



Review on Herbal Remedies for Dysentery and Diarrhea from the Melghat Region of Maharashtra State, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Review Article

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ABSTRACT

The rapid advancement in fast pacing lifestyle of people and more dependent on fast food is the major leading cause of the increase in stomach infections leading to dysentery and diarrhea. Diarrhoea / Diarrhea and Dysentery are major causes of morbidity and mortality in rural communities of the developing world. The current review focus on herbal remedies from the Melghat region for dysentery and diarrhea-related symptoms. A total of 287 medicinal plant species from 90 families have been compiled for Dysentery (210) and Diarrhea (243). Most reported plant families were Fabaceae contributing 11.14% plants of the total population, followed by Asteraceae (5.57%), Malvaceae (4.52%), Apocynaceae (3.48%), Rubiaceae (3.48%), Lamiaceae (3.13%), Combretaceae (3.13%), Amaranthaceae (2.78%), Euphorbiaceae (2.78%), Moraceae (2.78%),

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Mimosoideae (2.43%), etc. In this study, out of 287 species reviewed, trees represented 34.49% of species, followed by herbs (32.75%), shrubs (21.95%), climbers (8.01%), grasses (2.43%), and orchids (0.34%). Curated data presented along with the plant's botanical name, plant's family, category (habit), ailments, the part used with relevant traditional, folk, ethnobotanical uses and patterns with cross citations offers scope for researchers engaged in herbal drug discovery and development to dwell into the herbal reservoir and find suitable plant compounds for fighting this disease.

Keywords: *Diarrhoea; dysentery; herbal remedies; melghat; stomach infections.*

1. INTRODUCTION

India is known for containing the most prestigious medicinal plants which makes it a definitive hotspot for the exploration of plant-based compounds to cure diseases, solutions to which are yet to be discovered using synthetic compounds. Approximately 80% of the world population relies on plant-based herbal medicine, as plant-based compounds are known to show fewer side effects, are easily available, and are cost-effective [1]. Researchers are now developing what is known as a complementary and alternative therapy (CAM), based on botanical products. With this approach, the preparation of drugs from herbal plants is predicted to be faster and more convenient as compared to other sources [2]. This review article intends to fill in for the required knowledge regarding the potential reservoir of medicinal plants, compounds from which can provide great insights into discovering natural compounds which can be used for medicinal purposes to cure dysentery and diarrhea.

Bacillary dysentery can be caused by four *Shigella* species: *S. dysenteriae*, *S. flexneri*, *S. boydii*, and *S. sonnei* [3]. *Shigella sonnei* is the most common *Shigella* species prevalent in developed countries. *S. flexneri* is more frequent in developing countries whereas *S. dysenteriae* and *S. boydii* are the least causative bacterial agent [4]. Amoebic dysentery comes from a parasite called *Entamoeba histolytica*, generally caused due to poor sanitary conditions. Symptoms of Dysentery include Diarrhoea with stomach pain, vomiting, nausea, and blood or mucus in diarrhea [5]. Due to the increase in antibiotic use for the treatment of this disease, it develops antibiotic resistance, leading to poor response to treatment in many cases [6]. Therefore, developing knowledge of treatments based on herbal plants can help defeat this concern.

The research is done on the forest flora of the Melghat region [7], reporting the colossal

diversity of the contained medicinal plants. Many scientists, scholars, and researchers contributed to enlisting the plant species from Melghat, contributing to the development of the Melghat Plant databank (MPdb) [8,9] and the wild mushroom database [10]. Authors have also reviewed the medicinal properties of the Melghat flora for respiratory infection of Asthma [9].

2. METHODS AND MATERIALS

2.1 Data Retrieval

Pre-defined criteria (Fig. 1) were taken into consideration for selecting the research articles. The published literature and information obtained from international scientific databases such as Google Scholar, Medline, PubMed, PubMed Central, Research Gate, Science Direct, Scopus, and Web of Science were reviewed thoroughly keeping in mind the purpose of finding the plants which have the properties to heal the target ailment of this review. The plant species' names, synonyms, and families were thoroughly verified using sources such as books, research articles, and publicly available online sources.

2.2 Data Analysis

The literature was reviewed with qualitative and quantitative data analysis through statistical tools, which include graphs and tables. Plants found to show the medicinal properties in this review were higher than expected which offers scope for further development in this line of work including pharmacological screening, drug discovery, and development.

3. RESULTS AND DISCUSSION

This review article encircles plant species from Melghat, parts of which can be used to treat and manage diarrhea and dysentery; symptoms of dysentery include bloody diarrhea, nausea, vomiting, and excruciating stomach ache. It also includes information about botanical names,

plant categories, plant families, and parts of the plant which have the herbal properties to treat the ailment.

The review article resulted in the tabulation of 287 entries (Table 1), data from which yielded valuable information about the herbal properties of these plants. Out of 287 plants, it was found that 243 plants (53.6%) are having curative properties to treat Diarrhoea / Diarrhea and 210 plants (46.4%) have medicinal properties to treat Dysentery, having 165 plants as common plant species.

3.1 Types of Plants

From this study, it was found that concerning different plant parts used for formulation, 89 plant records were used for diarrhea and 80 plant records were used for dysentery, were trees; 76 plant records were used for diarrhea and 66 plant records were used for dysentery, were herbs; 56 plant records were used for diarrhea and 43 plant records were used for dysentery, were shrubs; 15 plant records were used for diarrhea and 16

plant records were used for dysentery, were climbers; 6 plant records were used for diarrhea and 5 plant records were used for dysentery, were from grasses category; and only 1 orchid was used for diarrhea (Fig. 2).

3.2 Family Occupancy

A total of 287 plants belonging to 90 families were found and confirm with the cross-literature survey. The maximum number of plants were found to be part of the Fabaceae family, which has 32 plants (11.14%) of total plant records, following which Asteraceae contributes 16 plants (5.57%), Malvaceae contributes 13 plants (4.52%), Apocynaceae and Rubiaceae contribute 10 plants (3.48%) each, Combretaceae and Lamiaceae contribute 9 plants species (3.13%) each, Amaranthaceae, Euphorbiaceae, and Moraceae contribute 8 plants (2.78%) each. Many more families contributed as shown in Table 2, different families carry different herbal properties, making them an important factor to consider in this review study.

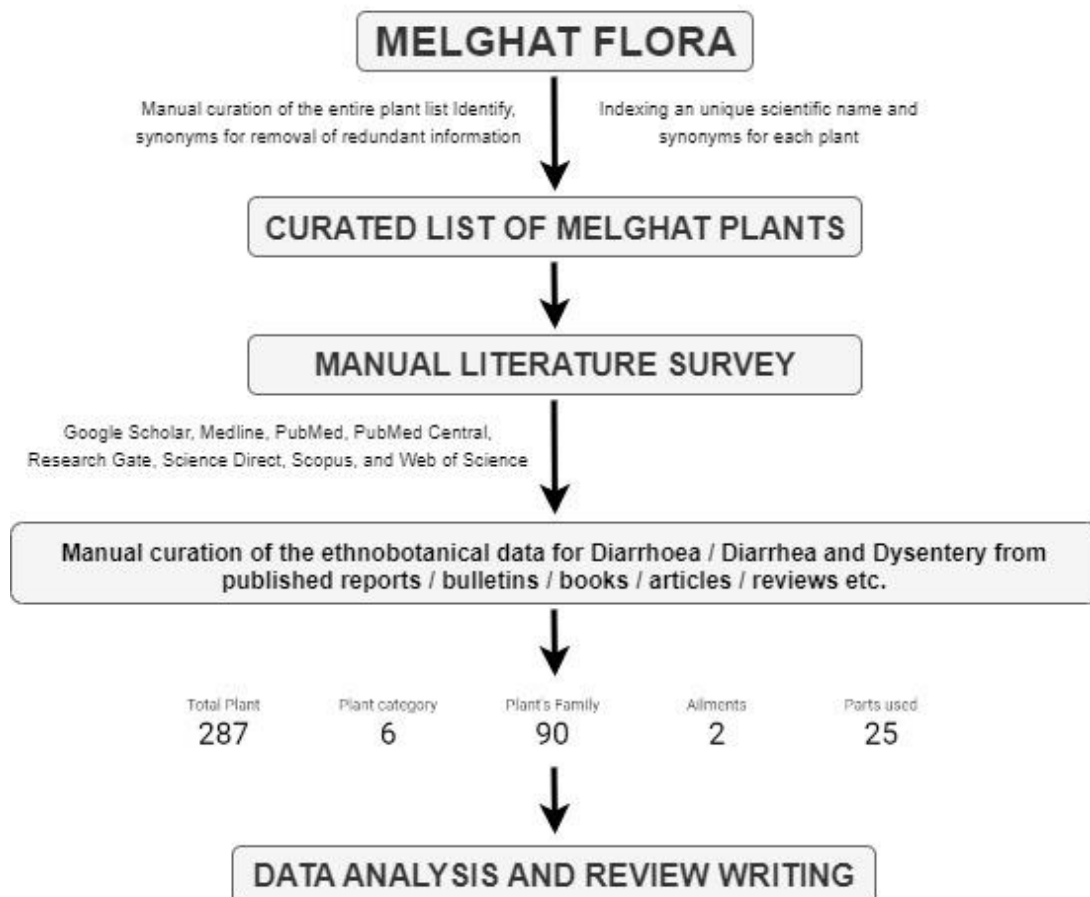


Fig. 1. Protocol for current review on herbal remedies for dysentery and diarrhea

Table 1. List of 287 medicinal plants from the melghat region used as herbal remedies for dysentery and diarrhea

