plants that are found commonly growing in the wild while others are cultivated plants, however easily available.

Keywords: Breast feeding, Galactagogue, Lactation, Nourishment, Traditional medicine, *Warlis* tribes

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Knowledge of medicinal use of plants in India is amassed over millennia by tribal. There exist around a million traditional, village-based carriers of herbal medicine traditions in the form of traditional birth attendants, *Visha vaidyas*, bonesetters, herbal healers and wandering monks. Apart from these specialized carriers, there are millions of women and elders who have traditional knowledge of herbal home-remedies and of food and nutrition. The informal system of folk medicine, the *Lok Parampara*, which exists in communities, is passed orally from generation to generation, for which there is little documentation. The elderly members of tribal communities possess a great deal of knowledge on medicinal plants. These plants are used by the tribal people solely or in combination for curing certain life threatening diseases. The same plants may be used for different disorders: for example, *Centella asiatica* is used for gynaecological problems and jaundice, *Dodonaea viscosa* is used for headache, stomach pain and piles, and *Wrightia tinctoria* for treating mumps and as lactagogue.

India has a tribal population of nearly 84.3 million people, which constitute around 8.2% of nation's total population¹. There are over 314 tribal communities in India, known by different names such as the *Adivasis*-the original inhabitants, *Vanya jati*- castes of forests, *Adim jati* - primitive people, etc. Maharashtra ranks fourth among the states in India, having a large tribal

population. The Scheduled tribes population in Maharashtra is 73.18 lakh, which is 9% of the total population in the state. There are 47 tribes in Maharashtra spread over 47 tehsils of 14 districts. Typically, the tribals inhabit foothills and slopes of the two major mountain range, i.e. Sahyadri that comprises of the Western Ghats and Satpura in the North-West of Maharashtra. They are a marginalized community both physically and socio-economically and depend on forest resources for their livelihood and are mostly engaged in occupations like settled cultivation, hunting, gathering, fishing, animal husbandry, trapping of birds and animals. Some have taken up pastoralism, terrace cultivation and horticulture, and some basket-weaving, mat-weaving and toddy-tapping. Thane district of Maharashtra is aptly known as the home of the adivasis as 25.40% of the total district population comprises of the tribals and they are mostly concentrated in the rural areas. Schedule tribe population is found in considerable numbers throughout the district though mostly concentrated in Dahanu, Jawhar, Shahapur, Talasari, Wada and Mokhada talukas. The major tribes found here are *Kokna*, *Mahadeo koli*, *Thakar*, *Katkari* and *Warlis*.

The paper is an attempt to investigate various plants used as galactagogue by *Warli* tribe of Dahanu. Dahanu is located N 19° 58' and E 72° 45' longitude and is at a distance of 124 km from Mumbai. Among the different tribes inhabiting Dahanu, *Warlis* are numerically the largest among all the tribes. Their

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headquarters are in the North-West in Dahanu where they form more than half the population. They have agriculture and forest labour as their occupation. Their folk traditions are rich and diverse. These tribals largely depend on plants for cure of most of the ailments and other health related problems. Breast feeding is carried for a prolonged period as there is no other supplement and the infants largely depend on mother's milk. Most of the nursing mothers continue breast-feeding up to 2 yrs of age of child. Many of them also consume some special food items such as fermented rice, turmeric soup, papaya, *shatavari* for

increased lactation. Certain herbs are known to possess the property of galactagogue and are frequently used by the tribals to increase lactation.

Methodology

Several surveys were undertaken to various settlements of Saravali village in Dahanu for the purpose of data collection. Data collection was done through interviews and discussion with elderly women and tribal practitioners. Additional information regarding dosage, form in which a particular plant is used, whether solely used or used as

