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Roshni Thampi

MSc Student,
Department of Agricultural
Extension, College of
Horticulture, Vellanikkara,
Thrissur, Kerala, India

Dr. Mercykutty MJ

Associate Professor,
Department of Agricultural
Extension, College of
Horticulture, Vellanikkara,
Thrissur, Kerala, India

Dr. Jalaja S Menon

Assistant Professor and Head i/c,
Cashew Research Station,
Madakkathara, Thrissur, Kerala,
India

Correspondence

Roshni Thampi

MSc Student,
Department of Agricultural
Extension, College of
Horticulture, Vellanikkara,
Thrissur, Kerala, India

Traditional knowledge on use of medicinal plants grown in homesteads as home remedies

Roshni Thampi, Dr. Mercykutty MJ and Dr. Jalaja S Menon

Abstract

The present paper is an attempt to explore the traditional knowledge nurtured by the farming community on medicinal plants. The study was conducted in Thrissur district of Kerala state. Thrissur has a long history in the use of medicinal plants and traditional medicine. Local people in the villages, especially the elderly, have useful information about health benefits and how to use these plants. Therefore, it seems that collecting and recording this information lead to the revival of traditional knowledge. A total of 62 species of medicinal plants and 45 ITKs were recorded in the study area. However, out of 62 species only 29 species are currently used for treating various illness and diseases. Further, 12 plants were used to cure more than one ailment, while 17 plants were mostly used for single therapeutic application. Traditional botanists and native people were also interviewed for identifying the medicinal plants and studying its uses.

Keywords: Indigenous traditional knowledge, ITK, medicinal plants, traditional knowledge, home remedies

1. Introduction

Medicinal plants are priceless gift of nature. From time immemorial they have been used as a source of medicine for treating human diseases. As per World Health Organization (WHO) [1] estimates, nearly 80 per cent of the population of developing countries depend on traditional medicines, mostly plant drugs, for their primary health care needs. It is estimated that 20,000 species of plants are being used for medicine in the third world countries [2].

In India, in traditional system of medicine it is estimated that about 8000 species of medicinal plants, herbs, shrubs, trees, climbers, orchids, grasses and tubers are used for medicinal purposes by millions of people across the country [3]. Even though there is a great advancement in the allopathic field of medicine, the medicinal plants are attracting the attention of the entire world in a much faster way. It has been reported that over 150 species of medicinal plants are either indigenous or naturalized to our state and are used in the Indian system of medicine like Ayurveda and Sidha [4].

The traditional wisdom and knowledge play an important role in contributing sustainable grass root innovation and the overall socio-economic development of communities. Researches show that the indigenous knowledge of medicinal plants has been decreasing at an alarming rate and many policies and development projects have collapsed because of failure to comprehend traditional knowledge and how this influences the way farmers manage available natural resources [5]. The knowledge of Ayurveda has led to the discovery of many potent bioactive agents in modern drug development [6],[7]. Still 75 per cent of total population relies on medicinal plants in the rural and remote areas by way of traditional systems of medicine. Large human population in developing countries is dependent on plant resources for healthcare because allopathic medicine can cure a wide range of diseases, but its high prices and occasional side-effects are causing many people to return to herbal medicines which tend to have fewer side effects [8].

There is an urgent need to document the traditional knowledge on medicinal and aromatic plants since this knowledge orally passes through generations and more vulnerable to be wiped out [9]. Kerala State is enormously graced with medicinal plants due to its diverse agro-climatic conditions. Medicinal plants constitute an important component of the plant resource spectrum of the state. Moreover, the state has a rich tradition in Ayurveda from very early period and contributed much to the development of this system of medicine. Out of 4600 flowering plants identified in Kerala, about 900 possess medicinal values.

Of these 540 species occur in forest ecosystems [10]. About 65 per cent of plants required for Ayurvedic medicine and almost 80 per cent of plants used in Sidha medicine are found in forests of Kerala [11]. The aim of this study was to identify different medicinal plants and the indigenous knowledge of local people in the study area.

2. Methodology

The study was carried out during the year 2018 in Kodakara, Pazhayannur and Wadakkanchery blocks of Thrissur district in Kerala. A total of 90 respondents were randomly selected and extensive field surveys were undertaken to gather data on medicinal plant species and their uses in the selected blocks. During the surveys, attempts were made to collect all possible information regarding the traditional use of

medicinal plants, part(s) used and ailment cured. A semi-structured questionnaire survey, consultation and group discussion with medicinal farmers were conducted. Traditional botanists and other knowledgeable people on medicinal plants were also interviewed.

