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## The Studies of Ethno Medicinal Plants Use in Gastrointestinal Disorders

**Dr. DhrutiAnand Shukla**

Assistant Professor, Department of Botany, Working on Traditional Herbal Medicines  
Khyati Institute of Science, Gujarat University, Ahmedabad, Gujarat, India

### **Abstract:**

*From ancient history Plants are considered as a main resource for food and basic medicine. Considering the world population and particularly in emerging nations like Asia and Africa, these communities are using plants as a primary source of medical aid. Medicinal plants are the foundation of resources (raw material) for both traditional systems and modern medicine. Their theory, understanding and practices are, different in many cases from the conventional medicines. Still the ancient use of many alternative medicine practices, including experience passed down from generation to generation and has proven the safety and efficacy of conventional medicine. The current research study is an attempt to gather the information and mode of application of ethno medicinal plants used in the treatment of gastrointestinal diseases and disorders. In various way the data were gathered from local people of Gandhinagar district more than 500 families were interviewed for the same. Collected data were reviewed with related research work. Selected ethno medicinal plants related information collected from different journals and books. Chemical constituents were taken from different Pharmaceutical journals for more collective and ethical study. The mode of applications of particular medicinal plants and its use for gastro problems are completely describe by the interviewing the different localities which they learnt from their ancestors. This research paper includes 5 Medicinal plants from various family with its Phytochemicals and Pharmacological application.*

**Keywords:** Phytochemicals, Medicinal plants, gastrointestinal diseases, ethno medicine, traditional systems

### **1. Introduction**

Plant resources have remained an integral part of human society throughout history. World Health Organization (WHO) estimated that about 80% of the developing world's population use traditional herbal medicines (Alves RR, Rosa IL, 2005). Ethno botany and Ethno pharmacology is the branch of knowledge dealing with herbal products used traditionally by years (Mahishi P, Srinivasa BH, Shivanna MB, 2005). The use of medicinal plants treasure plays an important role in the lives of rural people, (Ahmad, 2003). More than half of the world's population depends upon traditional medicines to meet daily health requirements (Eddouks et al., 2002). It is a natural phenomenon that each community across the globe has a unique philosophy, belief, attitude, culture, and economic status. These are the basic factors, which are responsible for the variation in practicing traditional medicines (Čančarević A, Bugarski B, Šavikin K, Zdunić G, 2013). Current study is an important addition towards the preservation of folk ethno medicinal knowledge on plants and the efficacy of their derived products from an area not been previously explored. The erosion of traditional knowledge is mainly due to the slow and gradual introduction of allopathic medicines, current trend towards modernization, and exposure to technological era (Zavaleta ES, Hulvey KB. Realistic, 2004). Therefore, the issue of preserving ethno medicinal knowledge must be properly addressed; otherwise, the vertical and horizontal transfer rate of this knowledge within and across communities would be reduced and ultimately extinct in the near future. This concern has already been elevated in similar studies (Bussmann RW, Sharon D., 2006). The main aim of this study was to document the important plants which are using for their Specific role in treatment of gastrointestinal disorder. While doing the community study it is must to know the authentic data collection of traditional knowledge of plant, the mode of application, phytochemical study of specific selected plants or plant parts and its tendency of relieving the pain is very important. Collected traditional knowledge of plants will show in relation to medicinal use, reflecting a striking diversity of species and its uses, as well as their importance in popular plant therapy in the given discussion. These traditions could pave the way for future phytochemical and pharmacological studies and thereby give rise to new medicinal resources. This paper is referring to the traditional herbs used for the treatment of gastrointestinal diseases (abbrev. GI diseases or GI illnesses) refer to diseases involving the gastrointestinal tract, namely the esophagus, stomach, small intestine, large intestine and rectum, and the accessory organs of digestion, the liver, gallbladder, and pancreas.