Table 1—Plants frequently used by Warlis women to increase lactation

Plant name	Local name	Family	Uses
<i>Alstonia scholaris</i> R.Br.	<i>Satvin</i>	Apocynaceae	Bark infusion is administered to women to increase the quantity of breast milk.
<i>Allium sativum</i> Linn.	<i>Lasun</i>	Liliaceae	Five pods of garlic and a small amount of crushed coriander seeds is boiled in two cups of water, filtered, cooled, pinch of turmeric is added and given twice a day to increase lactation.
<i>Amaranthus spinosus</i> Linn.	<i>Math</i>	Amaranthaceae	Fresh roots are chewed by nursing mothers to increase lactation.
<i>Asparagus racemosus</i> Wt.	<i>Shatavari</i>	Liliaceae	A cupful of infusion of dried root mixed with a little sugar is taken first thing in the morning.
<i>Barringtonia acutangula</i> (L.) Gaertn.	<i>Tivar</i>	Lecithydaceae	Young fruits are taken by the nursing mothers for inducing lactation.
<i>Boerhaavia diffusa</i> Linn.	<i>Punar-nava</i>	Nyctaginaceae	Plant powder is taken twice a day for at least a month.
<i>Calotropis procera</i> (Ait) R.Br.	<i>Rui</i>	Asclepiadaceae	The milky latex is applied on the main veins coming to the breast twice a day to induce lactation.
<i>Carica papaya</i> Linn.	<i>Papai</i>	Caricaceae	Unripe cooked fruits are frequently taken to encourage lactation.
<i>Cassia tora</i> Linn.	<i>Takla</i>	Caesalpinaceae	Seeds are slightly roasted over a slow fire made using tamarind twigs, ground to a powder and consumed by the nursing mothers.
<i>Coriandrum sativum</i> Linn.	<i>Dhania</i>	Apiaceae	Dried fruits infusion is taken twice a day to increase milk production during suckling.
<i>Cryptolepis buchanania</i> R.&S.	<i>Shweta kawali</i>	Periplocaceae	Powdered plant mixed in equal quantity with <i>Euphorbia microphylla</i> is given to nursing mothers for enhancement of lactation.
<i>Cuminum cyminum</i> Linn.	<i>Jira</i>	Apiaceae	A handful of seeds boiled in approximately two cups of water, filtered are taken with a spoonful of honey as a first thing in the morning to enhance lactation.
<i>Curculigo orchoides</i> Gaertn.	<i>Kali musli</i>	Amaryllidaceae	Seeds ground to a fine powder is mixed with honey and taken on an empty stomach by the lactating women.
<i>Curcuma longa</i> Linn.	<i>Haldi</i>	Zingiberaceae	Powdered rhizomes is added to rice water and taken twice a day for about fifteen days to increase lactation.
<i>Cyperus rotundus</i> Linn.	<i>Nagar motha</i>	Cyperaceae	Fresh tubers paste is applied to the breast of the nursing mothers at least twice a day to increase lactation.
<i>Desmodium triflorum</i> DC.	<i>Ranmethi</i>	Pappilionaceae	Leaves are cooked and consumed as a vegetable by nursing mothers.
<i>Euphorbia hirta</i> Linn.	<i>Dudhi</i>	Euphorbiaceae	Roots are steeped in water overnight and drunk by the lactating mothers next morning.
<i>Ficus hispida</i> Linn.f.	<i>Kala umbar</i>	Moraceae	Ripe fruits are considered as tonic and lactagogue and hence consumed to encourage lactation.
<i>Ficus racemosa</i> Linn.	<i>Umbar</i>	Moraceae	Bark decoction is used as a lactagogue. Ripe fruits are dehydrated, powdered and taken with sugar for lactation.

Contd.

Table 1—Plants frequently used by Warlis women to increase lactation—Contd.

