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An Ethnobotanical Study of Medicinal Plants Used by Ethnic People in Gingee Hills, Villupuram District, Tamilnadu, India

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ABSTRACT

This study was carried out in five geographically isolated hillocks of the Gingee hills, Villupuram district, Tamil Nadu, India, in a region inhabited by farmers and tribal groups called the *Kuravas* and *Irulas*. The authors found that a total of 163 plant species belonging to 138 genera and 62 families were used by the natives of the study area for the treatment of such ailments as diabetes, rheumatism, jaundice, fever, cold, cough, bone fracture and snake bite. The full results of this study are organized in table form and include the species botanical name, parts used, method of administration, dosage, and the local or vernacular names of the species. This present study analyzed the data collected from the study area by applying the quantitative ethnobotanical devices such as, use-value (UV), factor informant consensus (F*ic*) and fidelity level (Fl%).

Keywords- Hillocks, Gingee hills, Ethnobotanical devices.

INTRODUCTION

Gingee is a heritage town bounded by hills. The town falls under the geographical coordinates of 12°.15'N and 79°.25'E., above the Mean Sea Level of 30.45m. The town comprises of a number of small and large hills with rocky outcrops are found here and there. Gingee Forest Range consists of seven Reserve Forests and one Reserve Plains. They are: Gangavaram Reserve Forest (2681.87 ha), Thandavasamudram Reserve Forest (318.49 ha), Poolanjimalai Reserve Forest (236.94 ha), Pakkamalai (2263.81 ha), Siruvadi (1360.16 ha), Muttakadu (1289.72 ha), Padipallam (1457.28 ha) and Karai Reserve Plains (686.75 ha). All these Reserve Forests are located in the south west direction from Gingee towns. There are lots of isolated hillocks present and they are the offshoot of Eastern Ghats. There are 26 villages situated

around these Reserve Forest areas. The town has hot, dry climate almost throughout the year. The maximum temperature and the minimum temperature of the town are 36 to 30 C respectively. The town receives rain mainly during the months of October, November through the North East monsoon. On an average the town receives 700mm of rainfall.

Currently the Government of India, realizing the value of the country's vast range of medicinal plants, has embarked on a mission of documenting the traditional knowledge about plants and herbs. The World Health Organization has also recognized the importance of traditional medicine and has created strategies, guidelines and standards for botanical medicines. Over the past decade, there has been a resurgence of interest in the investigation of natural materials as a source of potential drugs. This current research endeavor strives to document the indigenous knowledge on the invaluable therapeutic properties. The data presented here were mostly from personal interviews using a standard questionnaire. The detailed information includes medicinal uses as well as dosage and mode of administration. Besides, the data collected from such interviews are also analyzed using qualitative ethnobotanical techniques to ascertain the importance given to each medicinal plant species in the study area.

MATERIALS AND METHODS

Frequent field trips were undertaken in order to survey the inhabitants of our study area (hillocks of Gingee hills of Eastern Ghats, Villupuram District, Tamilnadu) and to make collections of native medicinal plants. Information regarding medicinal plants was obtained in meetings with farmers who practiced indigenous medicine. An attempt was also made to survey the *Kuravas* and *Irulas* who also practiced indigenous medicine. In many cases, it was first necessary to gain a good rapport with these people in order to win over their confidence. The informants together with *Irulas* and *Kuravas* consisted of 74 % of male and 26 % of female. Out of 128 informants, 54 were *Irulas* and *Kuravas* and the remaining were farmers and herbal practitioners. According to the age, most of the informants were about 40-60 years old and the other interviewees were 20-40 years followed by 60-80 years respectively. According to the socio-demographic status, the literacy rate among the local inhabitants is comparatively higher than that of the *Irulas* and *Kuravas*. However, these two tribes are already in the mainstream in many aspects. Women informants in general showed much enthusiasm in the present research. The gathered data was cross-checked for reliability and accuracy by interacting with different groups of the farmers from different habitats to confirm the use, mode of administration and dosage differences of the herbal materials, if any. The collected materials were carefully brought to the laboratory for identification. Herbarium sheets for all the collected plant specimens were prepared (RHT No. from 65205 to 65596) and deposited in the Rapinat Herbarium, Tiruchirappalli (RHT), St. Joseph's College, Tiruchirappalli, Tamil Nadu, India. Plants in Table 1 are arranged alphabetically in order of their botanical names, followed by the family and a brief note on the plant parts used, use of ethnobotanical devices and their chemical properties.

Data analysis

Quantitative techniques had been used in the ethnobotanical studies to compare the uses and the cultural importance of different plant taxa. These analyses are of great scientific interest as they reflect cultural value systems, and they may also aid in the conservation of

biodiversity[1]. The data collected through interview of the informants was analyzed using three different quantitative tools namely *use value* (UV), *factor informant consensus* (F*ic*) and *fidelity level* (Fl %). The *relative importance* (RI) was calculated employing the use-value[2] which is a quantitative measure for the relative importance of species known locally.

Use value (UV)

Ever since the publication of the Use-Value index proposed by Phillips and Gentry[3,4] (modified from Prance[5]), similar approaches had been widely used by many different authors[6-12]. The technique of Use-Value, which is based on the number of uses and the number of people that cite a given plant, has been widely used within the ethnobotanical community to indicate the species that are considered most important by a given population[8,12]. It is one of the most common approaches which had been to associate the Use-Value with questions of conservation, based on the idea that the most important species would suffer the greatest harvesting pressure[6].

$$\mathbf{UV} = \boldsymbol{\Sigma U/n}$$

Where U is the number of use-reports cited by each informant for a given species and n refers to the total number of informants. Use values are high when there are many use-reports for a plant, implying that the plant is important, and approach zero (0) when there are few reports related to its use. The use value, however, does not distinguish whether a plant is used for single or multiple purposes.

Relative importance (RI)

The technique of Relative Importance (RI)[13] was developed primarily for measuring the usefulness of medicinal plants. The RI value is derived from the number of indications (of pharmacological properties) for that species and from the number ailments that it is used to treat. As such, the importance of a species increases if it is used to treat more infirmities. As this technique was conceived, it would be possible to calculate the Relative Importance of a medicinal plant based only on secondary sources (journal publication, for example). Although the Relative Importance technique is much less used than the Use-Value, we chose to examine it here due its usefulness of calculation. Both techniques consider the number of uses attributed to a given taxon in determining its importance[6,2] but they differ in that only the Use-Value technique includes the number of people that cite information for a given taxon (i.e. it is directly based on informant consensus).