## 2. Materials and Method

For given research the regular field work was conducted for consecutive two years. During the field work data were collected on the bases of plant diversity, area of cultivation, ruler & urban developed area and tribal community zones. Throughout the study the semi structured interview, group interviews, questionnaire, direct observation, interview with plant practitioners were arranged and the objectives were gathered. The timings for fieldwork were also selected according to the growth and collection season of the plants. Household respondents were also chosen through stratified sampling. Each study trip was well planned and executed effectively. Prior to any contact with the local people, the study and its objectives were introduced to the head of the area or localities. More than 100 families were interviewed and final data gathered related to gastrointestinal diseases. Collected database were segregated to identify the most common plant and its treatment. The mode of application was very place to place but the use of the particular medicine herb was same. After selecting best 5 Ethno medicinal plant, collected data were verified and reviewed through electronic search by using PubMed, SciFinder, Google Scholar, JCCC@INSTIRC and Web of Science. Some of the library literature on Ayurveda were also referred for the given research paper. Many of Pharmecognosy journals were also referred to identify the phytochemical properties of selected plants. Referred 5 plants are described in the tabulate form with its Botanical name, Family, its Phytochemicals, mode of applications and references.

## 3. Observation

During the study the number of data was gathered and out of that best 5 plants are selected here for the discussion. Table: 1 having information its Botanical information as well as about pharmacological activity of that particular plant while Table 2 is indicating the phytochemical list of those particular plants with referred information.

Sr. No	Botanical Name	Family	Part Used	Pharmacological Activity	References
1	<i>Mangifera indica</i> L.	Anacardiaceae	Mango tree Bark and Unripe Fruits	Extract drunk in diarrhea, preparing medicine for Diarrhea and dysentery, Antibacterial, anti-inflammatory, antifungal, anti-diabetic, antioxidant, antiviral and ant parasitic properties	(Maroyi A, 2011); (Chitemerere TA, Mukanganyama S, 2011); (Wauthoz N, Balde A, Balde ES, Van Damme M, Duez P, 2007)
2	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Rhizome	Rhizome chewed and swallowed as remedy for stomach pains, Digestive disorders, Antimicrobial, anti-inflammatory, immune-modulatory and anti-emetic activities	(Chigora P, Masocha R, Mutenheri F, 2007); (Paiva PMG, Gomes FS, Napoleão TH, Sá RA, Correia MTS, Coelho LCBB, 2010); (Paraskeva MP, Van Vuuren SF, Van Zyl RL, Davids H, Viljoen AM, 2008)
3	<i>Nicotiana glauca</i> L.	Solanaceae	Leaves	Powder of leaves applied on wounds tabacum, Cytotoxic activity and steroidal glycosides, good remedies for stomach ache, anti-microbial	(Gelfand M, Drummond RB, Mavi S, Ndemera B, 1985); (Chen YK, Li XS, Yang GY, Chen ZY, Hu QF, Miao MM, 2012); (Shvets SA, Gutsu ON, Kintia PK, 1996)
4	<i>Terminalia chebula</i>	<u>Combretaceae</u>	Fruit	Medicinal activities such as analgesic, antioxidant, hepatoprotective, antibacterial, anticancer and immune-modulatory activities.	(Saraphanchotiwithaya, A., Sripalakit, P. and Ingkaninan, K, 2008); (Singh, A.S, 2011)
5	<i>Mentha spicata</i> L.	<u>Lamiaceae</u>	Leaves	Helps to treat gastroenteritis by hydrating body, fighting diarrhea, relieving pain, reducing inflammation, help in constipation and dysentery. Antimicrobial and antioxidant activities of three Mentha species essential oils	(Chiapponi E, Henriot C, Bertrand X, Hocquet D, Bornette G. Antibiotics (Basel). 2020); (Ouakouak H, Benchikha N, Hassani A, Ashour MLJ Food Sci Technol. 2019)

Table 1: Medicinal Plants Used in Gastrointestinal Disorder with Scientific Name, Family, Part(S) Used and Use(S), Reported Ethno Medicinal /Pharmacological Activities, Related Reference Work

