



## FLORISTIC SURVEY FOR THE TREATMENT OF GASTROINTESTINAL DISORDERS IN SHIVAMOGGA DISTRICT, KARNATAKA

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### Abstract:

The present study showed the diversity and importance of plants used to treat gastrointestinal disorders in Shivamogga district of Karnataka. We documented a total of 36 species belonging to 25 families and 33 genera used to treat gastrointestinal disorders in Shivamogga area. Among the plant parts used for gastrointestinal disorder leaf used the highest number (12), followed by fruit (7), rhizome (4), whole plant (4), root (3), seed (2), bark (1), vegetative bud (1), stem/bark (1) and fruit/twigs (1).

Further, the existing information on traditional uses of medicinal plants are declining rapidly because of the lack of interest of young people to learn the traditional knowledge from the old medical practitioner. So the documentation and conservation of the information is essential.

**Key Words:** Ailments, Diversity, Plants, Gastrointestinal Disorders & Shivamogga District

### Introduction:

The plants extracts have been used as therapeutic agents. Many medicines presently prescribed by physicians are either directly isolated from plants or are artificially modified versions of natural products (Wang et al., 2007). These medicines are safe and environment friendly. As per the WHO about 80% of the world's population relies on traditional medicine for their primary health concern (Behera 2006). Herbalists and indigenous healers have used botanical medicines traditionally worldwide for the prevention and treatment of different pathologies. Clinical research has confirmed the efficacy of several plants for the treatment of gastro duodenal problems and their therapeutic effects (Kanner and Lapidot 2001; Gurbuz et al., 2000; Devi Prasad et al., 2013). The main objective of this study is to record the different types of plants used for the treatment of gastrointestinal disorders for the first time in Shivamogga district, Karnataka. As a result, new traditional therapies for digestive system diseases were recorded.