Factor informant consensus (Fic)

Phillips[2] in ethnobotanical techniques, pointed out that procedures based on "informant consensus" tend be more objective as they are designed to eliminate investigator bias in attributing relative importance to a given plant. To test homogeneity of knowledge about the medicinal plants, the factor informant consensus (F*ic*) was used. The F*ic* was calculated as:

$$\mathrm{F}ic = \frac{nur - nt}{nur - 1}$$

Where, *nur* refers to the number of the use-reports for a particular use category and *nt* refers to the number of taxa used for a particular use category by all informants. F*ic* values are low (near 0) if plants are chosen randomly or if there is no exchange of information about their use among informants and approach one (1) when there is a well-defined selection criterion in the community and/or if information is exchanged between informants**.**

Fidelity level (Fl %)

Because many plant species may be used in the same category, it is interesting to determine the most preferred species used in the treatment of particular ailment which can

be done with the fidelity level (Fl %)[14]. The fidelity level is calculated as:

$$\text{Fl}\ (\%) = \frac{Np}{N} X\ 100$$

Where Np is the number of use-reports cited for a given species for a particular ailment and N is the total number of use-reports cited for any given species. High Fl value (near 100%) is obtained for plants which almost all use reports refer to the same way of using it, whereas low Fl value is obtained for plants that are used for many different purposes.

RESULTS

The local population of Gingee hills had a good knowledge of ethnomedicinal plants as they were using 163 plants from 62 families to cure 39 ailments of humans and animals. Older informants were more knowledgeable on ethnomedicinal plant species than younger informants. The knowledge on indigenous medicinal plant use was declining among the younger generation which may be attributed to access to higher education in the community and the lack of interest among the younger generation to inherit and use ethnomedicinal knowledge. *Irulas* and *Kuravas* in this region too had considerably sound knowledge of ethnomedicinal plants. Day-by-day their knowledge of medicinal plants and uses also found declining which may be attributed to their inward integration with other rural people. (See table 1.)

DISCUSSION

In this study, a total of 163 species belonging to 138 genera and 62 families are documented (Table1). Out of these, 154 species (94 %) were dicots and 7 species (4%) were monocots and 2 species (1%) were Pteridophytes. Majority of the taxa were growing in wild (141 species), 13 species were purely cultivated and 10 species existed in both wild and cultivated forms. In terms of number of species used, Rubiaceae (12) appeared to be the most dominant family followed by Euphorbiaceae (11), Papilionoideae (9), Asclepiadaceae (8), Apocynaceae, Verbenaceae and Acanthaceae have 6 each. The next is Rutaceae, Ebenaceae and Sterculiaceae have 5 each followed by Caesalpiniaceae and Cucurbitaceae have 4 each. Genus *Diospyros* has 4 species and while *Strychnos* and *Acalypha* have 3 species. The plant parts used for medicinal preparation were leaf, stem, stem bark, sap, flower, seed, fruit and underground parts. There were instances of whole plant being used also. The most frequently used plant parts were leaves from 99 species (60%), root from 43 species (26%), fruits and seeds from 32 species (20%), stem and stem bark from 24 species (15%) and flowers from 10 species (6%).

Qualitative techniques such as Factor Informant Consensus (F*ic*), Use-Value (UV), Relative Importance (RI) and Fidelity Level (Fl) have been employed to analyze the usefulness of the ethno species and also to eliminate any bias in attributing relative importance to a given plant. On the basis of use-value (UV), the most important medicinal species of the present study area were: *Nerium oleander* (UV=60), *Ormocarpum sennoides* (UV=60), *Zehneria scabra* (UV=57), *Limonia acidissima* (UV=55), *Strychnos minor* (UV=55), *Acalypha indica* (UV=52), *Cleistanthus collinus* (UV=50), *Sphaeranthus indicus* (UV=49), *Ventilago madraspatana* (UV=49), *Ocimum canum* (UV=47), *Achyranthes aspera* (UV=45), *Dioscorea pentaphylla* (UV=42), *Ixora finlaysoniana* (UV=42), *Radermachera xylocarpa* (UV=42), *Cocculus hirsutus* (UV=39), *Enicostemma hyssopifolium* (UV=36) and *Dalbergia lanceolaria* (UV=33).

On the basis of factor informant consensus (F*ic*), as many as 39 ailments were observed to be cured by 163 plant species in the study area. These ailments

were classified into categories according to Heinrich[15]. The maximum species were used to cure various dermal diseases (22 species) followed by rheumatism (22 species), gastric troubles (17 species), antidote for poisonous bites (15 species), cuts and wounds (14 species), gynecological problems (13 species), joint pains (12 species), veterinary purposes (12 species), dysentery (12 species), boils (11 species) and cough and cold (11 species). Fidelity level (Fl) values in this study varied from 0.61 % to 60.12%. For the better accuracy, species mentioned by less than five informants were not considered in the final analysis. Some of them include: *Ormocarpum sennoides* (Fl= 60%), *Nerium oleander* (60%), *Zehneria scabra* (55%), *Strychnos roxburghiana* (55%), *Limonia acidissima* (55%), *Acalypha indica* (52%), *Cleistanthus collinus* (52%), *Sphaeranthus indicus* (49%), *Ventilago madraspatana* (49%), *Ocimum canum* (47%), *Strychnos nux-vomica* (45%), *Achyranthes aspera* (45%), *Jatropha glandulifera* (44%), *Bauhinia tomentosa* (42%), *Dioscorea pentaphylla* (42%), *Ixora finlaysoniana* (42%), *Radermachera xylocarpa* (42%) and *Tarenna asiatica* (42%).

In an ethnomedicinal plant, various parts namely root, stem, leaves, fruit, flower, bark, seed etc. are used in one way or other. Often the same plant is used for several preparations by using different plant parts. It is inferred from the interviews that not all parts contain the same quality of ingredient that is beneficial for the preparation of the medicine. Discovering that part which has high content of component is very vital for preparation and administration of medicine to cure any disease and for its efficacy. The underground parts (root, root bark, rhizome, bulb, tubers) of about 20 species are used for treating various diseases. This is a factor to be considered since distribution of the above species in the wild would become vulnerable and threatened in the course of time. Though the inhabitants of Gingee hills are aware of the effects of destructive collection, yet they need to be motivated regarding sustainable use of the above species.