Plant name	Local name	Family	Uses
<i>Foeniculum vulgare</i> Muller.	<i>Badi shep</i>	Apiaceae	Dried seeds mixed with powdered coriander seeds are taken 3-4 times a day. A handful of seeds are boiled in water for sometime over a slow fire and the infusion is taken while still warm to increase lactation.
<i>Hemidesmus indicus</i> Br.	<i>Anantamool</i>	Asclepiadaceae	Approximately 100 gm of fresh roots are infused in 2 cups of boiling water and left standing for 1 hr, then strained off and drunk. Roots roasted in plantain leaves, pounded, mixed with a small amount of cumin seeds and sugar is consumed by the nursing mothers.
<i>Holarrhenna antidy-sentrica</i> Wall.	<i>Kurchi</i>	Apocynaceae	Leaf paste is applied to the breast of the nursing mothers to increase lactation.
<i>Ipomoea digitata</i> Clarke.	<i>Bhui-kohala</i>	Convolvulaceae	Large tuberous roots are given with toddy to women to increase secretion of milk.
<i>Launea obtusus</i> (DC.) Almeida.	<i>Patheri</i>	Asteraceae	Leaves are cooked, mixed with rice water and taken by the nursing mothers to enhance lactation.
<i>Lepidium sativum</i> Linn.	<i>Ahliva</i>	Brassicaceae	Seeds are bruised, mixed with honey and taken first thing in the morning to enhance lactation.
<i>Madhuca indica</i> Gmelin.	<i>Moha</i>	Sapotaceae	Flowers and seeds are consumed by nursing mothers to increase lactation.
<i>Momordica Charantia</i> Linn.	<i>Karela</i>	Cucurbitaceae	Leaf paste is applied to the breast of the nursing mothers.
<i>Nigella sativa</i> Linn.	<i>Kalonji</i>	Ranunculaceae	Seeds are powdered and taken first thing in the morning to encourage lactation.
<i>Opuntia elatior</i> Mill.	<i>Nagaphana</i>	Cactaceae	A poultice of the heated plant is applied to the breasts of a nursing mother in order to encourage milk flow.
<i>Pueraria tuberosa</i> DC.	<i>Darni</i>	Fabaceae	Tubers are peeled, crushed, infused in hot water and administered once in a day for stimulating lactation in women after child birth.
<i>Ricinus communis</i> Linn.	<i>Erand</i>	Euphorbiaceae	Leaves are heated and tied to the breasts of the nursing mothers to increase milk flow.
<i>Scoparia dulcis</i> Linn.	<i>Meetha patti</i>	Scrophulariaceae	Intact roots are thoroughly washed and tied to the arm of the nursing mother to ensure increased lactation. Sometimes, root paste is applied to the breast of the lactating mothers.
<i>Sesamum indicum</i> Linn.	<i>Til</i>	Pedaliaceae	Seeds are slightly roasted, pounded and taken twice a day by the nursing mothers.
<i>Solena amplexi-caulis</i> (Lamk.) Gandhi.	—	Cucurbitaceae	Root stock is ground to a fine paste using the shell of garden snail and applied to the breast excluding the nipple area to increase production of breast milk. Tuber decoction is consumed to increase lactation.
<i>Trigonella foenum graecum</i> Linn.	<i>Methi</i>	Fabaceae	A small amount of seeds are powdered and mixed in rice porridge is taken daily first thing in the morning. Powdered seeds are made into gruel which is given as a diet to nursing mothers to increase lactation.
<i>Vitex negundo</i> Linn.	<i>Nirgudi</i>	Verbenaceae	Seeds are taken to stimulate mother's milk flow. Leaves are also used by nursing mothers.

a mixture with other ingredients, etc. was also collected. Plants collected were identified²⁻⁴. Some of the plants frequently used by Warlis women to increase lactation are listed (Table 1).

Results and discussion

Breast milk forms the major source of nutrition for Warli infants. Nursing mothers sometimes find it difficult to produce adequate milk and hence use various plants to enhance their lactation. A few plants

that are used by the tribal women as galactagogue have been scientifically proven to be effective while some have no supporting data for their attributed property. Plants like *Foeniculum vulgare* have high content of flavonoids that affects endocrine system and hormone function thereby promotes the flow of milk or lacteal secretion. *Trigonella* contains flavonoids (phytoestrogens), whose action in regulating the hormonal production facilitates the development of the mammary glands which feed on

estrogens that stimulates mammary glands to produce milk (as a consequence to the stimulation of the secretion of prolactin) in nursing mothers. Extract of *Asparagus racemosus* has been shown to increase both the weight of mammary lobulo-aveolar tissue and the milk yield. It was attributed to the action of released corticosteroids or an increase in prolactin. *Asparagus racemosus* has been as a galactagogue (*Stanya*) to increase milk secretion during lactation. *Vitex* has been used historically to increase milk production in lactating women. Lactating women with poor milk production treated with *Vitex* liquid extract were able to effectively increase production⁵.

Conclusion

A large number of plants used by *Warlis* as galactagogue are reported, while some are used on the basis of persisting traditions and lack the backing of any pharmacognostic report⁶⁻¹⁴. The modes of usage of most of the plants are based on traditions of *Warlis*. It has been scientifically proven that breast feeding is the best form of nutrition for infants. Lactation is sometimes sparse and lactating mother in such cases opt for synthetic lactagogues. Plants would prove to be a better option as they are usually devoid of side effects. Hence, a detailed scientific study is required to be carried out to investigate various parameter of the plants used as galactagogue by *Warli* women.

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