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Quantification of the Ethnomedicine Data Collected from the *Kanikkars* in Kanyakumari District, Tamil Nadu, India

Research Article

Baby Shalini C[1], Doss A[2], Ahamed Kabir N[2]*

1. Assistant Professor, Department of Botany, Nazareth Margoschis College at Pillaiyanmanai, Tamil Nadu, India.
2. Assistant Professor, 3. Research Scholar,
PG & Research Department of Botany, V. O. Chidambaram College at Thoothukudi. Tamil Nadu, India.

Abstract

This study aims to explore the traditional medicinal plants used by the *Kanikkar* community, which resides in 26 villages within the Petchiparai Panchayat area of Kanyakumari District, Tamil Nadu, India. These plants are crucial in treating various health issues the community faces. To gather ethnomedicinal information, we conducted interviews and group discussions with 252 participants, including 146 men and 106 women aged 20 to 60. Our research identified 215 species of medicinal plants belonging to 179 genera across 75 families, documenting each species and its medicinal uses. We analyzed the ethnomedicinal data using several quantitative metrics, including the Frequency of Citation Percentage (FC%), which tracks how often a plant is referenced for specific ailments; the Relative Frequency of Citation (RFC), which measures a plant's popularity; the Fidelity Level (FL), indicating the consistency of its use for certain conditions; and the Informant Consensus Factor (FIC), which assesses the agreement among informants regarding the uses of specific plants. We employed Direct Matrix Ranking (DMR) and Preference Ranking (PR) techniques to emphasize the importance of various plant species. This comprehensive evaluation highlights the rich ethnomedical knowledge of the *Kanikkar* community and stresses the significance of protecting their traditional practices along with the biodiversity that supports them.

Keywords: Ethnobotany, Traditional Medicine, Ethnomedicine, Quantitative Ethnomedicine Indices, Preference Ranking Exercise.

Introduction

One of the broadly used indigenous knowledge systems is the knowledge and application of traditional medicine. Such knowledge, known as ethnomedicinal knowledge, involves traditional diagnosis, collection of raw materials, preparation of remedies, and its prescript to the patients (1). The World Health Organization (WHO) characterises traditional medicine: "Traditional medicine is the sum of the knowledge, skills, and practices depended on the hypothesis, convictions, and experiences indigenous to diverse cultures, whether explicable or not, used in the sustenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and psychological illness". The WHO notes, nonetheless, that "improper use of traditional medicines or applications can have adverse or hazardous effects" and that "further research is expected to find out the efficacy and safety" of many of the practices and medicinal plants used by the traditional medicine systems (2). Traditional medicine, which is widespread worldwide, has been perceived by the World Health Organization (WHO) as a central structure of primary healthcare (3). Traditional plant-based knowledge has become a perceived tool in the quest for new sources of medications (4). Traditional knowledge of medicinal plants has consistently led the quest for new cures (5).

John Harshberger proposed the term ethnobotany in 1895 (6). Harshberger (7) defined ethnobotany as the study of the utilisation of plants by aboriginal people (8). Ethnobotany records traditional knowledge about plants and can be utilised to connect with policymakers and advancement organisers in thinking of appropriate strategies for conserving cultures and cultural knowledge related to their valuable plants (9). Ethnomedicine may be defined comprehensively as using plants by people as medications. However, these utilisations could be called, more precisely, ethnobotanical medicine (10). Ethnomedicine is one of the systems of medicine that is broadly practised among the tribal and aboriginal populations of our country for the treatment of ailments (11). Ethnomedical information/data plays a notable part in developing new scientifically validated and standardised drugs, i.e., herbal and modern (12).

Following the first use of the term "quantitative ethnobotany" coined by Prance *et al*. in 1987, there has been growing interest in developing the traditional compilation style of ethnobotanical studies by incorporating quantitative research methods in data collection, processing, and presentation of results (13). Quantitative ethnobotany may be defined as "the employment of quantitative strategies to the direct

*** Corresponding Author:**

Ahamed Kabir N
Research Scholar,
PG & Research Department of Botany, V. O. Chidambaram College at Thoothukudi.
Tamil Nadu, India.
Email Id: kabir29092001@gmail.com

analysis of existing plant use data." (14, 15). With concerns about conservation and sustainable and fair utilisation of wild plant resources, quantitative ethnobotany can add to the scientific base for management decisions (13). Medeiros *et al*. (16) have clarified that quantification in ethnobotany incorporates aspects related to the analysis of people's reports on the uses of plant species, and it incorporates the use of indices or quantitative techniques and statistical analysis. Phillips (17) confirmed that the quantitative methodology improves the scholarly study of ethnobotany. Quantitative techniques have been used in ethnobotany to compare plant taxa's utilisation and cultural value. These analyses are of incredible scientific interest as they reveal cultural value systems, and they may likewise assist in the conservation of biodiversity (18). Many quantitative indices have been put forth to provide various ways to deal with traditional and localised indigenous knowledge (19).

Materials and Methods

Study Area

Once known as Cape Comorin, Kanyakumari is the southernmost district in Tamil Nadu and mainland India. It is situated between 77° 15' and 77° 36' east and 8° 03' and 8° 35' to the north longitudes. It has its boundaries with the Tirunelveli district, the Gulf of Mannar, the Indian Ocean, the Arabian Sea, and the state of Kerala. Of the total district area of 1671.3 km², government forests occupy a space of 504.86 km², which comes to about 30.2% of the geographical area of the district. There are 14 types of forests, from lush tropical wet evergreen to tropical thorn forests.

Kanikkars

The *Kanikkar* is one of the major tribes living in many districts of Kerala and Tamil Nadu. They reside in or near forests in Thiruvananthapuram and Kollam in Kerala, Kanyakumari and Tirunelveli in Tamil Nadu. The *Kanikkars,* or *Kanis*, have an archaic history of hunting, gathering, and shifting cultivation. Long back, they were contracted by the Travancore Government to collect honey, wax, ginger, cardamom, dammar, and elephant tusks (20). Their language nearly echoes Malayalam (21) with few Tamil words (22). The *Kani* medicinal specialists are called "*Philathies*" (23).

Ethnomedicinal Survey and Data Collection

One year, a thorough ethnomedicinal survey was conducted in four different seasons in many villages situated in the Pechiparai panchayat (forest range) in Kalkulam taluk of Kanyakumari district to gather the indigenous knowledge of *Kanikkars* about the utilisation of traditional medicinal plants for the treatment of various human ailments. A sum of 252 knowledgeable local informants (146 men and 106 women) in the age group somewhere in the range of 20 to 60 were chosen to collect the ethnomedicinal data. The population density of the study area is given in Table 1.

The ethnomedicinal data were collected using semi-structured interviews with each informant, group conversations, and personal observations on administering medicines by following methods recommended by Martin (24) and Cotton (8). Consent was obtained before conducting interviews, and all the practical guidelines of the International Society of Ethnobiology were followed. The informants were interviewed in their local languages: Tamil and Malayalam. The purpose of data collection from women was to compare their indigenous knowledge with men's and their interest in using medicinal plants to treat various ailments. Critical questions about the medicinal plants were the local name of a particular medicinal plant used, ailments treated, the plant parts used, use of fresh or dry plant parts, use of a single or a blend of plants for remedy preparation, mode of remedy preparation, route of administration, dose requirement, and duration. The ethnomedicinal information was cross-checked with the other informants. The interviews were conducted at different times with the same informants to check the precision of the information obtained, and the obtained information was recorded. Various ailments reported by the informants were grouped under different ailment categories with their biomedical terms. Fresh plants were collected during the interviews to create voucher specimens for the herbarium. When possible, informants were followed into the forest/field to show the cited plant species and other informants confirmed their identity.

Quantitative Ethnomedicine Indices

In the current study, quantitative ethnomedicine indices such as Frequency of Citation Percentage (FC%), Relative Frequency of Citation (RFC), Fidelity Level (FL), and Informant Consensus Factor (FIC) of the medicinal plants cited by the *Kanikkars* were determined. Direct Matrix Ranking (DMR) exercise compared the multiple uses of a given plant species based on the information gathered from the *Kanikkar* informants. The Preference Ranking (PR) exercise examined the degree of efficacy of some selected medicinal plants used by the *Kanikkars* in the study area to treat dermatological problems.

Frequency of Citation Percentage

The Frequency of Citation Percentage (FC%) of the reported medicinal plant species was calculated using the formula:

FC % = Number of Informants Citing the Use of the Species/Total Number of Informants Interviewed (252) x 100.

Relative Frequency of Citation (25)

The Relative Frequency of Citation Index (RFC) reveals the local importance of each plant species in the study area. It is given by the Frequency of Citation (FC), i.e. the ratio between the number of informants who cited the medicinal uses of a given plant species and the total number of informants who partook in the interview (N), without weighing the use categories. The FC can be used to appraise the most preferred plant species by the informants. A high RFC value indicates the importance of a given plant species among the

informants. The RFC index value varies from 0 (if nobody cites a plant species as useful) to 1 (if each informant cites it as useful).

RFC = FC ÷ N (0 < RFC < 1)

Where,

FC = Number of the Informants Who Cited the Medicinal Use of a Given Plant Species

N = Total Number of the Informants Partook in the Interview

Fidelity Level (26)

The Fidelity Level Percentage Index (FL%)indicates the proportion of the informants who cited the medicinal uses of certain plant species to treat a particular human ailment in the study area and the notoriety of one plant species over others to treat a specific human ailment.The FLvalues will be helpful to know the informants' most preferred plant species for treating specific human ailments. The FL values are calculated to rank the recorded plant species based on their reported relative efficacy/curing potential. Classifying the human ailments cited by the informants into major ailment categories (various diseases based on the organ systems in one category) to calculate the FLvalues is essential. TheFL is the ratio between the number of informants who individually cited the use of a given plant species to treat a specific ailment and the total number of informants who cited a given plant species to treat any ailment expressed as a fraction of 100. The high values of FL indicate the notoriety of certain plant species over others to treat a specific ailment, as the high values validate their high usage rate against specific ailments. The low values ofFL validate their low-frequency usage against a specific ailment.

FL % = Ip ÷ Iu × 100

Where,

Ip = Number of the Informants Who Individually Cited the Use of a Given Plant Species to Treat a Specific Ailment

Iu= Total Number of the Informants Who Cited the Same Plant Species to Treat Any Ailment

Informant Consensus Factor

The current presentation, proposed by Heinrich *et al*. (27), is based on a similar but not the exact definition first proposed by Trotter and Logan (28). TheFactor of Informant Consensus (FIC) is used to know the given plant species of distinct intercultural relevance and to agree on their uses. The Factor of Informant Consensus (FIC) can be employed to document consensus on the practical uses of the given medicinal plant species for a specific ailment (29). Classifying the human ailments cited by the informants into major ailment categories (various diseases based on the organ systems in one category) to calculate the FICvalues is essential. The FIC value ranges from 0.00 to 1.00. It will be high if a large number of informants cites a given plant species, while it will be low, which indicates that informants had more limited knowledge about that given plant species. The high values of FIC will be obtained when only one or a few well-known plant species are stated to be used by a high proportion of informants to treat a particular ailment category due to their efficacy regarding curing potential. The high values of FICcan thus be used to find fascinating plant species for the hunt of bioactive compounds (29), as pharmacologically effective remedies are presumed from plant species with high values of FIC (28).