In the present study, it is observed that from plants belonging to 62 families and 163 species, 16 medicinally important plants are used by *Irulas* and *Kuravas* to cure various diseases such as respiratory, urinary and alimentary diseases followed by scabies and bone fracture. Over all, the knowledge of these tribal people in ethnomedicine is much less as compared to the local inhabitants. However, ailments for respiratory, urinary, alimentary, dermal and bone fracture remain the most important information shared by them which are continued to be quiet relevant to the present day situation. On the basis of use-value (UV), the most important medicinal species used by *Irulas* and *Kuravas* in the study site were *Andrographis echioides*, *Cassia auriculata, Phyllanthus reticulatus, Sapindus emarginatus, Ormocarpum sennoides* and *Zehneria scabra* are used for such ailments. Among the list of diseases, the herbalists and local inhabitants use medicinal plants particularly those pertaining to dermal disorder or skin diseases, Rheumatic ailments are very significant since 44 species in total are used against these ailments followed by gastric disorder or stomach ailments (17), arthritis (13) and gynecological problems (13) in menstruating women. About 12 species are documented for the veterinary purposes.

From this account it is clear that the local inhabitants and *Kuravas* and *Irulas* of Gingee hills possess the ability to discern the character of various plants and their beneficial properties. It is interesting to note that such a way of life, particularly with respect to health care practices, has hardly undergone any change even to the present day. Similar ethnobotanical uses of the species have been reported in some other parts of India (see other findings in Table 1).

Apart from the current findings, ethnobotanical surveys conducted so far in Gingee hills were sought for the accuracy of the studies. Muralidharan and Narasimhan[16] reported the medicinal plants of Gingee hills such as *Achyranthes aspera* (leaf) and *Phyla nodiflora* (leaf) used for piles. They also listed the following plants used for dysentery such as *Cadaba fruticosa* (leaf), *Cardiospermum halicacabum* (leaf), *Cassia tora* (leaf), *Diospyros montana* (bark), *Ficus benghalensis* (bark), *Morinda pubescens* (leaf) *Phyllanthus reticulatus* (leaf, *Toddalia asiatica* (leaf); *Scutia myrtina* (leaf) and *Pergularia daemia* (root) for stomach-ache and *Ocimum tenuiflorum* (leaf) for indigestion.

Sankaranarayanan[17] reported the medicinal plants of Villupuram district such as *Atalantia monophylla* (leaf) for rheumatoid pain, joint pain and glandular swelling, *Achyranthes aspera* (shoot and leaf) for dog bite and other poisonous bites, and leaf for tuberculosis, *Barleria prionitis* (leaf, bark and root), leaf for cataract and fever, bark for cough and leaf for toothache, boils and glandular swellings, *Cissampelos pareira* (root) for wound healing, antidote, fistula, skin disorders, indigestion, stomach pain, diarrhea and dysentery, *Cadaba fruticosa* (leaf) for general weakness and energetic during dysentery and diarrohea, *Enicostemma littorale* (leaf) for rheumatism, abdominal ulcers, hernia, itches, swellings and insect bites, *Helicteres isora* (root, fruit) root for cuts and wounds, fruit for ear diseases, *Ixora coccinea* (flowers) for dysentery, leucorrhoea, bronchitis and scabies, *Indigofera aspalathoides* (root) for chronic eczema, acute tumour, psoriasis, toothache and abscess, *Phyllanthus niruri* (leaf) for digestive, simulative, carminative and aphrodisiac, *Trichodesma indicum* (whole plant) for emollient and diuretic, root for dysentery, cough, cold, fever and joint pain. Jagatheeswari[18] reported medicinal plants of Villupuram such as *Acalypha indica* (leaf) for itching, skin disorders, *Achyranthus aspera* (leaf) for joint pain, toothache, *Cassia auriculata* (leaf) for muscle pain, body pain and gastric problems, *Calotropis gigantea* (leaf, root) for cattle, root for leprosy and leucoderma, *Erythrina indica* (leaf) for cold and cough, *Eucalyptus globulus* (leaf) for cough and cold, *Figus religiosa* (leaf) for body pain, *Morinda oleifera* (whole plant) for rheumatism, body strengthening, and sexual hormones, *Nerium oleander* (stem bark) for ear pain, *Ocimum sanctum* (leaf) for cough, dizziness, headache and *Phyllanthus amarus* (leaf) for jaundice.

Some of the medicinal properties of the plant species mentioned in the present work have already been scientifically validated on the basis of pharmacological assays. Reddy[19] showed the use of *Acalypha ciliata* (leaf) for wound healing; Gopalakrishnan[20] showed experimentally that the leaf of *Acalypha fruiticosa* for curing wounds and skin diseases; Gobalakrishnan[21] showed the use of *Allmania nodiflora* (leaf) for cold; *Anisomeles malabarica* (leaf) for fever[22]; *Anisomeles indica* (leaf, root) for swellings[23]; *Atalantia racemosa* (leaf, fruit) for rheumatic pain[17]; *Bryonia laciniosa* (leaf) for inflammations[23]; *Bulbophyllum kaitense* (root) for anticancer[24]; *Cadaba fruticosa* (leaf) for rheumatic related problems[25]; *Cymbidium aloifolium* (whole plant) for bone settings[26]; *Canthium dicoccum* (root bark) for joint pains[27]; *Caralluma umbellata* (stem) for stomach disorders[28]; *Carissa carandas* (root, stem, fruit) for hepatoprotection[29]; *Cleistanthus phlomoides* (stem, leaf) as poison[30]. Khare[31] mentioned the use of *Dendrophthoe falcata* (leaf) for menstrual disorder; *Diospyros montana* (bark, leaf, fruit) for skin diseases[32,33]; *Diospyros peregrine* (fruit, leaf) for tumour[31].

CONCLUSION

It is evident from this study that the medicinal plants still play a vital role in the primary healthcare of indigenous people in the study area. The information we gathered from the inhabitants of Gingee hills may be useful to other researchers in the fields of ethnobotany, taxonomy and pharmacology. Hopefully, this study offers a model for studying the relationship between plants and people within the contexts of a traditional medical system. The purpose of standardizing traditional remedies is obviously to ensure therapeutical efficacy; whereas the value of ethnomedicinal information in modern pharmacology lies in the development of new drugs. Lastly, this study has generated a broad spectrum of information concerning the use of medicinal plants by indigenous tribal groups.

