

Cosmetic Perspectives of Ethno-botany in Northern Part of Sri Lanka

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Abstract

Local women of Sri Lankan communities has been traditionally inclined toward herbal source for their beauty needs even after modernization. An ethnobotanical survey has been conducted on cosmetic use of indigenous plants in North Sri Lanka. The data were collected from 160 female informants from 5 districts using questionnaire method and semi structured interview. A total of 62 plant species belongs to 36 families used for beautifying purposes were recorded. The parts of local plants used for cosmetic purposes include Skin care (53.2 %), hair care (37.09%), nail care (4.8%), lip and eye care (11.2%). The present study regarding the traditional knowledge and practice of cosmetic herbs contributes to preserve the unnoticed aspect of cosmetic ethnobotany and the traditional cosmetic recipes in Sri Lanka.

Keywords: Cosmetics; Ethno-botany; North Sri Lanka; Traditional

Province is covered in tropical forests, with numerous rivers flowing through them [5].

Introduction

Herbal cosmetics are invaluable gift of nature. Herbal Cosmetics, referred as Products, are formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic benefits only, shall be called as Herbal Cosmetics [1]. The World Health Organization (WHO) has emphasized the importance of the traditional indigenous medicines, since a large majority of rural people in the developing countries still use these medicines as the first use in health care [2]. Unfortunately, knowledge regarding the use of traditional plants is lost from one generation to another [3].

Recently the practice of herbal medicine has been declining in the very places where it has been once developed and nurtured by oral tradition. This may in future lead to the loss of valuable information about the plants used [4]. Therefore the documentation of the traditional knowledge will contribute to the conservation, sustainable management and use of plant resources. Sri Lanka has a rich plant diversity. Ethnobotanical investigations have been reported for various parts in Sri Lanka but no survey has ever been carried out in cosmetic perspective. It is therefore necessary to document the plants used for cosmetic purposes in Sri Lanka.

Materials and Methods

Study site

The study was carried out in Northern province in Sri Lanka. The Northern Province is located in the north of Sri Lanka just 35 km from India. It has a land area of 8,884 km. The province is surrounded by the Gulf of Mannar and Palk Bay to the west, Palk Strait to the north west, the Bay of Bengal to the north and east and the Eastern, North Central and North Western provinces to the south. The Northern Province of Sri Lanka is comprised of five administrative districts: Jaffna, Kilinochchi, Mullaitivu, Vavuniya and Mannar (Figure 1). Northern

Geographical coordinates: 8.8855° North, 80.2767° East



Figure 1: Map of Northern part of Sri Lanka.

Data collection

The survey was carried out during the year 2016 in the districts of Jaffna, Kilinochchi, Mullaitivu, Vavuniya and Mannar in Northern part of Sri Lanka. In order to assess the cosmetic use of medicinal plants in Northern part of Sri Lanka semi-directive with open-ended questions used to interview the 130 local women, 10 traditional medical practitioners, 10 beauticians and 10 herbal sellers. Before each interview consent was taken from each informant. The Interview focused on informant's demographic details, knowledge about cosmetic herbs, local names, collection, recipe preparation and application of herbal cosmetic recipe. Plants mentioned were collected and identified by comparing with herbarium specimens and reference

to literature. The plant nomenclature of the International Plant name index was adopted (Table 1).

Data analysis

The data were arranged according to the main purpose of use such as Skin care, Hair care, Nail care, Eye care and Lip care. The ethnobotanical inventory for herbal recipes consists family, botanical

name, local name, parts used, method of preparation, and application of the identified plants in a tabular form. The data were further analyzed for basic categorization of the respondents' age, inhabitant, literacy and gender (Table 2).