In contrast, the low values of FIC authenticate that the informants differ over which plant species to use. It also stipulates that the informants use certain plant species arbitrarily to treat a reported ailment. The FIC study within an ethnic group/culture and between ethnic groups/cultural groups shows which plant species are broadly used. Thus, it helps to select particular plant species for pharmacological and phytochemical studies (30).

FIC = Nur - Nt ÷ Nur - 1

Where,

Nur = Number of Use reports in Each (Ailment) Category

Nt= Number of Taxa (Plant Species) Used

Direct Matrix Ranking (24)

The Direct Matrix Ranking (DMR) is a more complex variant of the Preference Ranking. Instead of arranging a series of objects on one characteristic such as 'Value' or 'Desirability', the respondents/ participants/key informants order them by considering several characteristics one at a time. After choosing a class of objects and defining its members, the respondents define the good and bad aspects of each. It is a ranking system based on the personal view of the importance of an object. The Direct matrix ranking can be employed to compare the chosen multipurpose plant species based on the use categories. The use categories for the comparison could be construction, food, fuelwood, shade, farm, household implements, etc., as employed in the works of Martin (24) and Cotton (8). Specialised knowledge of a few respondents should be solicited for the DMR exercise. It can be employed on the chosen multipurpose medicinal plant species most often reported to have multiple uses by respondents based on non-medicinal uses in at least five use categories. The respondents must be chosen based on the quality and quantity of information they give during the interviews. The number of respondents, including men and women distributed among different age categories, has to be at least 15. They should be asked to rank the plant species with diverse uses, i.e. to assign use values to each plant species through conversation based on their perceived level of usefulness using a numerical scale (5 = Best, 4 = Very Good, 3 = Good, 2 = Good Enough and 1 = Very Least). The use-values assigned by the respondents for each plant species have to be added together, i.e. summed up to decide its rank.

Preference Ranking (24)

The Preference Ranking (PR), which is based on a single dimension, is one of the most accessible analytical tools which requires asking the respondents to consider some five to seven items in a category that is the centre of the research or of an issue that is being discussed in the community. Each respondent arranges the items according to personal preference, perceived

importance in the community, or another criterion. Each rank is assigned an integer value (1, 2, 3, and so on), with the most significant or preferred item being assigned the highest number. For instance, the most preferred of five objects is rated '5' while the least liked is '1'. These numbers are summed for all respondents, presenting an overall ranking for the objects by the sample group of respondents. Whenever possible, this order of preference is cross-checked with the data collected from interviews and other sources to see if there is consistency in the responses. In the Preference Ranking of a few widely recognised items, the task can be carried out orally or drafted on a large piece of paper that everyone can see. As the number of items grows, it is better to have actual samples in hand and to randomise their order before asking each respondent to rank them (24).

The Preference Ranking exercise can be employed to assess the degree of effectiveness of some plant species against the most prevalent human ailments encountered in the study area. The tribals use plant species of various habits/growth forms to treat various human ailments. In such cases, the tribals would prefer particular plant species based on their degree of efficacy/curing power against a given ailment. Specialised knowledge of a few respondents/ participants/key informants should be sought for the Preference Ranking exercise. At least 15 respondents, including men and women distributed among different age categories, have to be asked to rank the given plant species, i.e. to assign values to each plant species according to their personal preferences based on the degree of efficacy/curing power using a numerical scale (5 = Most Effective/Most Preferred, 4 = More Effective/ More Preferred, 3 = Effective/Preferred to treat the most prevalent human ailment found in the study area and to decide the rank based on the total a score of each plant species. The rank has to be decided based on the total score of each plant species.

Results

During the field survey in the study area, the informants disclosed ethnomedicinal data of 215 species of plants distributed across 75 families and 179 genera as having therapeutic properties against about 90 human ailments (Table 2). The best-represented families in terms of the number of species are Euphorbiaceae (16 species), Fabaceae and Solanaceae (11species each), Asteraceae and Lamiaceae (8 species each), Apocynaceae, Caesalpiniaceae, and Zingiberaceae (7 species each), Acanthaceae (6 species each) Asclepiadaceae, Malvaceae, Menispermaceae, and Verbenaceae (5 species each), Amaranthaceae, Araceae, Aristolochiaceae, Convolvulaceae, Liliaceae, Piperaceae, and Rutaceae (4 species each), Combretaceae, Dioscoreaceae, Mimosaceae, Moraceae, Poaceae, Rubiaceae and Sterculiaceae (3 species each), Arecaceae, Cleomaceae, Cucurbitaceae, Lauraceae, Marantaceae, Musaceae, Myrtaceae, Nyctaginaceae, Oleaceae, Oxalidaceae, Plumbaginaceae, Polygalaceae, Polypodiaceae, Portulacaceae, Sapindaceae, Scrophulariaceae, and Vitaceae (2 species each) and other 31 families with one species each. The growth forms used as sources of medications to treat human ailments are herbs (103), trailed by trees and climbers (42 each) and shrubs (28). It shows that herbs are the primary growth form the *Kanikkars* use to treat human ailments. It could be because of their higher efficacy than other growth forms. The majority of plant species are commonly found and collected from the wild. The Leaves (41%) turn out to be the part of a plant preferred by the *Kanikkars* for therapeutic purposes, followed by the roots (14%).

The biomedical terms of various ailments grouped under 13 ailment categories are given in (Table 3). Of all the plant species cited by the *Kanikkar* informants, 14 plant species are used to treat Aches and Fever, 10 plant species are used to treat Dental and Oral Problems, 56 plant species are used to treat Dermatological Problems, 9 plant species are used to treat Ear and Throat Problems, 42 plant species are used to treat Gastrointestinal Problems, 18 plant species are used to treat Gynaecological Problems, 5 plant species are used to treat Kidney Problems, 12 plant species are used to treat Liver Problems, 14 plant species are used to treat Metabolic Diseases, 41 plant species are used to treat Other Problems, 21 plant species are used to treat Respiratory Problems, 16 plant species are used to treat Musculoskeletal disorders and swelling and 9 plant species are used to treat Urogenital Problems.

Frequency of Citation Percentage (FC%) and Relative Frequency of Citation (RFC) are calculated for the recorded 215 ethnomedicinal plants (Table 4). The levels of RFC decrease as follows: *Azadirachta indica* A. Juss. (0.142), *Cardiospermum halicacabum* L. (0.142), *Hemidesmus indicus* (L.) R. Br. (0.138), *Rauvolfia serpentina* (L.) Benth. ex Kurz (0.138), *Rhinacanthus nasutus* (L.) Kurz (0.130), *Plectranthus amboinicus* (Lour.) Spreng. (0.119), and *Piper nigrum* L. (0.111). *Azadirachta indica* A. Juss., *Cardiospermum halicacabum* L., *Hemidesmus indicus* (L.) R. Br., and *Rauvolfia serpentina* (L.) Benth. ex Kurz rise to be the most popular medicinal plants to the *Kanikkars* as indicated by their high RFC values (0.142 and 0.138). The other most-cited medicinal plants in the survey are *Rhinacanthus nasutus* (L.) Kurz, *Plectranthus amboinicus* (Lour.) Spreng., and *Piper nigrum* L. It indicates the solid and long-term association of the *Kanikkars* with confined plants.

The current study reveals 20 ethnomedicinal plants having high Fidelity Level (FL) values. The FL values are presented in Table 5. The FL values in this study vary from 24.24% to 69.23%. The study shows that the highest FL values are found in *Boerhavia diffusa* L. (69.23) followed by *Euphorbia hirta* L. (66.66), *Myxopyrum smilacifolium* (Wall.) Blume (65.21), *Cleome gynandra* L. (62.50), *Arenga wightii* Griff. (60), and *Syzygium cumini* (L.) Skeels (60); and the most negligible value is found in *Rhinacanthus nasutus* (L.) Kurz (24.24).

In the study area, the Informant Consensus about usages of ethnomedicinal plants for various ailment categories (13) ranges from 0.82 to 0.92. The average Informant Consensus Factor (FIC) value for all ailment

categories is 0.87 (Table 6). The level of consensus agreement between the informants concerning the uses of particular medicinal plant(s) for treating a particular ailment category is consistently high. The highest FIC values (0.90 and above) are obtained for ear and throat, gynaecological, and kidney problems among all ailment categories. The results of the FIC show that kidney problems have the highest agreement with an FIC value of 0.92, followed by ear and throat problems and gynaecological problems with an FIC value of 0.90 each. The most minor agreement between informants is observed in the musculoskeletal disorders and swelling with an FIC value of 0.82, followed by gastrointestinal problems (FIC 0.84), metabolic diseases (0.85), and urogenital problems (0.85). The results of the (FIC) indicate that ear and throat problems, gynaecological problems, and kidney problems are the most common ailments faced by the *Kanikkars* in the study area.

The results of a Direct Matrix Ranking exercise employed by a group of 10 key local informants on 20 chosen multipurpose medicinal plants show the highest scores/ranks for *Delonix regia*, *Syzygium cumini*, *Psidium guajava*, *Terminalia bellirica*, *Thespesia populnea*, *Aegle marmelos*, *Canarium strictum*, *Limonia acidissima,* and *Pongamia pinnata* (Table 6). These results indicate that these plants are exploited more for their non-medicinal uses than reported medicinal uses. According to the DMR output, *Delonix regia* and *Syzygium cumini* rank first with the highest score (17) due to their high multipurpose uses among all plants.

Preference Ranking Exercise performed by a group of 10 key local informants for 10 chosen medicinal plants based on their degree of efficacy for treating dermatological problems shows that *Saraca asoca* (Roxb.) Willd. ranks first and is the most preferred plant, followed by *Myxopyrum smilacifolium* (Wall.) Blume (Table 7).

Discussion

The current study points out some plant species, in particular *Ageratina adenophora* (Spreng.) R. M. King & H. Rob., *Ageratum conyzoides* (L.) L., *Ampelocissus indica* (L.) Planch., *Anamirta cocculus* (L.) Wight & Arn., *Arenga wightii* Griff., *Breynia retusa* (Dennst.) Alston, *Careya arborea* Roxb., *Caryota urens* L., *Cassytha filiformis* L., *Chlorophytum heynei* Baker, *Croton bonplandianus* Baill., *Gomphrena celosioides* Mart., *Hybanthus enneaspermus* (L.) F. Muell., *Orthosiphon aristatus* (Blume) Miq., *Phoenix loureiroi* Kunth, *Piper mullesua* Buch.- Ham. ex D. Don, *Polygala arvensis* Willd., *Portulaca quadrifida* L., *Pterospermum canescens* Roxb., *Rivea hypocrateriformis* (Desr.) Choisy, *Salacia alata* De Willd., *Schumannianthus virgatus* (Roxb.) Rolfe, *Sisyrinchium palmifolium* L., *Solanum diphyllum* L., *Solanum violaceum* Ortega, *Tragia involucrata* L., and *Vanda tessellata* (Roxb.) Hook. ex G. Don with new ethnomedicinal uses that have not been reported in earlier ethnomedicinal studies (31, 32, 33, 34) conducted among the *Kanikkars* inhabited in the study area. Recently gathered ethnomedicinal data are valuable sources for the future development of new drugs and further phytochemical, pharmacological, and clinical studies.