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
1	<i>Abelmoschus ficulneus</i> (L.) Wight & Arn. ex Wight	Malvaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[11]
2	<i>Abutilon indicum</i> (L.) Sweet (Syn. <i>Sida indica</i> L.)	Malvaceae	Shrubs	Dysentery	Leaves, Fruits	[12]
3	<i>Abutilon pannosum</i> (G. Forst.) Schltld.	Malvaceae	Shrubs	Diarrhoea / Diarrhea	Leaves, Fruits, Roots	[1,12–14]
4	<i>Acacia catechu</i> (L.f.) Willd.	Fabaceae	Tree	Dysentery	Leaves	[15]
5	<i>Acacia concinna</i> (Willd.) DC.	Mimosoideae	Climbers	Diarrhoea / Diarrhea	Leaves, Bark, Roots	[16]
6	<i>Acacia ferruginea</i> DC.	Mimosoideae	Tree	Diarrhoea / Diarrhea	Leaves	[13,14,16]
7	<i>Acacia jacquemontii</i> Benth	Mimosoideae	Shrubs	Dysentery	Leaves	[17]
8	<i>Acacia lenticularis</i> Benth. (Syn. <i>Senegalia lenticularis</i> (Buch.-Ham. ex Benth.))	Mimosoideae	Tree	Diarrhoea / Diarrhea	Leaves	[18]
9	<i>Acacia nilotica</i> (L.) Delile (Syn. <i>Acacia arabica</i> (Lam.) Willd.)	Mimosoideae	Tree	Dysentery	Leaves	[18]
10	<i>Acalypha indica</i> L.	Euphorbiaceae	Herbs	Diarrhoea / Diarrhea	Gum, Bark, Seeds	[19]
11	<i>Achyranthes aspera</i> L.	Amaranthaceae	Herbs	Dysentery	Leaves, Bark, Gum	[13,17]
12	<i>Adansonia digitata</i> L.	Malvaceae	Tree	Diarrhoea / Diarrhea	Leaves, Roots	[26,27]
13	<i>Adina cordifolia</i> (Roxb.) Brandis (Syn. <i>Haldina cordifolia</i> (Roxb.) Ridsdale)	Rubiaceae	Tree	Dysentery	Leaves, Whole plant	[13,28]
14	<i>Aegle marmelos</i> L.	Rutaceae	Tree	Diarrhoea / Diarrhea	Leaves, Roots, Whole plant	[16,21,22]
15	<i>Aerva javanica</i> (Burm. f.) Juss. ex Schult. (Syn. <i>Aerva persica</i> (Burm. f.))	Amaranthaceae	Herbs	Dysentery	Fruits, Seeds, Leaves	[29]
16	<i>Aerva lanata</i> (L.) Juss. ex Schult.	Amaranthaceae	Herbs	Diarrhoea / Diarrhea	Fruits, Seeds, Leaves	[29]
17	<i>Agave americana</i> L.	Agavaceae	Herbs	Dysentery	Roots	[17,30]
18	<i>Agave angustifolia</i> Haw.	Agavaceae	Herbs	Diarrhoea / Diarrhea	Roots	[17,30]
19	<i>Ageratum conyzoides</i> L.	Asteraceae	Herbs	Dysentery	Fruits	[23–25,31–33]
20	<i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	Tree	Diarrhoea / Diarrhea	Fruits, Leaves	[13,14,17,25,32–34]
21	<i>Alangium salviifolium</i> (L.f.) Wangerin	Cornaceae	Tree	Dysentery	Whole plant	[17]
22	<i>Albizia lebbek</i> (L.) Benth.	Fabaceae	Tree	Diarrhoea / Diarrhea	Whole plant	[17]
23	<i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae	Tree	Dysentery	Leaves	[14]
				Diarrhoea / Diarrhea	Leaves	[35]
				Dysentery	Leaves	[35]
				Dysentery	Sap	[36]
				Diarrhoea / Diarrhea	Leaves	[13,37]
				Dysentery	Leaves	[31]
				Diarrhoea / Diarrhea	Bark, Stem bark	[14,38,39]
				Dysentery	Bark, Stem bark	[38,39]
				Diarrhoea / Diarrhea	Leaves	[40]
				Dysentery	Leaves	[40]
				Dysentery	Bark	[17,24,41]
				Diarrhoea / Diarrhea	Bark, Seeds	[14,16,17,24,32]
				Dysentery	Root-bark	[17,32,33]
				Diarrhoea / Diarrhea	Root-bark, Stem bark, Leaves	[13,14,17,31–33]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
24	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Amaranthaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[17,42] [17,42]
25	<i>Alysicarpus vaginalis</i> (L.) DC.	Fabaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves Leaves	[17] [17]
26	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Herbs	Diarrhoea / Diarrhea	Whole plant, Leaves	[13,14,43]
27	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	Araceae	Herbs	Dysentery	Tubers	[13]
28	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Vitaceae	Climbers	Dysentery	Roots	[44]
29	<i>Anacardium occidentale</i> L.	Anacardiaceae	Tree	Diarrhoea / Diarrhea Dysentery	Leaves, Stem, Bark Leaves, Stem, Bark	[37,45] [45]
30	<i>Andrographis paniculata</i> (Burm. f.) Wall. ex Nees	Acanthaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves Leaves, Whole Plant, Roots	[33,46] [17,33,46]
31	<i>Annona squamosa</i> Linn	Annonaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits, Seeds Fruits, Seeds	[13,17,24] [13,17,24]
32	<i>Anogeissus latifolia</i> (Roxb. ex DC.) Wall. ex Beddome	Combretaceae	Tree	Diarrhoea / Diarrhea Dysentery	Stem bark, Bark Stem bark, Bark	[16,23,47] [16,48]
33	<i>Argemone mexicana</i> L.	Papaveraceae	Herbs	Dysentery	Leaves	[16]
34	<i>Argyreia nervosa</i> (Burm. f.) Bojer (Syn. <i>Argyreia speciosa</i> (L. f.) Sweet.)	Convolvulaceae	Climbers	Diarrhoea / Diarrhea	Tubers	[13]
35	<i>Artemisia vulgaris</i> L.	Asteraceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[13]
36	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Roots, Rhizome Roots, Rhizome	[1,13,14,23,43,48] [23,33,48]
37	<i>Atylosia scarabaeoides</i> (L.) Benth. (Syn. <i>Cajanus scarabaeoides</i> (L.) Thouars)	Fabaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Whole plant Whole plant	[49] [49]
38	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Tree	Dysentery Diarrhoea / Diarrhea	Leaves Leaves, Bark	[22] [13]
39	<i>Azanza lampas</i> (Cav.) Alef.	Malvaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Roots Stem	[50] [51]
40	<i>Bacopa monnieri</i> (L.) Pennell.	Scrophulariaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves Leaves	[52] [23]
41	<i>Bauhinia purpurea</i> L.	Fabaceae	Tree	Diarrhoea / Diarrhea	Leaves	[1,14]
42	<i>Bauhinia racemosa</i> Lam.	Fabaceae	Tree	Dysentery	Bark	[24]
43	<i>Bauhinia vahlii</i> Wight & Arn.	Fabaceae	Climbers	Diarrhoea / Diarrhea Dysentery	Leaves, Bark Stem bark	[24,47] [39]
44	<i>Bauhinia variegata</i> L.	Caesalpinaceae	Tree	Dysentery	Stem bark Flowers	[39] [16]
45	<i>Blumea lacera</i> (Burm.f.) DC.	Asteraceae	Herbs	Diarrhoea / Diarrhea	Leaves, Stem bark	[13,14]
46	<i>Blumea mollis</i> (D.Don) Merr.	Asteraceae	Herbs	Diarrhoea / Diarrhea	Whole plant	[13]
47	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves Roots	[53] [16]
48	<i>Bombax ceiba</i> L.	Malvaceae	Tree	Dysentery Diarrhoea / Diarrhea	Roots Calyx, Resin, Bark Leaves, Bark, Roots, Gum, Resin	[16] [16,23,33] [13,16,23,33,54]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
49	<i>Borreria articularis</i> (L.f.) F.N. Williams	Rubiaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Seeds Seeds	[33] [33]
50	<i>Borreria stricta</i> G. Mey. (Syn. <i>Borreria verticillata</i> L. / <i>Spermacoce verticillata</i> L.)	Rubiaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[55]
51	<i>Boswellia serrata</i> Roxb.	Burseraceae	Tree	Diarrhoea / Diarrhea Dysentery	Gum resin Gum resin	[14,56] [56]
52	<i>Buchanania cochinchinensis</i> (Lour.) Almeida (Syn. <i>Buchanania lanzan</i> Spreng)	Anacardiaceae	Tree	Diarrhoea / Diarrhea Dysentery	Bark, Leaves Bark, Stem bark	[14,47,57] [39,57]
53	<i>Butea monosperma</i> Roxb. (Syn. <i>Butea frondosa</i> Roxb.)	Fabaceae	Tree	Dysentery Diarrhoea / Diarrhea	Stem bark, Flowers Stem bark, Gum, Flowers, Sap	[16,47] [1,14,17,27,31,47]
54	<i>Butea superba</i> Roxb.	Fabaceae	Climbers	Diarrhoea / Diarrhea Dysentery	Leaves, Bark Leaves, Bark	[17] [17]
55	<i>Caesalpinia bonduc</i> (L.)Roxb.	Caesalpinioideae	Shrubs	Diarrhoea / Diarrhea Dysentery	Leaves, Stem bark Roots	[14,39] [39]
56	<i>Caesalpinia pulcherrima</i> (L.)Sw.	Caesalpinioideae	Shrubs	Dysentery Diarrhoea / Diarrhea	Wood Wood, Bark	[58] [14,58]
57	<i>Caesulia axillaris</i> Roxb.	Asteraceae	Herbs	Dysentery	Inflorescence	[42]
58	<i>Cajanus scarabaeoides</i> (L.) Thouars	Faboideae	Herbs	Diarrhoea / Diarrhea Dysentery	Whole plant Whole plant	[49] [49]
59	<i>Calotropis gigantea</i> (L.) W.T. Aiton	Asclepiadaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Leaves, Flowers, Aerial part Root-bark	[13,14] [17,32]
60	<i>Calotropis procera</i> (Aiton) W.T. Aiton	Asclepiadaceae	Shrubs	Diarrhoea / Diarrhea	Latex	[1,14]
61	<i>Canavalia gladiata</i> Sensu Robyns.	Fabaceae	Climbers	Dysentery	Seeds	[59]
62	<i>Capparis spinosa</i> L.	Capparaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Buds, Leaves Buds, Leaves	[60] [60]
63	<i>Capparis zeylanica</i> L.	Capparaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[14]
64	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Climbers	Diarrhoea / Diarrhea Dysentery	Leaves Leaves, Whole plant	[33] [33,34]
65	<i>Careya arborea</i> Roxb.	Lecythidaceae	Tree	Diarrhoea / Diarrhea Dysentery	Stem bark Stem bark	[47,61] [24,47,61]
66	<i>Carissa carandas</i> Linn.	Apocynaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[62]
67	<i>Casearia elliptica</i> Willd.	Salicaceae	Tree	Dysentery	Bark	[27]
68	<i>Cassia absus</i> L.	Caesalpinaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Seeds Seeds	[63] [63]
69	<i>Cassia fistula</i> L.	Caesalpinaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits Fruits, Seeds	[16,24] [16,22,24]
70	<i>Cassia mimosoides</i> DC.	Caesalpinaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[64] [64]
71	<i>Cassia occidentalis</i> L. (Syn. <i>Senna occidentalis</i> (L.))	Caesalpinaceae	Shrubs	Diarrhoea / Diarrhea	Whole plant, Roots	[13,65]
72	<i>Cassia tora</i> L. (Syn. <i>Senna tora</i> (L.) Roxb.)	Caesalpinaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves Leaves, Fruits	[13,31] [17]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
73	<i>Casuarina equisetifolia</i> L.	Casuarinaceae	Tree	Dysentery Diarrhoea / Diarrhea	Bark Bark, Whole plant	[17,63] [13,17,63]
74	<i>Cayratia trifolia</i> (L.) Domin.	Vitaceae	Climbers	Diarrhoea / Diarrhea	Leaves	[13]
75	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Bark Bark, Leaves	[24] [17,24]
76	<i>Celosia argentea</i> L. (Syn. <i>Celosia cristata</i> L.)	Amaranthaceae	Herbs	Dysentery Diarrhoea / Diarrhea	Seeds, Leaves Seeds, Leaves, Flowers	[16,17,31] [14,16,17,31]
77	<i>Centratherum anthelminticum</i> (L.) O. Ketz. (Syn. <i>Vernonia anthelmintica</i> (L.) Willd.)	Asteraceae	Herbs	Diarrhoea / Diarrhea	Seeds	[66]
78	<i>Chenopodium album</i> L.	Chenopodiaceae	Herbs	Diarrhoea / Diarrhea	Leaves, Roots	[17,43]
79	<i>Chlorophytum borivillianum</i> Santapau & R.R.Fern.	Liliaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[25] [25]
80	<i>Chlorophytum laxum</i> R. Br.	Liliaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[25] [25]
81	<i>Chlorophytum tuberosum</i> (Roxb.) Baker	Liliaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[25] [25]
82	<i>Cissampelos pareira</i> L.	Menispermaceae	Climbers	Dysentery Diarrhoea / Diarrhea	Leaves, Roots Roots, Whole plant	[16,17,23] [23,28,34,39]
83	<i>Cleome gynandra</i> L.	Cleomaceae	Herbs	Diarrhoea / Diarrhea	Seeds	[28]
84	<i>Clerodendrum viscosum</i> Vent.	Verbenaceae	Shrubs	Dysentery Diarrhoea / Diarrhea	Leaves Leaves, Roots	[23] [13]
85	<i>Coccinia grandis</i> (L.) Voigt (Syn. <i>Cephalandra indica</i> (Wight & Arn.) Naudin.)	Cucurbitaceae	Climbers	Diarrhoea / Diarrhea	Leaves, Roots	[13,17]
86	<i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Leaves Leaves	[16] [16]
87	<i>Cochlospermum religiosum</i> (L.) Alston	Bixaceae	Tree	Diarrhoea / Diarrhea	Flowers	[27]
88	<i>Coix lacryma-jobi</i> L.	Poaceae	Grasses	Diarrhoea / Diarrhea	Roots, Seeds	[13]
89	<i>Colocasia esculenta</i> (L.) Schott	Araceae	Herbs	Diarrhoea / Diarrhea	Rhizome	[13,28]
90	<i>Combretum decandrum</i> Jacq. (Syn. <i>Combretum roxburghii</i> Spreng.)	Combretaceae	Climbers	Dysentery	Stem bark	[39]
91	<i>Combretum ovalifolium</i> Roxb. (Syn. <i>Combretum albidum</i> G.Don.)	Combretaceae	Climbers	Diarrhoea / Diarrhea Dysentery	Fruits Fruits	[67] [67]
92	<i>Commelina paludosa</i> Blume	Commelinaceae	Herbs	Dysentery	Leaves	[43]
93	<i>Conyza canadensis</i> (L.) Cronquist	Asteraceae	Herbs	Diarrhoea / Diarrhea Dysentery	Aerial parts Aerial parts	[21,22] [21,22]
94	<i>Corallocarpus epigaeus</i> (Rottl.) C.B.Clark	Cucurbitaceae	Herbs	Dysentery	Roots, Rhizomes	[68]
95	<i>Corchorus tridens</i> L.	Tiliaceae	Herbs	Diarrhoea / Diarrhea	Oil	[69]
96	<i>Cordia dichotoma</i> Forster. f., Prodr.	Boraginaceae	Tree	Diarrhoea / Diarrhea	Leaves, Stem bark	[70]
97	<i>Crotalaria retusa</i> L.	Fabaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[71]
98	<i>Cucumis callosus</i> (Rottb.) Cogn.	Cucurbitaceae	Herbs	Diarrhoea / Diarrhea	Roots	[72]
99	<i>Cucumis setosus</i> Cogn. (Syn. <i>Cucumis hardwickii</i> Royle.)	Cucurbitaceae	Climbers	Dysentery	Fruits	[73]
100	<i>Curculigo orchioides</i> Gaertn.	Hypoxidaceae	Herbs	Diarrhoea / Diarrhea	Roots	[23,31]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
				Dysentery	Roots	[16]
101	<i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	Herbs	Diarrhoea / Diarrhea	Whole plant	[13]
102	<i>Cyathula prostrata</i> (L.) Blume	Amaranthaceae	Herbs	Dysentery	Whole plant	[74]
103	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Grasses	Diarrhoea / Diarrhea	Leaves	[33]
				Dysentery	Whole plant, Roots, Leaves	[13,16,21,22,33]
104	<i>Cyperus rotundus</i> L.	Cyperaceae	Herbs	Diarrhoea / Diarrhea	Rhizome, Tubers, Roots	[1,13,21,43]
				Dysentery	Whole plant, Roots	[22,43]
105	<i>Dactyloctenium aegyptium</i> (L.) Willd.	Poaceae	Grasses	Diarrhoea / Diarrhea	Seeds	[43]
				Dysentery	Seeds	[17]
106	<i>Dalbergia lanceolaria</i> L.f.	Fabaceae	Tree	Diarrhoea / Diarrhea	Bark	[14]
107	<i>Dalbergia latifolia</i> Roxb.	Fabaceae	Tree	Diarrhoea / Diarrhea	Bark	[75]
108	<i>Dalbergia sissoo</i> DC.	Faboideae	Tree	Diarrhoea / Diarrhea	Leaves	[1]
				Dysentery	Leaves, Bark	[16,23,24]
109	<i>Datura innoxia</i> Mill.	Solanaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[76]
110	<i>Datura metel</i> L.	Solanaceae	Shrubs	Dysentery	Fruits	[12]
				Diarrhoea / Diarrhea	Seeds	[77]
111	<i>Dendrophthoe falcata</i> (L.f.) Ettingsh. (Syn. <i>Loranthus falcatus</i> L.f.)	Loranthaceae	Shrubs	Diarrhoea / Diarrhea	Leaves, Whole plant	[39,78]
				Dysentery	Leaves, Whole plant	[78]
112	<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae	Shrubs	Diarrhoea / Diarrhea	Roots	[33]
				Dysentery	Roots	[24,33]
113	<i>Desmodium triflorum</i> (L.) DC.	Fabaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[31,33]
				Dysentery	Leaves	[31,33]
114	<i>Dichrostachys cinerea</i> (L.)Wight & Arn.	Mimosoideae	Shrubs	Diarrhoea / Diarrhea	Bark, Shoots	[79]
				Dysentery	Bark, Shoots	[79]
115	<i>Dicliptera verticillata</i> (Forssk.) C. Christensen	Acanthaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[80]
116	<i>Dillenia pentagyna</i> Roxb	Dilleniaceae	Tree	Diarrhoea / Diarrhea	Leaves	[47]
				Dysentery	Leaves	[47]
117	<i>Dioscorea belophylla</i> (Prain) Voigt ex Haines	Dioscoreaceae	Climbers	Dysentery	Tubers	[81]
118	<i>Dioscorea bulbifera</i> L.	Dioscoreaceae	Climbers	Dysentery	Roots, Tubers	[16], [33], [81]
				Diarrhoea / Diarrhea	Tubers	[33]
119	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Tree	Diarrhoea / Diarrhea	Bark, Leaves	[39,82]
120	<i>Eclipta prostrata</i> (L.) L. (Syn. <i>Eclipta alba</i> (L.) Hassk.)	Asteraceae	Herbs	Diarrhoea / Diarrhea	Leaves, Whole plant	[17,23,83]
121	<i>Ehretia laevis</i> (Rottler ex G. Don) Roxb.	Boraginaceae	Tree	Diarrhoea / Diarrhea	Roots	[84]
				Dysentery	Roots, Leaves	[84]
122	<i>Elephantopus scaber</i> L.	Asteraceae	Herbs	Diarrhoea / Diarrhea	Leaves, Roots	[33]
				Dysentery	Leaves, Roots	[17,33]
123	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Grasses	Dysentery	Whole plant	[43]
124	<i>Emblica officinalis</i> Gaertn. (Syn. <i>Phyllanthus emblica</i> L)	Euphorbiaceae	Tree	Dysentery	Fruits, Bark	[17,23,33]
				Diarrhoea / Diarrhea	Fruits, Bark, Leaves	[1,17,23,33]
125	<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae	Herbs	Diarrhoea / Diarrhea	Roots	[17,34]
				Dysentery	Whole plant	[17]
126	<i>Erythrina suberosa</i> Roxb.	Fabaceae	Tree	Dysentery	Leaves, Roots	[32]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
127	(Syn. <i>Erythrina stricta</i> Roxb.) <i>Eugenia jambolana</i> Lam.	Myrtaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits, Seeds Fruits, Seeds	[85] [85]
128	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Whole plant, Roots Whole plant, Roots, Leaves	[1,22,33,86] [16,17,23,31,33]
129	<i>Euphorbia parviflora</i> L.	Moraceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits, Bark Fruits, Bark	[43] [43]
130	<i>Euphorbia thymifolia</i> L.	Euphorbiaceae	Herbs	Dysentery	Whole plant	[16]
131	<i>Evolvulus alsinoides</i> (L.) L.	Convolvulaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Whole plant Whole plant	[87] [48,87]
132	<i>Ficus amottiana</i> (Miq.) Miq.	Moraceae	Tree	Diarrhoea / Diarrhea	Bark	[88]
133	<i>Ficus benghalensis</i> L.	Moraceae	Tree	Diarrhoea / Diarrhea Dysentery	Leaves, Roots, Latex, Aerial roots, Bark Stem bark, Latex, Aerial roots, Stem, Bark	[1,16,21,22,24,31– 33,39] [16,21–23,31,33]
134	<i>Ficus exasperata</i> Vahl.	Moraceae	Tree	Diarrhoea / Diarrhea Dysentery	Leaves Leaves	[89] [89]
135	<i>Ficus hispida</i> L. f.	Moraceae	Tree	Dysentery Diarrhoea / Diarrhea	Fruits, Latex Fruits, Latex, Stem bark	[17,34] [17,34,39]
136	<i>Ficus racemosa</i> L.	Moraceae	Tree	Dysentery	Latex	[16]
137	(Syn. <i>Ficus glomerata</i> Roxb.) <i>Ficus religiosa</i> L.	Moraceae	Tree	Diarrhoea / Diarrhea Dysentery	Roots, Latex, Leaves Bark, Stem bark Bark, Stem bark	[16,24,31,90] [39,91] [39,91]