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Table 1. Ethnomedicinal Plant Species used for curing different ailments along with their use value and chemical properties and other findings

Botanical name	Family	WC	Part used	Uses	#	Inf	UV	IR	RHT NO	Phytocompounds
Acacia eburnea (L.f.) Willd.	Mimosoideae	w	leaf	Dysentery (6)	1	6	3.6	0.3	RHT 65242	Alkaloids, nicotine
Acalypha ciliata Forssk.	Euphorbiaceae	w	leaf	Scabies (28)	1	28	17	0.07	RHT 65226	Kaempflerol, acalyphamide
Acalypha fruticosa Forssk.	Euphorbiaceae	w	leaf	Removal of pus from penis (3)	1	3	1.8	0.6	RHT 65354	Kaempflerol, acalyphamide
Acalypha indica L	Euphorbiaceae	w	leaf	Stomach-ache (46), cold (35), scorpion bite (4)	3	85	52	0.04	RHT 65209	Kaempflerol, acalyphamide
Achyranthes aspera L.	Amaranthaceae	w	Leaf, root	Worm infection (5), scorpion bite (20), cold (34), boils (15)	4	74	45	0.06	RHT 65213	Ecdysterone, oleanolic acid
Actiniopteris radiata (SW.) Link	Pteridaceae	w	laminae	Abortificent (3)	1	3	1.8	0.6	RHT 65245	Rutin
Albizia lebbeck (L.) Benth.	Mimosaceae	w	w. plant	Constipation (2), asthma, cough (15), night blindness (1)	4	18	11	0.27	RHT 65293	Flavonoids, oleanolic acid, albigenic acid
Albizia odoratissima (L.f.) Benth.	Mimosoideae	w	Root	Body itching (14)	1	14	8.5	0.14	RHT 65298	Flavonoids, oleanolic acid, albigenic acid
Allmania nodiflora (L.) R.Br. EX Wight	Amaranthaceae	w	Leaf	Common cold (8)	1	8	4.9	0.25	RHT 65590	-
Ammannia baccifera L.	Lythraceace	w	Leaf	Rheumatism, joint pain (12)	2	12	7.3	0.04	RHT 65570	Lawsone
Andrographis echioides Nees.	Acanthaceae	w	Leaf	Snake bite (2)	1	2	1.2	1	RHT 65251	Flavones, echiodinin, echioidin
Anisomeles malabarica R.Br. EX Sims	Labiateae	w	Leaf	Gastric (6), scorpion bite (12), snake bite (8), fever (1)	4	27	17	0.18	RHT 65215	Beta-sitosterol. Letulinic acid, ovatodiolide
Anisomeles indica (L.) O. Kuntze	Labiateae	w	Leaf, root	Antidote (12), swellings (3), fever (5), veterinary (1)	4	21	12	0.23	RHT 65329	Beta-sitosterol. Letulinic acid, ovatodiolide

Atalantia racemosa Wight & Arn.	Rutaceae	w	Leaf, fruit	Rheumatism, paralysis (3), fodder (8)	3	11	6.7	0.19	RTH 65292	Alkaloids, atalaphylline
Barleria prionitis L.	Acanthaceae	w	Leaf	Wounds (48)	1	48	29	0.04	RHT 65345	Iridoid, barlerin
Bauhinia racemosa Lam.	Caesalpiniaceae	c	w.plant	Skin disease (3), diarrhea (7), bleeding (2)	3	12	7.3	0.33	RHT 65290	Octacosane, beta-amyrin, beta-sitosterol
Bauhinia tomentosa L.	Caesalpiniaceae	c	Leaf	Appetizer (70)	1	70	43	0.02	RHT 65253	Octacosane, beta-amyrin, beta-sitosterol
Benkara malabarica (Lam.) Tirv.	Rubiaceae	w	Whole plant	Diarrhea (9), dysentery (20), boils (6)	3	35	21	0.11	RHT 65241	Scopoletin
Bergia capensis L.	Elantinaceae	w	Leaf	Intestinal worms (2)	1	2	1.2	1	RHT 65344	Elatine, procyanidin,
Bryonia laciniosa Linn	Cucurbitaceae	w	Leaf	Sneezing (4)	1	4	2.4	0.5	RHT 65368	Bryonin
Bulbophyllum kaitense Reichon b.f.	Orchidaceae	w	Root	Anticancer (7)	1	7	4.2	0.28	RHT 65240	n-Hexadecanoic acid, a-bisabolol
Cadaba fruticosa (L.) Druce	Capparaceae	w	Leaf	Bone settings (15), veterinary(3)	2	18	11	0.16	RHT 65250	Alkaloids, L-stachydrine, quercetin, isoorientin
Calotropis procera Br.	Asclepiadaceae	w	Leaf, flower	Snake bite (20)	1	20	12	0.1	RHT 65271	Cardenolide, proceragenin, beta-amyrin
Cymbidium aloifolium SW.	Orchidaceae	w	Whole plant	Bone settings (7), scabies (5)	2	12	7.3	0.25	RHT 65244	Dihydrophenanthrene, phenanthraquinone
Canavalia virosa (Roxb.) Wight & Arn.	Papilionoideae	w	seed	Snake bite (32)	1	32	19	0.16	RHT 65573	Proteins, amino acids
Cansjera rheedi J.F. Gmelin	Opiliaceae	w	Whole plant	Spasmodic (2)	1	2	1.2	1	RHT 65317	Quercetin 3-0-beta rutinoside
Canthium dicoccum (Gaertn.) Teijsm. & Binn. Var. dicoccum	Rubiaceae	w	Root bark	Dysentery (7)	1	7	4.2	0.28	RHT 65577	Mannitol, alkaloids
Canthium parviflorum Lam	Rubiaceae	w	Leaf	Rheumatism (11), body pains (8)	2	13	7.9	0.23	RHT 65278	Mannitol, alkaloids
Caralluma attenuata Wight.	Asclepiadaceae	c	Leaf	Diabetes (9)	1	9	5.5	0.22	RHT 65225	n-hexadecanoic acid, oleic acid
Caralluma umbellata	Asclepiadaceae	c	Stem	Stomach Disorders (22),	2	27	16	0.11	RHT	3ß-hydroxy-pregn-5-ene

