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Research Article

ETHNOMEDICINAL PLANTS USED FOR GASTRO-INTESTINAL AILMENTS BY KANI TRIBES OF KANYAKUMARI WILDLIFE SANCTUARY IN TAMILNADU, INDIA

Celin Pappa Rani J* and Jeeva S

Department of Botany and Research Centre, Scott Christian College (Autonomous), Nagercoil, Tamilnadu, India - 629 003

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A B S T R A C T

An ethnobotanical survey was carried out in Kani tribe inhabited areas of Kanyakumari Wildlife Sanctuary, Tamilnadu, India. This study documented the medicinal plants used for gastro intestinal ailments by the Kani tribe. The field survey was conducted between July 2015 to July 2016. A total of 59 medicinal plants belonging to 55 genera and 35 families used for the treatment of gastrointestinal ailments by the tribe. Among these nine spp. are used to treat dysentery, 8 for stomach ache, 7 for ulcer, 6 for vermifuge, 6 for flatulence, 5 for constipation 6 for diarrhea, 4 for indigestion, 4 for vomiting, 1 for poisonous waste removal and 1 for gastritis.

INTRODUCTION

Medicinal plants have a long history among many tribal communities, they play a primary role in treating many diseases and this medicinal practice is based on hundreds of years of belief and observations (Kala, 2005). The World Health Organization has estimated that about 80% of the global population depend on traditional medicine to meet their primary healthcare needs (WHO, 2000). Plants and natural products have been used in various indigenous systems of medicine throughout the world to reduce human morbidity and mortality (Yigezu *et al*., 2014). Ethnomedicine has thrived because of the cost-effectiveness, acceptability and biomedicinal benefits. There has been a huge growth in the demand for herbal medicines globally (Halile *et al*., 2008). Herbal remedies play an important role in healing ailments and are considered to be the oldest forms of healthcare known to mankind on earth (Dangwal and Sharma, 2011). The present study was carried out to document ethnomedicinal plants used by the Kani tribes to cure gastro intestinal problems like stomach ache, dysentery, diarrhea, constipation ulcer and indigestion.

MATERIALS AND METHODS

Data collection

Ethnobotanical data were collected on gastro-intestinal ailments during 2015-2016, from all categories of Kani tribe interviewing medicine men, tribal headman, elderly persons. The survey was conducted through semi-structured open-ended interviews based on standard ethnobotanical methods (Martin, 1995; Alexiades, 1996). Data collected included plant parts used, mode of preparation of each medication, mode of utilization, the disease each plant helps to cure, local name Data collected included plant parts used, mode of preparation of each medication, mode of utilization, the disease each plant helps to cure, local name. Interviews were conducted in Tamil. Data collected through direct interviews were directly documented in field notebooks as preliminary data.

Plant collection and identification

Plant samples were collected by walking in the forest. Some of the plants were identified in the field itself. Photographs were taken. During collection the taxa were classified according to their habit: herb, shrub, tree, liana and climber. Plant samples were collected for the preparation of voucher specimens. Voucher specimens were deposited in the Department of Botany and Research Centre, Scott Christian College, Nagercoil. The Angiosperm Phylogeny Classification (APG 111, 2009) was followed to classify the taxa. The plant specimens were identified with the help of local and regional floras (Gamble and Fischer, 1956; Nair and Henry, 1983). In order to check the spelling, eliminate the use of older synonyms and ensure uniform nomenclature all plant names were verified using The Plant List (2013).

RESULTS AND DISCUSSION

Medicinal plant diversity

The present study identified a total of 59 medicinal plants belonging to 55 genera and 35 families used for the treatment

Corresponding author:* **Celin Pappa Rani J
Department of Botany and Research Centre, Scott Christian College (Autonomous), Nagercoil, Tamilnadu, India - 629 003

of gastrointestinal ailments. Of the 35 families, 34 belonged to angiosperms and 1 belong to pteridophyte (Pteridaceae). Among angiosperms, dicotyledons were represented by 28 families, 47 genera and 58 taxa, monocotyledons by 6 families, 7 genera and 8 taxa. Of the 50 dicot taxa, 30 were Polypetalae belonging to 29 genera and 17 families; 9 were Gamopetalae belonging to 8 genera and 5 families and 11 were Monochlamydeae belonging to 10 genera and 6 families. Monocots were represented by 8 taxa belonging to 7 genera and 6 families (Table 1).