138	<i>Flacourtia indica</i> (Burm. f.) Merr.	Flacourtiaceae	Tree	Diarrhoea / Diarrhea	Leaves, Bark, Fruits	[1,24]
139	<i>Gardenia gummifera</i> L.f.	Rubiaceae	Shrubs	Diarrhoea / Diarrhea	Gum	[31]
140	<i>Gardenia latifolia</i> Aiton	Rubiaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits, Bark Fruits, Bark	[92] [92]
141	<i>Garuga pinnata</i> Roxb.	Burseraceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits Roots, Bark, Fruits	[93] [24]
142	<i>Getonia floribunda</i> Roxb. (Syn. <i>Calycopteris floribunda</i> (Roxb.))	Combretaceae	Climbers	Dysentery	Leaves	[90]
143	<i>Glinus lotoides</i> L.	Molluginaceae	Herbs	Diarrhoea / Diarrhea	Whole plant	[94]
144	<i>Glinus oppositifolius</i> (L.) Aug.DC.	Molluginaceae	Herbs	Diarrhoea / Diarrhea	Aerial parts	[95]
145	<i>Gmelina arborea</i> Roxb.	Verbenaceae	Tree	Diarrhoea / Diarrhea	Bark, Stem bark	[17,39]
146	<i>Grewia flavescens</i> Juss.	Tiliaceae	Shrubs	Diarrhoea / Diarrhea	Root bark	[96]
147	<i>Grewia hirsuta</i> Vahl	Tiliaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[17] [17,24]
148	<i>Grewia rothii</i> DC.	Tiliaceae	Shrubs	Dysentery	Root bark	[39]
149	<i>Grewia tiliifolia</i> Vahl.	Malvaceae	Tree	Diarrhoea / Diarrhea Dysentery	Stem bark Stem bark	[97] [31]
150	<i>Helicteres isora</i> L.	Malvaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Fruits Fruits, Seeds	[16,23,24,31,34] [16,17,23,31,34,54]
151	<i>Hemidesmus indicus</i> (L.) R. Br.	Apocynaceae	Shrubs	Diarrhoea / Diarrhea	Roots	[1,39]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
152	<i>Holarrhena antidysenterica</i> (L.) Wall. ex A. DC. (Syn. <i>Holarrhena pubescens</i> Wallich ex A. DC.)	Apocynaceae	Tree	Diarrhoea / Diarrhea Dysentery	Stem bark, Bark, Seeds, Roots Stem bark, Bark, Seeds, Roots	[31–33,39,47] [16,17,23,31–34,39,54]
153	<i>Holoptelea integrifolia</i> Planch.	Ulmaceae	Tree	Diarrhoea / Diarrhea Dysentery	Leaves, Fruits Leaves, Stem bark	[98] [39]
154	<i>Hybanthus enneaspermus</i> (L.) F. Muell.	Violaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Whole plant Whole plant	[99] [99]
155	<i>Ichnocarpus frutescens</i> (L.) W.T.Aiton. (Syn. <i>Ichnocarpus ovatifolius</i> A. DC.)	Apocynaceae	Shrubs	Dysentery	Roots	[17]
156	<i>Impatiens balsamina</i> L.	Balsaminaceae	Herbs	Dysentery	Roots	[100]
157	<i>Imperata cylindrica</i> (L.) P. Beauv.	Poaceae	Grasses	Diarrhoea / Diarrhea Dysentery	Roots Roots	[43] [43]
158	<i>Indigofera cassioides</i> DC.	Fabaceae	Shrubs	Dysentery	Flowers, Roots	[23]
159	<i>Indigofera linnaei</i> Ali	Fabaceae	Herbs	Dysentery	Whole plant	[24]
160	<i>Ipomoea obscura</i> (L.) Ker Gawl.	Convolvulaceae	Climbers	Diarrhoea / Diarrhea Dysentery	Leaves Leaves	[28] [101]
161	<i>Ipomoea quamoclit</i> L.	Convolvulaceae	Climbers	Dysentery	Whole plant	[101]
162	<i>Jatropha curcas</i> L.	Euphorbiaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Roots Stem	[1] [32]
163	<i>Juglans regia</i> L.	Juglandaceae	Tree	Diarrhoea / Diarrhea	Leaves	[102]
164	<i>Kyllinga brevifolia</i> Rottb.	Cyperaceae	Herbs	Diarrhoea / Diarrhea	Leaves, Tubers	[103]
165	<i>Kyllinga nemoralis</i> (J.R. Forst. & G. Forst.) Dandy ex Hutch. & Dalziel	Cyperaceae	Herbs	Diarrhoea / Diarrhea	Rhizome	[104]
166	<i>Lannea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	Tree	Diarrhoea / Diarrhea Dysentery	Leaves, Bark Leaves, Bark, Stem bark	[17] [17,39]
167	<i>Lantana camara</i> L.	Verbenaceae	Shrubs	Dysentery Diarrhoea / Diarrhea	Leaves Stem	[23] [28]
168	<i>Leea macrophylla</i> Roxb. ex Hornem.	Vitaceae	Herbs	Dysentery	Roots	[17]
169	<i>Leonotis nepetifolia</i> (L.) R.Br.	Lamiaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Whole plant Whole plant	[105] [86]
170	<i>Leptadenia reticulata</i> (Retz.) Wight	Apocynaceae	Shrubs	Diarrhoea / Diarrhea	Seeds	[72]
171	<i>Leucas cephalotes</i> (Roth) Spreng.	Lamiaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves Leaves	[17] [17]
172	<i>Limnophila indica</i> (L.) Druce	Scrophulariaceae	Herbs	Dysentery	Aerial parts	[42]
173	<i>Limonia acidissima</i> Linn.	Rutaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits Fruits	[106] [106]
174	<i>Lindernia crustacea</i> (L.) F. Muell.	Scrophulariaceae	Herbs	Dysentery	Whole plant	[27,42]
175	<i>Litsea glutinosa</i> (Lour.) C. B. Rob.	Lauraceae	Tree	Diarrhoea / Diarrhea Dysentery	Leaves, Bark Leaves, Bark	[33] [33]
176	<i>Litsea monopetala</i> (Roxb. ex Baker) Pers (Syn. <i>Litsea sebifera</i> (Willd.) Persoon)	Lauraceae	Tree	Diarrhoea / Diarrhea Dysentery	Bark Leaves, Bark	[33] [32,33]
177	<i>Ludwigia octovalvis</i> (Jacq.) P.H. Raven	Onagraceae	Shrubs	Diarrhoea / Diarrhea	Whole plant	[107]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
178	<i>Madhuca indica</i> J.F. Gmel. (Syn. <i>Madhuca longifolia</i> (J. Königex L.))	Sapotaceae	Tree	Dysentery Diarrhoea / Diarrhea	Whole plant Bark, Stem bark, Flowers	[107] [1,16,31,39]
179	<i>Mallotus philippensis</i> (Lam.) Mull. Arg.	Euphorbiaceae	Tree	Dysentery	Fruits	[17]
180	<i>Mangifera indica</i> L.	Anacardiaceae	Tree	Diarrhoea / Diarrhea	Bark, Leaves, Flowers, Fruits, Seeds	[1,24,33,37,65]
				Dysentery	Bark, Leaves, Flowers, Fruits, Seeds	[24,32–34]
181	<i>Melia azedarach</i> Linn.	Meliaceae	Tree	Diarrhoea / Diarrhea	Bark, Leaves	[28,65]
182	<i>Melilotus indica</i> (L.) All. (Syn. <i>Melilotus indicus</i> (L.) All.)	Fabaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[43]
183	<i>Melochia corchorifolia</i> L.	Sterculiaceae	Herbs	Dysentery	Leaves, Roots	[108]
184	<i>Mesua ferrea</i> L.	Calophyllaceae	Tree	Diarrhoea / Diarrhea	Bark	[109]
				Dysentery	Bark	[109], [110]
185	<i>Mimosa hamata</i> Willd.	Fabaceae	Shrubs	Dysentery	Roots	[111]
				Diarrhoea / Diarrhea	Roots	[111]
186	<i>Mimusops elengi</i> L.	Sapotaceae	Tree	Dysentery	Fruits	[27,31]
				Diarrhoea / Diarrhea	Fruits, Seeds	[17,27,31]
187	<i>Mitragyna parvifolia</i> (Roxb.) Korth.	Rubiaceae	Tree	Dysentery	Stem bark	[39]
188	<i>Moghania bracteata</i> (Roxb.) H.L.Li (Syn. <i>Flemingia strobilifera</i> (L.))	Fabaceae	Shrubs	Diarrhoea / Diarrhea	Roots	[112]
				Dysentery	Roots, Tuber	[112]
189	<i>Momordica balsamina</i> sensu W. & A.	Cucurbitaceae	Climbers	Diarrhoea / Diarrhea	Leaves	[113]
190	<i>Moringa oleifera</i> Lam	Moringaceae	Tree	Dysentery	Leaves, Whole plant	[12,24]
191	<i>Mucuna pruriens</i> (L.) DC. (Syn. <i>Mucuna prurita</i> Wight.)	Fabaceae	Shrubs	Dysentery	Roots	[17]
192	<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[16,31,37]
				Dysentery	Leaves, Roots	[16,31,39,54]
193	<i>Mussaenda frondosa</i> L. (Syn. <i>Mussaenda macrophylla</i> Wall.)	Rubiaceae	Tree	Diarrhoea / Diarrhea	Stem bark	[114]
				Dysentery	Stem bark	[114]
194	<i>Nepeta hindostana</i> (Roth) Haines (Syn. <i>Nepeta ruderalis</i> Buch.-Ham.)	Lamiaceae	Herbs	Diarrhoea / Diarrhea	Whole plant	[115]
				Dysentery	Whole plant	[115]
195	<i>Nervilia aragoana</i> Comm. ex Gaudich.	Orchidaceae	Orchid	Diarrhoea / Diarrhea	Whole plant	[116]
196	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[17,47]
197	<i>Ocimum canum</i> Sims. (Syn. <i>Ocimum americanum</i> auct.)	Lamiaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[33,37]
				Dysentery	Leaves	[33]
198	<i>Ocimum gratissimum</i> L.	Lamiaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[37,117]
199	<i>Oroxylum indicum</i> (L.) Kurz	Bignoniaceae	Tree	Diarrhoea / Diarrhea	Root-barks	[17,32,33]
				Dysentery	Seeds, Root-barks, Stem bark	[16,17,23,33,39]
200	<i>Ougeinia oojeinensis</i> (Roxb.) Hochr.	Fabaceae	Tree	Diarrhoea / Diarrhea	Gum, Bark	[24]
				Dysentery	Gum, Bark	[16,24]
201	<i>Oxalis corniculata</i> L.	Oxalidaceae	Herbs	Dysentery	Leaves, Fruits, Roots	[21,23,32,34,43]
				Diarrhoea / Diarrhea	Leaves, Fruits, Roots,	[22,32,43]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
202	<i>Passiflora foetida</i> L.	Passifloraceae	Climbers	Diarrhoea / Diarrhea	Whole plant	[118]
203	<i>Pergularia daemia</i> (Forssk.) Chiov.	Asclepiadaceae	Climbers	Diarrhoea / Diarrhea	Aerial parts	[31,39]
				Dysentery	Leaves	[39]
204	<i>Phoenix sylvestris</i> (L.) Roxb.	Arecaceae	Tree	Diarrhoea / Diarrhea	Roots	[119]
				Dysentery	Leaves, Gum, Fruits, Sap	[119]
205	<i>Phyllanthus amarus</i> Schum & Thonn.	Euphorbiaceae	Herbs	Diarrhoea / Diarrhea	Leaves, Roots, Seeds	[16,31]
				Dysentery	Whole plant	[16,31,34]
206	<i>Phyllanthus fraternus</i> G.L.Webster	Euphorbiaceae	Herbs	Diarrhoea / Diarrhea	Whole plant	[33]
				Dysentery	Whole plant	[33]
207	<i>Phyllanthus maderaspatensis</i> L.	Phyllanthaceae	Shrubs	Diarrhoea / Diarrhea	Seeds	[120]
				Dysentery	Seeds	[120]
208	<i>Phyllanthus reticulatus</i> Poir.	Phyllanthaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[33]
				Dysentery	Roots	[33]
209	<i>Phyllanthus urinaria</i> L.	Phyllanthaceae	Herbs	Dysentery	Shoots or Roots	[121]
				Diarrhoea / Diarrhea	Whole plant, Shoots or Roots	[121]
210	<i>Pithecellobium dulce</i> (Roxb.)Benth.	Mimosoideae	Tree	Dysentery	Bark	[122]
				Diarrhoea / Diarrhea	Roots, Bark	[25], [122]
211	<i>Plectranthus rugosus</i> Wall. ex Benth. (Syn. <i>Isodon rugosus</i> (Wall. ex Benth.))	Lamiaceae	Herbs	Diarrhoea / Diarrhea	Whole plant	[123]
212	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Shrubs	Dysentery	Roots, Leaves	[17,54]
				Diarrhoea / Diarrhea	Roots, Whole plant	[17,28,31,37]
213	<i>Pogostemon benghalensis</i> (Burm.f.) Kuntze	Lamiaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[124]
				Dysentery	Leaves	[124]
214	<i>Pongamia pinnata</i> (L.)Pierre (Syn. <i>Pongamia glabra</i> Vent.)	Fabaceae	Tree	Dysentery	Bark	[12]
				Diarrhoea / Diarrhea	Leaves	[31]
215	<i>Portulaca oleracea</i> L.	Portulacaceae	Herbs	Diarrhoea / Diarrhea	Aerial parts	[125]
				Dysentery	Aerial parts	[125]
216	<i>Portulaca quadrifida</i> L.	Portulacaceae	Herbs	Dysentery	Aerial parts	[126]
217	<i>Prunus persica</i> (L.) Stokes	Rosaceae	Tree	Dysentery	Leaves	[16]
218	<i>Pseudarthria viscida</i> (L.)Wight & Arn.	Fabaceae	Herbs	Diarrhoea / Diarrhea	Roots	[127]
219	<i>Psoralea corylifolia</i> L. (Syn. <i>Cullen corylifolium</i> (L.) Medik.)	Fabaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[17]
220	<i>Pterocarpus marsupium</i> Roxb.	Fabaceae	Tree	Diarrhoea / Diarrhea	Bark, Gum	[24]
				Dysentery	Bark, Stem bark	[23,39]
221	<i>Pterospermum acerifolium</i> (L.) Willd.	Malvaceae	Tree	Dysentery	Bark	[47]
				Diarrhoea / Diarrhea	Bark, Flowers	[47]
222	<i>Pupalia lappacea</i> (L.) Juss.	Amaranthaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[128]
223	<i>Quercus incana</i> W. Bartram	Fagaceae	Tree	Diarrhoea / Diarrhea	Fruits	[21]
				Dysentery	Fruits	[21]
224	<i>Rauvolfia tetraphylla</i> L.	Apocynaceae	Shrubs	Diarrhoea / Diarrhea	Roots	[33]
				Dysentery	Roots	[33]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
225	<i>Rubia cordifolia</i> L.	Rubiaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[28] [17]
226	<i>Salvia plebeia</i> R.Br.	Lamiaceae	Herbs	Diarrhoea / Diarrhea	Seeds	[129]
227	<i>Santalum album</i> L.	Santalaceae	Tree	Diarrhoea / Diarrhea	Heartwood	[1,17]
228	<i>Schleichera oleosa</i> (Lour.) Oken	Sapindaceae	Tree	Dysentery	Stem bark	[39]
229	<i>Scoparia dulcis</i> L.	Plantaginaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves, Roots Leaves, Roots, Whole plant	[17,33,43,83] [17,33,34,43,83]
230	<i>Securinega virosa</i> (Roxb. ex Willd.) Baill.	Phyllanthaceae	Shrubs	Diarrhoea / Diarrhea	Leaves, Stem bark	[37]
231	<i>Semecarpus anacardium</i> L.	Anacardiaceae	Tree	Diarrhoea / Diarrhea	Stem bark	[39]
232	<i>Sesamum indicum</i> L. (Syn. <i>Sesamum orientale</i> L.)	Pedaliaceae	Herbs	Dysentery Diarrhoea / Diarrhea	Seeds, Oil Seeds, Oil	[17,32] [130]
233	<i>Shorea robusta</i> Gaertn.	Dipterocarpaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits, Bark Gum	[16,31] [16]
234	<i>Sida acuta</i> Burm. f.	Malvaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Aerial parts Roots, Whole plant	[37] [131]
235	<i>Sida cordifolia</i> L.	Malvaceae	Shrubs	Dysentery	Leaves, Root bark	[23,31]
236	<i>Sigesbeckia orientalis</i> L.	Asteraceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[132]
237	<i>Smilax zeylanica</i> L.	Smilacaceae	Climbers	Dysentery	Roots	[33]
238	<i>Solanum nigrum</i> L.	Solanaceae	Herbs	Dysentery Diarrhoea / Diarrhea	Fruits Whole plant, Leaves	[22] [28,31]
239	<i>Sonchus oleraceus</i> L.	Asteraceae	Herbs	Diarrhoea / Diarrhea	Shoots	[133]
240	<i>Sorghum bicolor</i> (L.) Moench	Poaceae	Grasses	Diarrhoea / Diarrhea	Seeds	[28]
241	<i>Soymida febrifuga</i> (Roxb.) Juss.	Meliaceae	Tree	Diarrhoea / Diarrhea Dysentery	Bark Bark	[24] [23]
242	<i>Sphaeranthus indicus</i> L.	Asteraceae	Herbs	Dysentery Diarrhoea / Diarrhea	Whole plant Whole plant	[134] [134]
243	<i>Spilanthes calva</i> DC.	Asteraceae	Herbs	Dysentery	Whole plant	[42]
244	<i>Spondias pinnata</i> (L. f.) Kurz	Anacardiaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits, Bark Fruits, Bark	[16,23,32,33] [16,17,33]
245	<i>Stachytarpheta jamaicensis</i> (L.) Vahl. (Syn. <i>Stachytarpheta indica</i> (L.) Vahl)	Verbenaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves Leaves	[31] [31]
246	<i>Sterculia urens</i> Roxb.	Sterculiaceae	Tree	Dysentery	Gum	[24]
247	<i>Streblus asper</i> Lour.	Moraceae	Tree	Diarrhoea / Diarrhea Dysentery	Bark, Seeds Stem bark, Roots, Seeds, Leaves	[17,33] [17,23,31,33]
248	<i>Stylosanthes fruticosa</i> (Retz.) Alston.	Fabaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[28]
249	<i>Syzygium cumini</i> (L.) Skeels (Syn. <i>Eugenia jambolana</i> Linn)	Myrtaceae	Tree	Diarrhoea / Diarrhea Dysentery	Stem bark, Roots, Seeds, Fruits Stem bark, Roots, Seeds, Leaves	[12,16,17,22,23,33] [16,17,23,33,54]
250	<i>Syzygium heyneanum</i> (Duthie) Wall. ex Gamble (Syn. <i>Eugenia heyneana</i> Wall.)	Myrtaceae	Tree	Diarrhoea / Diarrhea	Bark	[135]
251	<i>Tacca leontopetaloides</i> (L.) Kuntze	Taccaceae	Herbs	Diarrhoea / Diarrhea	Tubers	[136]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
252	<i>Tamarindus indica</i> L.	Fabaceae	Tree	Dysentery Diarrhoea / Diarrhea	Tubers Fruits, Whole plant, Seeds	[136] [17,25,28]
253	<i>Tamarix troupii</i> Hole (Syn. <i>Tamarix indica</i> Willd.)	Tamaricaceae	Shrubs	Dysentery Dysentery	Seeds Bark, Fruits	[17] [137]
254	<i>Tectona grandis</i> L. f.	Verbenaceae	Tree	Diarrhoea / Diarrhea	Bark	[17]
255	<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Shrubs	Diarrhoea / Diarrhea	Roots	[17]
256	<i>Terminalia alata</i> Heyne ex Roth	Combretaceae	Tree	Diarrhoea / Diarrhea Dysentery	Bark Bark	[138] [138]
257	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	Tree	Dysentery	Bark, Leaves	[16,34]
258	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Tree	Dysentery Diarrhoea / Diarrhea	Bark, Fruits Fruits	[23,33] [16,17,33]
259	<i>Terminalia chebula</i> Retz.	Combretaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits, Bark Fruits, Bark	[17,32] [17,32]
260	<i>Terminalia tomentosa</i> Wight & Arn.	Combretaceae	Tree	Diarrhoea / Diarrhea	Bark	[17]
261	<i>Tinospora cordifolia</i> auct. non (DC). Miers: Hook f. & Thoms.	Menispermaceae	Herbs	Dysentery	Roots, Stem	[16,33,48]
262	<i>Trema orientalis</i> (L.) Blume	Ulmaceae	Tree	Diarrhoea / Diarrhea Dysentery	Roots, Stem, Whole plant Roots	[1,23,33,48] [24,31]
263	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[12]
264	<i>Trichodesma indicum</i> (L.) R. Br.	Boraginaceae	Herbs	Dysentery	Roots	[27,31]
265	<i>Trichodesma zeylanicum</i> (Burn. fil.) R. Br.	Boraginaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Whole plant Whole plant	[140] [140]
266	<i>Tridax procumbens</i> (L.) L.	Asteraceae	Herbs	Diarrhoea / Diarrhea Dysentery	Leaves Leaves	[31] [16,31]
267	<i>Triumfetta pilosa</i> Wall.	Malvaceae	Herbs	Diarrhoea / Diarrhea	Leaves	[141]
268	<i>Triumfetta rhomboidea</i> Jacq.	Tiliaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Leaves, Bark Leaves, Bark	[17,33,34] [17,33,34]
269	<i>Uraria picta</i> (Jacq.)DC.	Fabaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[142]
270	<i>Urena lobata</i> L.	Malvaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[17] [17]
271	<i>Vallisneria spiralis</i> (L.) Kuntze	Apocynaceae	Climbers	Diarrhoea / Diarrhea	Leaves, Bark	[143]
272	<i>Vernonia cinerea</i> (L.) Less	Asteraceae	Herbs	Dysentery	Whole plant	[16]
273	<i>Vetiveria zizanioides</i> (L.) Nash	Poaceae	Grasses	Diarrhoea / Diarrhea Dysentery	Roots Roots	[144] [144]
274	<i>Vitex negundo</i> L.	Verbenaceae	Shrubs	Dysentery Diarrhoea / Diarrhea	Leaves, Flowers Leaves, Whole plant	[12,16,17] [12,16,24]
275	<i>Vitex trifolia</i> L.	Lamiaceae	Shrubs	Dysentery	Leaves	[17]
276	<i>Waltheria americana</i> L. (Syn. <i>Waltheria indica</i> L.)	Sterculiaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[145] [145]
277	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Shrubs	Diarrhoea / Diarrhea	Leaves	[28]
278	<i>Woodfordia fruticosa</i> (L.) Kurz	Lythraceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Flowers Flowers, Bark, Leaves,	[39] [16,17,33,39]