The current study shows that herbs are the primary growth form used in the study area for treating various human ailments. It could be related to the fact that they are more easily accessible in the study area than trees and shrubs and their high effectiveness in the treatment of ailments in comparison to other growth forms. This finding agrees with the general pattern of dominance of herbs seen in most ethnomedicinal inventories (35, 36, 37, 38, 39, 21, 40, 41, 42, 43, 44, 45, 46) conducted somewhere else in India and other countries. While analysing the number of citations for the plant parts used to prepare remedies, a preference for using leaves, followed by roots, becomes evident in the current study. Using leaves reduces the rate of threats to plant species compared to using roots and flowers. A preference for using the leaves in remedy preparations over the other parts of a plant could be due to the ease of collection and effective remedy (47) and the presence of more bioactive ingredients in the leaves that increase in response to the phytophagous organisms as the leaves are the most vulnerable parts of a plant (48). In addition, the leaves are the principal photosynthetic organs of a plant and are confirmed to be the natural pharmacy to synthesise many pharmacologically active compounds against some ailments (49). Various ethnomedicinal studies have been carried out in India as well as in other countries (50, 35, 51, 52, 53, 54, 55, 21, 56, 57, 42, 58, 59, 60, 61, 62, 63, 65) reported that leaves are the part of a plant most used in remedy preparations.

In the current study, *Azadirachta indica* A. Juss. (RFC 0.142), *Cardiospermum halicacabum* L.(RFC 0.142), *Hemidesmus indicus* (L.) R. Br. (RFC 0.138), and *Rauvolfia serpentina* (L.) Benth. ex Kurz (RFC 0.138) showed a high frequency of citation with the highest RFC values indicate the solid and long term association of the *Kanikkars* with these plant species in the study area.

The current study exposes that some plant species widely used by the *Kanikkars* in the study area have higher FL values than those less popular. The FL values in this study vary from 24.24% to 69.23% for 20 ethnomedicinal plant species. This study specifies 3 high FL value plant species: *Boerhavia diffusa* L. (69.23), *Euphorbia hirta* L. (66.66), and *Myxopyrum smilacifolium* (Wall.) Blume (65.21). These 3 ethnomedicinal plant species could be selected for further detailed phytochemical screening to investigate the bioactive compounds responsible for their high curative potential. The high FL values indicate the high curative potential of medicinal plants and a deep dependency on those plants by the *Kanikkars* in the study area. These 3 plants with high FL values should be prioritised for bioassay and toxicity studies.

In the current study, the informant consensus of medicinal plants used by the *Kanikkars* results in FIC values ranging from 0.82 to 0.92 per ailment category. The average FIC value (0.87) for all ailment categories confers a notable level of informant consensus

compared to similar studies from other countries (66, 67). High informant consensus was also recorded in studies with many ailments categories, for instance, studies with the *Malasars* (the average FIC = 0.71) and the *Irulas* (the average FIC = 0.85) in India (68, 69). Moerman (70) employed a similar analysis for the medicinal plants used by the indigenous communities of North America and voiced his firm opinion on the Informant Consensus for identifying medicinal plants with pharmacologically active compounds. The high level of consensus among the informants about the usage of medicinal plants for the treatment of various ailments common in the study area submits that the ethnomedicinal uses of plants are widespread in the study area.

The result shows that ear and throat problems, gynaecological problems, and kidney problems are the most common ailments the *Kanikkars* face in the study area. These prevalent ailments in the study area have the highest FIC values. Kidney problems have a high FIC value of 0.92, followed by ear and throat problems and gynaecological problems with an FIC value of 0.90 each. The Highest FIC values indicate the presence of phytochemical constituent(s) with therapeutic effects in the medicinal plants used to treat the ailments mentioned above. According to Heinrich *et al*. (27), high FIC values are very helpful in selecting particular plants for further search of bioactive compounds. Anyway, a low FIC value does not rigorously suggest that a plant is less promising in terms of its biological activity, as stated by Moerman (70). It is the first Informant Consensus report published from an ethnic group (the *Kanikkars*) in the Kanyakumari District of Tamil Nadu and supported by the earlier publications on Informant Consensus by Ragupathy *et al*. (68) and Sajem and Gosai (71).

The output of a Direct Matrix Ranking exercise confers the highest scores/ranks for 9 multipurpose medicinal plants in the study area, namely *Delonix regia* (Hook.) Raf., *Syzygium cumini* (L.) Skeels, *Psidium guajava* L., *Terminalia bellirica* (Gaertn.) Roxb., *Thespesia populnea* (L.) Sol. ex Correa, *Aegle marmelos* (L.) Correa, *Canarium strictum* Roxb., *Limonia acidissima* L., and *Pongamia pinnata* (L.) Pierre. It indicates that these plants are exploited more for non-medicinal than reported medicinal uses. Overharvesting of multipurpose medicinal plants for agricultural tools, construction, fodder, food, and firewood is the factor that enhances the depletion of some plant species in the study area. The result of the Direct Matrix Ranking implementation on multipurpose medicinal plants allows one to recognise which are more under stress in the study area and the causes that threaten those plant species. Accordingly, *Delonix regia* (Hook.) Raf. and *Syzygium cumini* (L.) Skeels rank first. It shows that these plants are notable for their values other than their medicinal value, which could be related to the cause of their depletion in the study area. Along these lines, the result calls for urgent complementary conservation action to save the fast-eroding multipurpose medicinal plants in the study area. Yineger *et al*. (52) reported the same pattern of highest exploitation of multipurpose medicinal plants for uses other than their traditional medicinal importance in southeastern Ethiopia.

When there are different medicinal plants recommended for the same ailment, people prefer one over the other. The Preference Ranking Exercise helped identify the most preferred medicinal plants of the *Kanikkars* in the study area for treating dermatological problems. Accordingly, in the current study, *Saraca asoca* (Roxb.) Willd. ranks first as the most preferred medicinal plant, followed by *Myxopyrum smilacifolium* (Wall.) Blume. Further investigation of these medicinal plants' bioactive compounds against dermatological problems may bring hopeful results. According to the informants, the least preferred medicinal plants to treat dermatological problems compared to the other 8 medicinal plants are *Canarium strictum* Roxb. and *Senna alata* (L.) Roxb.

Conclusion

Ethnomedicinal studies are of enormous worth in discovering contemporary drugs from indigenous medicinal plants. Documenting traditional medicinal knowledge is essential for conserving and multiplying indigenous medicinal plants. With the enormous increase in traditional medicines worldwide, protecting traditional medicinal knowledge has become a critical concern. For most indigenous communities/tribal communities, traditional knowledge based on plants is essential to who they are. Its maintenance is crucial since it is an essential part of a community's social and physical environment. Traditional plant-based knowledge can be misappropriated, and the interests of its legitimate custodians can be harmed by attempts to use it for industrial or commercial gain. Strategies for safeguarding and preserving traditional plant-based knowledge must be developed to ensure sustainable growth in the face of these threats. For developing nations, promoting, preserving, and protecting tribal communities' traditional plant-based knowledge and practices are crucial. However, this priceless treasure is in danger in many places on the globe. Documenting and digitising traditional plant-based knowledge in a Traditional Knowledge Digital Library is an effective way to preserve traditional plant-based knowledge and prevent its misappropriation by third parties. This study could open an avenue for pharmacological research or be a reference for future quantitative ethnomedicinal studies.

Abbreviations

- FC% = Frequency of Citation Percentage
- RFC = Relative Frequency of Citation
- FL = Fidelity Level
- FIC = Informant Consensus Factor
- DMR = Direct Matrix Ranking
- PR = Preference Ranking

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Table 1: Population Density of the Study Area

Villages	Gender		Total	Percentage of Male	Percentage of Female
	Male	Female			
Alamparaimalai	68	56	124	54.83	45.16
Andiportrai	43	64	107	40.18	59.81
Ettankundru	35	34	69	50.72	49.27
Kalaparai	40	65	105	38.09	61.90
Killikonam	52	63	115	45.21	54.78
Koduthurai	78	79	157	49.68	50.31
Koruvakuli	68	94	162	41.97	58.02
Manalikaadu	35	46	81	43.20	56.79
Mangamalai	51	43	94	54.25	45.74
Maramalai	32	26	58	55.17	44.82
Minglamadaku	72	63	135	53.33	46.66
Mothiramalai	20	40	60	33.33	66.66
Mudavanportrai	89	105	194	45.87	54.12
Mugaliyadi	9	10	19	47.36	52.63
Nadanamportrai	10	10	20	50	50
Paduparaimalai	22	31	53	41.50	58.49
Pinnamootutheri	31	32	63	49.20	50.79
Ponniyakulam	74	67	141	52.48	47.51
Silangundru	7	7	14	50	50
Thachamalai	84	82	166	50.60	49.39
Thonikuli	18	13	31	58.06	41.93
Thottamalai	70	83	153	45.75	54.24
Valayarthooki	24	29	53	45.28	54.71
Valiyamalai	130	143	273	47.61	52.38
Vettamvilai	12	10	22	54.54	45.45
Vilamalai	75	51	126	59.52	40.47

*A total of 252 (146 male and 106 female) informants in the age group between 30 and 60 were interviewed to collect data.

Table 2: The Complete Inventory of the Ethnomedicinal Plants Used by the *Kanikkars* in the Study Area

S. No.	Botanical Name	Family	Local Name	Habit	Part(s) Used
1	*Abrus precatorius* L.	Fabaceae	*Kunnimuthu*	Herb	Seed
2	*Abrus pulchellus* Thwaites	Fabaceae	*Vellaikunni*	Herb	Leaf
3	*Abutilon indicum* (L.) Sweet	Mal/vaceae	*Thuthi*	Herb	Leaf
4	*Acacia caesia* (L.) Willd.	Mimosaceae	*Velleenjai*	Tree	Stem bark
5	*Acalypha indica* L.	Euphorbiaceae	*Kuppaimaeni*	Herb	Leaf
6	*Achyranthes aspera* L.	Amaranthaceae	*Nayuruvi*	Herb	Leaf and Root
7	*Acmella paniculata* (Wall. ex DC.) R. K. Jansen	Asteraceae	*Kalapachai*	Herb	Flower
8	*Acorus calamus* L.	Araceae	*Vasambu*	Herb	Rhizome
9	*Acrostichum heterophyllum* L.	Polypodiaceae	*Seethaithali*	Herb	Leaf
10	*Aegle marmelos* (L.) Correa	Rutaceae	*Vilvam*	Tree	Stem bark
11	*Aerva lanata* (L.) Juss.	Amaranthaceae	*Sirukanpeelai*	Herb	Whole plant
12	*Ageratina adenophora* (Spreng.) R. M. King & H. Rob.	Asteraceae	*Karikalanpachilai*	Herb	Leaf
13	*Ageratum conyzoides* (L.) L.	Asteraceae	*Mondhan*	Herb	Leaf
14	*Alangium salviifolium* (L. f.) Wangerin.	Alangiaceae	*Azhingil*	Shrub	Leaf
15	*Aloe vera* (L.) Burm. f.	Liliaceae	*Chotthukathalai*	Herb	Leaf
16	*Alpinia calcarata* (Haw.) Roscoe	Zingiberaceae	*Chittarathai*	Herb	Rhizome
17	*Alpinia galanga* (L.) Willd.	Zingiberaceae	*Paererathai*	Shrub	Rhizome
18	*Alstonia scholaris* (L.) R. BR.	Apocynaceae	*Mukkampalai*	Tree	Stem latex
19	*Alternanthera sessilis* (L.) R. Br. ex DC.	Amaranthaceae	*Ponnankannikeerai*	Herb	Whole plant
20	*Amorphophallus paeoniifolius* (Dennst.) Nicolson	Araceae	*Kattukarunai*	Herb	Corm
21	*Ampelocissus indica* (L.) Planch.	Vitaceae	*Chenkeradakodi*	Climber	Root