Haw.Syn.Pl.				stomach pain (5)					65285	
Cardiospermum halicacabum L. Var. microcarpum (Kunth) Blume	Sapindaceae	w	Leaf	Joint pains (3), dandruff (2), darkening of hair (1)	3	6	3.6	0.66	RHT 65255	Beta-sitosterol, D-glucoside, oxalic acid
Carissa carandas L. Mant.	Apocynaceae	w	Root	Anticancer (3), tooth-ache (5)	2	8	4.9	0.37	RHT 65582	Ascorbic acid
Carissa spinarum L.	Apocynaceae	c	Fruit	Appetizer (6)	1	6	3.6	0.33	RHT 65581	Ascorbic acid
Senna auriculata (L.) Roxb.	Caesalpiniaceae	w	flowers	Urinary disorders (9)	1	9	5.5	0.06	RHT 65382	Acetylcholine, aloe-emodin
Cassia fistula L.	Caesalpiniaceae	w	Stem, leaf	Chest pain (2), fever (10), skin diseases (20)	2	32	19	0.12	RHT 65234	Resin, sennoides A
Catungaregam torulosa (Dennst.) Tirv. (Randia brandisii Gamble)	Rubiaceae	w	Fruit	Suicidal (2)	1	2	1.2	1	RHT 65314	Delta-tocopherol
Coccinia grandis (L.) Voigt.	Cucurbitaceae	c	Stem	Veterinary (2)	1	2	1.2	1	RHT 65205	Polyprenol, ß-carotene
Ceratopteris thalictroides (l.) Brongn	Pteridaceae	w	Leaf	Dysentery (7)	1	7	4.2	0.28	RHT 65233	Callose, lipid
Chloroxylon swietenia DC.	Rutaceae	c	Leaf	Good health (10)	1	10	6.1	0.2	RHT 65551	A-pinene, limonene, geijerene, germacrene
Cissampelos pareira L.	Menispermaceae	w	Leaf	Tooth-ache (4), inflammation (2), mosquito repellent (3)	3	9	5.5	0.44	RHT 65227	Tritepene, flavonoids, glycosides
Cissus vitiginea L.	Vitaceae	w	Root	Snake bite (12), chest pain (2)	2	14	8.5	0.33	RHT 65307	Tannins, proteins, steroids
Clausena dentata (Willd.) Roemer C. willdenowii Wight & Arn	Rutaceae	w	Leaf, bark	Veterinary (3)	1	3	1.8	0.66	RHT 65596	Benzene, 1,2,3-trimethoxy 5 propenyl
Cleistanthus collinus (Roxb.) Benth. & Hook.	Euphorbiaceae	w	Stem, leaf	Antiseptic (2), veterinary (1), suicidal (80)	3	83	50	0.04	RHT 65565	4-0-methylmannose, thirophene, myo-inositol
Clerodendrum phlomoides L.F	Verbenaceae	w	Leaf, root	Lactation (1), leucorrhoea, diarrhea (2), measles (1)	4	4	2.4	1.25	RHT 65339	Colebrin, iridiod diglucoside, lucumin
Clitoria ternatea L.	Papilionoideae	c	Root, seed	Diuretic, purgative (2)	2	2	1.2	1.5	RHT 65333	Nucleoprotein

Coccinia grandis (L.) Voigt.	Cucurbitaceae	w	Fruit	Cooling effect (9)	1	9	5.5	0.22	RHT 65311	Lupeol, cucurbitacin B
Cocculus hirsutus (L.) Diels	Menispermaceae	w	Leaf, root	Rheumatism (56), piles (2), semen production (6)	3	64	39	0.06	RHT 65222	Cyclopeptide, coclaurine, ginnol, magnoflorine
Cochlospermum religiosum (L.) Alston	Cochlospermaceae	w	Leaf	Cough (25)	1	25	15	0.28	RHT 65295	Tannins, polyphenols, crystals, starch
Coldenia procumbens L.	Boraginaceae	w	Leaf	Veterinary (8)	1	8	4.9	0.28	RHT 65272	Alkaloids, proteins
Combretum ovlifolium Roxb.	Combretaceae	w	Bark, root	Insect bite (7)	1	7	4.2	0.28	RHT 65299	Apigenin, genkwanin, rhamnocitrin
Crataeva adansonii DC. ssp. odora (Buch-Ham) M. Jacobs	Capparaceae	c	Stem	Joint pains, body pains (36)	2	36	22	0.05	RHT 65210	Lupeol
Crataeva magna (Lour.) DC.	Capparaceae	w	Leaf	Piles (2)	1	2	1.2	1	RHT 65388	Ceryl alcohol, lupeol
Crotalaria verrucosa L.	Papilionoideae	w	Leaf,root	Rheumatism, body pains (20)	2	20	12	0.15	RHT 65287	Crotaverrine, crotalaburnine
Cryptolepis buchanani Roemer & Schultes	Asclepiadaceae	w	Root, stem,leaf	Bone fracture (3)	1	3	1.8	0.66	RHT 65558	Sarverogenin, cryptosin, buchanin
Cyperus pangorei Rottb.	Cyperaceae	w	Stem, rhizome	Urinary infection (3), beautifying hair (2)	2	5	3.0	0.6	RHT 65297	Lignin
Cyphostemma setosum (Roxb.) Alston	Vitaceae	w	Tuber	Veterinary (6)	1	6	3.6	0.33	RHT 65218	Alkaloids, tannins
Dalbergia lanceolaria L.F.	Papilionoideae	w	Leaf,	Skin diseases (35), rheumatism (20)	2	55	33	0.05	RHT 65545	Lanceolarin, isoflavone
Dendrophthoe falcata (L.f.) Ettingsh. (Variantz)	Loranthaceae	w	Leaf	Abortificent (20), arrests white discharge in women (6)	2	26	15	0.11	RHT 65571	Gallic, ellagic, chebulinic acid, narcotic
Dioscorea pentaphylla L.	Dioscoreaceae	w	Tuber	Immunity, good health (70)	2	70	42	0.04	RHT 65219	Carbohydrates, albuminoids
Dioscorea oppositifolia L.	Dioscoreaceae	w	Tuber, tuber	Wounds, body ache (9), painful urination (4)	3	13	7.9	0.30	RHT 65216	Carbohydrates, albuminoids
Diospyros montana Roxb.	Ebenaceae	w	Bark,	Fever (3), delirium, sole	3	5	3.0	0.8	RHT	Hentriacontane, ursolic

