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IDENTIFICATION OF THE PLANTS USE AS NATURAL HERBAL SHAMPOO IN MANIPUR

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Abstract

Background: A field survey was conducted in the year, 2011 - 12 in Imphal valley of Manipur, on the use of herbs as ingredient sources for the preparation of traditional natural herbal shampoo referred to as '*Chinghi'*, by *Meitei* community.
Materials & methods: Methodological field survey and personal interview of local people aged between 30-70 years of both sexes using standard questionnaires were carried out to collect information on the plants use in the herbal shampoo preparation.
Results: The survey revealed the therapeutic application of 35 plant species representing 28 genera and 18 families available in the Imphal valley. Tree species contributed immensely, yielding 38%, while herbs 32%, shrubs 27%, and climbing shrubs 3%, respectively being the record of the total number of plants used as ingredient in herbal shampoo preparation. These natural shampoos are used for a wide range of common hair care like anti-ageing of the hair, blackness, shininess and smoothness of the hair. It is prepared from young leaves and tender stalk of shoot of trees or shrubs, or whole plant of the herbs and fresh fruits boiled with local sticky rice water locally called '*Chinghi'*. Fermented lime peel is also used as a herbal shampoo.
Conclusions: The study shows details of their scientific, common, and local names, including their family, parts used, habit of the plants, and the benefit to the hair health as a whole.

Key words: Manipur, herbal shampoo, *Meitei*, *Chinghi*

Introduction

Manipur, popularly known as "Jewel of India" is located on the eastern frontier of India; it is bounded on the east by Myanmar (Burma), on the north by Nagaland, on the west by Assam and on the south by Mizoram & Myanmar (Burma). Physically, Manipur comprises of two parts - the hills and the valley. The valley is at the centre surrounded by hills on all sides. The hills cover about 3 by 4 of the total area of the State and is situated at 23.80°-25.68°N latitude and 93.03°-94.78°E longitude covering a total geographical area of 22,327 km.^{2} It comprises 1820 sq. km of flat plateau of alluvial valley popularly known as "Imphal valley" inhabited by the *Meitei* (*Manipuri*) and *Meitei pangal* (*Manipuri muslim*) and 20,507 sq. km of hill territory and forms a part of the Himalayan mountain system, which carries this cup-shaped wonderland inside its series of hill ranges inhabited by 30 different tribes of *Naga tribes and kuki tribes*. All the hills are covered with luxuriant growth of forests with nagesar, jurul, Indian rubber, tan, oak, ash, teak and palm. It is part of both Himalaya as well as Indo-Burma biodiversity hotspots in the world supporting about 50% of the total India's biodiversity (Mao, *et al*., 2009). In Manipur, the *Meitei* (*Manipuri*) community inhabiting in the valley regions have the traditional knowledge of using natural herbal shampoo called "*Chinghi*" from time immemorial to treat different ailments of hair like anti-ageing of the hair, black and shininess of the hair without any harmful effect on the hair. History reveals that in the beginning of the 14th century there has been a good description of medicinal plants and herbal treatment for many diseases (Khumbongmayum, *et al*., 2008). A number of works on ethnobotony of Manipur have been done since 1980s and some comprehensive accounts of its folklore are available (Singh, 1996: Singh and Singh, 1996; Singh, 1997; Singh and Singh, 2000 and Singh *et al*., 2007) but none of the study is reported on the identification of the plant species used for herbal shampoo preparation by the people of the *Meitei* (*Manipuri*) community from time immemorial and even today also it is very popular and every household is using it. Therefore, it is now necessary to study details of their scientific name, common name, local name, family, part used evaluation of its chemical content in its ingredients and to conserved it ingredients plant species for the future.