### Materials and Methods:

#### Study Area:

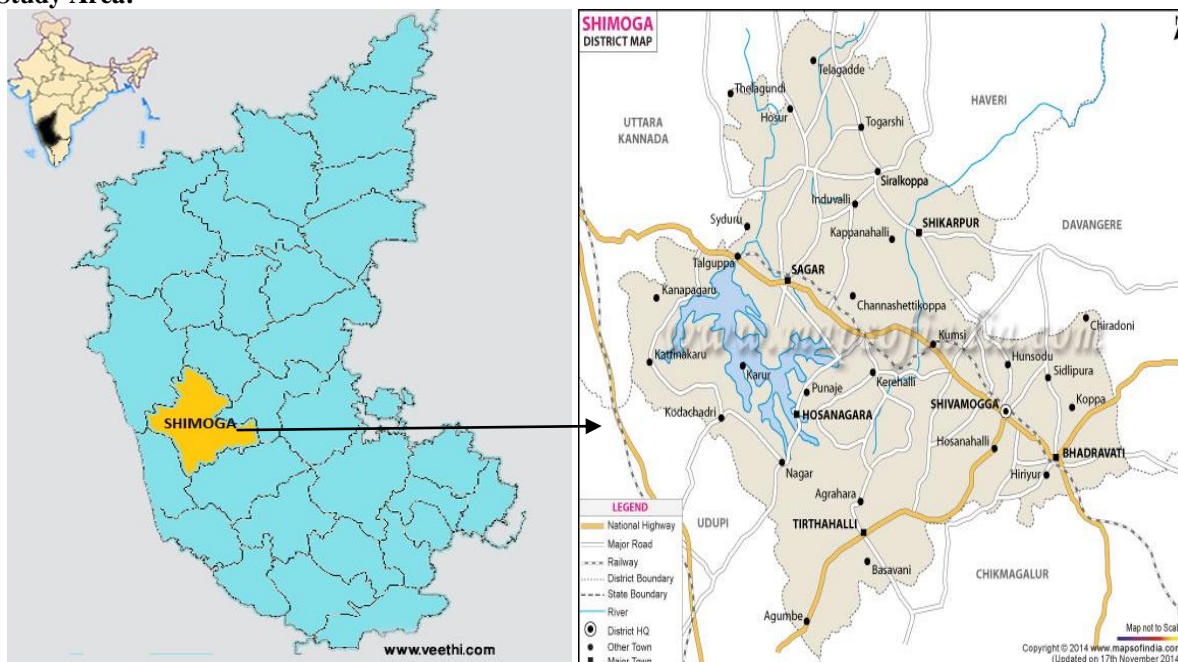


Figure 1: Study area map (Source: www.veethi.com; www.mapsofindia.com)

Shivamogga district is situated in Karnataka state of India (Figure 1). A major part of Shivamogga district lies in the Malnad region of the Western Ghats. Shivamogga city is its administrative centre. Shivamogga district is a part of the malnad region of Karnataka and is also known as the 'Gateway to Malnad' or

'Malenaada Hebbagilu' in Kannada. The district ranks 9th in terms of the total area among the districts of Karnataka. It is spread over an area of 8465 km<sup>2</sup> (National Informatics Centre, 2007). Shivamogga lies between the latitudes 13°27' and 14°39' N and between the longitudes 74°38' and 76°04' E at a mean altitude of 640 meters above sea level (National Informatics Centre, 2007). The peak Kodachadri hill at an altitude of 1343 meters above sea level is the highest point in this district.

The present study is an attempt to know the documentation of plants used for digestive disorders in Shivamogga district of Karnataka. Local traditional healers for treating piles were often visiting the areas of the district to collect plant species. Periodic field surveys were carried out during July 2017 to December 2017. Data were collected through local herbal practitioner, village elders and native medicine men residing around Shivamogga areas through personal communication. Standard methods were followed for the collection of plant materials and preservation of plant species. Voucher specimens were collected identified, by referring standard flora (Hooker, 1884; Gamble, 1936; and Saldhana, 1984).

#### **Results and Discussion:**

There are many common floristic medicines used against gastrointestinal disorders. Table 1 depicts the list of plants used for the treatment of dysentery, diarrhoea, stomach pain and worms. A total of 36 species of plants belonging to 25 families and 33 genera used to treat gastrointestinal disorders in Shivamogga area of Karnataka.

*Abutilon indicum* leaf extract is given for 3 days to cure stomach pain. *Achyranthes aspera* leaf juice is given with butter milk for 3 days to control dysentery. *Aegle marmelos* fruit pulp with pepper powder is given for indigestion. *Aloe vera* leaf gel taken for 40 days to cure piles. Tender buds of *Calotropis procera* ground with salt and pepper are given to cure stomach pain.

*Cynodon dactylon* root extract is given with little sugar and cardamom to control dysentery. *Cyperus rotundus* rhizome powder is mixed with butter milk taken for 2-3 days to cure dysentery. Whole plant extract of *Euphorbia hirta* mixed with ghee and sugar to cure piles. *Ficus religiosa* leaf ground with jiggery to control stomach pain. Leaf juice of *Leucas aspera* mixed with little rock salt to control stomach pain. *Mangifera indica* seed powder mixed with butter is taken to treat piles.

Leaf extract of *Moringa oleifera* mixed with honey and tender coconut water to control dysentery. While, root paste of *Nerium indicum* is applied to piles to reduce pain. *Opuntia dillenii* riped fruit juice boiled with little sugar and is given to cure piles. Young twigs of *Punica granatum* eaten with little salt to cure stomach pain. *Psidium guajava* leaf grind with butter milk and taken to cure piles.

*Holarrhena antidysenterica* stem and bark powder is used to cure stomach problems. *Oxalis corniculata* leaf decoction is given to control dysentery. Seed powder of *Pongamia pinnata* is used to kill pinworm. Rhizome powder of *Zingiber officinale* is taken with hot water for indigestion until cured.