			leaf, fruit	cracks (2)					65315	acid, diospyrin
Diospyros ferrea (Willd.) Bakh. Var. *buxifolia* (Rottb.) Bark.	Ebenaceae	w	Fruit, leaf	Famine food (1), snake bite (30)	2	31	19	0.09	RHT 65236	Quinines, napthaquinones, lupine triterpenes
Diospyros melanoxylon Roxb.	Ebenaceae	w	flower	Scabies (45)	1	45	27	0.04	RHT 65305	steroids, tannins, flavonoids,
Diospyros peregrina Sensu Gurke.	Ebenaceae	w	Fruit, leaf	Sore throat (6), tumor (22)	2	28	17	0.10	RHT 65367	Beta-sitosterol, betulin, oleanolic acid
Dipteracanthus patulus (Jacq.) Nees	Acanthaceae	w	Leaf	Scabies, wounds (50)	2	50	30	0.06	RHT 65563	Steroids, tannins
Elephantopus scaber L.	Compositeae	w	Leaf, root, fruit	Abortificient (30), menstrual disorders (3), tooth-ache (3), diarrhea (2), veterinary (1)	5	39	23	0.15	RHT 65220	Germacranolide dilactones, molephantin, molephantinin, lupeol
Elytraria acaulis (L.f.) Lindau	Acanthaceae	w	Leaf, root	Fever (6), tumor (4), anscesseses (1)	3	11	6.7	0.36	RHT 65592	Alkaloids, flavonoids, steroids, tannins
Enicostemma axillare (Lam.) A. Raynal ssp. axillare	Gentianaceae	w	Whole plant	Snake bite (2), rheumatism (1), semen discharge(6),insect bite(1)	4	10	6.1	0.5	RHT 65221	Apigenin, genkwanin, isovitexin, swertisin,
Enicostemma hyssopifolium L.	Gentinaceae	w	W. plant	Snake bite (60)	1	60	36	0.03	RHT 65555	Apigenin, genkwanin
Erythrina variegata L.	Perkeriaceae	w	Leaf	Wheezing, asthma (25)	2	25	15	0.5	RHT 65386	Saponins, flavonoids,
Erythroxylum monogynum Roxb.	Erythroxylaceae	w	Bark	Stomachic (6), dyspepsia, fever (3)	3	9	5.5	0.44	RHT 65547	Dipterpenes, monogynol
Eucalyptus globulus Labill	Olacaceae	c	Leaf	Mucus in chest, cough (5)	3	5	3.0	0.8	RHT 65380	Euglobals, phloroglucin
Euphorbia heyreana Sprengel ssp. heyreana	Euphorbiaceae	w	Leaf	Warts (2)	1	2	1.2	1	RHT 65340	Triterpenoids, euphol, euphorbol hexacosonate
Ficus tinctoria Forst. F. ssp.*parasitica* (Willd.) Corner	Moraceae	w	Unripe fruits	Constipation (3)	1	3	1.8	0.66	RHT 65574	-
Garuga pinnata Roxb.	Burseraceae	w	Leaf	Good health (20)	1	20	12	0.1	RHT 65289	Sterols, sitosterols, stigmasterol

Gloriosa superba L.	Liliaceae	w	W. plant	Insecticides (9), human suicidal (20)	2	29	17	0.15	RHT 65249	Colchicines, gloriosine
Glyptopentalum lawsonii Gamble	Celastraceae	w	Leaf	Insect bite (5)	1	5	3.0	0.4	RHT 65303	-
Gmelina arborea Roxb.	Verbenaceae	w	Leaf, bark	Anticancer (2)	1	2	1.2	1	RHT 65214	Lignans, arborone
Gomphrena decumbens L.	Amaranthaceae	w	W. plant	Veterinary (5)	1	5	5.0	0.4	RHT 65308	Betacyanins, steroids
Gossypium barbadense L.	Malvaceae	w	Leaf	Menstruation (2)	1	2	1.2	1	RHT 65336	Gossypol
Grewia flavescens A.L. Juss.	Tiliaceae	w	Flowers	Deity worship (7)	1	7	4.2	0.28	RHT 65559	Phytol, lupeol
Grewia tiliaefolia M.Vahl	Tiliaceae	w	W. plant	Bone fracture (2)	1	2	1.2	1	RHT 65359	Triterpenoids
Helicteres isora L.	Sterculiaceae	w	Fruit, root	Snake bite (11), nursing mothers (7)	2	18	11	0.16	RHT 65237	Malatyamine, cucurbitacin B
Hemionitis arifolia (Burm.) T.moore	Hemionitidaceae	w	Fronds	Snake bites (3), colic diseases(1)	2	4	2.4	0.75	RHT 65246	Flavonoids, phenols, sterols
Hildegardia populifolia (Roxb.) Schott & Endl. Sterculia populifolia Roxb.	Malvaceae	w	Seed	Country liquor (1)	1	1	0.6	2	RHT 65231	Saponins, tannins
Hiptage benghalensis (L.) Kurz H. madablota Gaertner	Malpighiaceae	w	Leaf	Skin diseases, insecticidal, scabies (25)	3	25	15	0.16	RHT 65572	Octacosanol, alpha-amyrin, hiptagin
Holoptelea integrifolia (Roxb.) Planchon	Ulmaceae	w	Leaf	Insecticide (5)	1	5	5.0	0.4	RHT 65247	Holoptelin-A, B, friedelin, epi-friedelinol
Ichnocarpus frutescens R.Br.	Apocynaceae	w	Whole plant	Scabies (7), fertility (3), insect bite (3)	3	13	7.9	0.30	RHT 65206	n-butyl sorboside, kaemferol
Indigofera linnaei Ali	Papilionoideae	w	Stem, root	Hair growth (8)	1	8	4.9	0.25	RHT 65248	Indigoferin, enneaphyllin
Indigofera tinctoria L.	Papilionoideae	w	Leaf	Lactation (6)	1	6	3.6	0.33	RHT 65549	Indicine, apigenin, kaemferol
Ipomoea staphylina Roemer & Schultes.	Convolvulaceae	w	Leaf, stem	Fodder (3)	1	3	1.8	0.66	RHT 65588	Hydrocyanic acid
Ipomoea sepiaria J. Koenig ex	Convolvulaceae	w	W.	Snake bite (22), swellings (2)	2	24	12	0.12	RHT	Hydrocyanic acid