Results and Discussion

Purpose	Local name	Botanical name	family	Parts used	Remedy
Acne	Manjal	<i>Curcuma longa</i>	<i>Zingiberaceae</i>	Rhizome	Rubbed paste is applied over the acne
	Puthina	<i>Mentha arvensis</i>	<i>Labiataea</i>	Leaves	Leaf paste is applied
	Vembu	<i>Azardirecta indica</i>	<i>Melliaceae</i>	Leaves	Vapor from boiled leaves use to steam the face
	Ulli	<i>Allium sativum</i>	<i>Lilliaceae</i>	Bulb	Paste is applied over the acne during night
	Maramanjai	<i>Coscinum fenestratum</i>	<i>Menispermaeeae</i>	Stem	Stem powder with rose water applied over the acne
	Kuppai meni	<i>Acalypha indica</i>	<i>Euphorbaceae</i>	Leaves	Leaf paste is applied
	Thulasi	<i>Ocimum santum</i>	<i>Labiataea</i>	Leaves	Leaf paste is applied
	Karuva	<i>Cinnammum zeylanicum</i>	<i>Lauraceae</i>	Bark	Bark powder along with honey applied
Fairness	Santhanam	<i>Santalum album</i>	<i>Santalaceae</i>	Stem	Stem powder with rose water applied
	Vilvam	<i>Agle marmelos</i>	<i>Rutaceae</i>	Fruit	Fruit mask is applied
	Urulaikilangu	<i>Solanum tuberosum</i>	<i>Solanaceae</i>	Tuber	Grated tuber mixed with lemon and applied
	Thakkaali	<i>Solanum lycopersicum</i>	<i>Solanaceae</i>	Fruit	Mashed fruit is applied
	Pipinkaai	<i>Cucumis sativus</i>	<i>Curcubitaceae</i>	Fruit	Grated fruit is applied
	Thesikkai	<i>Citrus aurantifolia</i>	<i>Rutaceae</i>	Fruit	Vapor from boiled fruit use to steam the face
	Roja	<i>Rosa</i>	<i>Rocaceae</i>	Flower	Soaked water is used to wash the face
	carrot	<i>Daucus carota</i>	<i>Umbellierae</i>	Root	Grated root along with milk is applied
	Aavaarai	<i>Cassia auriculata</i>	<i>Leguminosae</i>	Flower	Flower paste is applied
	Pappaasi	<i>Carica papaya</i>	<i>Capparidaceae</i>	Fruit	Mashed fruit along with honey applied
	Puli	<i>Tamirindus indica</i>	<i>Leguminosae</i>	Fruit	Fruit pulp with gram powder applied
Anti-aging	Payaru	<i>Vigna radiata</i>	<i>Fabaceae</i>	Seed	Seed powder applied as face pack
	kadalai	<i>Cicer arietinum</i>	<i>Leguminosae</i>	seed	Seed powder applied as face pack
	Aarisi	<i>Oriza sativa</i>	<i>Graminae</i>	seed	Seed powder applied as face pack along withrice clean water
	Coconut	<i>Cocos nucifera</i>	<i>Arecaceae</i>	Seed	Coconut milk is applied with carrot juice
	Coffee	<i>Coffea arabica</i>	<i>Rubiaceae</i>	Fruit	Coffee powder is applied as face pack
	Nannaari	<i>Hemidismus indicus</i>	<i>Asclepidaceae</i>	Root	Root soaked water is used to wash the face
Pigmentation	Venthayam	<i>Trigonella foenum</i>	<i>Leguminosae</i>	Seed	Soaked seeds ground as a paste and applied

	Ulunthu	<i>Phaseolus mungu</i>	<i>Leguminosae</i>	Seed	Root soaked water is used to wash the face
	Grapes	<i>Vitis vinifera</i>	<i>Vitaceae</i>	Fruit	Mashed fruit is applied
	kadugu	<i>Brassica nigra</i>	<i>Cruciferae</i>	Seed	Oil extracted from seed s applied
	Tharpoosani	<i>Colocynthis citrullus</i>	<i>curcubitaceae</i>	Fruit	Mashed fruit is applied
Allergy	vandukolli	<i>Cassia alata</i>	<i>Leguminosae</i>	Leaves	Leaf paste with lemmon juice applied
	karuncheeragam	<i>Nigella sativa</i>	<i>Ranunculaceae</i>	seed	Seed paste with coconut milk is applied
	kaarbogi	<i>Psoralea corilyfolia</i>	<i>Leguminosae</i>	seed	Seed paste with coconut milk is applied
Body odour	vettiver	<i>Vetiveria zizanioides</i>	<i>Graminae</i>	Root	Root powder used for bath
	kichili	<i>Curcuma zeordica</i>	<i>Zingiberaceae</i>	Rhizome	Rhizome powder used for bath
	Manchal	<i>Curcuma longa</i>	<i>Zingiberaceae</i>	Rhizome	Rhizome powder used for bath
	aruvathaa	<i>Ruta graveolens</i>	<i>Rutaceae</i>	Leaves	Leaf powder used for bath