Sr. No.	Plant's Name	Family	Category	Ailments	Parts used	References
279	<i>Wrightia tinctoria</i> Roem.	Apocynaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits Bark, Seeds	[146] [146]
280	<i>Wrightia tomentosa</i> (Roxb.) Roem. & Schult. (Syn. <i>Wrightia arborea</i> (Dennst.) Mabb.)	Apocynaceae	Tree	Dysentery	Roots	[17]
281	<i>Xeromphis spinosa</i> (Thunb.) Keay (Syn. <i>Catunaregam spinosa</i> (Thunb.))	Rubiaceae	Tree	Diarrhoea / Diarrhea Dysentery	Bark Bark	[147] [147]
282	<i>Xeromphis uliginosa</i> (Retz.) Maheshw (Syn. <i>Tamilnadia uliginosa</i> (Retz.))	Rubiaceae	Tree	Diarrhoea / Diarrhea Dysentery	Fruits, Roots Fruits, Roots	[17] [17]
283	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Tree	Dysentery Diarrhoea / Diarrhea	Leaves Seeds, Bark	[32] [16,28,34]
284	<i>Ziziphus nummularia</i> (Burm. f.) Wight & Walk.-Arn.	Rhamnaceae	Shrubs	Diarrhoea / Diarrhea Dysentery	Roots Roots	[16] [16]
285	<i>Ziziphus rugosa</i> Lam.	Rhamnaceae	Tree	Diarrhoea / Diarrhea	Bark	[17]
286	<i>Ziziphus xylopyrus</i> (Retz.) Willd.	Rhamnaceae	Tree	Diarrhoea / Diarrhea	Stem bark	[39]
287	<i>Zornia gibbosa</i> Span.	Fabaceae	Herbs	Diarrhoea / Diarrhea Dysentery	Whole plant Whole plant	[148] [148]