Table 1 Floristic richness of ethnomedicinal taxa

Floristic group		Genus	Taxa	Family
Angiosperms				
Dicotyledons	Polypetalae	29	30	17
	Gamopetalae	8	9	5
	Monochlamydae	10	11	6
Monocotyledons		7	8	6
Pteridophytes		1	1	1
		55	59	35

Family abundance

The abundance of taxa per family ranged from one taxon to four taxa. The best represented families were Apocynaceae, Leguminosae, Euphorbiaceae and Rutaceae (each with 4 taxa), followed by Combretaceae, Malvaceae and Zingiberaceae (each with 3 taxa), Apiaceae, Cucurbitaceae, Moraceae, Phyllanthaceae, Solanaceae and Vitaceae (each with 2 taxa), Annonaceae, Arecaceae, Begoniaceae, Caesalpiniceae, Clusiaceae, Convolvulaceae, Cyperaceae, Dilleniaceae , Lamiaceae, Lythraceae, Marantaceae, Meliaceae, Menispermaceae, Moringaceae, Myristicaceae, Oxalidaceae, Pedaliaceae, Piperaceae, Poaceae, Pteridaceae, Sterculiaceae and Amaryllidaceae with one taxon. Leguminosae have been found to be the most prominent in treating various ailments among the Kanis. Plants belonging to Apocynaceae poccess therapeutic potential (Wankhede, *et al.,* 2013). Members of the Leguminosae hold significant medicinal properties and have been widely used as components of pharmaceutical products (Gao *et al*., 2010). Chew *et al*. (2011) assessed the antioxidant potential and antibacterial activity and classes of phytochemical of some of the medicinal members of bean family.

Habit of medicinal plants

Of the collected ethnomedicinal plants, 22(37%) were trees followed by herbs 15 (26%), climbers 10(17%), shrubs 10 (17%) and lianas 2(3%). Predominant usage of trees in herbal medicine preparation due to the availability throughout the year (Uniyal *et al*.,2006; Sanz-Biset *et al*., 2009) and are relatively drought resistant and not easily affected by seasonal variations (Maroyi, 2011). The findings are in line with those of studies carried out in India and elsewhere; Tharu tribe of Uttar Pradesh (Bajpai *et al.,* 2016), the Garo, Koch and Hajong tribe of Bangladesh (Islam *et al*., 2014), Karanga communities of Zimbabwe (Maroyi, 2013) prefers herbs for medicinal preparation.

Plant parts used for medicine preparation

Kanis use all parts of the plant for medicine preparation. Fruit, leaf, root, bark, rhizome, wood, tuber and bulb were found to be widely used by the Kani tribe for the treatment of gastrointestinal ailments. Fruits and leaves are the most frequently used plant part, accounting for 19 taxa (32%), followed by leaf [17 taxa (29%)], root [6 taxa (10%)], bark [5 taxa (9%)], seed [4 taxa (7%)], stem [2 (3%)], tuber [2 taxa (3%)] and bulb [1 (2%)]. Ripened fruits contain high concentration of secondary metabolites (Tariq *et al*., 2015). Present study are in line with the studies in another country in which fruit is most commonly used plant part against gastrointestinal ailments (Dogan and Ugulu 2013). Leaves can be collected easily from the forest (Giday *et al*., 2009). The high use of leaves might be attributed to the fact that they can be easily obtained in large quantities when compared with other plant parts (Passulacqua *et al*., 2007). Leaf is the major site of photosynthesis and is the most metabolically active part of the plant. They are the sites of various biochemical reactions, leading to the production of secondary metabolites, which contribute towards their medicinal value (Balick and Cox, 1996; Ghorbani, 2005). The fact that leaves are used by the Kani for treating various ailments has been substantiated by the findings among various other tribes in India and elsewhere. Tharu tribes of Dudhwa National Park (Kumar and Bharati, 2014), Maroon community people of Netherlands (Klooster *et al*., 2016). In Tamilnadu too, Kuravas and Irulas of Villupuram district (Arulappan *et al.,* 2015), Paliyars (Ignacimuthu *et al.,* 2008), Irulas (Vijayalakshmi *et al*., 2014), Malayalis (Kadhirvel *et al*. 2010), Muthuvars and Irulas tribes (Jeyaprakash *et al.,* 2011),and Malayali Gounders (Vaidyanathan *et al*., 2014) use leaves for preparing medicines to cures various ailments.