Table 1: Cosmetic ethnobotanical application for Skin Care.

Purpose	Local name	Botanical name	Family	Part used	Remedy
Hair loss	Vengaayam	<i>Allium cepa</i>	<i>Liliaceae</i>	Bulb	Bulb paste is applied along with egg white
	Katraalai	<i>Aloe vera</i>	<i>Liliaceae</i>	Leaves	Gel is applied
	Urulai kilangu	<i>Solanum tuberosum</i>	<i>Solanaceae</i>	Tuber	Tuber paste is applied
	Thenggai	<i>Cocos nucifera</i>	<i>Areaceae</i>	Seed	Coconut milk is applied
	Ellu	<i>Seasamum indicum</i>	<i>Pedaliaceae</i>	Seed	Extracted oil is applied
	Aamanaku	<i>Ricinus communis</i>	<i>Euphorbacia</i>	Seed	Extracted oil is applied
	Kadukai	<i>Terminalia chebula</i>	<i>Combretaceae</i>	Fruit	Fruit pulp powder is applied
	Nelli	<i>Phyllanthus embilica</i>	<i>Euphorbaceae</i>	Fruit	Fruit pulp powder is applied
	Thaandrikkai	<i>Terminalia bellirica</i>	<i>Combretaceae</i>	Fruit	Fruit pulp powder is applied
	Sembaruthi	<i>Hibiscus rosa</i>	<i>Malvaceae</i>	Flower	Flower paste is applied
	Karasaalai	<i>Eclipta prostrata</i>	<i>Compositae</i>	Leaves	Leave paste is applied
	Muthiyar koonthal	<i>Merremia tridentata</i>	<i>Convulvulaceae</i>	Leaves	applied
	Kariveppilai	<i>Murraya koenigii</i>	<i>Rutaceae</i>	Leaves	applied
	Milagu	<i>Piper nigrum</i>	<i>Piperacea</i>	Seed	Seed with coconut milk is applied
Pirami	<i>Bacopa monniera</i>	<i>Scrophulariaceae</i>	Leaves	Leave paste is applied	
Dandruff	Poduthalai	<i>Lippa nodiflora</i>	<i>Verbanaceae</i>	Leaves	Leave paste is applied
	Ulli	<i>Allium sativum</i>	<i>Liliaceae</i>	Bulb	Bulb paste is applied along with egg white
	Naiteku	<i>Dillenia retusa</i>	<i>Dilleniaceae</i>	Fruit	Boiled fruit is applied
	koiya	<i>Psidium guajava</i>	<i>Myrtaceae</i>	Leaves	Leaf soaked water is applied
	vembu	<i>Azardirecta indica</i>	<i>Melliaceae</i>	Leaves	Leaf soaked water is applied

Hair Cleansing	seeyakaai	<i>Trigonella corniculata</i>	<i>Leguminosae</i>	Fruit	Boiled fruit with rice clean water used
	venthayam	<i>Trigonella foenum</i>	<i>Leguminosae</i>	seed	Boiled seed is applied
Hair coloring	Beetroot	<i>Beta vulgaris</i>	<i>Amaranthaceae</i>	Root	Juice of the root used
	Maruthondri	<i>Lawsonia inermis</i>	<i>Lythraceae</i>	leaves	Leaf paste with tea decoction is used
	Avuri	<i>Indigofera tinctora</i>	<i>Leguminosae</i>	Leaves	Leaf paste is used

Table 2: Cosmetic ethnobotanical applications for Hair Care.