Roxb.			plant						65332	
Ixora finlaysoniana Wallich ex Don.	Rubiaceae	c	W. plant	Ornamental (70)	1	70	42	0.02	RHT 65374	Gallic acid, ß-sitostreol
Ixora notoniana Wall. Ex.Don	Rubiaceae	c	Flowers	Anti-tumor (3)	1	3	1.8	0.66	RHT 65318	Gallic acid, ß-sitostreol
Jasminum trichotomum Heyne. Ex. Roth.	Oleaceae	w	Whole plant	Anti-tumor, skin diseases, itches, joint pains (6)	4	6	3.6	1.66	RHT 65591	Benzyl acetate, benzyl benzoate, phytol, jasmine
Jatropha grandulifera Roxb.	Euphorbiaceae	w	Leaf	Lactation (3), boils (70)	2	73	44	0.04	RHT 65228	jatropholone, fraxetin
Lepisanthes tetraphylla (Vahl.) Radlk.	Sapindaceae	c	W. plant	Good health (14)	1	14	8.5	0.14	RHT 65296	Saponins
Limonia acidissima L.	Rutaceae	w	Leaf, fruit	Edible, appetizer (90)	2	90	55	0.03	RHT 65276	Geraniol, α, ß-pinene, 1,8-cineole, linool
Lippia javanica (Burm.F.) Sprengel	Verbenaceae	w	Whole plant	Asthma (4)	1	4	2.4	0.28	RHT 65274	Citral, neral, geranial, diterpenes, lippone
Maba neilgherrensis Wight	Ebenaceae	w	leaf	Liver diseases (7)	1	7	4.2	0.25	RHT 65369	Benzaminic acid, 3-aminobenzoic
Madhuca longifolia (L.) Koen.	Sapotaceae	c	flower	Food (6), snake bite (2)	2	8	4.9	0.37	RHT 65343	α,ß-amyrin acetate,sitosterol
Marsdenia brunoniana Wight & Arn.	Asclepiadaceae	w	leaf	Evil spirits expellant (7)	1	7	4.2	0.28	RHT 65212	Tenacissosides A to E
Maytenus emarginata (Willd.) Ding Hou	Celastraceae	w	Leaf, root	Tooth-ache (3), gastro troubles (2)	2	5	5.0	0.6	RHT 65229	-
Melochia corchorifolia L.	Sterculiaceae	w	Leaf	Anti-ulcers (7), snake bite (12)	2	19	11	0.6	RHT 65595	Friedelin, beta-sitosterol
Merremia tridentata (L.) Hallier. f.	Convolvulaceae	w	Leaf	Joint pains, rheumatism (20)	2	20	12	0.15	RHT 65335	Flavonoids, diometin
Microlepia speluncae (L.) Moore	Dennstaedtiaceae	w	Root	Tuberculosis (2)	1	2	1.2	1	RHT 65252	-
Molineria trichocarpa (Wight) Balakr.	Hypoxidaceae	w	W. plant	Iron production in body (2)	1	2	1.2	1	RHT 65224	-
Mollugo cerviana Ser. var.	Aizoaceae	w	Leaf	Inflammation (45)	1	45	27	0.04	RHT	Orientin, vitexin

spathulifolia Fenzal	(Molluginaceae)								65309	
Morinda umbellata L.	Rubiaceae	w	Leaf	Diarrhea, dysentery (30)	2	30	18	0.1	RHT 65357	Rubichoric acid, anthraquinones
Mussaenda hirsutissima (Hook.f.) Hutchinson ex Gamble	Rubiaceae	w	Leaf, flower	Anti-ulcers (7)	1	7	4.2	0.28	RHT 65560	Anthocyanins, hyperin, quercetin, rutin, ferulic
Nerium oleander (L.) N. odorum Sol.	Apocynaceae	w	Leaf, fruit	Human suicidal (98)	1	98	60	0.02	RHT 65556	Oleandrin, gentiobiosyl oleandrin, odoroside
Nicandra physalodes (L.) Gaertner.	Solanaceae	w	Flower	Human suicidal (30)	1	30	18	0.04	RHT 65337	Nicandrenone, withanolide
Ochna obtusata DC. var. gamblei (Brandis) Kanis	Ochnaceae	w	root	Asthma, TB (40), menstrual disorders (4)	3	44	26	0.05	RHT 65322	Isoflavones, oleanolic acid
Ocimum canum Sims.	Lamiaceae	w	W. plant	Fever (70), insect repellent (7)	2	77	47	0.03	RHT 65331	Methylheptenone, camphor
Olax imbricata Roxb. O. wightiana Wallich ex Wight & Arn	Olacaceae	w	Bark	Anemia (2), diabetes (5)	2	7	4.2	0.42	RHT 65379	-
Oldenlandia umbellata L.	Rubiaceae	w	Leaf	Removal of phlegm (1)	1	1	1.2	2	RHT 65254	Anthraquione
Ormocarpum sennoides DC.	Papilionoideae	w	Leaf	Bone setting (98)	1	98	60	0.02	RHT 65365	Menthol, eduesmol, myrtenol, elemol, hotrienol
Oxystelma esculentum (L.f.) R.Br. ex Schuletes.	Asclepiadaceae	w	Whole plant	Ulcer, sores, scabies (20)	3	20	12	0.2	RHT 65338	Cardenolide tetraglycoside, oxyline
Passiflora foetida L.	Passifloraceae	w	Leaf, fruit	Boils (60)	1	60	36	0.03	RHT 65341	Apigenin, luteolin
Pavetta indica L.	Rubiaceae	w	Leaf	Boils (15)	1	15	9.2	0.13	RHT 65349	d- mannitol
Pavetta tomentosa Roxb. ex Smith	Rubiaceae	w	Leaf	Boils (23)	1	23	14	0.08	RHT 65217	d- mannitol
Pedalium murex L.	Pedaliaceae	w	Whole plant	Tympanic(2), delivery of child (2), leucorrhoea (6)	3	10	6	0.4	RHT 65334	Flavonoids pedalitin, diometin, dinatin
Pentatropis capensis (L.F.)	Asclepiadaceae	w	W.	Emetic, purgative (4)	2	4	2.4	0.75	RHT	triterpenes, squalene,