Mode of preparation

Kani tribes prepare medicine in different forms. They are grouped into 10 categories. Of these, most commonly used method of preparation was paste [20 taxa (34%)], followed by extract [9 taxa (15%)], raw [9 (15%)], decoction [7 taxa (12%)], powder [5 taxa (8%)], cooked [4 taxa (7%)], roasted [2 taxa(3%)] and infusion [1 taxa (2%)], oil [1 taxa(2%)] and burnt [1 taxa (2%)] Water is commonly used as the solvent for the preparation of medicines. Pastes are prepared predominantly by various tribes; Valaiyans of Dindigul district (Yasothkumar and Rajendran, 2016), Kurumbas and Kurichans of Dharmapuri district (Alagesaboopathi, 2014), and Malasars of Velliangiri Hills of Coimbatore (Raghupathy *et al.,* 2008). Methods of preparation and application vary based on the type of disease and the extent of ailments (Giday *et al*., 2016).

Mode of application

Kanis prefer two types of application of medicine: topical and oral. The most common route of application is oral [58 reports (98%)], followed by topical [1 reports (2%)]. Oral mode of application is followed by the Kanis mainly for treating gastro intestinal ailments. Oral mode of application of herbal medicine provides fast and better action in treating gastrointestinal ailments. The finding that the oral mode of application of medicine is predominant among Kanis is concordant with, findings among various tribes: Malayali tribe in Yercaud hills (Senthilkumar *et al* 2012), Marwat of Pakistan (Tariq *et al.,*2015). Kani tribes frequently use some adjuvant's like cane sugar, palm sugar, coconut milk, honey, cow milk and breast milk while preparing herbal medicines.

Common gastro intestinal problems among the Kani tribe were dysentery, stomach ache, ulcer, vermifuge, flatulence, constipation diarrhea, indigestion, vomiting, poisonous waste removal and gastritis. A total of 59 medicinal plants belonging to 55 genera and 35 families used for the treatment of gastrointestinal ailments by the tribe.

Table 2 List of ethnomedicinal plants used by the Kani tribe for treating gastro-intestinal ailments