22	*Anamirta cocculus* (L.) Wight & Arn.	Menispermaceae	*Kakkilikai*	Climber	Fruit
23	*Andrographis paniculata* (Burm. f.) Nees	Acanthaceae	*Nilavaembu*	Herb	Whole plant
24	*Anisomeles indica* (L.) Kuntze	Lamiaceae	*Vathamkolli*	Herb	Whole plant
25	*Anisomeles malabarica* (L.) R. Br. ex Sims	Lamiaceae	*Perunthumbai*	Herb	Leaf
26	*Annona squamosa* L.	Annonaceae	*Mundhiri*	Tree	Fruit
27	*Arenga wightii* Griff.	Palmaceae	*Azhathenku*	Tree	Toddy from inflorescence
28	*Aristolochia bracteolata* Lam.	Aristolochiaceae	*Aduthinnapalai*	Climber	Leaf
29	*Aristolochia indica* L.	Aristolochiaceae	*Keradakodi*	Climber	Root
30	*Aristolochia tagala* Cham.	Aristolochiaceae	*Valiakeradan*	Climber	Root
31	*Asparagus racemosus* Willd.	Liliaceae	*Sathavari*	Climber	Tuberous root
32	*Azadirachta indica* A. Juss.	Meliaceae	*Vaembu*	Tree	Leaf and Stem bark
33	*Bacopa monnieri* (L.) Wettst.	Scrophulariaceae	*Neerpirami*	Herb	Leaf
34	*Barleria prionitis* L.	Acanthaceae	*Kodippachalai*	Shrub	Leaf
35	*Begonia malabarica* Lam.	Begoniaceae	*Narayanasanjeevi*	Herb	Leaf
36	*Biophytum sensitivum* (L.) DC.	Oxalidaceae	*Manivattipachilai*	Herb	Leaf and Whole plant
37	*Blepharis maderaspatensis* (L.) Heyne ex Roth	Acanthaceae	*Muruvuporundhi*	Herb	Leaf
38	*Boerhavia diffusa* L.	Nyctaginaceae	*Mukkurattai*	Herb	Root
39	*Breynia retusa* (Dennst.) Alston	Euphorbiaceae	*Vanampathanpachilai*	Herb	Leaf
40	*Bryophyllum pinnatum* (Lam.) Oken	Crassulaceae	*Sodakuchedi*	Herb	Leaf
41	*Caesalpinia bonduc* (L.) Roxb.	Caesalpiniaceae	*Kalarchikai*	Tree	Seed and Whole plant
42	*Calotropis gigantea* (L.) Dryand.	Asclepiadaceae	*Yerukku*	Shrub	Latex of stem
43	*Canarium strictum* Roxb.	Burseraceae	*Kungilium*	Tree	Resin
44	*Canthium coromandelicum* (Burm. f.) Alston	Rubiaceae	*Karai*	Herb	Leaf
45	*Capsicum annuum* L.	Solanaceae	*Kantharimilahu*	Herb	Fruit
46	*Cardiospermum halicacabum* L.	Sapindaceae	*Ulincha*	Climber	Whole plant
47	*Careya arborea* Roxb.	Lecythidaceae	*Pelumaram*	Tree	Stem bark
48	*Carica papaya* L.	Caricaceae	*Papali*	Tree	Fruit
49	*Caryota urens* L.	Arecaceae	*Ulathi*	Tree	Toddy from inflorescence
50	*Cassia fistula* L.	Caesalpiniaceae	*Sarakonnai*	Tree	Stem bark
51	*Cassytha filiformis* L.	Lauraceae	*Moodillathali*	Climber	Whole plant
52	*Catharanthus roseus* (L.) G. Don	Apocynaceae	*Nithyakalyani*	Herb	Leaf and Root
53	*Centella asiatica* (L.) Urb.	Apiaceae	*Vallarai*	Herb	Leaf
54	*Chamaecrista kleinii* (Wight & Arn.) V. Singh	Caesalpiniaceae	*Mulluillathottazhi*	Climber	Leaf
55	*Cheilocostus speciosus* (J. Koing) C. Specht	Costaceae	*Costum*	Shrub	Rhizome
56	*Chlorophytum heynei* Baker	Liliaceae	*Agathurunji*	Herb	Bulb
57	*Cinnamomum verum* J. Presl	Lauraceae	*Karuvapattai*	Tree	Stem bark
58	*Cissampelos pareira* L.	Menispermaceae	*Malaithangi*	Climber	Whole plant
59	*Cissus quadrangularis* L.	Vitaceae	*Pirandai*	Climber	Whole plant
60	*Cleome gynandra* L.	Cleomaceae	*Thaivazhai*	Herb	Leaf
61	*Cleome viscosa* L.	Cleomaceae	*Naikaduku*	Herb	Leaf
62	*Clerodendrum infortunatum* L.	Verbenaceae	*Peruvilai*	Herb	Leaf
63	*Clitoria ternatea* L.	Fabaceae	*Sankupushpam*	Climber	Root and Whole plant
64	*Cnidoscolus aconitifolius* (Mill.) I. M. Johnst.	Euphorbiaceae	*Pressurekeerai*	Shrub	Leaf
65	*Codariocalyx motorius* (Houtt.) H. Ohashi	Fabaceae	*Thozhukanni*	Herb	Root
66	*Colocasia esculenta* (L.) Schott	Araceae	*Saembu*	Herb	Corm
67	*Commelina benghalensis* L.	Commolinaceae	*Vazhapachai*	Herb	Leaf
68	*Crotalaria retusa* L.	Fabaceae	*Kilukilupai*	Herb	Seed
69	*Croton bonplandianus* Baill.	Euphorbiaceae	*Milakaipoondu*	Herb	Leaf
70	*Croton tiglium* L.	Euphorbiaceae	*Nanjukai*	Shrub	Leaf and Seed

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71	*Curculigo orchioides* Gaertn.	Hypoxidaceae	*Nilapanai*	Herb	Root
72	*Curcuma aromatica* Salisb.	Zingiberaceae	*Kasthurimanjal*	Herb	Rhizome
73	*Cycas circinalis* L.	Cycadaceae	*Chalai*	Tree	Seed
74	*Cyclea peltata* (Lam.) Hook. f. & Thomson	Menispermaceae	*Padathali/Pillaithali*	Climber	Leaf and Root
75	*Cymbopogon citratus* (DC.) Stapf	Poaceae	*Chukkunaripul*	Herb	Leaf
76	*Cynodon dactylon* (L.) Pers.	Poaceae	*Arukampul*	Herb	Leaf
77	*Cyperus rotundus* L.	Cyperaceae	*Koraikizhanku*	Herb	Rhizome
78	*Datura innoxia* Mill.	Solanaceae	*Oomathai*	Herb	Leaf
79	*Datura metal* L.	Solanaceae	*Neelaoomathai*	Herb	Flower and Leaf
80	*Delonix regia* (Hook.) Raf.	Fabaceae	*Vadhanarayini*	Tree	Leaf
81	*Dioscorea oppositifolia* L.	Dioscoreaceae	*Kattukachi*	Climber	Tuber
82	*Dioscorea pentaphylla* L.	Dioscoreaceae	*Nooran*	Climber	Tuber
83	*Diploclisia glaucescens* (Blume) Diels	Menispermaceae	*Erumathirankodi*	Climber	Leaf
84	*Diplocyclos palmatus* (L.) C. Jeffrey	Cucurbitaceae	*Malaipoosani*	Climber	Whole plant
85	*Drynaria quercifolia* (L.) J. Sm	Polypodiaceae	*Attukalparani*	Herb	Rhizome
86	*Eclipta prostrata* (L.) L.	Asteraceae	*Karisalai*	Herb	Leaf
87	*Elephantopus scaber* L.	Asteraceae	*Yanaichavuttadi*	Herb	Root
88	*Elettaria cardamomum* (L.) Maton	Zingiberaceae	*Elakkai*	Herb	Seed
89	*Emilia sonchifolia* (L.) DC. ex DC.	Asteraceae	*Eluthani*	Herb	Leaf
90	*Ensete superbum* (Roxb.) Cheesman	Musaceae	*Kalvazhai*	Herb	Seed
91	*Entada rheedii* Spreng.	Mimosaceae	*Perandai*	Climber	Seed
92	*Erythrina variegata* L.	Fabaceae	*Mullumurukku*	Tree	Leaf
93	*Euphorbia cyathophora* Murray	Euphorbiaceae	*Ilaimelpoothan*	Shrub	Latex of stem
94	*Euphorbia hirta* L.	Euphorbiaceae	*Ammanpacharisi*	Herb	Leaf and Latex of whole plant
95	*Euphorbia nivulia* Buch.-Ham.	Euphorbiaceae	*Ilaikalli*	Shrub	Latex of stem and Stem bark
96	*Euphorbia tithymaloides* L.	Euphorbiaceae	*Neernochi*	Shrub	Latex of stem
97	*Evolvulus alsinoides* (L.) L.	Convolvulaceae	*Vishnukirandhi*	Climber	Whole plant
98	*Ficus benghalensis* L.	Moraceae	*Aal*	Tree	Latex of stem
99	*Ficus racemosa* L.	Moraceae	*Athi*	Tree	Latex of stem
100	*Ficus religiosa* L.	Moraceae	*Arasu*	Tree	Latex of stem
101	*Getonia floribunda* Roxb.	Combretaceae	*Pullani*	Climber	Sap of stem
102	*Gloriosa superba* L.	Liliaceae	*Kalapaikizhanku*	Climber	Tuberous root stock
100	*Glycyrrhiza glabra* L.	Fabaceae	*Athimathuram*	Shrub	Root
104	*Gnetum ula* Brongn.	Gnetaceae	*Odavalli*	Climber	Sap of stem
105	*Gomphrena celosioides* Mart.	Amaranthaceae	*Vellaraki*	Herb	Whole plant
106	*Helicteres isora* L.	Sterculiaceae	*Valampiriidampiri*	Tree	Fruit
107	*Hemidesmus indicus* (L.) R. Br.	Apocynaceae	*Nannari*	Climber	Root
108	*Hemionitis arifolia* (Burm. f.) T. Moore	Pteridaceae	*Kalthamarai/ Nayecheviyan*	Herb	Leaf
109	*Hybanthus enneaspermus* (L.) F. Muell.	Violaceae	*Orithalthamarai*	Herb	Whole plant
110	*Hygrophila auriculata* (Schumach.) Heine	Acanthaceae	*Nirmulli*	Herb	Leaf/Root
111	*Indigofera tinctoria* L.	Fabaceae	*Neelamari*	Herb	Leaf and Root
112	*Ipomoea quamoclit* L.	Convolvulaceae	*Ottupadathi*	Climber	Leaf
113	*Ixora coccinea* L.	Rubiaceae	*Kattuthethi*	Shrub	Flower
114	*Jasminum angustifolium* (L.) Willd.	Oleaceae	*Kattupichi*	Climber	Root
115	*Jatropha curcas* L.	Euphorbiaceae	*Sitramanaku*	Shrub	Leaf
116	*Jatropha glandulifera* Roxb.	Euphorbiaceae	*Kattamanaku*	Shrub	Seed
117	*Justicia adhatoda* L.	Acanthaceae	*Adathoda*	Shrub	Leaf
118	*Kaempferia galanga* L.	Zingiberaceae	*Kachilam*	Herb	Rhizome
119	*Lantana camara* L.	Verbenaceae	*Poochedi*	Shrub	Root
120	*Lawsonia inermis* L.	Lythraceae	*Marudhani*	Tree	Leaf