Kavitha et al., (2004) isolated alkaloids from the ethanolic extract of *Holarrhena antidysenterica* seeds, evaluated and confirmed the activity against *E. coli*. Mamtha et al (2004) was observed broad spectrum activity of *Centella asiatica* against a wide range of enteric pathogens. In indigenous system Dandamudi et al., (2010) revealed the antioxidant activity and total phenol content in *Pongamia pinnata* flowers. Devi Prasad et al (2013) reported a total of 32 plant species which are used for the problems of digestive disorders by the five major tribes of Wayanad district, Kerala.

#### **Conclusion:**

The present study reports a total of 36 plants belonging to 25 families are used against gastrointestinal disorders. The peoples of Shivamogga district are dependent on these plants for this ailment and proved to be effective. The most of the flora used for the treatment of gastrointestinal disorders by the elder peoples in the district are *Aegle marmelos*, *Achyranthes aspera*, *Cynodon dactylon*, *Citrus limon*, *Punica granatum* and *Zingiber officinale*. Hence, further pharmacological and clinical studies can be taken up for the plants in the formulation of new medicines for gastrointestinal disorders.

#### **References:**

1. Behera K. K. Ethnomedicinal Plants used by the Tribals of Similipal Bioreserve, Orissa, India: A Pilot Study, *Ethnobotanical Leaflets* 2006; 10: 149-173.
2. Dandamudi R. B. In Vitro Studies on Extracts of *Pongamia pinnata* (L) Pierre Flowers as a Potent Antioxidant, *International Journal of Agriculture and Food Science Technology*, 2010; 1(19):7-11.
3. Devi Prasad, A.G., T.B Shyma and M.P Raghavendra., Plants used by the tribes of for the treatment of digestive system disorders in Wayanad district, Kerala. *J App Pharm Sci*. 2013; 3 (08): 171-175.
4. Gamble 1994. *Flora of Presidency of Madras*, vol.1-3. Dehra Dun: Bishan Singh Mahendrapal Singh.
5. Gurbuz I., Akyuz C., Yesilada E., Sener B. Anti-ulcerogenic effect of *Momordica charantia* L. Fruits on various ulcer models in rats. *Journal of Ethno pharmacology*, 2000; 71: 77-82.
6. Hooker 1978. *Flora of British India*, Vol.1-7. Dehra Dun: Bishan Singh Mahendrapal Singh.
7. Kanner J, Lapidot T. The stomach as a bioreactor: dietary lipid peroxidation in the gastric fluid and the effects of plant derived antioxidants. *Free Radical Biology and Medicine*, 2001; 31 (Suppl 11): 1388-1395.

8. Kavitha D, Shilpa P. N, Devaraj S. N, Antibacterial and anti diarrhoeal effects of alkaloids of *Holarrhena antidysenterica* Wall. Indian J Exp Biol. 2004. 42; 589-594.
9. Mamtha B, Kavitha K, Srinivasan K. K, Shivananda P. G. An in vitro study of the effect of *Centella asiatica* [Indian pennywort] on enteric pathogens. Indian J. Pharmacol. 2004; 36: 41.
10. National Informatics Centre. "Geography of Shivamogga". The Official website of Shimoga District. District Administration, Shimoga. Retrieved 2007-03-25.
11. Saldanha, 1984. Flora of Karnataka. New Delhi: Oxford and IBH Publishing Co.1984.
12. Siddalinga Murthy S.M and Vidya Sagar, G.M.2013. Medicinal plants used in the treatment of gastrointestinal disorders in Bellary district, Karnataka, India. Indian Journal of Traditional Knowledge vol 12(2):321-325.
13. Wang M. W, Hao X, Chen, K. Biological screening of natural products and drug innovation in China, Phil. Trans. R. Soc. B. 2007; 362: 1093–1105.