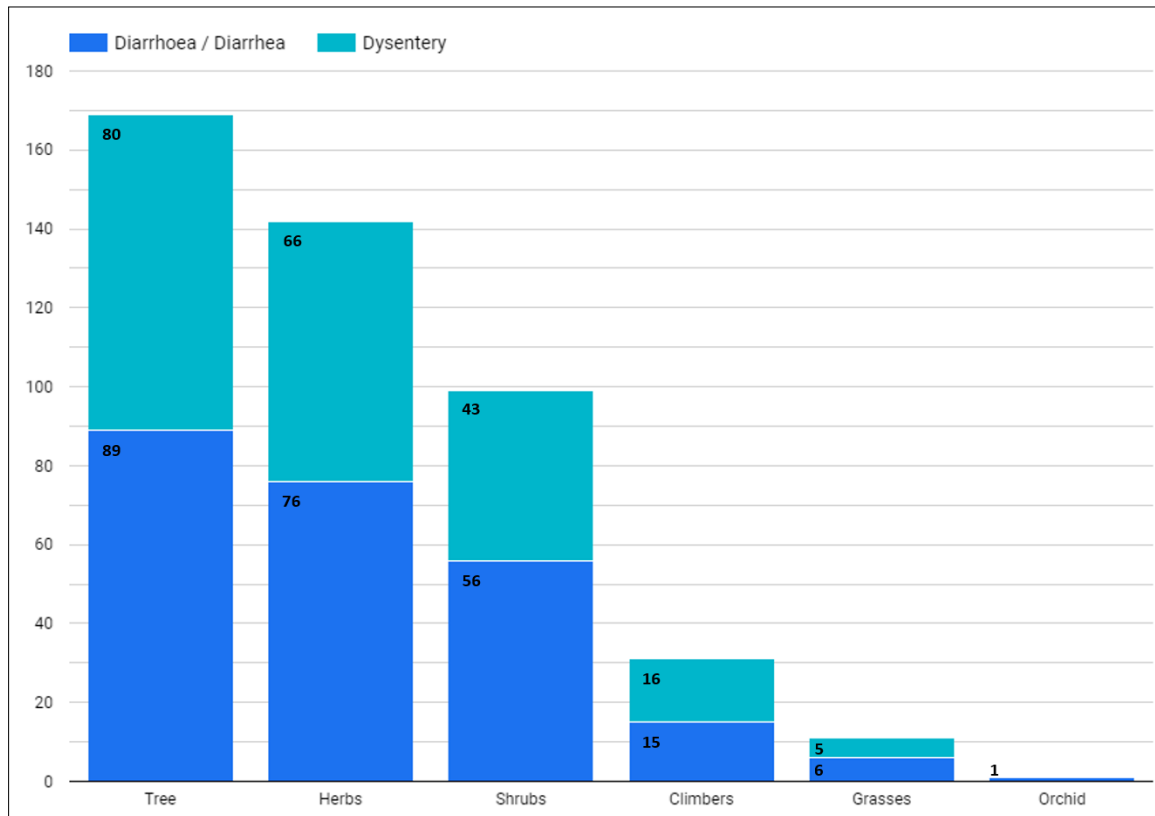


Fig. 2. Plant category wise distribution for diarrhea and dysentery records

Table 2. Plant family name and percentage of record contributed by each family

Sr. No	Plant's Family	Records	%
1	Fabaceae	32	11.14982578
2	Asteraceae	16	5.574912892
3	Malvaceae	13	4.529616725
4	Apocynaceae	10	3.484320557
5	Rubiaceae	10	3.484320557
6	Lamiaceae	9	3.135888502
7	Combretaceae	9	3.135888502
8	Euphorbiaceae	8	2.787456446
9	Amaranthaceae	8	2.787456446
10	Moraceae	8	2.787456446
11	Mimosoideae	7	2.43902439
12	Poaceae	7	2.43902439
13	Caesalpinaceae	6	2.090592334
14	Verbenaceae	6	2.090592334
15	Anacardiaceae	6	2.090592334
16	Tiliaceae	5	1.742160279
17	Cucurbitaceae	5	1.742160279
18	Boraginaceae	4	1.393728223
19	Rhamnaceae	4	1.393728223
20	Solanaceae	4	1.393728223
21	Phyllanthaceae	4	1.393728223
22	Convolvulaceae	4	1.393728223
23	Scrophulariaceae	3	1.045296167
24	Rutaceae	3	1.045296167
25	Myrtaceae	3	1.045296167
26	Asclepiadaceae	3	1.045296167
27	Sterculiaceae	3	1.045296167
28	Menispermaceae	3	1.045296167
29	Meliaceae	3	1.045296167
30	Vitaceae	3	1.045296167
31	Cyperaceae	3	1.045296167

Sr. No	Plant's Family	Records	%
32	Liliaceae	3	1.045296167
33	Dioscoreaceae	2	0.696864111
34	Agavaceae	2	0.696864111
35	Ulmaceae	2	0.696864111
36	Araceae	2	0.696864111
37	Sapotaceae	2	0.696864111
38	Faboideae	2	0.696864111
39	Sapindaceae	2	0.696864111
40	Burseraceae	2	0.696864111
41	Portulacaceae	2	0.696864111
42	Caesalpinioideae	2	0.696864111
43	Capparaceae	2	0.696864111
44	Lauraceae	2	0.696864111
45	Molluginaceae	2	0.696864111
46	Acanthaceae	2	0.696864111
47	Loranthaceae	1	0.348432056
48	Lythraceae	1	0.348432056
49	Commelinaceae	1	0.348432056
50	Cleomaceae	1	0.348432056
51	Chenopodiaceae	1	0.348432056
52	Celastraceae	1	0.348432056
53	Lecythidaceae	1	0.348432056
54	Casuarinaceae	1	0.348432056
55	Moringaceae	1	0.348432056
56	Cornaceae	1	0.348432056
57	Nyctaginaceae	1	0.348432056
58	Oleaceae	1	0.348432056
59	Onagraceae	1	0.348432056
60	Orchidaceae	1	0.348432056
61	Oxalidaceae	1	0.348432056
62	Papaveraceae	1	0.348432056
63	Passifloraceae	1	0.348432056
64	Pedaliaceae	1	0.348432056
65	Calophyllaceae	1	0.348432056
66	Plantaginaceae	1	0.348432056
67	Plumbaginaceae	1	0.348432056
68	Juglandaceae	1	0.348432056
69	Hypoxidaceae	1	0.348432056
70	Flacourtiaceae	1	0.348432056
71	Rosaceae	1	0.348432056
72	Bixaceae	1	0.348432056
73	Bignoniaceae	1	0.348432056
74	Salicaceae	1	0.348432056
75	Santalaceae	1	0.348432056
76	Fagaceae	1	0.348432056
77	Cuscutaceae	1	0.348432056
78	Balsaminaceae	1	0.348432056
79	Simaroubaceae	1	0.348432056
80	Smilacaceae	1	0.348432056
81	Asparagaceae	1	0.348432056
82	Arecaceae	1	0.348432056
83	Taccaceae	1	0.348432056
84	Tamaricaceae	1	0.348432056
85	Dilleniaceae	1	0.348432056
86	Ebenaceae	1	0.348432056
87	Annonaceae	1	0.348432056
88	Violaceae	1	0.348432056
89	Dipterocarpaceae	1	0.348432056
90	Zygophyllaceae	1	0.348432056
Total		287	100 %

3.3 Parts of Plants Used

From the data analysis of the current review articles, it was found that 25 different parts are used in various herbal formulation preparation traditionally to treat diarrhoea / diarrhea and dysentery. The leaves were the most used part

as 98 records (40.32%) are having leaves as their main part used in the treatment or capable of treating the ailment of diarrhoea / diarrhea, following which stem bark shows herbal traits from 68 records (32.38%) and roots from 52 records (21.39%), the whole plant is also used in case of 33 records (13.58%). 28 records

(11.52%) have fruits, 25 records (10.28%) have seeds, and 8 records (3.29%) have flowers as an herbal plant part for diarrhea. Further, 7 records (2.88%) have gum, 6 records (2.46%) have aerial parts, 5 records (1.66%) have tubers; rhizome, latex contribute 4 records each; stems, root bark, and shoots contribute 3 records each; oil, sap, heartwood contribute 2 records each, and buds, wood, resin, gum resin, aerial roots contribute 1 record each as medicinal plant parts.