Sl.No	Botanical name	Local name	Family	Parts used	Habit	Mode of preparation	Ethnomedicine preparation	Mode of administration	Ailment treated
1	*Aegle marmelos* (L.) Corre	Vilvam	Rutaceae	Fruit	Tree	Powder	Fruits dried and powdered about 30 g fruit powder taken orally for three times a day cures dysentery. Fruits act as coolant.	Oral	Dysentery
2	*Acalypha indica* L.	Kuppaimeni	Euphorbiaceae	Leaf	Herb	Paste	5 gm of the leaf is made into paste is taken orally thrice a day cures stomach ache.	Oral	Stomach ache
3	*Allium sativum* L.	Poondu	Amaryllidaceae	Bulb	Herb	Cooked	Bulb consumed orally cures gas trouble.	Oral	Gas trouble
4	*Alpinia galanga* (L.) Willd	Perarathai	Zingiberaceae	Rhizome	Herb	Decoction	Boil ten leaves with water (50 ml) . Consume 10 ml of the water it cures indigestion and gas trouble	Oral	Indigestion, gas trouble
5	*Annona muricata* L.	Mullu munthiri	Annonaceae	Fruit	Shrub	Extract	Handful of leaves crushed along with two young fruits. Pure filtered extract (20 ml) is consumed to stop diarrhea.	Oral	Diarrhea
6	*Baccaurea courtallensis* (Wight) Mull.Arg.	Mootupazham	Phyllanthaceae	Fruit	Tree	Raw	Fruits consumed cures constipation	Oral	Constipation
7	*Begonia malabarica* Lam.	Narayana sanjeevi/Enam koli	Begoniaceae	Leaf	Herb	Raw	Leaves eaten raw increases body strength and stamina and reduces the hunger.	Oral	Reduces hunger
8	*Caesalpinia bonduc* (L.) Roxb.	Kazhanchi	Caesalpiniaceae	Seed	Climbe	Paste	Seed paste (20 gm) is consumed to stop diarrhea and cures stomach ache.	Oral	Stomach ache/diarrhea
9	*Calophyllum inophyllum* L	Punai	Clusiaceae	Fruit	Tree	Oil	Fruits shade dried and boiled along with coconut oil. One spoon of this oil is taken orally in the early morning agains constipation.	Oral	Constipation
10	*Cassia fistula* L.	Kattu konnai	Caesalpiniaceae	Bark	Tree	Decoction	About 10 gm bark is boiled with 100 ml of water and 5ml of this decoction is taken orally for three time a day cures stomach ache. Ten grams of tender leaves boiled with water (100 ml) is made into decoction is consumed once helps in expelling worms.	Oral	Stomach ache/ vermifuge
11	*Cayratia pedata* (Lam.) Gagnep.	Ivaralli	Vitaceae	Root	Climbe	Paste	Roots ground into fine paste. Paste (10 g) is consumed to stop diarrhea.	Oral	Diarrhea
12	*Ceiba pentandra* (L.) Gaertn.	Elavu panchu maram	Malvaceae	Bark	Tree	Extract	Crush the bark, extract mixed with tamarind fruit extract taken orally cure stomach ache.	Oral	Stomach ache
13	*Centella asiatica* (L.) Urb.	Kodangal	Apiaceae	Leaf	Herb	Paste	Leaves made into paste with rice water given orally once a day for seven days cures stomach ulcer.	Oral	Ulcer
14	*Cipadessa baccifera* (Roth.) Miq.	Pullipan chedi	Meliaceae	Leaf	Shrub	Paste	Leaf paste (10 gm) mixed with cup of milk consumed to stop diarrhea.	Oral	Diarrhea