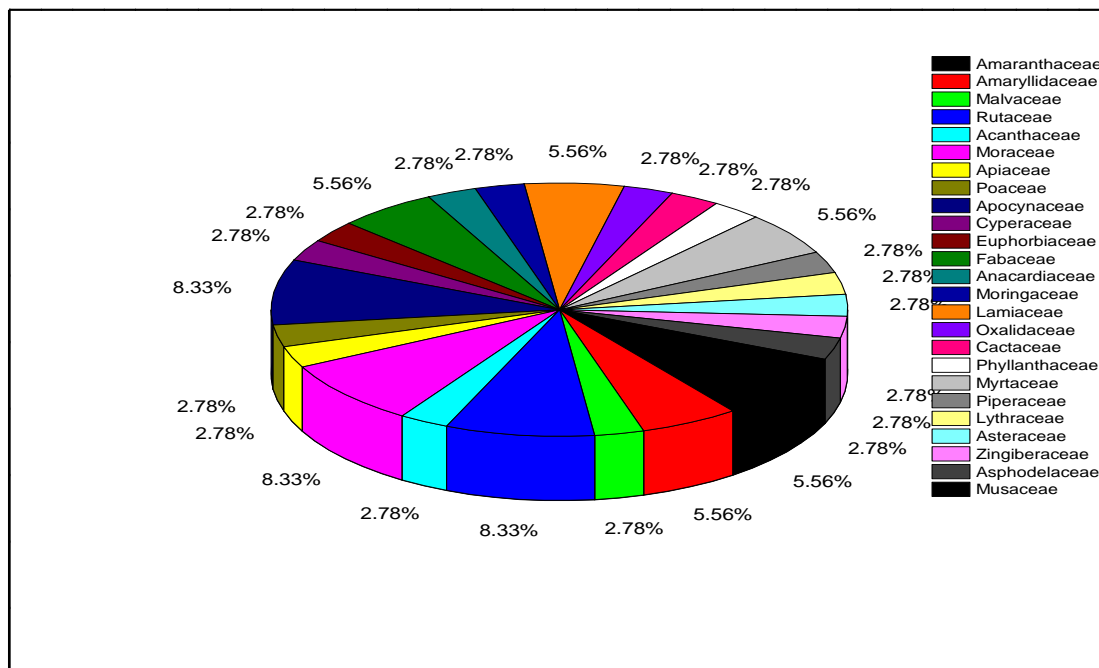


Figure 2: Percentage of plant families used against gastrointestinal disorders.