3. Results and Discussion

A total of 62 species of medicinal plants and 45 ITKs were recorded in the study area. This indicates the high diversity of medicinal plants species in the selected blocks. However, out of 62 species only 29 species are currently used by local inhabitants for medicinal purposes. Further, 12 plants were used to cure more than one ailment, while 17 plants are widely used for single therapeutic application.

Table 1: List of medicinal plants from homesteads of Thrissur district and their medicinal uses

SL No.	Plant Species	Local name	Chemical components/ alkaloids	Parts(s) used and or method of preparation	Uses or against which ailments
1	<i>Adenia hondala</i>	Palmuthukku	Lanceolin, stenodactylin and volkensin	Tuber – dried and powdered	Induce lactation
2	<i>Adhatoda vasica</i> Nees.	Adalodakam	Vasicine, quinazoline alkaloid	Leaves - Decoction	Cough
				Leaf juice mixed with honey	Menstrual bleeding
				Leaf juice mixed with sugar	Tuberculosis
3	<i>Aegle marmelos</i>	Koovalam	Aegeline	Leaves- Decoction	Stomach pain
4	<i>Aerva lanata</i>	Cheroola	Ervine, kaempferol, quercetin, methyl grevillate	Leaves and ginger boiled in water	Gas trouble
5	<i>Ageratina adenophora</i>	Venappacha	Ageraphorone, stigmaterol, ferulic acid, caffeic acid	Tender leaves and stem - Crushed	Cuts, body pain and allergy
6	<i>Aloe vera</i>	Kattarvazha	Acetylated mannans, polymannans, anthraquinone, C- glycosides, Anthraones, emodin and lectins	Leaves- Gel from the leaf for surface application	Sunburns, wounds, acne
				Crushed leaf in water and taken orally	Diabetics, obesity, abdominal pain
7	<i>Azadirachta indica</i>	Veppu	Triterpenoids, salanin, Azadirachtin, melianone and organic acids	Neem oil used as hair oil	Sneezing
				Roots – crushed with honey	Vomiting in children
				Leaves - paste	Inflammation in face
8	<i>Biophytum sensitivum</i>	Mukkutti	Cupressuflavone, amentoflavon, luteolin, isoorientin, caffeoylquinic acid	Paste prepared from whole plant	Dysentery
				Roots and stem –decoction with equal amount of water and milk Consume for 7 days	Diabetes
9	<i>Boerhaavia diffusa</i>	Thazhuthama	Boeravinones G and H, rotenoids, quinolone alkaloid and lunamarine	Roots - Decoction	Sinusitis
				Leaves - juice	Improve eyesight
10	<i>Centella asiatica</i>	Kudakan	Asiaticoside, brahmoside, asiatic acid, brahmic acid	Whole plant - juice	Dysentery in children
11	<i>Cissus quadrangularis</i> Linn	Changalamparanda	Carotenoids, triterpenoids, ascorbic acid and dimer quadrangularin A	Leaves - juice	Ear infection
12	<i>Coscinium fenestratum</i>	Maramanjil	Ceryl alcohol, saponin, hentriacontane, sitosterol glucoside, palmitic acid and oleic acid	Stem cuttings boiled in water	Jaundice
13	<i>Curcuma longa</i>	Manjal	Turmerone, phellantrene, terpinolene, undecanol	Mix turmeric powder, honey and milk. Apply as hair pack. Wash it off after 30 minutes using shampoo	Hair growth
14	<i>Emblica officinalis</i>	Amla	Gallic acid, ellagic acid, pyrogallol, norsesquiterpenoids, corilagin, geranin, eleaocarpusin and prodelphinindins B1 and B2	Fruit – mix amla juice, turmeric powder and honey. Consume orally.	Diabetes
15	<i>Emelia sonchifolia</i>	Muyalcheviyan	Rhamnetin, isorhamnetin, quercetin, luteolin	Whole plant- paste. Apply to throat	Tonsillitis
16	<i>Eupatorium triplinerve</i>	Ayyappana	Selina-4(5),7(11)- dien-8-one, caryophyllene and elemene	Leaves - paste	Inflammation, Hair fall
17	<i>Ixora coccinea</i>	Thechi	Kaemferol, quercetin. Proanthocyanidin, phenolic acids and ferulic acids	Juice of ixora flowers and kizharnelli leaves mixed with breast milk	Eye infection
18	<i>Mimosa pudica</i>	Thottavaadi	Mimosine, turgorin	Whole plant crushed with	Jaundice