Name	Local Name	Botanical name	Family	Part used	Remedy
Nail care	Ellu	<i>Seasamum indicum</i>	<i>Pedaliaceae</i>	Seed	Seed paste is applied
	Thengaai	<i>Cocos nucifera</i>	<i>Arecaceae</i>	Seed	Oil is applied
	kuppilalai	<i>Vernonia zeylanica</i>	<i>Compositae</i>	Leaves	Leaf paste is applied
Eye care	Maathulai	<i>Punica granatum</i>	<i>Punicaceae</i>	Leaves	Decoction of leaves used to wash the eyes
	Malligai	<i>Jasminum grandiflorum</i>	<i>Oleaceae</i>	Flower	Decoction of flower used to wash the eyes
	Pippinkai	<i>Cucumis sativus</i>	<i>Curcubitaceae</i>	Fruit	Fruit paste is applied
Lip care	Ellu	<i>Seasamum indicum</i>	<i>Pedaliaceae</i>	Seed	Seed paste is applied
	Beetroot	<i>Beta vulgaris</i>	<i>Amaranthaceae</i>	Root	Rot paste is applied
	Roja	<i>Rosa</i>	<i>Rocaceae</i>	Flower	Flower paste is applied
	Thengaai	<i>Cocos nucifera</i>	<i>Arecaceae</i>	Seed	Oil is applied

Table 3: Cosmetic ethnobotanical application for nail, eye and lip care.

Botanical name	Family	Parts used
<i>Mentha arvensis</i>	<i>Labiatae</i>	Leaves
<i>Azardiracta indica</i>	<i>Melliaceae</i>	Leaves
<i>Allium sativum</i>	<i>Lilliaceae</i>	Bulb
<i>Coscinum fenestratum</i>	<i>Menispermaceae</i>	Stem
<i>Acalypha indica</i>	<i>Euphorbaceae</i>	Leaves
<i>Ocimum santum</i>	<i>Labiatae</i>	Leaves
<i>Cinnammum Zeylanicum</i>	<i>Lauraceae</i>	Bark
<i>Santalam album</i>	<i>Santalaceae</i>	Stem
<i>Agle marmelos</i>	<i>Rutaceae</i>	Fruit
<i>Solanum tuberosum</i>	<i>Solanaceae</i>	Tuber
<i>Solanum lycopersicum</i>	<i>Solanaceae</i>	Fruit

<i>Cucumis sativus</i>	<i>Curcubitaceae</i>	Fruit
<i>Citrus aurantifolia</i>	<i>Rutaceae</i>	Fruit
<i>Rosa</i>	<i>Rocaceae</i>	Flower
<i>Daucus carota</i>	<i>Umbellierae</i>	Root
<i>Cassia auriculata</i>	<i>Leguminosae</i>	Flower
<i>Carica papaya</i>	<i>Capparidaceae</i>	Fruit
<i>Tamirindus indica</i>	<i>Leguminosae</i>	Fruit
<i>Vigna radiata</i>	<i>Fabaceae</i>	Seed
<i>Cicer arietinum</i>	<i>Leguminosae</i>	seed
<i>Oriza sativa</i>	<i>Graminae</i>	seed
<i>Coffea arabica</i>	<i>Rubiaceae</i>	Fruit
<i>Hemidismus indicus</i>	<i>Asclepidaceae</i>	Root
<i>Phaseolus mungu</i>	<i>Leguminosae</i>	Seed
<i>Vitis vinifera</i>	<i>Vitaceae</i>	Fruit
<i>Brassica nigra</i>	<i>Cruciferae</i>	Seed
<i>Colocynthis citrullus</i>	<i>curcubitaceae</i>	Fruit
<i>Cassia alata</i>	<i>Leguminosae</i>	Leaves
<i>Nigella sativa</i>	<i>Ranunculaceae</i>	seed
<i>Psoralea corilyfolia</i>	<i>Leguminosae</i>	seed
<i>Ruta graveolens</i>	<i>Rutaceae</i>	Leaves
<i>Vetiveria zizanooids</i>	<i>Graminae</i>	Root
<i>Curcuma zeordica</i>	<i>Zingiberraceae</i>	Rhizome
<i>Curcuma longa</i>	<i>Zingiberraceae</i>	Rhizome
<i>Ruta graveolens</i>	<i>Rutaceae</i>	Leaves
<i>Allium cepa</i>	<i>Lilliaceae</i>	Bulb
<i>Aloe vera</i>	<i>Lilliaceae</i>	Leaves
<i>Solanum tuberosum</i>	<i>Solanaceae</i>	Tuber
<i>Cocos nucifera</i>	<i>Arecaceae</i>	Seed
<i>Seasamum indicum</i>	<i>Pedaliaceae</i>	Seed
<i>Ricinus communis</i>	<i>Euphorbacia</i>	Seed