15	*Cissus quadrangularis* L.	Pirandai	Vitaceae	Stem	Climbe	Cooked	Tender stems (15 gm) heat in fire. Heated stem consumed once cures gas trouble.	Oral	Gas trouble
16	*Citrus limon* (L.) Osbeck	Ellumichai	Rutaceae	Leaf	Tree	Raw	Chew one leaf prevent vomiting sensation.	Oral	Vomiting
17	*Cocos nucifera* L.	Thenai	Arecaceae	Fruit	Tree	Raw	Coconut milk given orally twice stops dysentery.	Oral	Dysentery
18	*Croton tiglium* L.	Nachu kurichan/Nervalam	Euphorbiaceae	Fruit	Tree	Paste	Fruit ground into fine paste. Paste 5 g is taken orally against constipation.	Oral	Constipation
19	*Cyclea peltata* (Lam.) Hook.f. & Thomson	Jala theratti/ Arathazhi/Padagha thazhi	Menispermaceae	Leaf	Climbe	Paste	Leaf paste (50gm) given orally for once cures diarrhea.	Oral	Diarrhea
20	*Cyperus rotundus* L.	Korai kizhaghu	Cyperaceae	Root	Herb	Paste	Handful of roots ground into fine paste, and given orally for vomiting.	Oral	Vomiting
21	*Decalepis hamiltonii* Wight & Arn.	Perunannari	Apocynaceae	Tuber	Liana	Paste	Root tuber grind made into paste given orally twice a day for three days cures ulcer.	Oral	Ulcer
22	*Dillenia pentagyna* Roxb.	Naithekku	Dilleniaceae	Bark	Tree	Paste	Bark ground into paste and consumed along with coconut milk two times / day for seven days cures ulcer.	Oral	Ulcer
23	*Euphorbia nivulia* Buch.-Ham.	Mantha kalli	Euphorbiaceae	Leaf	Tree	Extract	Leaves shown in fire and then crushed, extract is taken. 20 ml of this extract is given orally once a day controls child dysentery.	Oral	Dysentry
24	*Ficus racemosa* L.	Athi	Moraceae	Fruit	Tree	Raw	Fruits eaten reduces vomiting.	Oral	Vomiting
25	*Ficus arnottiana* (Miq.) Miq.	Kalarasu	Moraceae	Root	Tree	Paste	Root (20 g) ground and made into paste given orally twice a day for three days cures ulcer.	Oral	Ulcer
26	*Getonia floribunda* Roxb.	Pillani kodi	Combretaceae	Stem	Liana	Paste	Handful of leaves ground with a little water. 5 gm s leaf paste consumed cures stomach ache	Oral	Stomach ache
27	*Glycosmis pentaphylla* (Retz.) DC.	Kattu konchai	Rutaceae	Fruit	Shrub	Extract	Juice extracted from fruit (10 ml) given orally twice a day cures stomach ache.	Oral	Stomach ache
28	*Helicteres isora* L.	Kaivam / Valampuri edampuri	Sterculiaceae	Bark	Tree	Extract	Bark (50 g) are crushed to extract juice. juice (5-10 ml) taken orally for treating diarrhea.	Oral	Diarrhea
29	*Hemidesmus indicus* (L.) R. Br. ex Schult.	Nannari	Apocynaceae	Root	Climbe	Paste	Handful of root tuber ground into paste and boiled along with coconut milk is consumed for twice a day for seven days cures mouth and stomach ulcers.	Oral	Ulcer
30	*Hemionitis arifolia* (Burm. f.) T. Moore	Naicheviyan	Pteridaceae	Leaf	Herb	Extract	Juice extracted from four leaves mixed with coconut milk is taken orally for thrice a day to stop diarrhea.	Oral	Diarrhea