Bullock P. mirophylla (Roth) Wight.			plant						65553	taraxasterol
Phyla nodiflora (L.) E. Greene	Verbenaceae	w	W. plant	Common cold (50)	1	50	30	0.04	RHT 65557	Nodiflorins A, B, lipiflorins
Phyllanthus emblica L. Emblica officinalis Gaerter	Euphorbiaceae	w	Root	Heart diseases (2)	1	2	1.2	1	RHT 65544	Phyllanthol, beta-amyrin
Phyllanthus reticulatus Poiret.	Euphorbiaceae	w	Fruit, bark	Rheumatism (7), dysentery (2), purgative (1)	3	10	6	0.4	RHT 65372	Lupeol acetate, stigmasterol,
Plumbago zeylanica L.	Plumbaginaceae	w	Root	Abortifient (34), diarrhea (2), eczema, leprosy (3), piles (2), psoriasis (1), jaundice (2)	7	44	26	0.8	RHT 65207	Naphthoquinone, plumbagin
Pongamia pinnata (L.) Pierre P. glabra	Papilionoideae	w	Leaf,fruit	Insect repellent (2)	1	2	1.2	1	RHT 65342	Beta-sitosteryl acetate,sterol
Polyalthia cerasoides (Roxb.)	Annonaceae	w	Leaf	Fungal diseases (2)	1	2	1.2	1	RHT 65327	Clerodance dipterpenes
Premna tomentosa Willd.	Verbenaceae	w	Leaf	Joint pain (7), appetizer (3), giddiness (2)	3	12	7.3	0.33	RHT 65373	Apigenin, limonene
Pseudarthria viscida (L.) Wight & Arn.	Papilionoideae	w	Root, leaf	Asthma (3), dysentery (3), bone setting (5)	3	11	6.7	0.36	RHT 65238	Leucopelargonidin
Pyrostegia venusta (Ker Gawh) Miers	Bignoniaceae	w	W. plant	Ornamental (45)	1	45	27	0.04	RHT 65546	Saponins, alkaloids, tannins
Radermachera xylocarpa (Roxb.) Schum.	Bignoniaceae	w	Resin	Scabies (70)	1	70	42	0.02	RHT 65211	Dinatin, oleanolic acid, stigmasterol, redermachol
Rauvolfia tetraphylla L.	Apocynaceae	w	Root	Nervous disorders (2)	1	2	1.2	1	RHT 65235	Rauwolscine
Sansevieria roxburghiana Schultes & Schultes f.	Agavaceae	w	Rhizome	Cough, cold (65)	2	65	39	0.5	RHT 65243	Aconitic acid, sansevierine
Sapindus emarginata M. Vahl.	Sapindaceae	w	Fruit, pulp	Emetic (3), migraine (2), epilepsy (1)	3	6	3.6	0.66	RHT 65325	Triterpenoids glycosides, sapindosides
Sarcostemma intermedium Decne.	Asclepiadaceae	w	Whole plant	Veterinary (9)	1	9	5.5	0.22	RHT 65569	Malic acid, succinic acid, surcosa, lupeol
Schefflera stellata (Gaertner)	Araliaceae	c	W.	Ornamental (11)	1	11	6.7	0.18	RHT	Saponins, flavonoids

Harms			plant						65269	
Scutia myrtina (Burm. f.) Kurz	Rhamnaceae	w	Leaf	Nervous disorders (1)	1	1	1.2	2	RHT 65208	Anthraquinones, aloesaponarin
Sebastiania chamalea (L.) Muell. Arg.	Euphorbiaceae	w	W. plant	Diarrhea (30)	1	30	18	0.06	RHT 65304	Gallic acid, brevifolin, rutin
Sphaeranthus indicus L.	Asteraceae	c	leaf	Fever (80)	1	80	49	0.02	RHT 65330	Methyl chavicol, α ionone
Strychnos minor L.	Loganiaceae	w	Fruit	Human suicidal (90)	1	90	55	0.02	RHT 65288	Indole alkaloids, strychnine
Strychnos nux-vomica L.	Loganiaceae	w	Seeds	Rheumatism (3), heart problems (1), human suicidal (70)	3	74	45	0.05	RHT 65273	Indole alkaloids, strychnine, novacine
Strychnos potatorum L.	Loganiaceae	w	fruits	Dysentery (3)	1	3	1.8	0.66	RHT 65390	strychnine, novacine
Sterculia foetida L.	Sterculiaceae	w	S. bark	Rheumatism (50)	1	50	30	0.04	RHT 65270	Scutellarein, luteolin
Sterculia urens Roxb.	Sterculiaceae	w	Resins	Throat infections (6)	1	6	3.6	0.33	RHT 65319	Quercetin, kaempferol
Stictocardia tillifolia (Desr.) Hallier f.	Convolvulaceae	w	W. plant	Etheogenic (4)	1	4	2.4	0.5	RHT 65566	Alkaloids, sterols
Swietenia mahgani L.	Meliaceae	w	Leaf	Making bedi (5)	1	5	5.0	0.5	RHT 65306	Mahoganin, cyclomahogenol
Synadenium grantii Hook.F.	Euphorbiaceae	w	Leaf	Human suicidal (20)	1	20	12	0.1	RHT 65320	Tannins, terpenes
Tarenna asiatica (L.) Kuntze	Rubiaceae	w	Leaf, fruit	Skin diseases, boils (70)	2	70	42	0.04	RHT 65593	Corymbosin, flavones, D-mannitol
Terminalia arjuna (Roxb.) Wight & Arn.	Compratacеae	w	Stem	Leucorrhoea (2)	1	2	1.2	1	RHT 65576	Arjunolic acid, terminic acid, arjunetin, arjunosides
Tiliacora acuminata (Lam.) Miers	Menispermaceae	w	Root	Snake bite (4)	1	4	2.4	0.5	RHT 65554	Tiliacorine, tiliarine, tiliacorinine, tiliacine
Toddalia asiatica (L.) Lam. Var. gracilis Gamble	Rutaceae	w	Leaf	Good health (5)	1	5	5.0	0.4	RHT 65223	Toddanol, toddanone, toddasin, pimpinellin
Trewia polycarpa Bth. & Hk.f.	Euphorbiaceae	w	Leaf	Swellings, wounds, cuts (25)	3	25	15	0.16	RHT	Pyridine alkaloids,

									65302	nudiflorine
Trianthema triquetra Rottler ex Willd. Var. triquetra	Aizoaceae	w	Leaf	Bone settings (2)	1	2	1.2	1	RHT 65575	Linoleic, linolenic, oleic, palmitic, stearic acid
Trichodesma indicum (L.) R.Br.	Boranginaceae	w	Leaf, root	Joint pains (3), stomach-ache (3)	2	6	3.6	0.5	RHT 65548	Linoleic, linolenic, oleic, palmitic, stearic acid
Ventilago madraspatana Gaertner.	Rhamnaceae	w	W. plant	Scabies (80)	1	80	49	0.02	RHT 65353	Anthraquinones, ventinones, A,B physcion
Vitex peduncularis Wallich ex Schover.	Verbenaceae	w	Leaf	Fever (65)	1	65	39	0.03	RHT 65326	Iridoid glycosides, isomeric casticin, luteolin
Waltheria indica L.	Sterculiaceae	w	W. plant	Hemorrhages (2), fecundity (3)	2	5	5.0	0.8	RHT 65568	Pelargonidin, cyanidin
Wrightia tinctoria R.Br.	Apocynaceae	w	Leaf, bark	Eczema, psoriasis, skin diseases, flatulence (20)	4	20	12	0.25	RHT 65239	Cycloartanes, cycloartenone, α,ß-amyrin
Zehneria scabra (L.F.) Sond.	Cucurbitaceae	w	tuber	Snake bite (3), diabetes (90)	2	93	57	0.03	RHT 65356	α-citral, borneol, hotrienol, linayl acetate

(w/c =wild/ cultivated; # = Number of use categories; Inf = Number of Informants; UV = Use-value; IR = Relative importance)