121	*Leucas aspera* (Willd.) Link	Lamiaceae	*Thumbai*	Herb	Leaf and Flower
122	*Leucas biflora* (Vahl) R. Br. ex Sm.	Lamiaceae	*Perunthumbai*	Climber	Leaf
123	*Limonia acidissima* L.	Rutaceae	*Vila*	Tree	Leaf
124	*Maranta arundinacea* L.	Marantaceae	*Kuva*	Herb	Rhizome
125	*Marsdenia sylvestris* (Retz.) P. I. Forst.	Asclepiadaceae	*Sarkaraikolli*	Climber	Leaf
126	*Merremia tridentata* (L.) Hallier f.	Convolvulaceae	*Ammayarkoonthal*	Climber	Leaf
127	*Mimosa pudica* L.	Mimosaceae	*Thottali*	Herb	Leaf
128	*Mirabilis jalapa* L.	Nyctaginaceae	*Andhimalligai*	Herb	Root
129	*Mollugo cerviana* (L.) Ser.	Molluginaceae	*Parpadaham*	Herb	Root
130	*Morinda pubescens* J. E. Smith	Rubiaceae	*Manjanathi*	Tree	Root
131	*Moringa oleifera* Lam.	Moringaceae	*Murungai*	Tree	Stem bark and Flower
132	*Mucuna pruriens* (L.) DC.	Fabaceae	*Poonakali*	Climber	Seed
133	*Mukia maderaspatana* (L.) M. Roem.	Cucurbitaceae	*Musumusukai*	Climber	Leaf
134	*Murraya koenigii* (L.) Spreng.	Rutaceae	*Curryvaepilai*	Tree	Leaf
135	*Musa paradisiaca* L.	Musaceae	*Monthanvazhai*	Tree	Pseudo aerial stem
136	*Myxopyrum smilacifolium* (Wall.) Blume	Oleaceae	*Sadhuramullai*	Climber	Leaf
137	*Naravelia zeylanica* (L.) DC.	Ranunculaceae	*Mookaripankodi*	Climber	Leaf
138	*Naregamia alata* Wight & Arn.	Rutaceae	*Nilavilathi*	Herb	Root
139	*Ocimum basilicum* L.	Lamiaceae	*Thiruneertupachilai*	Herb	Leaf
140	*Ocimum tenuiflorum* L.	Lamiaceae	*Nallathulasi*	Herb	Leaf
141	*Opuntia dillenii* (Ker Gawl.) Haw.	Cactaceae	*Sappathikalli*	Shrub	Phylloclade
142	*Orthosiphon aristatus* (Blume) Miq.	Lamiaceae	*Poonameesai*	Herb	Leaf
143	*Oxalis corniculata* L.	Oxalidaceae	*Puliyarai*	Herb	Leaf
144	*Pergularia daemia* (Forssk.) Chiov.	Asclepiadaceae	*Vaeliparuthi*	Climber	Leaf
145	*Phoenix loureiroi* Kunth	Arecaceae	*Kattuindhi*	Tree	Shoot apical meristem
146	*Phyla nodiflora* (L.) Greene	Verbenaceae	*Poduthalai*	Herb	Leaf
147	*Phyllanthus emblica* L.	Euphorbiaceae	*Nelli*	Tree	Fruit
148	*Phyllanthus niruri* L.	Euphorbiaceae	*Keezhanelli*	Herb	Whole plant
149	*Physalis angulata* L.	Solanaceae	*Kuttithakkali*	Herb	Leaf
150	*Piper betle* L.	Piperaceae	*Vetrilai*	Climber	Leaf
151	*Piper longum* L.	Piperaceae	*Thippili*	Herb	Seed
152	*Piper mullesua* Buch.- Ham. ex D. Don	Piperaceae	*Kaattunallmilagu*	Climber	Climbing branch
153	*Piper nigrum* L.	Piperaceae	*Milagu*	Climber	Seed
154	*Plectranthus amboinicus* (Lour.) Spreng.	Lamiaceae	*Karpooravalli*	Herb	Leaf
155	*Plumbago indica* L.	Plumbaginaceae	*Chenkoduveli*	Herb	Leaf and Root
156	*Plumbago zeylanica* L.	Plumbaginaceae	*Venkoduveli*	Herb	Leaf and Root
157	*Polygala arvensis* Willd.	Polygalaceae	*Siriyanangai*	Herb	Leaf
158	*Polygala javana* DC.	Polygalaceae	*Periyanangai*	Shrub	Leaf
159	*Pongamia pinnata* (L.) Pierre	Fabaceae	*Pungai*	Tree	Stem bark
160	*Portulaca quadrifida* L.	Portulaceae	*Tharapasalikerai*	Herb	Whole plant
161	*Pothos scandens* L.	Araceae	*Maravalli*	Climber	Root
162	*Psidium guajava* L.	Myrtaceae	*Koiya*	Tree	Leaf
163	*Pterospermum canescens* Roxb.	Sterculiaceae	*Malaalinchal*	Shrub	Seed
164	*Pterospermum rubiginosum* Heyne ex Wight & Arn.	Sterculiaceae	*Ellootti*	Tree	Stem bark
165	*Rauvolfia serpentina* (L.) Benth. ex Kurz	Apocynaceae	*Amalpori/ Sarpakanthi*	Herb	Root
166	*Rhinacanthus nasutus* (L.) Kurz	Acanthaceae	*Nagamalli*	Herb	Leaf and Whole plant
167	*Ricinus communis* L.	Euphorbiaceae	*Amanakku*	Shrub	Leaf
168	*Rivea hypocrateriformis* (Desr.) Choisy	Convolvulaceae	*Mosthakeerai*	Climber	Leaf
169	*Salacia alata* De Willd.	Celastraceae	*Ponkorandai*	Climber	Root
170	*Sansevieria roxburghiana* Schult. & Schult. f.	Agavaceae	*Pampaatipachilai*	Herb	Root

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171	*Santalum album* L.	Santalaceae	*Sandanam*	Tree	Wood
172	*Sapindus laurifolia* Vahl, Symb.	Sapindaceae	*Soapkai*	Tree	Fruit
173	*Saraca asoca* (Roxb.) Willd.	Caesalpiniaceae	*Asoka*	Tree	Flower
174	*Sarcostemma acidum* (Roxb.) Voigt.	Asclepiadaceae	*Kodikalli*	Shrub	Leaf
175	*Sauropus androgynus* (L.) Merr.	Euphorbiaceae	*Ironkeerai*	Herb	Leaf
176	*Schumannianthus virgatus* (Roxb.) Rolfe	Marantaceae	*Kattukoovai*	Herb	Leaf and Rhizome
177	*Scoparia dulcis* L.	Scrophulariaceae	*Sarkaraivaembu*	Herb	Whole plant
178	*Senna alata* (L.) Roxb.	Caesalpiniaceae	*Anathavarai*	Shrub	Leaf
179	*Senna auriculata* (L.) Roxb.	Caesalpiniaceae	*Avarai*	Shrub	Flower
180	*Senna occidentalis* (L.) Link	Caesalpiniaceae	*Pethavarai*	Herb	Leaf
181	*Sida acuta* Burm. f.	Malvaceae	*Kurunthotti*	Herb	Leaf
182	*Sida cordata* (Burm. f.) Borss. Waalk.	Malvaceae	*Neerurinchi*	Herb	Leaf
183	*Sisyrinchium palmifolium* L.	Iridaceae	*Visanarayani*	Herb	Bulb
184	*Smilax zeylanica* L.	Smilaceae	*Karuvulanchikodi*	Climber	Rhizome
185	*Solanum americanum* Mill.	Solanaceae	*Manathakali*	Herb	Whole plant
186	*Solanum diphyllum* L.	Solanaceae	*Aarogyamooligai*	Herb	Seed
187	*Solanum rudepannum* Dunal	Solanaceae	*Sundai*	Shrub	Fruit
188	*Solanum trilobatum* L.	Solanaceae	*Thoodthuvalai*	Herb	Flower, Leaf and Seed
189	*Solanum violaceum* Ortega	Solanaceae	*Pulichundai*	Herb	Fruit
190	*Solanum virginianum* L.	Solanaceae	*Kandankathri*	Shrub	Leaf
191	*Syzygium cumini* (L.) Skeels	Myrtaceae	*Naval*	Tree	Stem bark and Seed
192	*Tabernaemontana alternifolia* L.	Apocynaceae	*Kundalampalai*	Tree	Root
193	*Tabernaemontana divaricata* (L.) R. Br. ex Roem. & Schult.	Apocynaceae	*Nandiyavattai*	Shrub	Flower
194	*Talinum fruticosum* (L.) Juss.	Portulaceae	*Parupukeerai*	Herb	Leaf
195	*Terminalia bellirica* (Gaertn.) Roxb.	Combretaceae	*Thani*	Tree	Fruit
196	*Terminalia chebula* Retz.	Combretaceae	*Kadukai*	Tree	Fruit and Seed
197	*Thespesia lampas* (Cav.) Dalzell & A. Gibson	Malvaceae	*Kattuparuthi*	Shrub	Leaf
198	*Thespesia populnea* (L.) Sol. ex Correa	Malvaceae	*Poovarasu*	Tree	Stem bark
199	*Thottea siliquosa* (Lam.) Ding Hou	Aristolochiaceae	*Kuthilvayana*	Herb	Root
200	*Tinospora cordifolia* (Willd.) Miers	Menispermaceae	*Seendhil*	Climber	Whole plant
201	*Tragia involucrata* L.	Euphorbiaceae	*Soriyanangai*	Herb	Leaf
202	*Tribulus terrestris* L.	Zygophyllaceae	*Nerungi*	Herb	Whole plant
203	*Trichopus zeylanicus* Gaertn.	Dioscoreaceae	*Aarokyapachilai*	Herb	Leaf
204	*Tridax procumbens* (L.) L.	Asteraceae	*Muriampachilai*	Herb	Leaf
205	*Tylophora indica* (Burm. f.) Merr.	Asclepiadaceae	*Nancharuthan*	Climber	Leaf/Root
206	*Vanda tessellata* (Roxb.) Hook. ex G. Don	Orchidaceae	*Vanda*	Herb	Leaf
207	*Vernonia cinerea* (L.) Less	Asteraceae	*Kucharipachilai*	Herb	Leaf
208	*Vetiveria zizanioides* (L.) Nash	Poaceae	*Vettiver*	Herb	Root
209	*Vitex altissima* L. f.	Verbenaceae	*Nochi*	Tree	Leaf
210	*Vitex negundo* L.	Verbenaceae	*Nochi*	Tree	Leaf
211	*Withania somnifera* (L.) Dunal	Solanaceae	*Amukara*	Herb	Root tuber
212	*Wrightia tinctoria* R. Br.	Apocynaceae	*Vetpalai*	Tree	Leaf
213	*Zingiber officinale* Roscoe	Zingiberaceae	*Inji*	Herb	Rhizome
214	*Zingiber zerumbet* (L.) Roscoe ex Sm.	Zingiberaceae	*Kattuinji*	Herb	Rhizome
215	*Zizyphus mexicana* Rose	Rhamnaceae	*Thodali*	Shrub	Leaf