community are very much susceptible to the ailments because of lack of sanitation (Saxena *et al*., 2014).

31	*Ipomoea obscura* (L.) Ker Gawl.	Pulla thazhi	Convolvulaceae	Root	Climbe	Decoction	Root decoction given orally cures dysentery.	Oral	Dysentery
32	*Jatropha glandulifera* Roxb.	Kurunthotillai	Euphorbiaceae	Seed	Shrub	Powder	Seeds dried and powdered given orally once to clear the bowel system.	Oral	Constipation
33	*Leucas aspera* (Willd.) Link	Thumbai	Lamiaceae	Leaf	Herb	Decoction	Leaf decoction (20 ml) is drunk to expe intestinal worms.	Oral	Vermifuge
34	*Limonia acidissima* Groff	Vilanthikai	Rutaceae	Fruit	Tree	Raw	Fruits eaten to cure gas trouble.	Oral	Gas trouble
35	*Maranta arundinacea* L.	Koova kizhanghu	Marantaceae	Tuber	Herb	Cooked	Cooked tuber (25 g) is consumed to stop dysentery.	Oral	Dysentry
36	*Momordica charantia* L.	Pakarkai	Cucurbitaceae	Leaf	Climbe	Decoction	A handful of fresh leaves boiled in 25 m water. This decoction (5 ml) drunk one time a day for five days to expel worms for stomach (vermifuge).	Oral	Vermifuge
37	*Moringa oleifera* Lam.	Murungai	Moringaceae	Leaf	Shrub	Extract	Bark juice given orally acts to expel worms from stomach (vermifuge).	Oral	Vermifuge
38	*Myristica malabarica* Lam.	Kattujathy	Myristicaceae	Fruit	Tree	Powder	Fruit powder (20 g) boiled with a cup of water and given orally cures gastric troubles and dysentery.	Oral	Gas trouble,Dysentry
39	*Ochlandra travancorica* (Bedd.) Gamble	Ethel	Poaceae	Leaf	Tree	Burnt	Leaf burnt put it in the container with the flames and keep it in the stomach relieves gas trouble.	Oral	Gas trouble
40	*Oxalis corniculata* L.	Puliyarai	Oxalidaceae	Leaf	Herb	Paste	Leaves ground into paste and given orally cures dysentery.	Oral	Dysentery
41	*Phyllanthus emblica* L.	Nelli	Phyllanthaceae	Fruit	Tree	Infusion	Crush five fruits and soak it in a cup of water. Drink this water in the following day cures gastritis.	Oral	Gastritis
42	*Piper betle* L.	Vetrillai	Piperaceae	Leaf	Climbe	Paste	Leaf shown in fire and ground into fine paste and applied topically over stomach cures stomach ache.	Topical	Stomach ache
43	*Punica granatum* L.	Madhulai	Lythraceae	Fruit	Shrub	Decoction	Equal proportion (20 g) each of fruit rind and *Psidium guajava* leaves made into decoction with water given orally two times in a day cures dysentery.	Oral	Dysentery
44	*Rauvolfia tetraphylla* L.	Arockya mulighai	Apocynaceae	Fruit	Shrub	Roasted	Fruits sauté taken orally for five days to expel intestinal worms.	Oral	Vermifuge
45	*Sesamum indicum* L.	Ellu	Pedaliaceae	Leaf	Herb	Paste	Handful of leaves pounded into paste and given orally to cure dysentery and stomach pain.	Oral	Dysentery
46	*Sesbania grandiflora* (L.) Pers.	Agathi keerai	Fabaceae	Leaf	Tree	Cooked	Leaves cooked eaten cures vomiting .	Oral	Vomiting
47	*Sida acuta* Burm.f.	Arivazh manai poondu	Malvaceae	Bark	Herb	Decoction	About 50 g of bark boiled with (250 ml water. About 10 ml of this decoction is drunk twice a day for three days cures stomach ulcer.	Oral	Ulcer
48	*Solanum torvum* Sw.	Sundaikai	Solanaceae	Fruit	Shrub	Roasted	Roasted fruits eaten regularly to expel intestinal worms.	Oral	Vermifuge
49	*Solanum americanum* Mill.	Manathakali	Solanaceae	Fruit	Herb	Raw	Fruits eaten cures stomach ulcer.	Oral	Ulcer
50	*Tadehagi triquetrum* (L.) H.Ohashi	Vettaichuzavi	Fabaceae	Leaf	Shrub	Raw	Leaves used for chewing, helps in curing indigestion	Oral	Indigestion
51	*Tamarindus indica* L.	Puzhi	Caesalpiniceae	Fruit	Tree	Raw	Fruits (5 gm) mixed with a pinch of salt taken orally cures indigestion and gastritis.	Oral	Indigestion, gastritis
52	*Terminalia bellirica* (Gaertn. Roxb.	Thani kai	Combretaceae	Fruit	Tree	Powder	Fruits dried and powdered, 10 g of this powder is mixed with honey and given orally twice a day cures diarrhea.	Oral	Diarrhea
53	*Terminalia chebula* Retz.	Kadukai	Combretaceae	Fruit	Tree	Extract	Five to ten grams of fruits soaked in water for twelve hours to prepare juice. This juice is taken against constipation.	Oral	Constipation
54	*Thespesia lampas* (Cav.) Dalzell	Kattu paruthi	Malvaceae	Seed	Shrub	Paste	Paste of seed (10 g) is consumed with honey twice a day cures stomach pain.	Oral	Stomach ache
55	*Trichosanthes lobata* Roxb.	Kattupudal/Peypuc al	Cucurbitaceae	Fruit	Climbe	Paste	Fruits ground into paste mixed honey and given orally for expelling intestinal worms.	Oral	Vermifuge
56	*Trigonella foenum-graecum* L.	Venthayam	Apiaceae	Seed	Herb	Powder	Seeds roasted and powdered and eaten two times a day cures dysentery.	Oral	Dysentery
57	*Tylophora indica* (Burm. f.) Merr.	Nacharuthan	Apocynaceae	Root	Climbe	Paste	Root paste given orally in empty stomach to remove all the poisonous waste from stomach.	Oral	Poisonous waste removal
58	*Zingiber officinale* Roscoe	Inchi	Zingiberaceae	Rhizome	Herb	Extract	Juice from rhizome and consumed after meals cures indigestion and gas trouble.	Oral	Indigestion, gas trouble
59	*Zingiber zerumbet* (L.) Roscoe ex Sm.	Chenthikilangu/ Kolinchi	Zingiberaceae	Rhizome	Tree	Paste	Rhizome (10 gm) made into paste taken orally cures gas trouble.	Oral	Gas trouble