<i>Terminalia chebula</i>	Combretaceae	Fruit
<i>Phyllanthus embilica</i>	Euphorbaceae	Fruit
<i>Terminalia bellirica</i>	Combretaceae	Fruit
<i>Hibiscus rosa</i>	Malvaceae	Flower
<i>Eclipta prostrata</i>	Compositae	Leaves
<i>Merremia tridentata</i>	Convulvulaceae	Leaves
<i>Murraya koenigii</i>	Rutaceae	Leaves
<i>Piper nigrum</i>	Piperaceae	Seed
<i>Bacopa monniera</i>	Scrophulariaceae	Leaves
<i>Lippa nodiflora</i>	Verbanaceae	Leaves
<i>Dillenia retusa</i>	Dilleniaceae	Fruit
<i>Psidium guajava</i>	Myrtaceae	Leaves
<i>Trigonella corniculata</i>	Leguminosae	Fruit
<i>Trigonella foenum</i>	Leguminosae	seed
<i>Beta vulgaris</i>	Amaranthaceae	Root
<i>Lawsonia inermis</i>	Lythraceae	leaves
<i>Indigofera tinctora</i>	Leguminosae	Leaves
<i>Vernonia zeylanica</i>	Compositae	Leaves
<i>Punica granatum</i>	Punicaceae	Leaves
<i>Jasminum grandiflorum</i>	Oleaceae	Flower
<i>Rosa</i>	Rosaceae	Flower

Table 4: List of Plant species having cosmetic application in northern part of Sri Lanka.

Results from the semi-directive with open-ended questions interview represent a diverse range among women including literate, illiterate, young, elders with different profession. Among the 160 informants ranging from 22-76 years, the largest proportion above 30 years of age (48.75%) and illiterate (40.62%). The results indicate that indigenous knowledge of local herbs is well reputable among elder generation i.e., age>30 years. The women of the area prefer herbal cosmetics as they believe the effectiveness of herbs. Fear of Side effects on the modern cosmetics is another important reason to depend on the herbal sources (Table 3).

Age group	Individuals	%age	Literacy rate	Individuals	% age
20-30	35	21.87%	Illiterate	65	40.62%
30-50	78	48.75%	Below O/I	23	14.37%
>50	47	29.37%	Advanced level	42	26.25%
			University	30	18.75%

Table 5: Age group and literacy level frequencies of the respondents in the area.

Medicinal plants contain numerous biologically active compounds which have medicinal activities. Every culture has its own unique traditional cosmetics using local herbs. The results of this research showed that the parts of local plants used for cosmetic purposes in Northern Sri Lanka include Skin care (53.2%), hair care (37.09%), nail care (4.8%), lip and eye care (11.2%). The members of the families Leguminosae 9 (sp.), Rutaceae 5 (sp.), lilliaceae 3 (sp.), saponaceae were mainly mentioned (Table 4). In addition, the plant parts mentioned in this study were either dried before use or the fresh paste of the plants was used in cosmetics preparations. The leaves (29%) fruit (23%), seeds (20%), tuber (3%), rhizome (3%), bulb (3%) bark (25%), roots (19%), flower (7%) and stem (3%) were the most mentioned morphological parts in the recipes (Figure 2). Application of the cosmetic herbs in the study are include in the management of acne, fairness, anti-aging, pigmentation, allergy, hair loss, dandruff, hair cleansing, hair colouring, nail care, eye care, lip care and for body odor (Figure 3). More than 60 recipes were documented about the cosmetic use of indigenous herbs in North Sri Lanka (Table 5).