Experimental Materials and Methods

Experimental site

The study was carried out in Imphal valley which is located at 23º45' N to 25º00'N and 93º43'E to 94º15' covering with an area of 1843sq.km comprising of four districts (Imphal East, Imphal West, Thoubal and Bishnupur) inhabited by *Meitei* community (Fig. 1) .The herbal shampoo is very popular for the *Meitei* community of the Imphal valley and less common in the hilly area inhabited by different tribal community. The average altitudes of the valley is about 750m above MSL and represent a typical subtropical zone with cool, dry winter, a warm summer and a moderate monsoon season.The rainfall ranges from 933 mm in the valley to 2593 mm in the hills. The temperature ranges from a minimum of sub-zero to 36°C. The soil types comprises of red ferruginous in the hilly tracts to alluvium in the plain and are acidic in nature exhibiting a range of pH from 5.4 to 6.8. The natural vegetation accounts for 64 per cent of the total geographical areathe prevailing agro-climatic zones have indeed shelters a rich natural underutilized fruit species, medicinal and aromatic plants and underutilized vegetables scattering in undulated hilly terrain. These underutilized fruits, vegetable and medicinal plant species have been the principal source of nutritional food for the

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local people and also a rich source of ingredients of natural herbal shampoo. The present work was based on the methological field survey conducted during the year 2011 to 2012. Local people of 30-75 age group of both genders are interviewed (using standard questionnaires) on the different types of plants parts they been used for generations and benefit they obtained from the herbal natural shampoos.

Figure 1: Imphal Valley, the site of study
*Arrows indicate the four valley districts (Imphal valley)

Figure 2: List of processed plant used in herbal shampoo
(a) Overnight soaked Aonla (b) Rice water (c) Fermented lime peel Sieved in muslin cloth (d) Partially fermented lime peel (e) Fully fermented lime peel (f) Aonla and Lime peel soaked in water (g) Finally filtered product (h) Sticky rice

The specimens of the plants are collected and identified on the basis of vernacular name, regional floras and published literatures (Deb, 1961; Hore, 1998; Jain and Rao, 1977and Singh et al., 2003). They are enumerated alphabetically with common name, scientific name, local name, family, habit of the plants and its part used.

Method for herbal shampoo "*Chinghi*" preparation

The local natural herbal shampoo called '*Chinghi*' is prepared from the local rice water '*Chinghi*' along with many herbs. In this rice water, natural herbs and leaves of fruit trees as mentioned in the Table 1 are added and boiled it properly. After the ingredients are properly boiled, it is cool down and sieved using a muslin cloth to remove the impurities and the finally collected clear liquid is used as herbal shampoo. After using the herbal shampoo for washing the hair, the hair is washed properly and no oil is needed to apply on the hair afterwards.. It is best to use it within 2-3 days after preparation.

Method for herbal shampoo of fermented lime preparation

In Manipur, the fermented lime is also used as natural herbal shampoo by the *Meitei* community particularly as anti-ageing for the hair preventing grayness of the hair. It is prepared from the ripe lime locally called "*Champra*". First, it is washed properly with the water then the juice is extracted after removing the seeds. Then the fruit along with the peel is cut into small pieces and kept in air tight plastic bottle or glass bottle under the room temperature in dark place. The fermentation process is completed within 2 weeks but the bottle should not be open until it is completely fermented. After the fermentation is completed, it is diluted in water (1 teaspoon in ½ liter of water) and used as natural herbal shampoo after sieving with muslin cloth locally called "*Phadi*" (Figure 2).

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Fresh herbal hair lotion

Herbal hair lotion from the crushed aonla fruit (*Emblicaofficinalis*) and fresh lime (*Citrus aurantifolia*) peel which was soaked for overnight was also used as hair lotion to washed the hair after washing with artificial shampoo. Then it is washed with fresh water again. Such types of hair lotion give a cool effect to the head and softness of hair and also prevent grayness of hair.