For the treatment of dysentery, the most used plant part was found to be leaves in 66 out of 210 (31.42%) records. Followed by roots from 59 records (28.09%), stem bark from 56 records (26.66%), whole plants from 33 records (15.71%), fruits from 29 records (13.80%), and seeds from 21 records (10%). Further, 6 records (2.85%) have flowers; root bark, tubers contribute 5 records each; stems, aerial parts, and gum contribute 4 records each; latex contributes 3 records; rhizomes and shoots contribute 2 records each; and buds, wood, gum resin, calyx, resin, aerial roots, inflorescence, sap, oil contribute 1 records each as medicinal plant parts. The hierarchy of the plant parts capable of treatment of both ailments is shown in Fig. 3.

During the current review, a total of 287 plants were recorded to be used against diarrhoea /

diarrhea and dysentery from the Melghat region which is best known as 'Tiger Reserve' from Amravati district of Maharashtra state, India. The results of the study were presented in Tables 1-2, comprising botanical name (synonyms), family, category, and part(s) used, with cross-reference literature.

All the herbal uses of medicinal plants from the Melghat region recorded in this study are either not reported earlier or not widely recorded in important publications. It has been already established from previously done studies that phytochemicals such as alkaloids, terpenes, flavonoids, and tannins increase colonic water and electrolyte reabsorption, thereby having anti-diarrheal activity [149], some are also known to act by decreasing intestinal motility. The acute toxicity effect of the hydroalcoholic extract of *Sida cordifolia* L. (100-400mg/kg) produced dose-dependent and significant protection[150]. The stem bark of *Acacia nilotica* (L.), *Albizia lebbek* (L.) Benth., *Bombax ceiba* L., *Butea monosperma* Roxb., *Syzygium cumini* (L.); fruits of *Aegle marmelos* L., *Emblca officinalis* Gaertn., *Mangifera indica* L.; rhizomes of *Asparagus racemosus* Willd.; roots of *Cissampelos pareira* L., *Cyperus rotundus* L., *Euphorbia hirta* L., *Helicteres isora* L., *Holarrhena antidysenterica* (L.), *Scoparia dulcis* L.; aerial roots of *Ficus benghalensis* L. were most referred plant parts

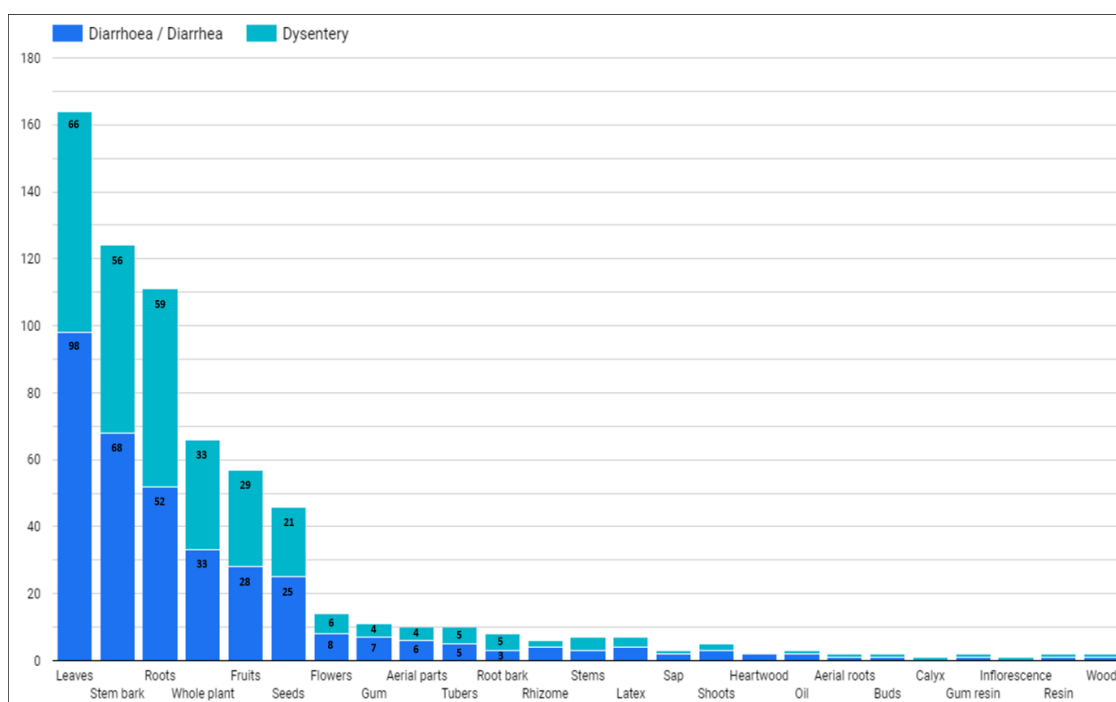


Fig. 3. Plant part used for Diarrhea and Dysentery records

for both the ailments. Study of the phytochemicals derived from these plants can lead to the extraction of potential drug targets for the treatment of both diarrhoea and dysentery as there are 165 common plant species whose plant parts are used to treat both ailments.

4. CONCLUSIONS

The main purpose of herbal remedies is to provide the solution with the least side effects, plant species that are proven to be useful in the treatment of ailments such as dysentery and diarrhea can provide a strong scientific foundation for researchers to create drugs with higher potential using now available and developed bioinformatics tools. The current investigation specifies medicinal plants, parts of which are traditionally used to treat the discussed ailments. The present information may serve as the baseline, cross-referred new information on many medicinal plants and their uses to initiate further research for the discovery of new compounds and biological activities of these potential plants from the Melghat region.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Singh AK, Srivastava AK, Singh VK, Yadav H, Pandey KD, Kumar A. Role of plants and their metabolites in the treatment of diarrhoea. *J Sci Res.* 2018;62:25-33.
2. Pan SY, Zhou SF, Gao SH, Yu ZL, Zhang SF, Tang MK et al. Fong W F and Ko KM. New perspectives on how to discover drugs from herbal medicines: CAM's outstanding contribution to modern therapeutics. *Evid Based Complement Alternat Med.* 2013;1-25.
3. Pelczar MJ, Chan ECS, Reid RD. *Microbiology* ed E C S (Eddie C S Chan 1931- and R D Reid. 1905- (McGraw-Hill);1977 .
4. Kotloff KL, Winickoff JP, Ivanoff B, Clemens JD, Swerdlow DL, Sansonetti PJ, et al. Global burden of Shigella infections: implications for vaccine development and implementation of control strategies. *Bull World Health Organ.* 1999;77(8):651-66.
5. Willey JM, Prescott LM. Sandman K M and wood DH. Prescott's microbiology. McGraw-Hill; 2020.
6. Ashkenazi S, Levy I, Kazaronovski V, Samra Z. Growing antimicrobial resistance of Shigella isolates. *J Antimicrob Chemother.* 2003;51(2):427-9.
7. Patel RI. Forest flora of melghat; 1968.
8. Atre NM, Khedkar DD. A review on herbal remedies for sexually transmitted infections (STIs) from melghat region of Maharashtra State, India. *Eur J Med Plants.* 2020:1-17.
9. Khedkar DD, Atre NM. Medicinal flora of melghat for asthma: A review. *J Pharmacogn Phytochem.* 2019;8: 2091-5.
10. Hedawoo G, Pilley H, Atre N, Nagmote S. Wild Mushroom Database: A repository for wild mushrooms from Melghat and Amravati region. *J Sci Inf.* 2012:107-9.
11. Grosvenor PW, Gothard PK, McWilliam NC, Supriono A, Gray DO. Medicinal plants from Riau Province, Sumatra, Indonesia. Part 1: Uses. *J Ethnopharmacol.* 1995;45(2):75-95.
12. Parthiban R, Vijayakumar S, Prabhu S, Morvin Yabesh JGE. Quantitative traditional knowledge of medicinal plants used to treat livestock diseases from Kudavasal taluk of Thiruvavur District, Tamil Nadu, India. *Revista Brasileira de Farmacognosia.* 2016;26(1):109-21.
13. Rani Das P, Akter S, Tabibul Islam M, Humayun Kabir M, Megbahul Haque M, Khatun Z et al. A selection of medicinal plants used for treatment of diarrhea by folk medicinal practitioners of Bangladesh. *J Sustain Agric.* 2012;6:153-61.
14. Mishra A, Seth A, Maurya SK. Therapeutic significance and pharmacological activities of antidiarrheal medicinal plants mention in Ayurveda: a review. *J Intercult Ethnopharmacol.* 2016;5(3):290-307.
15. Arbat AA. Pharmacognostic studies of stem of abutilon Pannosum (Forst F.). *Biosci Discov.* 2012;3:317-20.
16. Gairola S, Sharma J, Gaur RD, Siddiqi TO, Painuli RM. Plants used for treatment of dysentery and diarrhoea by the Bhoja community of district Dehradun, Uttarakhand, India. *J Ethnopharmacol.* 2013;150(3):989-1006.
17. DeFilipps RA, Krupnick GA. The medicinal plants of Myanmar. *PhytoKeys.* 2018; 341(102):1-341.
18. Deb J, Dash GK. Pharmacognostical studies on stem bark of Acacia ferruginea DC. *Pharm Lett.* 2014;6:61-6.

19. Rasool F, Ishaque M, Yaqoob S, Tanveer A. Chemical composition and ethnobotanical uses of *Acacia jacquemontii* Benth. In the Thal Desert in Pakistan. *Bois Forests Trop.* 2017;1:67-76.
20. Fern K. *Senegalia lenticularis* Trop. Plants Database;2014.
21. Jan G, Khan MA, Gul F. Ethnomedicinal plants used against diarrhea and dysentery. In: Kohistan D, editor *Ethnobot. Leafl.* 2008;12:620-37.
22. Ullah Khan S, Khan RU, Khan A, Ullah I, Zahra Bokhari T. Medicinal plants used to cure diarrhea and dysentery by the local inhabitants of district Bannu, Khyber PakhtoonKhwa, Pakistan. *Adv Pharm Ethnomedicines.* 2013;1:15-8.
23. Rout SD, Panda T. Ethnobotanical survey of medicinal plants used for the treatment of diarrhoea and dysentery by the tribals of Similipal forest, Mayurbhanj, Odisha, India *App. Sci Rep.* 2017;19:9-18.
24. Sisodiya S, Dutt HC. Woody phyto-resources of medicinal importance used by the tribal populations between Satpura and Vindyan Hills, Madhya Pradesh, India. 2020;20:9453-61.
25. Dabur R, Gupta A, Mandal TK, Singh DD, Bajpai V, Gurav AM et al. Antimicrobial activity of some Indian medicinal plants. *Afr J Tradit Complement Altern Med.* 2007;4(3):313-8.
26. Batubara I, Wahyuni WT, Firdaus I. Utilization of Anting-Anting (*Acalypha indica*) leaves as antibacterial. *IOP Conf Ser Earth Environ Sci.* 2016;31.
27. Nandagoapalan V, Doss A, Marimuthu C. Ethnobotanical studies on useful plants of Pachamalai hills of Tiruchirappalli district of Tamil Nadu. *Adv Sci Res.* 2016;7:14-9.
28. Woldeab B, Regassa R, Alemu T, Megersa M. Medicinal plants used for treatment of diarrhoeal related diseases in Ethiopia. *Evid Based Complement Alternat Med.* 2018;2018:4630371.
29. Kamatou GPP, Vermaak I, Viljoen AM. An updated review of *Adansonia digitata*: A commercially important African tree. *S Afr J Bot.* 2011;77(4):908-19.
30. Rokade Y, Pawar SP. A comprehensive review on *Adina cordifolia*. *Int J Pharm Sci Rev Res.* 2013;18:13-6.
31. Shanmugam S, Rajendran K, Annadurai M. Ethnomedicinal plants used to cure diarrhoea and dysentery in Pachalur hills of dindigul district in Tamil Nadu, southern India. *J Appl Pharm Sci.* 2011;1:94-7.
32. Marak NM. Indigenous Knowledge on Medicinal Plants Used for Treating diarrhoea and Dysentery among the Garo Community, Meghalaya (North East India) Study area. 2017;7:29-36.
33. Morshed AJM, Nandni NC. Indigenous medicinal plants used by the tribal healers of Chittagong hill tracts to treat diarrhoea and dysentery *Harmdard Med.* 2012;55:48-66.
34. Vaidyanathan D, Senthilkumar MSS, Basha MG. Studies on ethnomedicinal plants used by Malayali tribals in Kolli Hills of Eastern Ghats, Tamil Nadu, India. *Asian J Plant Sci Res.* 2013;3:29-45.
35. Misra AK, Varma SK, Kumar R. Anti-inflammatory effect of an extract of *Agave americana* on experimental animals. *Pharmacogn Res.* 2018;10(1):104-8.
36. Monterrosas-Brisson N, Ocampo MLA, Jiménez-Ferrer E, Jiménez-Aparicio AR, Zamilpa A, Gonzalez-Cortazar M et al. Anti-inflammatory activity of different agave plants and the compound Cantalaponin-1. *Molecules.* 2013;18(7): 8136-46.
37. Nduche MU, Omosun G. The use of medicinal plants in the treatment of diarrhoea in Nigeria: ethnomedical inventory of Abia State. *Sch J Agric Vet Sci.* 2016;3:270-4.
38. Lavhale MS, Mishra SH. PHCOG REV: plant Review Nutritional and therapeutic potential of *Ailanthus excelsa* – a review. 2007;1:105-13.
39. Padal SB. SBP. *IOSR J Environ Sci Toxicol Food Technol.* 2013 *Phytomedicinal Flora and their Folk claim of Visakha Patnam District Agency, Andhra Pradesh, India;*3:9-16.
40. Panara K, Singh P, Rawat P, Kumar V, Maruf M, Patel K et al. Importance of *Alangium salviifolium* and Its Pharmacological Update. *Eur J Med Plants.* 2016;12(4):1-15.
41. Verma SC, Vashishth E, Singh R, Kumari A, Meena AK, Pant P et al. A review on parts of *Albizia lebbek* (L.) Benth. used as Ayurvedic drugs *Res. J Pharm Technol.* 2013;6:1307-13.
42. Swapna MM, Prakashkumar R, Anoop KP, Manju CN, Rajith NP. A review on the medicinal and edible aspects of aquatic and wetland plants of India. *J Med Plants Res.* 2011;5(33):7163-76.
43. Bhatt MD, Prasad Adhikari YP, Kunwar RM. Ethnomedicinal values of weeds in

