

DIVERSITY AND POPULATION DENSITY OF TREES AND LIANAS IN MEDICINAL PLANT CONSERVATION AREA (MPCA) IN KOLLI HILLS, EASTERN GHATS, TAMILNADU.

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Abstract

Kolli hills as a part of Eastern Ghats (11° 10'- 11° 30' N and 75° 15'-75° 30' E), in Namakkal district, Tamil Nadu is a highly fragmented habitat. Anthropogenic activities such as high input horticulture, mining and coffee plantation are intense in this area. In the history of traditional medicine it is an important region. Diversity and population density of different woody species (trees and lianas) of evergreen and semi-evergreen forests in Medicinal Plant Conservation Area (MPCA) in Kolli hills, were studied through quadrat method under Threatened Species Recovery Research. During the study a total of 102 woody species including 79 trees and 23 lianas were enumerated. Twelve species were identified at generic level (*Aglaia*, *Albizia*, *Celtis*, *Cinnamomum*, *Cryptocarya*, *Ficus*, *Glochidion*, *Litsea*, *Memecylon*, *Milusa*, *Nothopegia* and *Psychotria*). Thirteen were unidentified. The identified 88 species belonging to 36 families and 79 genera. Among the families Lauraceae was represented by 9 species followed by Rubiaceae (7) and Moraceae (6). The diversity values, Shannon-Wiener's index (3.61) and Simpson's index (0.049) indicated rich species diversity. Higher number of species in a community is ecologically important since diversity increases as the community becomes more stable. The total stand density of the site was 1655 stems/ ha. Species density values varied from 1.25 to 252.5 stem/ ha in which highest value was shown by *Memecylon umbellatum* (252.5) followed by *Myristica dactyloides* (140), *Diospyros ovalifolia* (95) and *Symplocos cochinchinensis* (75). About 50 % of space and resources were shared by *Canarium strictum*, *Memecylon umbellatum*, *Myristica dactyloides*, *Artocarpus heterophyllus*, *Persea macrantha*, *Syzygium cumini*, *Prunus ceylanica*, *Memecylon* sp. and *Diospyros ovalifolia* while the remaining by 92 other species as indicated by IVI values. Species represented by one or two individuals were considered as rare. Out of the 102 woody species 42 (41.18%) species were found to be rare in the study area. Rarely occurring species require specific microhabitat conditions and species having limited distribution in any area become sensitive even to small habitat alteration.

(Source: Proc. National Seminar on Conservation of Eastern Ghats)

GENDER DISTRIBUTION AND BREEDING SYSTEMS AMONG MEDICINAL PLANTS OF EASTERN GHATS

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Abstract

The breeding systems of the select medicinal plants taxa (172 species) found in the Eastern Ghats hill range are studied in relation to growth form, fruit type, vegetation type and altitude. It was found that hermaphrodite category dominated in this zone followed by monoecy and dioecy (136 species, 28 species and 8 species respectively). Dioecy occurs predominantly in arborescent medicinal plant taxa than in herbaceous while, monoecious taxa are equally distributed among medicinal plants of both forms. No significant association was obtained between the breeding systems in relation to altitude of the medicinal plants studied.

Key words: *Breeding systems, monoecy, dioecy, hermaphrodite, vegetation*

Table 1. Gender distribution and breeding systems in Eastern Ghats medicinal flora