Table 3: Various Ailments in the Study Area Grouped Under Different Ailment Categories with Their Biomedical Terms

Ailment Categories	Biomedical Terms
Aches and Fever	Body Ache, Fever, Flu, Headache, Migraine and Viral Fever
Dental and Oral Problems	Scorbutic Gingivitis, Mouth Ulcer and Toothache

Dermatological Problems	Abcesses, Acne, Boils, Calluses, Carbuncles, Chickenpox, Corn, Contagious Itch, Cracked Heels, Dandruff, Dermatophytosis, Eczema, Freckles, Rashes, Leprosy, Miliaria, Pimples, Scabies, Skin Infections and Warts
Ear and Throat Problems	Earache and Pharyngitis (Strep Throat)
Gastrointestinal Problems	Abdominal Pain, Acidity, Baby Colic, Constipation, Diarrhea, Dysentery, Dyspepsia, Flatulence, Gastric Pain, Heartburn, Hemorrhoids, Inflammatory Bowel Disease, Inflammatory Bowel Syndrome, Intestinal Worm Infection, Peptic Ulcer, Piles and Regurgitation
Gynaecological Problems	Postpartum Back Pain, Dysmenorrhoea, Gonorrhea, Labor Pain, Leucorrhoea and Menorrhagia
Kidney Problems	Cystolithiasis, Hypertension, Nephrolithiasis and Prostatitis
Liver Problems	Jaundice
Metabolic Diseases	Diabetes
Others	Adentitis, Alopecia, Animal and Insect Bites, Body Heat, Bone Fracture, Conjunctivitis, Cuts, Eye Infections, Fatigue, Hydrocele, Low Milk Supply in Breast Feeding and Wounds
Respiratory Problems	Asthma, Blocked Nose, Bronchitis, Cold, Congestion in the Chest and Cough
Musculoskeletal Disorders and Swelling	Arthralgia, Gout, Myalgia, Rheumatism and Ankle injury
Urogenital Problems	Common Urinary Problems, Cystitis, Erectile Dysfunction, Hematuria and Prostatitis

Table 4: Frequency of Citation (FC), Frequency of Citation % (FC %) and Relative Frequency of Citation (RFC) for the Reported Plant Species in the Study Area

S. No.	Botanical Name	FC	FC %	RFC
1	*Abrus precatorius* L.	2	0.79	0.007
2	*Abrus pulchellus* Thwaites	2	0.79	0.007
3	*Abutilon indicum* (L.) Sweet	2	0.79	0.007
4	*Acacia caesia* (L.) Willd.	2	0.79	0.007
5	*Acalypha indica* L.	20	7.93	0.079
6	*Achyranthes aspera* L.	13	5.15	0.051
7	*Acmella paniculata* (Wall. ex DC.) R. K. Jansen	17	6.74	0.067
8	*Acorus calamus* L.	8	3.17	0.031
9	*Acrostichum heterophyllum* L.	3	1.19	0.011
10	*Aegle marmelos* (L.) Correa	7	2.77	0.027
11	*Aerva lanata* (L.) Juss.	16	6.34	0.063
12	*Ageratina adenophora* (Spreng.) R. M. King & H.	2	0.79	0.007
13	*Ageratum conyzoides* (L.) L.	6	2.38	0.023
14	*Alangium salviifolium* (L. f.) Wangerin.	3	1.19	0.011
15	*Aloe vera* (L.) Burm. f.	19	7.54	0.075
16	*Alpinia calcarata* (Haw.) Roscoe	16	6.34	0.063
17	*Alpinia galanga* (L.) Willd.	9	3.57	0.035
18	*Alstonia scholaris* (L.) R. BR.	2	0.79	0.007
19	*Alternanthera sessilis* (L.) R. Br. ex DC.	8	3.17	0.031
20	*Amorphophallus paeoniifolius* (Dennst.) Nicolson	24	9.52	0.095
21	*Ampelocissus indica* (L.) Planch.	5	1.98	0.019
22	*Anamirta cocculus* (L.) Wight & Arn.	3	1.19	0.011
23	*Andrographis paniculata* (Burm. f.) Nees	18	7.14	0.071
24	*Anisomeles indica* (L.) Kuntze	7	2.77	0.027
25	*Anisomeles malabarica* (L.) R. Br. ex Sims	2	0.79	0.007
26	*Annona squamosa* L.	6	2.38	0.023
27	*Arenga wightii* Griff.	20	7.93	0.079
28	*Aristolochia bracteolata* Lam.	5	1.98	0.019
29	*Aristolochia indica* L.	22	8.73	0.087
30	*Aristolochia tagala* Cham.	15	5.95	0.059
31	*Asparagus racemosus* Willd.	19	7.54	0.075
32	*Azadirachta indica* A. Juss.	35	13.88	0.138
33	*Bacopa monnieri* (L.) Wettst.	2	0.79	0.007
34	*Barleria prionitis* L.	3	1.19	0.011
35	*Begonia malabarica* Lam.	2	0.79	0.007
36	*Biophytum sensitivum* (L.) DC.	10	3.96	0.039
37	*Blepharis maderaspatensis* (L.) Heyne ex Roth	12	4.76	0.047
38	*Boerhaavia diffusa* L.	13	5.15	0.051

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39	*Breynia retusa* (Dennst.) Alston	4	1.58	0.015
40	*Bryophyllum pinnatum* (Lam.) Oken	5	1.98	0.019
41	*Caesalpinia bonduc* (L.) Roxb.	11	4.36	0.043
42	*Calotropis gigantea* (L.) Dryand.	5	1.98	0.019
43	*Canarium strictum* Roxb.	10	3.96	0.039
44	*Canthium coromandelicum* (Burm. f.) Alston	11	4.36	0.043
45	*Capsicum annuum* L.	2	0.79	0.007
46	*Cardiospermum halicacabum* L.	36	14.28	0.142
47	*Careya arborea* Roxb.	8	3.17	0.031
48	*Carica papaya* L.	6	2.38	0.023
49	*Caryota urens* L.	14	5.55	0.055
50	*Cassia fistula* L.	4	1.58	0.015
51	*Cassytha filiformis* L.	9	3.57	0.035
52	*Catharanthus roseus* (L.) G. Don	4	1.58	0.015
53	*Centella asiatica* (L.) Urb.	11	4.36	0.043
54	*Chamaecrista kleinii* (Wight & Arn.) V. Singh	15	5.95	0.059
55	*Cheilocostus speciosus* (J. Koing) C. Specht	14	2.38	0.023
56	*Chlorophytum heynei* Baker	3	1.19	0.011
57	*Cinnamomum verum* J. Presl	6	2.38	0.023
58	*Cissampelos pareira* L.	11	4.36	0.043
59	*Cissus quadrangularis* L.	9	3.57	0.035
60	*Cleome gynandra* L.	8	3.17	0.031
61	*Cleome viscosa* L.	6	2.38	0.023
62	*Clerodendrum infortunatum* L.	4	1.58	0.015
63	*Clitoria ternatea* L.	10	3.96	0.039
64	*Cnidoscolus aconitifolius* (Mill.) I. M. Johnst.	19	7.54	0.075
65	*Codariocalyx motorius* (Houtt.) H. Ohashi	10	3.96	0.039
66	*Colocasia esculenta* (L.) Schott	4	1.58	0.015
67	*Commelina benghalensis* L.	6	2.38	0.023
68	*Crotalaria retusa* L.	9	3.57	0.035
69	*Croton bonplandianus* Baill.	8	3.17	0.031
70	*Croton tiglium* L.	4	1.58	0.015
71	*Curculigo orchioides* Gaertn.	8	3.17	0.031
72	*Curcuma aromatica* Salisb.	8	3.17	0.031
73	*Cycas circinalis* L.	9	3.57	0.035
74	*Cyclea peltata* (Lam.) Hook. f. & Thomson	12	4.76	0.047
75	*Cymbopogon citratus* (DC.) Stapf	7	2.77	0.027
76	*Cynodon dactylon* (L.) Pers.	6	2.38	0.023
77	*Cyperus rotundus* L.	4	1.58	0.015
78	*Datura innoxia* Mill.	6	2.38	0.023
79	*Datura metal* L.	22	8.73	0.087
80	*Delonix regia* (Hook.) Raf.	15	5.95	0.059
81	*Dioscorea oppositifolia* L.	4	1.58	0.015
82	*Dioscorea pentaphylla* L.	4	1.58	0.015
83	*Diploclisia glaucescens* (Blume) Diels	8	3.17	0.031
84	*Diplocyclos palmatus* (L.) C. Jeffrey	3	2.38	0.023
85	*Drynaria quercifolia* (L.) J. Sm	10	1.19	0.011
86	*Eclipta prostrata* (L.) L.	16	6.34	0.063
87	*Elephantopus scaber* L.	21	8.33	0.083
88	*Elettaria cardamomum* (L.) Maton	8	3.17	0.031
89	*Emilia sonchifolia* (L.) DC. ex DC.	3	2.38	0.023
90	*Ensete superbum* (Roxb.) Cheesman	4	1.58	0.015
91	*Entada rheedii* Spreng.	8	3.17	0.031
92	*Erythrina variegata* L.	10	1.19	0.011
93	*Euphorbia cyathophora* Murray	6	2.38	0.023
94	*Euphorbia hirta* L.	9	3.57	0.035
95	*Euphorbia nivulia* Buch.-Ham.	6	2.38	0.023
96	*Euphorbia tithymaloides* L.	4	1.58	0.015