- kanchanpur district, far-western nepal. *Ethnobot Res Appl.* 2021;21:1-19.
44. Tamilarasi CT, Subasin U, Kavimani S, Jaykar B. Phytochemical and pharmacological evaluation of *Ampelocissus latifolia*. *Anc Sci Life.* 2000;20(1-2):14-8.
 45. Doss VA, Thangavel KP. Antioxidant and antimicrobial activity using different extracts of *Anacardium occidentale* L. *Int J Appl Biol Pharm Technol.* 2011;2:436-43.
 46. Okhwarobo A, Ehizogie Falodun J, Erharuyi O, Imieje V, Falodun A, Langer P. Harnessing the medicinal properties of *Andrographis paniculata* for diseases and beyond: a review of its phytochemistry and pharmacology. *Asian Pac J Trop Dis.* 2014;4(3):213-22.
 47. Panda SK, Padhi L, Leyssen P, Liu M, Neyts J, Luyten W. Antimicrobial, anthelmintic, and antiviral activity of plants traditionally used for treating infectious disease in the Similipal Biosphere Reserve, Odisha, India *Front. Pharmacol.* 2017;8:1-15.
 48. Sajeev KK, Sasidharan N. Ethnobotanical observations on the tribals of chinnar wildlife sanctuary. *Anc Sci Life.* 1997;16(4):284-92.
 49. Ray AS, Rahaman CH. Pharmacognostic standardization and phytochemical investigation of *Cajanus scarabaeoides* (L.) Thouars. *Res J Pharmacogn Phytochem.* 2018;10(1):120-31.
 50. Ghosh A, Chowdhury HR, Manda IS. A contribution to the ethnobotanical uses of plants for ethnomedicine and magico-religious belief by the tribals of Birbhum district, West Bengal *Ethnobot. Med Plants.* 2009:675-82.
 51. Ghosh P, Rahaman CH. Pharmacognostic and Phytochemical studies of *Azanza lampas* (Cav.) Alef.: an Ethnomedicinally important root drug of Malvaceae. *Res J Pharmacogn Phytochem.* 2018;10(4):259.
 52. Deo YK, C RKR. Critical review on pharmacological properties of Brahmi. *IJAM.* 2013;4(2):92-9.
 53. Sreelekha KP, Krishna TPA, Krishna TPA, Deepa PE, Darsana U, Juliet S et al. Pharmaco-chemical characterization of leaves of *Blumea mollis* (D. Don) merr. from Western Ghats of wayanad region of Kerala, India *J. J Pharmacogn Phytochem.* 2017;6:319-23.
 54. Tikadar P, Sharat KP, Panda D. Phytochemical analysis of medicinal plants used for treatment of dysentery and diarrhoea by the Paraja Tribe of Koraput, Odisha, India Poly Tikadar, Sharat K Palita and Debabrata Panda. *Int J Herb Med.* 2017;5:01-4.
 55. Izuogu NB, Bello OE, Bello OM. A review on *Borreria verticillata*: A potential bionematicide, channeling its significant antimicrobial activity against root-knot nematodes. *Heliyon.* 2020;6(10):e05322.
 56. Siddiqui MZ. *Boswellia serrata*, a potential antiinflammatory agent: an overview. *Indian J Pharm Sci.* 2011;73(3):255-61.
 57. Buchanania T, Mishra S, Tiwari S. Spatial distribution of *Buchanania cochinchinensis* in Jharkhand. *Int J Green Pharm.* 2018;5:344-53.
 58. Sen M K and Dash B K. A review on phytochemical and pharmacological aspects of *Cissus quadrangularis* L. 2012;6:169–73.
 59. Moteetee AN. *Canavalia* (Phaseoleae, Fabaceae) species in South Africa: naturalised and indigenous. *S Afr J Bot.* 2016;103:6-16.
 60. Chedraoui S, Abi-Rizk A, El-Beyrouthy M, Chalak L, Ouaini N, Rajjou L. *Capparis spinosa* L. in A systematic review: A xerophilous species of multi values and promising potentialities for agrosystems under the threat of global warming. *Front Plant Sci.* 2017;8:1-18.
 61. Ambardar N, Aeri V. A better understanding of traditional uses of *Careya arborea* Roxb.: phytochemical and pharmacological review Tang [*Humanitas Med.* 2013;3:28.1-7.
 62. Tesfaye T, Ravichadran YD. Traditional uses, pharmacological action and phytochemical; 2018.
 63. Ahmad S, Hassan A, Abbasi WM, Rehman T. Phytochemistry and pharmacological potential of *Cassia absus* – a review. *J Pharm Pharmacol.* 2018;70(1): 27-41.
 64. Abdallah MS, Warodi FA, Gambo RM. Antibacterial activity of leaf extract (*Cassia mimosoides* linn) on some bacterial isolates from diarrhoeal samples of infant. *Imp J Interdiscip Res.* 2017;3:1450-3.
 65. De Wet H, Nkwanyana MN, van Vuuren SF. Medicinal plants used for the treatment of diarrhoea in northern Maputaland, KwaZulu-Natal Province, South Africa. *J Ethnopharmacol.* 2010;130(2):284-9.
 66. Negi DS, Semwal A, Juyal V, Rana AJ. Antibacterial and antifungal Activity of

- Centratherum anthelminticum* seeds Asteraceae (Compositae). 2014;2:136-9.
67. Sreedhar S, Nitha B, Shree ABR. Antimicrobial activity of stem bark of *Aombretum albidum* G. Don: A traditional medicinal liana. Int J Pharm Sci Res. 2013;4:3184.
 68. Kothawade KA, Siddiqui AR. A comprehensive review on pharmacological activity of *Vernonia anthelmintica* and *Corallocarpus epigaeus* Asian J. Pharm. Educ Res. 2018;7:28-35.
 69. Isaiah S, Arun Kumar CSSN. Phytochemical screening, antimicrobial activity and GC-MS analysis of *Corchorus tridens* L. IJPR. 2016;6:353-7.
 70. Jamkhande PG, Barde SR, Patwekar SL, Tidke PS. Plant profile, phytochemistry (Indian cherry): a review and pharmacology of *Cordia dichotoma*. Asian Pac J Trop Biomed. 2013;3(12):1009-16.
 71. Devendra BN, Srinivas N, Solmon KS. A comparative pharmacological and phytochemical analysis of *In vivo* & *In vitro* propagated *Crotalaria* species. Asian Pac J Trop Med. 2012;5(1):37-41.
 72. Seliya AR, Patel NK. Ethnomedicinal uses of climbers from Saraswati River Region of Patan District, North Gujarat. Ethnobot Leaflet. 2009;13:865-72.
 73. Garud BD, Varghese M, Thakur PL. Contribution of plant diversity to healthcare in Saptashrunji region in Kalwan tahsil, Maharashtra with special reference to flowers, fruits and seeds. Int J Plant Sci. 2016;11(1):135-40.
 74. Dulla O, Jahan FI. Ethnopharmacological survey on traditional medicinal plants at Kalaroa Upazila, Satkhira District, Khulna Division, Bangladesh. J Intercult Ethnopharmacol. 2017;6(3):316-25.
 75. Swamy K, Pai V, Hanumantha M, Suryanarayan V. Assessment of tar spot disease in *Dalbergia latifolia* and their management. J Pharmacogn Phytochem. 2019;8:621-3.
 76. Abbas DA, Jaafar FR. Study of antidiarrhoeal effect of *Datura innoxia* leave extract against diarrhoea induce by castor oil and magnesium sulphate in mice Iraqi J. Vet Med. 2010;34:79-84.
 77. . K, Saini M. Effect of *datura Metel* (Datura) seeds in experimentally induced diarrhoea. Int J Res Ayurveda Pharm. 2018;9(3):96-8.
 78. Sinoriya P, Sharma V, Sinoriya A. A review on *Dendrophthoe falcata* (LINN. F.) Asian J. Pharm Clin Res. 2011;4:1-5.
 79. Jayakumari S, Srinivasa Rao GH, Anbu J, Ravichandiran V. Antidiarrhoeal activity of *Dichrostachys cinerea* (L.) Wight & Arn. Int J Pharm Pharm Sci. 2011;3:61-3.
 80. Ette E, Etuk EU, Peace U, Chris E, Okokon JE, Udobi CE et al. Antiplasmodial and antidiarrhoeal activities of *Dicliptera verticillata* leaf extract. J Phytopharmacol. 2015;4(2):73-9.
 81. Aadil M, Aziz A. Aadil Hussain Tantray, PA P. Ethnopharmacological Potential and Medicinal Uses of Miracle Herb *Dioscorea* spp. J. Ayurvedic Herb. Med. 2018;4:79-85.
 82. Chintala S, Kandhula A, Janapathi YK. F K and PDV. Int J Pharm Sci Res. Pharmacognostic studies on *Diospyros melanoxylon*. 2012;3:3438-43.
 83. Howlader MS, Jannat K, Rahmatullah M. Medicinal plants used for treatment of diarrhea and dysentery in Chandpur District, Bangladesh arch. Nat. Med Chem. 2019;4:1-6.
 84. Shukla A, Kaur A. A systematic review of traditional uses bioactive phytoconstituents of genus *Ehretia*. Asian J Pharm Clin Res. 2018;11(6):88-100.
 85. Usman MR. M and Choubey N. J Pharm Res. Medicinal importance and pharmacological significance of *Eugenia jambolana* lam. 2017;11:83-90.
 86. Tugume P, Nyakoojo C. Ethnopharmacological survey of herbal remedies used in the treatment of paediatric diseases in Buhunga parish, Rukungiri District, Uganda. BMC Complement Altern Med. 2019;19(1):353.
 87. Khan QA, Khan AA, Jabeen A, Ansari S. *Sankhaholi Evolvulus alsinoides* Linn: a review innovare J. Heal Sci. 2016;4:1-3.
 88. Babu A, Anand D, Saravanan P. Phytochemical analysis of *Ficus arnottiana* (Miq.) Miq. Leaf extract using GC-MS analysis. Int J Pharmacogn Phytochem Res. 2017;9:7-12.
 89. Ahmed F, Karim A, Mueen Ahmed K, Abedin M. Traditional uses and pharmacological potential of *Ficus exasperata* vahl. Syst Rev Pharm. 2012;3(1):15-23.
 90. Natarajan B, Paulsen BS. An ethnopharmacological study from thane district, Maharashtra, India: traditional knowledge compared with modern