Sr. No	Botanical Name	Phytochemicals	References
1	<i>Mangifera indica</i> L.	Phenolic acids, flavonoids, and pigments such as chlorophyll and carotenoids. macronutrients (carbohydrates, lipids and fatty acids, proteins and amino acids, and organic acids) and micronutrients (vitamins and minerals)	(Masibo, M., Qian, H, 2008), (Matheyambath, A. C., Subramanian, J., Paliyath, G., 2016)
2	<i>Zingiber officinale</i> Roscoe	Fatty oils proteins, carbohydrates, crude fiber, ash, water, volatile oil, hydro-ethanol extracts, $\beta$ -zingiberene, antioxidant components analysed were polyphenols, vitamin C, $\beta$ carotene, flavonoids and tannins.	(Ekundayo O, Laakso I, Hiltunen R. 1988), (Wang J, Ke W, Bao R, Hu X, Chen F. 2017)
3	<i>Nicotiana glauca</i> L.	Main polyphenols contained in the tobacco leaf are rutin and chlorogenic acid. Amino acids contained include glutamic acids, asparagine, glutamine, and $\gamma$ -Aminobutyric acid	(Shmuk, A.A., 1953); (Fujimori, T.; Kasuga, R.; Matsushita, H.; Kaneko, H.; Noguchi, M. 1976)
4	<i>Terminalia chebula</i>	Different types of phytochemicals such as alkaloids, flavonoids, saponin, phenolic compounds, steroids, carboxylic acid, tannin and glycoside.	(Sharma P, Prakash T, Kotresha D, Ansari MA, Sahrm UR, Kumar B, Debnath J, Goli D 2010); (Nigam M, Mishra AP, Adhikari-Devkota A, Dirar AI, Hassan MM, Adhikari A, Belwal T, Devkota HP. 2020)
5	<i>Mentha spicata</i> L.	terpenes such as $\alpha$ -menthol, neomenthol, isomenthol, d-menthone, isomenthone, menthofuran, menthylacetate, carvomenthone, cineol, p-cymene, aromadendrene, limonine, -phellandrene, pipertone, -pinene, carvacrol, $\alpha$ -pinene, $\alpha$ -phellandrene, -pinene, dipentene, cardinene, and -thujone in different proportions depending on the season, type of climate and the plant processing $\alpha$ -menthol, neomenthol, isomenthol, d-menthone, isomenthone, menthofuran, menthylacetate, carvomenthone, cineol, p-cymene, aromadendrene, limonine, -phellandrene, pipertone, -pinene, carvacrol, $\alpha$ -pinene, $\alpha$ -phellandrene, -pinene, dipentene, cardinene, and -thujone in different proportions depending on the season, type of climate and the itamin K, Phenolic constituents of the leaves include rosmarinic acid and several flavonoids, primarily eriocitrin, luteolin and hesperidin. The main volatile components of the essential oil are menthol and menthone.	(Spirling LI, Daniels IR 2001); (Mckay DL, Blumberg JBA. 2006); (Strzelecka H, Kowalski J. 2000)

Table 2: Indicating the Phytochemical List of That Particular Plant with Referred Information

People are using different mode of applications or the combination of herb with cold/ warm water, using of plant abstract, chewing the raw fruits or leaves or important part of herb, in some of the application mixture or formulation of

the herbs used as per their connivance, preparing herb reminds by soaking the herbs in water overnight, making of tonic with sugar syrup etc.

#### 4. Conclusion

Herbal medicinal Plants are either used as indigenous therapy or as isolated active principles for a common source of medicine. Indigenous ethno pharmacology has been considered as an important tool in the exploration of new medicines for community but yet authentic data is much needed for the same. Herbal medicines are a common method of complementary and alternative medicine used on the treatment of various forms of ailments around the globe. Traditionally all medicinal preparations were derived from plants, whether in the simple form of plant parts or the more sophisticated way of crude extracts, mixtures, etc. this herbal formulation claimed to have major medicinal benefits in many of Gastrointestinal disease where phytochemical evidences and study is must needed. Given research documentation can be help full to the field of Pharmecognocy and can helpful for future generation.

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