97	*Evolvulus alsinoides* (L.) L.	3	2.38	0.023
98	*Ficus benghalensis* L.	6	2.38	0.023
99	*Ficus racemosa* L.	6	2.38	0.023
100	*Ficus religiosa* L.	6	2.38	0.023
101	*Getonia floribunda* Roxb.	10	2.38	0.023
102	*Gloriosa superba* L.	16	6.34	0.063
100	*Glycyrrhiza glabra* L.	12	4.76	0.047
104	*Gnetum ula* Brongn.	12	4.76	0.047
105	*Gomphrena celosioides* Mart.	7	2.77	0.027
106	*Helicteres isora* L.	6	2.38	0.023
107	*Hemidesmus indicus* (L.) R. Br.	35	13.88	0.138
108	*Hemionitis arifolia* (Burm. f.) T. Moore	10	1.19	0.011
109	*Hybanthus enneaspermus* (L.) F. Muell.	11	4.36	0.043
110	*Hygrophila auriculata* (Schumach.) Heine	2	0.79	0.007
111	*Indigofera tinctoria* L.	15	5.95	0.059
112	*Ipomoea quamoclit* L.	5	1.98	0.019
113	*Ixora coccinea* L.	9	3.57	0.035
114	*Jasminum angustifolium* (L.) Willd.	7	2.77	0.027
115	*Jatropha curcas* L.	3	1.19	0.011
116	*Jatropha glandulifera* Roxb.	5	1.98	0.019
117	*Justicia adhatoda* L.	18	7.14	0.071
118	*Kaempferia galanga* L.	15	5.95	0.059
119	*Lantana camara* L.	2	0.79	0.007
120	*Lawsonia inermis* L.	9	3.57	0.035
121	*Leucas aspera* (Willd.) Link	13	5.15	0.051
122	*Leucas biflora* (Vahl) R. Br. ex Sm.	10	3.96	0.039
123	*Limonia acidissima* L.	11	4.36	0.043
124	*Maranta arundinacea* L.	9	3.57	0.035
125	*Marsdenia sylvestris* (Retz.) P. I. Forst.	18	7.14	0.071
126	*Merremia tridentata* (L.) Hallier f.	7	2.77	0.027
127	*Mimosa pudica* L.	2	0.79	0.007
128	*Mirabilis jalapa* L.	2	0.79	0.007
129	*Mollugo cerviana* (L.) Ser.	2	0.79	0.007
130	*Morinda pubescens* J. E. Smith	4	1.58	0.015
131	*Moringa oleifera* Lam.	9	3.57	0.035
132	*Mucuna pruriens* (L.) DC.	9	3.57	0.035
133	*Mukia maderaspatana* (L.) M. Roem.	3	1.19	0.011
134	*Murraya koenigii* (L.) Spreng.	6	2.38	0.023
135	*Musa paradisiaca* L.	7	2.77	0.027
136	*Myxopyrum smilacifolium* (Wall.) Blume	15	5.95	0.059
137	*Naravelia zeylanica* (L.) DC.	2	0.79	0.007
138	*Naregamia alata* Wight & Arn.	5	1.98	0.019
139	*Ocimum basilicum* L.	15	5.95	0.059
140	*Ocimum tenuiflorum* L.	11	4.36	0.043
141	*Opuntia dillenii* (Ker Gawl.) Haw.	3	1.19	0.011
142	*Orthosiphon aristatus* (Blume) Miq.	10	3.96	0.039
143	*Oxalis corniculata* L.	10	3.96	0.039
144	*Pergularia daemia* (Forssk.) Chiov.	15	5.95	0.059
145	*Phoenix loureiroi* Kunth	5	1.98	0.019
146	*Phyla nodiflora* (L.) Greene	8	3.17	0.031
147	*Phyllanthus emblica* L.	8	3.17	0.031
148	*Phyllanthus niruri* L.	22	8.73	0.087
149	*Physalis angulata* L.	8	3.17	0.031
150	*Piper betle* L.	16	6.34	0.063
151	*Piper longum* L.	12	4.76	0.047
152	*Piper mullesua* Buch.- Ham. ex D. Don	11	4.36	0.043
153	*Piper nigrum* L.	28	11.11	0.111

154	*Plectranthus amboinicus* (Lour.) Spreng.	30	11.90	0.119
155	*Plumbago indica* L.	2	0.79	0.007
156	*Plumbago zeylanica* L.	4	1.58	0.015
157	*Polygala arvensis* Willd.	8	3.17	0.031
158	*Polygala javana* DC.	9	3.57	0.035
159	*Pongamia pinnata* (L.) Pierre	3	1.19	0.011
160	*Portulaca quadrifida* L.	9	3.57	0.035
161	*Pothos scandens* L.	4	1.58	0.015
162	*Psidium guajava* L.	8	3.17	0.031
163	*Pterospermum canescens* Roxb.	9	3.57	0.035
164	*Pterospermum rubiginosum* Heyne ex Wight &	23	9.12	0.091
165	*Rauvolfia serpentina* (L.) Benth. ex Kurz	35	13.88	0.138
166	*Rhinacanthus nasutus* (L.) Kurz	33	13.09	0.130
167	*Ricinus communis* L.	2	0.79	0.007
168	*Rivea hypocrateriformis* (Desr.) Choisy	4	1.58	0.015
169	*Salacia alata* De Willd.	2	0.79	0.007
170	*Sansevieria roxburghiana* Schult. & Schult. f.	9	3.57	0.035
171	*Santalum album* L.	7	2.77	0.027
172	*Sapindus laurifolia* Vahl, Symb.	2	0.79	0.007
173	*Saraca asoca* (Roxb.) Willd.	10	3.96	0.039
174	*Sarcostemma acidum* (Roxb.) Voigt.	8	3.17	0.031
175	*Sauropus androgynus* (L.) Merr.	2	0.79	0.007
176	*Schumannianthus virgatus* (Roxb.) Rolfe	8	3.17	0.031
177	*Scoparia dulcis* L.	13	5.15	0.051
178	*Senna alata* (L.) Roxb.	9	3.57	0.035
179	*Senna auriculata* (L.) Roxb.	7	2.77	0.027
180	*Senna occidentalis* (L.) Link	11	4.36	0.043
181	*Sida acuta* Burm. f.	4	1.58	0.015
182	*Sida cordata* (Burm. f.) Borss. Waalk.	5	1.98	0.019
183	*Sisyrinchium palmifolium* L.	12	4.76	0.047
184	*Smilax zeylanica* L.	14	5.55	0.055
185	*Solanum americanum* Mill.	5	1.98	0.019
186	*Solanum diphyllum* L.	5	1.98	0.019
187	*Solanum rudepannum* Dunal	4	1.58	0.015
188	*Solanum trilobatum* L.	5	1.98	0.019
189	*Solanum violaceum* Ortega	4	1.58	0.015
190	*Solanum virginianum* L.	4	1.58	0.015
191	*Syzygium cumini* (L.) Skeels	15	5.95	0.059
192	*Tabernaemontana alternifolia* L.	8	3.17	0.031
193	*Tabernaemontana divaricata* (L.) R. Br. ex Roem.	6	2.38	0.023
194	*Talinum fruticosum* (L.) Juss.	3	1.19	0.011
195	*Terminalia bellirica* (Gaertn.) Roxb.	10	3.96	0.039
196	*Terminalia chebula* Retz.	9	3.57	0.035
197	*Thespesia lampas* (Cav.) Dalzell & A. Gibson	4	1.58	0.015
198	*Thespesia populnea* (L.) Sol. ex Correa	5	1.98	0.019
199	*Thottea siliquosa* (Lam.) Ding Hou	16	6.34	0.063
200	*Tinospora cordifolia* (Willd.) Miers	6	2.38	0.023
201	*Tragia involucrata* L.	6	2.38	0.023
202	*Tribulus terrestris* L.	12	4.76	0.047
203	*Trichopus zeylanicus* Gaertn.	15	5.95	0.059
204	*Tridax procumbens* (L.) L.	19	7.54	0.075
205	*Tylophora indica* (Burm. f.) Merr.	8	3.17	0.031
206	*Vanda tessellata* (Roxb.) Hook. ex G. Don	8	3.17	0.031
207	*Vernonia cinerea* (L.) Less	5	1.98	0.019
208	*Vetiveria zizanioides* (L.) Nash	10	3.96	0.039
209	*Vitex altissima* L. f.	2	0.79	0.007
210	*Vitex negundo* L.	16	6.34	0.063
211	*Withania somnifera* (L.) Dunal	9	3.57	0.035

212	*Wrightia tinctoria* R. Br.	16	6.34	0.063
213	*Zingiber officinale* Roscoe	8	3.17	0.031
214	*Zingiber zerumbet* (L.) Roscoe ex Sm.	7	2.77	0.027
215	*Zizyphus mexicana* Rose	6	2.38	0.023

FC % = Number of Informants Citing the Use of the Species/Total Number of Informants Interviewed (252) x 100

RFC = FC ÷ N (0 < RFC < 1)

Where, **FC** = Number of the Informants Who Cited the Medicinal Use of a Given Plant Species; **N** = Total Number of the Informants Partook in the Interview.

Table 5: Fidelity Level Values of Most Frequently Used Plant Species for Different Ailment Categories

Species	Ailment Category	I_p	I_u	Fidelity Level %
Amorphophallus paeoniifolius	Gastrointestinal Problems	14	24	58.33
Arenga wightii	Gynaecological Problems	12	20	60
Azadirachta indica	Dermatological Problems	20	35	57.14
Boerhavia diffusa	Gynaecological Problems	9	13	69.23
Cardiospermum halicacabum	Gynaecological Problems	21	36	58.33
Cheilocostus speciosus	Metabolic Diseases	8	14	57.14
Cleome gynandra	Ear Problems	5	8	62.50
Clitoria ternatea	Throat Problems	5	10	50
Codariocalyx motorius	Metabolic Diseases	5	10	50
Datura metal	Ear Problems	9	16	56.25
Elephantopus scaber	Aches	12	21	57.14
Euphorbia hirta	Dermatological Problems	6	9	66.66
Gloriosa superba	Gynaecological Problems	9	16	56.25
Hemidesmus indicus	Oral Problems	20	35	57.14
Myxopyrum smilacifolium	Aches	15	23	65.21
Plectranthus amboinicus	Fever	12	30	40
Rauvolfia serpentina	Other Problems (Snake bite)	20	35	57.14
Rhinacanthus nasutus	Other Problems (Snake bite)	18	33	24.24
Syzygium cumini	Metabolic Diseases	9	15	60
Moringa oleifera	Other Problems	6	9	66.66
Tylophora indica	Gastrointestinal Problems	8	16	50

FL % = Ip ÷ Iu × 100

Where,

Ip = Number of the Informants Who Individually Cited the Use of a Given Plant Species to Treat a Specific Ailment

Iu = Total Number of the Informants Who Cited the Same Plant Species to Treat Any Ailment

Table 6: Informant Consensus Factor (FIC) for Different Ailment Categories

Ailment Categories	Plant Species	Number of Taxa (N_t)	Number of Use Reports	FIC
Aches and Fever (14)	*Andrographis paniculata* (18) *Anisomeles malabarica* (2) *Azadirachta indica* (15) *Bacopa monnieri* (2) *Biophytum sensitivum* (5) *Careya arborea* (5) *Cleome gynandra* (3) *Elephantopus scaber* (12) *Myxopyrum smilacifolium* (15) *Ocimum tenuiflorum* (5) *Piper mullesua* (5) *Plectranthus amboinicus* (12) *Scoparia dulcis* (13) *Vitex negundo* (10)	14	122	0.89