- biological science. Pharm Biol. 2000;38(2):139-51.
91. Singh S, Jaiswal S. Therapeutic properties of ficus Regligiosa. Int J Eng Res Gen Sci. 2014;2:149-58.
 92. Dhurwe RK, Prajapati RK, Lakhera ML, Kumar P. Documentation of non-timber forest products and medicinal plants available in Narayanpur forest area of Chhattisgarh. Int J Chem Stud. 2018;6:2644-54.
 93. Lavanya B, Thangamalathi S. Garuga pinnata Roxburgh – an update. Int J Inst Pharm Life Sci. 2016;6:6-11.
 94. Bhavani S. Review Article *Glinus lotoides* (Ciru-Ceruppadai): an overview. J Chem Pharm Res. 2015;7:676-82.
 95. Chakraborty T, Paul S, Paul S. *Glinus oppositifolius* (L.) Aug. [DC: A repository of medicinal potentiality]. Int J Phytomed. 2017;9(4):543-57.
 96. Gebauer J, Bernholt H, Hammer K. *Grewia flavescens*: A potential horticultural crop? Genet Resour Crop Evol. 2013;60(6):1915-9.
 97. Sharma C, Malgaonkar M, Sangvikar S, Murthy S, Pawar S. In vitro evaluation of antimicrobial and antioxidant profile of *Grewia L.* Root extracts. J Appl Life Sci Int. 2016;7(1):1-9.
 98. Mondal S, Bandyopadhyay A. The wonders of a medicinal tree: *Holoptelea integrifolia* (ROXB.) planch. Int J Pharm Pharm Sci. 2016;8:43-8.
 99. Anupa MP, Chinju S, Murugan M. Qualitative phytochemical screening and in vitro antioxidant activity of *Hybanthus enneaspermus*. Int J Pharmacogn Phytochem Res. 2016;8:1046-9.
 100. Meenu B, Neeraja ED, Rejimon G, Varghese A. *Impatiens balsamina*: an overview. J Chem Pharm Res. 2015;7:16-21.
 101. Londhe DK, Neel RS, Bhuktar AS. Ethno-medicinal uses of some species of genus *Ipomoea L.* from Maharashtra state. Int J Appl Res. 2017;3:82-4.
 102. Al-Snafi AE. Chemical constituents, nutritional, pharmacological and therapeutic importance of *Juglans regia*-A review IOSR J. Pharm. www.iosrphr.org. 2018;8:1-21.
 103. Penjor D, Tshering T, Bhattaria G, Namgay T. The study of ethnobotanical uses by local healers in Taktse chiwog from central Bhutan. Asian Plant Res J. 2020;6:19-39.
 104. Krishnasamy R, Jeyapal G, Chandrasekar MJN, Dhanabal SP. Pharmacognostical studies on root and rhizomes of *Kyllinga nemoralis*. Int J Res Pharm Sci. 2017;8:222-7.
 105. Pushpan R, Nishteswar K, Kumari H. Ethno medicinal claims of *Leonotis nepetifolia* (L.) R. Br: a review. Int J Res Ayurveda Pharm. 2012;3(6):783-5.
 106. Vijayvargia P, Vijayvergia R. A review on *Limonia acidissima* L: multipotential medicinal plant. Int J Pharm Sci Rev Res. 2014;28:191-5.
 107. Kadum Yakob H, Manaf Uyub A, Fariza Sulaiman S. Toxicological evaluation of 80% methanol extract of *Ludwigia octovalvis* (Jacq.) P.H. Raven leaves (Onagraceae) in BALB/c mice. J Ethnopharmacol. 2012;142(3):663-8.
 108. T P. Ethnobotany, phytochemistry and pharmacology of *Melochia corchorifolia* L. Int Res J Pharm. 2014;5(7):543-5.
 109. Chahar K. *Mesua ferrea* L.: a review of the medical evidence for its phytochemistry and pharmacological actions. Afr J Pharm Pharmacol. 2013;7(6):211-9.
 110. Asif M, Jafari SF, Iqbal Z, Revadigar V, Oon CE, Majid ASA et al. Ethnobotanical and phytopharmacological attributes of *Mesua ferrea*: A mini review. J Appl Pharm Sci. 2017;7:242-51.
 111. Jasuja ND, Saxena R, Chandra S, Bhargava S, Joshi SC. Pharmacological evaluation of an ethnomedicinal and endangered desert plant: *Mimosa hamata*. J Biol Sci. 2013;14(1):52-9.
 112. Narayanan A, Shenoy A, Shabaraya A. A Review on Pharmacological Activities of *Flemingia strobilifera* Int. J. Pharm. Sci. Rev. Res. 2020;70–2.
 113. Thakur GS, Bag M, Sanodiya BS, Bhadouriya P, Debnath M, Prasad GBKS et al. *Momordica balsamina*: a medicinal and nutraceutical plant for health care management. Curr Pharm Biotechnol. 2009;10(7):667-82.
 114. Lalremruati M, Lalmuansangi C, Siama Z. Free radical scavenging activity and antioxidative potential of various solvent extracts of *Mussaenda macrophylla* Wall: an in vitro and ex vivo study. J app pharm sci. 2019;9(12):94-102.
 115. Mahmood H, Chaudhry MA, Masood Z, Saeed MA, Adnan S. A mechanistic evaluation of the traditional uses of *Nepeta ruderalis* in gastrointestinal and airway

- disorders. Pharm Biol. 2017;55(1):1017-21.
116. Pant B. Medicinal orchids and their uses: tissue culture a potential alternative for conservation. Afr J Plant Sci. 2013;7(10):448-67.
 117. Prabhu KS, Lobo R, Shirwaikar AA, Shirwaikar A. *Ocimum gratissimum*: A review of its Chemical, Pharmacological and Ethnomedicinal Properties. TOALTMEDJ. 2009;1(1):1-15.
 118. C M, D N, K S, S U, A R, ran. Antibacterial properties of *Passiflora foetida* L. – A common exotic medicinal plant. Afr J Biotechnol. 2007;6(23):2650-3.
 119. Jain P, Jain S, Sharma S, Paliwal S. Diverse application of *Phoenix sylvestris*: A potential herb. Agric Nat Resour. 2018;52(2):107-14.
 120. Akhtar S, Rauf A, Siddiqui MZ. A comprehensive review on *Kanocha (Phyllanthus maderaspatensis)*: an important *Una ni* drug. Int J Res Pharm PharmSci. 2019;4:24-8.
 121. Geethangili M, Ding ST. A review of the phytochemistry and pharmacology of *Phyllanthus urinaria* L. Front Pharmacol. 2018;9:1109.
 122. Kulkarni KV, Kaushik C, Kulkarni V, Jamakhandi VR. Medicinal uses of *Pithecellobium dulce* and its health benefits. J Pharmacogn Phytochem. 2018;7:700-4.
 123. Janbaz KH, Arif J, Saqib F, Imran I, Ashraf M, Zia-UI-Haq M et al. In-vitro and in-vivo validation of ethnomedicinal uses of methanol extract of *Isodon rugosus* Wall. ex Benth. (Lamiaceae). BMC Complement Altern Med. 2014;14:71.
 124. Shigwan AV, Khade AB. Hatpakki Basawaraj C and Ghurghure SM 2013-A comprehensive review on *Pogostemon benghalensis* (Burm. F.) O. Kuntze. Res Rev J Pharmacogn Phytochem;1:10-5.
 125. Zhou Y, Xin H, Rahman K, Wang S, Peng C, Zhang H. *Portulaca oleracea* L.: a review of Phytochemistry and Pharmacological Effects. BioMed Res Int. 2015;2015:1-11.
 126. Durgawale TP, Khanwelkar CC, Durgawale PP. Phytochemical analysis of *Portulaca oleracea* and *Portulaca quadrifida* extracts using gas chromatography–mass spectrometry. Asian J Pharm Clin Res. 2018;11(9):204-7.
 127. Mathew GM, Sasikumar JM. Antioxidant activity of *Pseudarthria viscida*. Indian J Pharm Sci. 2007;69:581-2.
 128. Akindele AJ, Salako OA, Ohonbamu UV. Evaluation of the antidiarrhoeal activity of the hydroethanolic leaf extract of *Pupalia Lappa cea* Linn. Juss. J Ethnopharmacol. 2014;151(2):984-9.
 129. Shirsat R, Suradkar S, Koche D. Some phenolic compounds of *Salvia plebeia* R. BR. Biosci Discov. 2012;3:61-3.
 130. Nagpurkar M, Patil NM. A review on Sesame – an ethno medicinally significant oil crop. Int J Life Sci Pharm Res. 2017;7:58-63.
 131. Dinda B, Das N, Dinda S, Dinda M, Silsarma I. The genus *Sida* L. – A traditional medicine: its ethnopharmacological, phytochemical and pharmacological data for commercial exploitation in herbal drugs industry. J Ethnopharmacol. 2015;176:135-76.
 132. Rakotondrafara A, Rakotondrajaona R, Rakotoarisoa M, Ratsimbason M, Rasamison VE, Rakotonandrasana SR. Ethnobotany of medicinal plants used by the Zafimaniry clan in Madagascar. J Phytopharmacol. 2018;7(6):483-94.
 133. Ahmad SS, Erum S, Khan SM, Nawaz M, Wahid A. Exploring the medicinal plants wealth: A traditional medico-botanical knowledge of local communities in Changa Manga Forest, Pakistan. Middle East J Sci Res. 2014;20:1772-9.
 134. Galani VJ, Patel BG, Rana DG. *Sphaeranthus indicus* Linn.: A phytopharmacological review. Int J Ayurveda Res. 2010;1(4):247-53.
 135. Tripathi J, Singh R, Prakash Ahirwar R. Ethnomedicinal study of plants used by Tribal person for diarrhoea diseases in Tikamgarh District M.P J. Med. Plants Stud. 2017;5:248-53.
 136. Mosissa D. Bio-prospecting Potential of *Tacca leontopetaloides* (L.) O. Kuntze for Access and Benefit Sharing. Acta Sci Biotechnol. 2020;1:3-7.
 137. Shafi MS, Ashraf MY, Sarwar G. Wild medicinal plants of Cholistan area of Pakistan. Pak J Biol Sci. 2000;4(1):112-6.
 138. Saklani S, Rawat Y, Plygun S, Shariati MA, Nigam M, Maurya VK et al. Biological activity and preliminary phytochemical screening of *terminalia alata* Heyne ex Roth. J Microbiol Biotechnol Food Sci. 2019;8:1010-5.

139. Fabowale PO, Ogundare AO, Awoyinka P, Agunloye O. *Trema orientalis* Linn. Blume: susceptibility patterns of selected multiple antibiotic resistant bacteria and fungi to the leaf extracts. *Res Microbiol.* 2020;8:25-32.
140. Maregesi MS, Nyamwisenda T, Mwangomo D, Kidukuli A. In vitro antimicrobial activity and determination of essential metal and ash value contents of *Trichodesma zeylanicum*. *Int J Res Pharmacol Pharmacother.* 2013;2:417-24.
141. Labu Z, Ahmed MT, Bala A, Islam T, Binte Arfan N, Labu ZK. In vitro investigation of thrombolytic, membrane stabilizing, antidiarrhoeal and antimicrobial activity of aerial parts of *Triumfetta pilosa* Artic. *Jordan J Pharm Sci.* 2016;9:89-103.
142. Hem K, Singh NK, Singh MK. Anti-inflammatory and hepatoprotective activities of the roots of *Uraria picta*. *Int J Green Pharm.* 2017;11:S166-73.
143. Wong SK, Chan EWC. Botany, uses, phytochemistry and pharmacology of *Vallisneria spiralis*: A short review. *Pharmacogn J.* 2013;5(5):242-6.
144. Bhushan B, Sharma SK, Singh T, Singh L, Arya H. *Vetiveria zizanioides* (Linn.) Nash: A pharmacological overview. *Int Res J Pharm.* 2013;4(7):18-20.
145. Zongo F, Ribuot C, Boumendjel A, Guissou I. Botany, traditional uses, phytochemistry and pharmacology of *Waltheria indica* L. *J Ethnopharmacol.* 2013;148(1):14-26. (syn. *Waltheria americana*) [a review].
146. Khyade MS, Vaikos NP. *Wrightia tinctoria* R. Br.-a review on its ethnobotany, pharmacognosy and pharmacological profile. *J Coast Life Med.* 2014;2:826-40.
147. Patil MB, Khan PA. Ethnobotanical, phytochemical and Fourier Transform infrared Spectrophotometer (FTIR) studies of *Catunaregam spinosa* (Thunb.) Tirven. *J Chem Pharm Sci.* 2017;10:950-5.
148. Valli M, Kumar OA, Padal SB. Ethnomedicinal plants used for dysentery and diarrhoea by tribes in Prakasam District, Andhra Pradesh, India. *BMR Phytomed.* 2016;2:1-4.
149. Palombo EA. Phytochemicals from traditional medicinal plants used in the treatment of diarrhoea: modes of action and effects on intestinal function. *Phytother Res.* 2006;20(9):717-24.
150. Shahed-Al-Mahmud M, Jahan T, Towhidul Islam M. Antidiarrheal activities of hydroalcoholic extract of *Sida cordifolia* roots in Wistar albino rats. *Orient Pharm Exp Med.* 2018;18(1):51-8.

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