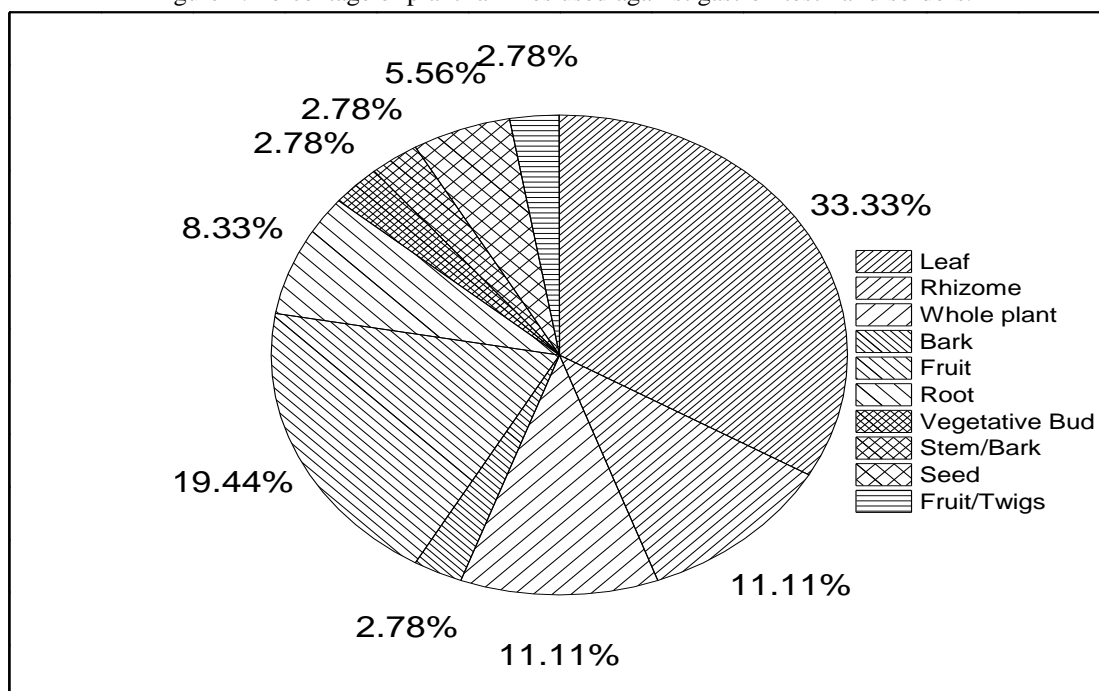


Figure 3: Percentage of Plant parts used for Gastrointestinal disorders.

Table 1: List of plants used for Gastrointestinal disorders in Shivamogga district, Karnataka

S.No	Scientific Name	Family	Parts Used
1.	<i>Amaranthus spinosus</i>	Amaranthaceae	Leaf
2.	<i>Allium cepa</i>	Amaryllidaceae	Rhizome
3.	<i>Aloe vera</i>	Asphodelaceae	Leaf
4.	<i>Abutilon indicum</i>	Malvaceae	Leaf
5.	<i>Achyranthus aspera</i>	Amaranthaceae	Leaf
6.	<i>Aegle marmelos</i>	Rutaceae	Whole plant
7.	<i>Andrographis paniculata</i>	Acanthaceae	Leaf
8.	<i>Artocarpus hirsutus</i>	Moraceae	Bark
9.	<i>Allium sativum</i>	Amaryllidaceae	Rhizome
10.	<i>Citrus limonum</i>	Rutaceae	Fruit
11.	<i>Citrus aurantifolia</i>	Rutaceae	Fruit
12.	<i>Centella asiatica</i>	Apiaceae	Whole plant
13.	<i>Cynodon dactylon</i>	Poaceae	Root
14.	<i>Calotropis procera</i>	Apocynaceae	Vegetative Bud
15.	<i>Cyperus rotundus</i>	Cyperaceae	Rhizome
16.	<i>Euphorbia hirta</i>	Euphorbiaceae	Whole plant
17.	<i>Ficus benghalensis</i>	Moraceae	Leaf
18.	<i>Ficus religiosa</i>	Moraceae	Leaf
19.	<i>Holorrhena antidysenterica</i>	Apocynaceae	Stem,Bark
20.	<i>Leucas aspera</i>	Lamiaceae	Leaf
21.	<i>Mimosa pudica</i>	Fabaceae	Root
22.	<i>Mangifera indica</i>	Anacardiaceae	Seed
23.	<i>Moringa oleifera</i>	Moringaceae	Leaf
24.	<i>Musa sp.</i>	Musaceae	Fruit
25.	<i>Nerium indicum</i>	Apocynaceae	Root
26.	<i>Ocimum basilicum</i>	Lamiaceae	Leaf
27.	<i>Oxalis corniculata</i>	Oxalidaceae	Whole plant
28.	<i>Opuntia dillenii</i>	Cactaceae	Fruit
29.	<i>Phyllanthus emblica</i>	Phyllanthaceae	Fruit
30.	<i>Psidium guajava</i>	Myrtaceae	Leaf
31.	<i>Piper nigrum</i>	Piperaceae	Fruit
32.	<i>Punica granatum</i>	Lythraceae	Fruit, Twigs
33.	<i>Pongamia pinnata</i>	Fabaceae	Seed
34.	<i>Syzygium cumini</i>	Myrtaceae	Fruit
35.	<i>Tridax procumbens</i>	Asteraceae	Leaf
36.	<i>Zingiber officinale</i>	Zingiberaceae	Rhizome