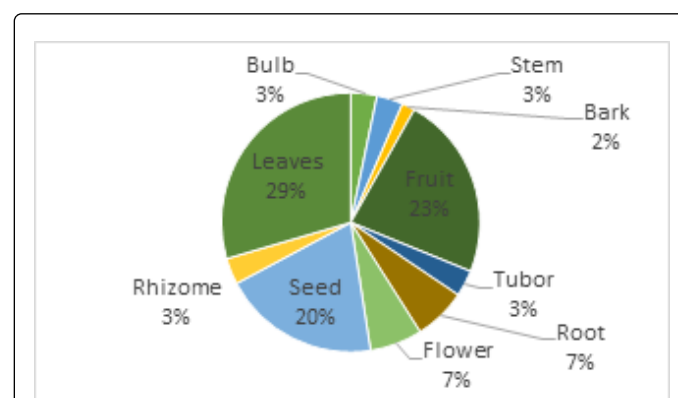


Figure 2: Morphological part of the plants used as cosmetic ethnobotany.

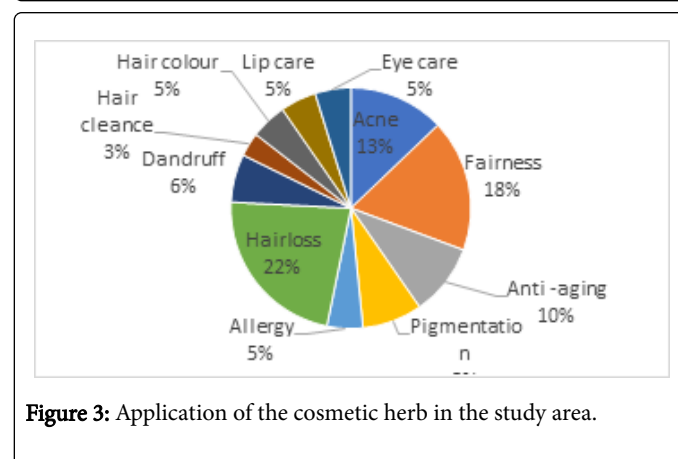


Figure 3: Application of the cosmetic herb in the study area.

Conclusion

Since North Sri Lanka has the rich plant diversity Local people of area have good knowledge of utilization of plants for cosmetic purposes. This study has invented some of the plants used in Northern Sri Lanka for cosmetic purpose. As cosmetic utilization of local herbs has not been carried out yet in North Sri Lanka the documentation of

traditional knowledge will contribute to the conservation, sustainable management and consumption of plant resources.

References

1. Gediya SK, Mistry RB, Patel UK, Blessy M, Jain HN (2011) Herbal Plants: Used as a cosmetics. *J Nat Prod Plant Resour* 1: 24-32.
2. Goleniowski ME, Bongiovanni GA, Bongiovanni L, Palacio CO, Cantero JJ (2006) Medicinal plants from the Sierra de Comechingones, Argentina. *J Ethnopharmacol* 107: 324-341.
3. Tabuti JR (2002) Traditional knowledge in Bulamogi County-Uganda: Importance to sustainable livelihoods. *African Knowledge Sciences*: 98-103.
4. Harsha VH, Hebbar SS, Hegde GR, Shripathi V (2002) Ethnomedical knowledge of plants used by Kunabi tribe of Karnataka in India. *Fitoterapia* 73: 281-287.
5. (2011) "Area of Sri Lanka by province and district". Statistical Abstract. Department of Census & Statistics, Sri Lanka.