Precaution for the use of "*Chinghi*"

The bottom portion of the liquid are composed of thick liquid of high concentration of starch and residue of the ingredients which are left after boiling with the rice water. Generally discard the bottom liquid portion and newly preparation is continue form the fresh ingredients and rice water. It should be sieved with the fine muslin cloth if not it increase dandruff. There is no limitation in the combination of the herbs in the "*chinghi*" preparation which are described in the Table 1. Therefore, any available source of herbs are used in the preparation of it and it is not recommended to use utensils made of copper and other rice except the sticky type of local rice found in the valley region. The quality of the herbal shampoo also depends on the quality of the rice; sticky rice from the jhumming cultivation from the hills are not preferred, instead the rice grown in the valley region are preferred since the quality of sticky rice grown in the plains are of better quality than those grown in the hills.

Usefulness of natural herbal shampoo

On the basis of the information from the elderly people (30-75 ages of both the genders) through interviewing they revealed that regular uses of these shampoos give a black shininess and softness to the hair. Besides, it provides an anti-ageing affect to the hair preventing grayness formation of the hair. It ingredients plant are available throughout the year and there was no limitation in the combination of these herbs during it preparation provided an opportunity to used such herbal shampoo year the round by the *Meitei* community in Manipur.

Results

During the survey, altogether 35 plants belonging to 26 genera and 18 families were collected which are used as ingredient in the herbal shampoo preparation (Table 1).Based on the family dominance, Rutaceae 17% is found to be the most widely used family followed by Asteraceae 14%, Malvaceae and Laminaceae 9% each, Apiaceae, Annacardiaceae, Oxalidaceae, Rubiaceae 6% each and Acanthaceae, Aeraceae, Annonaceae, Rubiaceae, Euphorbiaceae, Scrophulariaceae, Portulacaceae, Flacourtatiaceae, Maglonaceae and Myrtaceae 3% (Fig. 3). Among the ingredients used, leaf 62%, whole plant 14%, fruit peel 12%, flower 9% and fruit 3% indicating maximum used of leaf as ingredient in the herbal shampoo preparation. These ingredients were obtained from tree 37%, herb 31%, and shrub 29% and climbing shrub 3% showing tree species has the maximum source of its ingredients among the plants (Figure 4).