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Dental and Oral Problems (10)	*Acmella paniculata* (17) *Cleome viscosa* (6) *Cymbopogon citratus* (7) *Elephantopus scaber* (9) *Hemidesmus indicus* (20) *Oxalis corniculata* (5) *Solanum violaceum* (4) *Solanum virginianum* (4) *Tabernaemontana alternifolia* (8) *Vitex altissima* (2)	10	82	0.88
Dermatological Problems (56)	*Abrus precatorius* (2) *Acacia caesia* (2) *Acalypha indica* (18) *Acrostichum heterophyllum* (3) *Aloe vera* (19) *Alstonia scholaris* (2) *Anamirta cocculus* (3) *Aristolochia bracteolata* (5) *Azadirachta indica* (20) *Begonia malabarica* (2) *Bryophyllum pinnatum* (5) *Calotropis gigantea* (5) *Canarium strictum*(5) *Canthium coromandelicum* (11) *Chamaecrista kleinii* (15) *Cheilocostus speciosus* (6) *Chlorophytum heynei* (3) *Crotalaria retusa* (5) *Croton bonplandianus* (5) *Croton tiglium* (4) *Curcuma aromatica* (8) *Cyclea peltata* (6) *Diploclisia glaucescens* (8) *Eclipta prostrata* (5) *Euphorbia cyathophora* (6) *Euphorbia hirta* (6) *Euphorbia nivulia* (4) *Euphorbia tithymaloides* (4) *Evolvulus alsinoides* (3) *Ficus benghalensis* (6) *Ficus racemosa* (6) *Ficus religiosa* (6) *Indigofera tinctoria* (7) *Jasminum angustifolium* (7) *Jatropha curcas* (3) *Jatropha glandulifera* (2) *Lawsonia inermis* (9) *Leucas biflora* (10) *Limonia acidissima* (11) *Morinda pubescens* (4) *Mukia maderaspatana* (3) *Pergularia daemia* (15) *Phyla nodiflora* (8) *Pongamia pinnata* (3) *Pothos scandens* (4) *Rauvolfia serpentina* (15) *Rhinacanthus nasutus* (15) *Santalum album* (7) *Saraca asoca* (10) *Senna alata* (9) *Senna occidentalis* (6) *Thespesia lampas* (4) *Vetiveria zizanioides* (10) *Withania somnifera* (9) *Wrightia tinctoria* (16) *Zizyphus Mexicana* (6)	56	401	0.86

Ear and Throat Problems (9)	*Cleome gynandra* (5) *Clitoria ternatea* (5) *Datura metal* (9) *Ipomea quamoclit* (5) *Piper betle* (16) *Piper nigrum* (20) *Sarcostemma acidum* (8) *Tragia involucrate* (6) *Vanda tessellata* (8)	9	82	0.90
Gastrointestinal Problems (42)	*Abrus pulchellus* (2) *Abutilon indicum* (2) *Acorus calamus* (8) *Aegle marmelos* (7) *Alpinia calcarata* (7) *Alpinia galanga* (9) *Alternanthera sessilis* (4) *Amorphophallus paeoniifolius* (14) *Annona squamosa* (6) *Boerhavia diffusa* (2) *Carica papaya* (6) *Cassia fistula* (4) *Catharanthus roseus* (4) *Clerodendrum infortunatum* (4) *Colocasia esculenta* (4) *Cyclea peltata* (6) *Dioscorea oppositifolia* (4) *Dioscorea pentaphylla* (4) *Diplocyclos palmatus* (3) *Elettaria cardamomum* (8) *Helicteres isora* (6) *Hemidesmus indicus* (15) *Maranta arundinacea* (6) *Murraya koenigii* (6) *Naregamia alata* (3) *Oxalis corniculata* (5) *Physalis angulata* (8) *Plectranthus amboinicus* (9) *Plumbago zeylanica* (4) *Portulaca quadrifida* (4) *Psidium guajava* (8) *Schumannianthus virgatus* (6) *Smilax zeylanica* (14) *Solanum americanum* (5) *Solanum diphyllum* (5) *Solanum rudepannum* (4) *Talinum fruticosum* (3) *Terminalia bellirica* (10) *Terminalia chebula* (9) *Tylophora indica* (8) *Zingiber officinale* (8) *Zingiber zerumbet* (7)	42	261	0.84

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Gynaecological Problems (18)	*Achyranthes aspera* (13) *Ageratum conyzoides* (6) *Arenga wightii* (12) *Asparagus racemosus* (19) *Boerhavia diffusa* (9) *Cardiospermum halicacabum* (21) *Caryota urens* (14) *Centella asiatica* (11) *Cynodon dactylon* (6) *Erythrina variegata* (10) *Gloriosa superba* (9) *Gomphrena celosioides* (7) *Hemionitis arifolia* (10) *Ixora coccinea* (9) *Senna auriculata* (4) *Senna occidentalis* (3) *Syzygium cumini* (6) *Tinospora cordifolia* (6)	18	175	0.90
Kidney Problems (5)	*Aerva lanata* (16) *Cnidoscolus aconitifolius* (10) *Musa paradisiaca* (7) *Orthosiphon aristatus* (10) *Tribulus terrestris* (8)	5	51	0.92
Liver Problems (12)	*Ampelocissus indica* (5) *Arenga wightii* (8) *Boerhavia diffusa* (2) *Cassytha filiformis* (9) *Drynaria quercifolia* (10) *Eclipta prostrata* (11) *Getonia floribunda* (10) *Gnetum ula* (12) *Lantana camara* (2) *Phyllanthus niruri* (22) *Portulaca quadrifida* (5) *Thespesia populnea* (5)	12	101	0.89
Metabolic Diseases (14)	*Alangium salviifolium* (3) *Biophytum sensitivum* (3) *Cheilocostus speciosus* (8) *Cnidoscolus aconitifolius* (9) *Codariocalyx motorius* (5) *Ensete superbum* (4) *Maranta arundinacea* (3) *Marsdenia sylvestris* (18) *Phoenix loureiroi* (5) *Pterospermum canescens* (9) *Pterospermum rubiginosum* (10) *Salacia alata* (2) *Senna auriculata* (3) *Syzygium cumini* (9)	14	91	0.85

Others (41)	*Ageratina adenophora* (2) *Alternanthera sessilis* (4) *Amorphophallus paeoniifolius* (10) *Aristolochia indica* (22) *Aristolochia tagala* (15) *Blepharis maderaspatensis* (12) *Breynia retusa* (4) *Caesalpinia bonduc* (11) *Clitoria ternatea* (3) *Codariocalyx motorius* (5) *Commelina benghalensis* (6) *Crotalaria retusa* (4) *Croton bonplandianus* (3) *Cyperus rotundus* (4) *Datura innoxia* (6) *Emilia sonchifolia* (3) *Entada rheedii* (8) *Euphorbia hirta* (3) *Euphorbia nivulia* (2) *Indigofera tinctoria* (8) *Kaempferia galanga* (15) *Merremia tridentata* (7) *Mimosa pudica* (2) *Moringa oleifera* (6) *Opuntia dillenii* (3) *Phyllanthus emblica* (8) *Polygala arvensis* (8) *Polygala javana* (9) *Pterospermum rubiginosum* (13) *Rauvolfia serpentina* (20) *Rhinacanthus nasutus* (18) *Sansevieria roxburghiana* (9) *Sauropus androgynus* (2) *Schumannianthus virgatus* (2) *Senna occidentalis* (2) *Sida acuta* (4) *Sisyrinchium palmifolium* (12) *Tabernaemontana divaricata* (6) *Thottea siliquosa* (16) *Trichopus zeylanicus* (15) *Tridax procumbens* (19)	41	331	0.87
Respiratory Problems (21)	*Acalypha indica* (12) *Alpinia calcarata* (9) *Biophytum sensitivum* (2) *Careya arborea* (3) *Cinnamomum verum* (6) *Clitoria ternatea* (2) *Datura metal* (8) *Glycyrrhiza glabra* (12) *Justicia adhatoda* (18) *Leucas aspera* (13) *Naregamia alata* (2) *Ocimum basilicum* (15) *Ocimum tenuiflorum* (6) *Piper longum* (12) *Piper mullesua* (6) *Piper nigrum* (8) *Plectranthus amboinicus* (9) *Sapindus laurifolia* (2) *Solanum trilobatum* (5) *Vernonia cinerea* (5) *Vitex negundo* (6)	21	161	0.87

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Musculoskeletal Disorders and Swelling (16)	*Anisomeles indica* (7) *Canarium strictum* (5) *Capsicum annuum* (2) *Cardiospermum halicacabum* (15) *Cissampelos pareira* (11) *Cissus quadrangularis* (9) *Datura metal* (5) *Delonix regia* (15) *Hygrophila auriculata* (2) *Jatropha glandulifera* (3) *Mirabilis jalapa* (2) *Mollugo cerviana* (2) *Naravelia zeylanica* (2) *Plumbago indica* (2) *Ricinus communis* (2) *Sida cordata* (5)	16	89	0.82
Urogenital Problems (9)	*Barleria prionitis* (3) *Curculigo orchioides* (8) *Cycas circinalis* (9) *Gloriosa superba* (7) *Hybanthus enneaspermus* (11) *Moringa oleifera* (3) *Mucuna pruriens* (9) *Rivea hypocrateriformis* (4) *Tribulus terrestris* (4)	9	58	0.85

FIC = Nur - Nt ÷ Nur - 1

Where,

Nur = Number of Use reports in Each (Ailment) Category

Nt = Number of Taxa (Plant Species) Used

Table 7: Direct Matrix Ranking (DMR) Score of a Group of 10 Key Local Informants for 20 Chosen Multipurpose Medicinal Plants Based on Their Non-medicinal Uses in Five Use categories (Score Key: 5 = Best, 4 = Very Good, 3 = Good, 2 = Good Enough, 1 = Very Least)

Plant Species	Use Categories						
	Agricultural Tools	Construction	Fodder	Food	Fire Wood	Total	Rank
Aegle marmelos	4	5	-	-	4	13	3
Canarium strictum	4	5	-	-	4	13	3
Caryota urens	1	1	-	3	2	7	6
Cycas circinalis	-	-	3	4	3	10	5
Delonix regia	5	5	3	-	4	17	1
Gnetum ula	2	2	-	3	2	9	6
Helicteres isora	1	1	-	-	3	5	8
Limonia acidissima	2	2	3	3	3	13	3
Mucuna pruriens	-	-	2	4	2	8	7
Oxalis corniculata	-	-	4	4	-	8	7
Phyllanthus emblica	-	-	-	5	4	9	6
Pongamia pinnata	5	4	4	-	-	13	3
Psidium guajava	3	2	-	5	4	14	2
Pterospermum canescens	3	2	-	-	2	7	6
Pterospermum rubiginosum	3	2	-	-	2	7	6
Syzygium cumini	5	4	-	4	4	17	1
Terminalia bellirica	3	3	4	-	4	14	2
Terminalia chebula	3	3	-	-	4	10	5
Thespesia populnea	5	5	-	-	4	14	2
Vitex negundo	4	4	-	-	3	11	4

Table 8: Preference Ranking Score of a Group of 10 Key Local Informants for 10 Chosen Medicinal Plants Used to Treat Dermatological Problems Based on Degree of Efficacy (Score Key: 5 = Most Effective/Most Preferred, 4 = More Effective/More Preferred, 3 = Effective/Preferred, 2 = Least Effective/Less Preferred and 1 = Poor/Still Less Preferred)

List of Medicinal Plants	Informants											
	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8	I_9	I_{10}	Total	Rank
Canarium strictum	2	3	1	1	4	2	4	1	2	3	23	8
Canthium coromandelicum	5	1	1	3	2	4	2	2	3	4	27	6
Diploclisia glaucescens	5	5	2	3	4	2	1	4	2	4	32	5
Myxopyrum smilacifolium	4	3	5	4	3	3	1	5	5	2	35	2
Rauvolfia serpentina	4	5	3	2	3	1	5	2	4	5	34	3
Rhinacanthus nasutus	1	4	3	4	2	5	3	4	4	3	33	4
Saraca asoca	5	5	4	2	4	3	5	3	1	5	37	1
Senna alata	1	2	4	3	2	2	3	1	4	2	24	7
Wrightia tinctoria	4	3	5	2	4	4	2	4	5	1	34	3
Zizyphus mexicana	3	1	4	2	3	4	5	2	2	5	32	5

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