Among these nine taxa are used to treat dysentery, 8 for stomach ache, 7 for ulcer, 6 for vermifuge, 6 for flatulence, 5 for constipation. 7 for diarrhea, 4 for indigestion, 4 for vomiting, 1 for poisonous waste removal and 1 for gastritis. *Aegle marmelos, Cocos nucifera*, *Euphorbia nivulia*, *Ipomoea obscura, Maranta arundinacea, Oxalis corniculata*, *Punica granatum, Sesamum indicum and Trigonella foenum-graecum* were the plants used by tribe for treating dysentery. The rural

The present study shows that dysentery was the common ailment among the tribe, this may be due to intake of unhygienic food and water (Muralidharan and Narasimhan, 2012) *Acalypha indica*, *Ceiba pentandra*, *Getonia floribunda*, *Glycosmis pentaphylla*, *Piper betle*, *Thespesia lampas, Cassia fistula* and *Caesalpinia bonduc* were the plants used to treat stomach ache, *Centella asiatica Decalepis hamiltonii*, *Dillenia pentagyna*, *Ficus arnottiana*, *Hemidesmus indicus*, *Sida acuta* and *Solanum americanum* were used to treat ulcer. *Annona*

muricata, Cayratia pedata, Cipadessa baccifera, Cyclea peltata, *Helicteres isora*, *Hemionitis arifolia* and *Terminalia bellirica* were used for treating diarrhea. The rural people are vulnerable to these intestinal ailments because of the inadequate availability of clean drinking water (Saxena *et al.,* 2014*). Leucas aspera*, *Momordica charantia, Moringa oleifera, Rauvolfia tetraphylla, Solanum torvum* and *Trichosanthes lobata* were the plants used for killing intestinal worms (vermifuge). *Baccaurea courtallensis*, *Calophyllum inophyllum, Croton tiglium Jatropha glandulifera* and *Terminalia chebula* were used by the tribe for treating constipation. *Allium sativum*, *Limonia acidissima*, *Ochlandra travancorica, Zingiber zerumbet*, *Myristica malabarica* and *Cissus quadrangularis* were used for treating flatulence. *Citrus limon, Cyperus rotundus, Ficus racemosa* and *Sesbania grandiflora* used for treating vomiting. *Tylophora indica* used for expelling poisonous waste from stomach. *Begonia malabarica* reduces hunger. *Phyllanthus emblica* used for treating gastritis. *Tadehagi triquetrum, Alpinia galanga, Zingiber officinale* and *Tamarindus indica* were used by the tribe for treating indigestion by the Kani tribe. Active components of ginger reported to stimulate digestion and relieve constipation (Stewart *et al*., 1991).

CONCLUSION

Kani tribe residing in Southern Western Ghats still depend on wild medicinal plants for treating various gastro intestinal ailments. Due to their remoteness and inaccessible to modern medicine they depend on herbal medicines. The tribal people have acquired the knowledge about the medicinal plant from their ancestors which transferred from generation to generation. Due to deforestation certain valuable plants were under the stage of extinction. Such medicinal plants should be conserved and regenerated. Medicinal plants used by the tribe must be subjected for pharmacological investigation for the discovery of novel drugs.

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