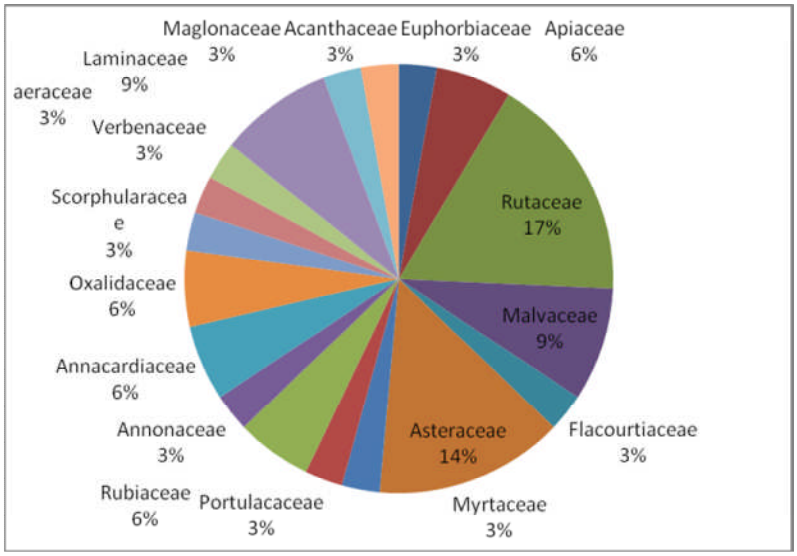

Figure 3: Family dominance of the plants as ingredients in herbal shampoo

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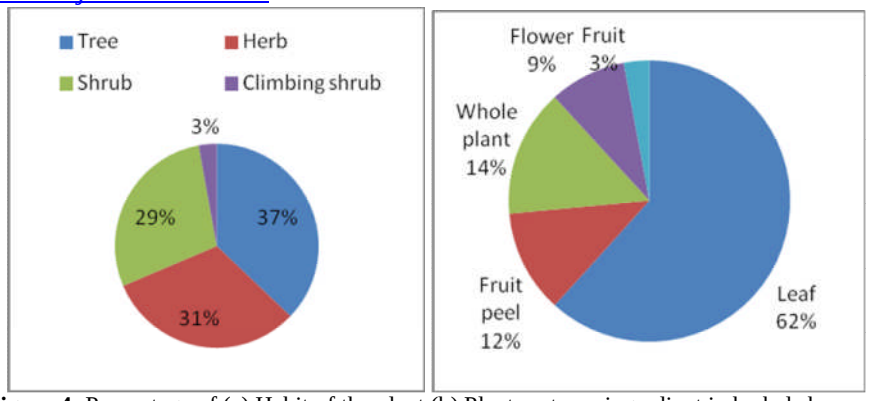

Figure 4: Percentage of (a) Habit of the plant (b) Plant parts, as ingredient in herbal shampoo

Table 1: Description of the ingredients used in the herbal shampoo preparation

Common name	Botanical name	Local name	Family	Habit	Part use
Aonla	*Emblica Officinalis*	Heikru	Euphorbiaceae	T	Fruit
Brahmi	*Centela Asiatica*	Peruk	Apiaceae	H	Whole plant
Chauldhua	*Glycomis Arborea*	Yong komla	Rutaceae	S	Leaves
China rose	*Hibiscus rosachinensis*	Juba-kushum	Malvaceae	S	Leaves and flower
Dandal	*Xylosma longifolia*	Nong-Leishang	Flacourtiaceae	T	Leaves
Gum tree	*Eucalyptus globolus*	Nasik	Malvaceae	T	Leaves
Goat weed	*Ageratum conyzoides*	Khonggai Napi	Asteraceae	H	Tender shoot and leaves
Bhandari	*Artabotryshexapetalus*	Chini-champa	Annonaceae	CS	Leaves and flower
Indian hog plum	*Spondias Pinnata*	Heining	Annacardaceae	T	Leaves and fruit
Indian-catmint	*Anisomeles Indica*	Thoidind Agouba	Lamiaceae	H	Leaves
Khul-khuri	*Hydrocotyles ibthorpoides*	Lei peruk	Apiaceae	H	Whole plant
Patchouli	*Pogostemon Parviflorus*	Sang-brei	Laminaceae	S	Tender shoot
Lemon	*Citrus limonia*	Heijang	Rutaceae	T	Leaves and fruit peel
Lime	*Citrus aurantifolia*	Champra	Rutaceae	T	Leaves and fruit peel
Magnolia tree	*Maglonia Hodgsonii*	U-thambal Agangba	Maglonaceae	T	Flower
Mandarin	*Citrus sinensis*	Komla	Rutaceae	T	Fruit peel
Marigold	*Tegeteserecta*	Sanarei Athonba	Asteraceae	S	Leaves
Marigold (maroon red)	*Tegetesafricana*	Housanarei	Asteraceae	S	Leaves
Gumma	*Leucas aspera*	Mayang Lembum	Lamiaceae	S	Leaves
Moss-rose	*Portulaca Oleraceae*	Laibakkundo	Portulacaceae	H	Whole plant
Moyna	*Meyna laxiflora*	Heibi	Rubiaceae	T	Leaves
Mugwort	*Artimisia vulgaris*	Laibakgou	Asteraceae	H	Leaves
Nisinda	*Vitexnegundo*	Urikshibi	Verbenaceae	S	Tender shoot and Leaves
Nutgall tree	*Rhuschinensis*	Heimang	Annacardaceae	T	Leaves
Oyster plant	*Acanthus mollis*	Krishna khumbam	Acanthaceae	S	Leaves
Pink-sorrel	*Oxalis debilis*	InkholYensil	Oxalidaceae	H	Whole plant
Pommelo	*Citrus maxima*	Nobab	Rutaceae	T	Leaves
Red Bottle brush	*Callistemon citrinus*	Balab Lei	Myrtaceae	T	Shoot
Red-sorrel	*Hibiscus subdariffa*	SilotSougri	Malvaceae	S	Leaves
Mussanda	*Mussaenda roxburghii*	Hanu-rei	Rubiaceae	S	Leaves
Sweet flag	*Acoruscalamus*	O-hidak	Aeraceae	H	Tender Leaves
Sweet orange	*Citrus reticulate*	Komla Heithum	Rutaceae	T	Fruit peel
Water-hyssop	*Bacopa monneiri*	Laibakkundomacha	Scrophulariaceae	H	Leaves
Wormseed	*Artemisia maritime*	Ching Laibakgou	Asteraceae	H	Leaves
Yellow-woodsorrel	*Oxalis corniculata*	Lam Yensil	Oxalidaceae	H	Whole plant