				Phyllanthus niruri (Kizharnelli) and roasted with duck egg	
				Whole plant crushed with coconut milk and drink for 15 days	Asthma
19	<i>Ocimum sanctum</i> Linn.	Thulsi	Eugenol, carvacrol, nerol and eugenol methyl ether	Place leaves in pillow before sleeping	Head lice
				Mix equal quantity of thulsi leaf extract and honey. Consume orally	Cold
20	<i>Phyllanthus niruri</i>	Kizharnelli	Phyllanthine and hypophyllanthine	Whole plant crushed in milk	Jaundice
				Crush whole plant with milk and consume in empty stomach	Jaundice
21	<i>Piper betle</i>	Betel vine	Diosgenin, eugenol, allylpyrocatechol	Leaves - juice	Burns
22	<i>Piper longum</i>	Thippali	Piperin, rutin, chavicin, beta- caryophyllene piperlyne and limonene	Dried spikes and roots-Grind and mix with lemon juice and consume	Vomiting
				Grind with sugar and consume	Sore throat
23	<i>Plumbago rosea</i>	Chettikoduveli	Plumbagin	Roots - Grind and apply	Elephantiasis
24	<i>Scoparia dulcis</i>	Kallurukki	Scopadulcic acids A and B, scopadiol scopadulciol, scopadulin, scoparic acids A and C and betulinic acid	Consume juice from whole plant	Kidney stone
25	<i>Sida rhombifolia</i> Linn.	Kurunthotti	Ephedrine and siephedrine	Roots - decoction in milk	Cardiac disorders
				Leaves juice + coconut oil	Hair growth
				Crush leaves with leaves of koovalam and chembarathi and apply to scalp. Wash off after one hour	Hair fall
26	<i>Tabernaemontana divaricata</i>	Nanthyarvattom	Voacritine, voacangine, coronaridine, vobasine, taberinaemontanine and dregamine	Leaves and flowers - juice	Eye pain
27	<i>Withania somnifera</i>	Amukkuram	Withanine, withananine, pseudo-withanine, somnine, somniferine and somniferanine	Cooked in milk, dried and powder. Boil this with milk and consume daily	To gain body weight
28	<i>Wrightia tinctoria</i>	Dandapaala	Cycloartanes, cycloartenone, cycloleucalenol and beta-amyrin	Crushed leaves dipped in coconut oil and exposed to sunlight for three days	Dandruff
29	<i>Zingiber officinale</i>	Ginger	Gingerols, shogols, geranyl, neral, beta-sesquiphellandrene, beta- bisabolene, ar-curcumene and alpha zingiberne	Equal amount of ginger juice, raw hone and pomegranate juice – consume 1 tablespoon of this mixture 3 times a day	Dry cough
				Ginger juice + salt + lemon juice	Indigestion
				Equal parts of ginger juice and lemon juice Consume twice a day	Headache
				Rub grated ginger to areas of hair fall. Wash off after 30 minutes	Hair fall

Table 2: Use of medicinal plants as home remedies by respondents

Items	Kodakara	Pazhayannur	Wadakkanchery
No. of ITK documented	29	31	35
Number of home remedies identified	19	24	30
No. of plants used	15	20	22

Even though respondents have good knowledge on uses of medicinal plants, they are practicing home remedies based on requirement only. From Table 2 it is evident that respondents from Wadakkanchery block use 30 home-remedies, 24 by respondents from Pazhayannur block and only 19 home-remedies used by respondents from Kodakara block. The number of plants used in these home- remedies were 22, 20 and 15 respectively. The study also revealed that most of the respondent were highly knowledgeable about the use of medicinal plants as home-remedies.

Conclusion

Indigenous traditional knowledge is very productive and useful in the context of sustainable development. But unfortunately, the precious and perennial non-documented traditional knowledge and its full potentiality have not yet been fully utilized. Observations reveal that most of the aforesaid plants do not have any recorded toxic effect upon

the users. Not only the above plant species but also the unexplored knowledge have tremendous medicinal values and may be the subject of utmost importance to explore the possible outcome of attributes for those diseases having no desirable remedies in particular. There is an immediate need of recording all type of knowledge through proper investigation.

The people of the study area possess good knowledge of herbal drugs but due to modernization, their knowledge of traditional uses of plants may be lost in due course. So it is important to study and document the uses of plants by different local communities. Even though most of the inhabitants have good accessibility to visit physicians or the clinics but many farmers still use medicinal plants due to their efficacy and lesser side effects. This confirms the importance of these medicinal plants as renewable resources by local inhabitants in the study area. It is worth mentioning that most of the informants of the study area are optimistic

on the traditional primary healthcare practices among indigenous communities. Further studies can be undertaken by including different parts of Kerala to compare the different uses for each plant species. Based on the study, it is suggested that for the benefit of the communities, the recorded plant species may be conserved and cultivated as far as possible.

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