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Discussion

The state of Manipur experienced a variety of flora and fauna flourishing hitherto in the wild state as its natural home. These ingredients source of herbal shampoo has been grown throughout the length and breadth of the region and belief behind this mode of using it is good for hair and prevent from graying the hair, smooth, black and shininess of the hair. This could be attributed due to the presence of photochemical in the ingredients of it but still now no research work has been done about the chemical constituents and its mechanism in the prevention of graying of hair. Thus, if this hidden mechanism and chemical constituents in the ingredients is explored without further delay, the state will be in a position to occupy a sizeable share in the National Market in general and International Market in particular for the anti-ageing herbal shampoo manufacturing. It is indeed the rightful time that steps be taken up for preservation of this traditional knowledge of herbal shampoo making before it is too late. Different varieties of plant species were used by the locals for the preparation of the herbal shampoo available in the surrounding areas of the valley (Fig 5a, 5b)

Limitation: Although this traditional herbal shampoo are good source of nutrient for the hair, there are certain limitations. Those ingredients which are collected from the wild should be free of contaminated toxic residues of insecticidesand fungicides since it incresases hair fall.Another important limitations is the lack of the different ingredients for the prpeparartion of this herbal shampoo due to urbanisation and deforrestation. Nowadays people want easy to use products and they don't prefer going for the hectic process of collection and preparation of herbal shampoo.

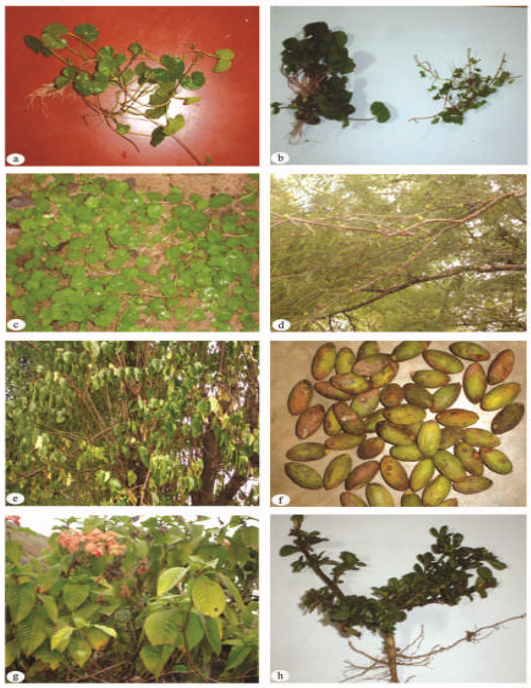

Figure 5a: List of plants used in herbal shampoo(a) *Centella asiatica* (b) *Oxalis sps.* (c) *Hydrocele asiatica* (d) *Emblica officinialis* (e) *Meyna laxiflora* (f) *Spondias pinnata* (g) *Mussaenda roxburghii* (h) *Portulaca oleracea*

Figure 5b: List of plants used in herbal shampoo (i) *Callistemon citrinus* (j) *Ageratum conyzoides* (k) *Cittrus reticulata* (l) *Citrus sinensis* (m) *Hibiscus rosachinensis* (n) *Citrus limonia* (o) *Tagetes erecta* (p) *Leucas aspera*

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