S.No	Name of the plant species	Family	Alt	VT	GF	BT	FT
1	<i>Abutilon polyandrum</i> (Roxb.) Wight & Arn.	Malvaceae	3	Sc	A	H	DD
2	<i>Acacia arabica</i> (Lam.) Willd.	Mimosoideae	1	Sc	A	H	DD
3	<i>Acacia concinna</i> (Willd.) DC.	Mimosoideae	5	Sc	A	H	DD
4	<i>Acacia sundra</i> (Roxb.) DC.	Mimosoideae	1	Sc	A	H	DD
5	<i>Acanthospermum hispidum</i> DC.	Compositae	2	Sc	H	M	DI
6	<i>Achyranthes aspera</i> L.	Amaranthaceae	2	Sc,D	H	H	DI
7	<i>Adenostemma lavenia</i> (L.) Kuntze	Amaranthaceae	6	SE	H	H	DI
8	<i>Adina Cordifolia</i> (Roxb.) Hook.f.ex Brandis	Rubiaceae	5	D	A	H	DD
9	<i>Aerva lanata</i> (L.) Juss.	Amaranthaceae	2	Sc,D	H	H	DD
10	<i>Aerva monsoniae</i> (Retz.) C.Martius	Amaranthaceae	2	Sc	H	H	DD
11	<i>Aganosma cymosum</i> (Roxb.) Don	Apocynaceae	1	Sc	A	H	DD
12	<i>Ageratum conyzoides</i> L.	Compositae	5	D	H	H	DI
13	<i>Aglaia roxburghiana</i> (Wight & Arn.) Miq. var. <i>Courtallensis</i> Gamble	Meliaceae	2	SE	A	Pd	F(1)
14	<i>Alangium salviifolium</i> (L.f.) Wangerin	Alangiaceae	3	D	A	H	F(1)
15	<i>Albizia lebbek</i> (L.) Benth.	Mimosoideae	3	Sc	A	H	DD
16	<i>Albizia odoratissima</i> (L.f.) Benth.	Mimosoideae	5	Sc,D	A	H	DD
17	<i>Alternanthera triandra</i> Lam.	Amaranthaceae	5	Sc	H	H	DI
18	<i>Alysicarpus rugosus</i> (Willd.) DC.	Papilionoideae	6	Sc	H	H	DD
19	<i>Amaranthus spinosus</i> L.	Amaranthaceae	5	Sc	H	M	DI
20	<i>Amaranthus viridis</i> L.	Amaranthaceae	5	Sc	H	M	DI
21	<i>Anamirta cocculus</i> (L.) Wight & Arn.	Menispermaceae	3	SE	A	D	F
22	<i>Andrographis alata</i> (Vahl) Nees	Acanthaceae	3	Sc	H	H	DD
23	<i>Andrographis lineate</i> Wallich ex Nees	Acanthaceae	6	Sc	H	H	DD
24	<i>Anisochilus carnosus</i> (L.f.) Wallich	Labiatae	6	Sc	A	H	DI
25	<i>Anisomeles indica</i> (L.) Kuntze	Labiatae	5	D	H	H	DI
26	<i>Argyreia bracteata</i> Choisy	Convolvulaceae	3	SE	A	H	F
27	<i>Argyreia cuneata</i> (Willd.) ker Gawler	Convolvulaceae	5	SE	A	H	F
28	<i>Arisaema leschanaultii</i> Blume	Araceae	6	D	H	M	F(1)
29	<i>Aristolochia indica</i> L.	Aristolochiaceae	3	D	H	H	DD
30	<i>Artemisia nilagirica</i> C.B.Clarke	Compositae	6	SE	A	Gm	F
31	<i>Artemisia parviflora</i> Buch. -Ham.ex Roxb.	Compositae	3	SE	A	Gm	DI
32	<i>Asclepias curassavica</i> L.	Asclepiadaceae	4	SE	H	H	DD
33	<i>Atalantia monophylla</i> (L.) Corr. Serr.	Rutaceae	2	D	A	H	F
34	<i>Barleria buxifolia</i> L.	Acanthaceae	2	Sc	H	H	DD
35	<i>Blepharis boerhaviifolia</i> Pers.	Acanthaceae	2	Sc	H	H	DD
36	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	2	D,Sc	H	H	DI
37	<i>Boswellia glabra</i> Roxb.	Burseraceae	1	D	A	H	F(1)
38	<i>Bridelia roxburghiana</i> (Muell. Arg.) Gehrm.	Euphorbiaceae	1	Sc	A	M	F(1)
39	<i>Buchanania lanzan</i> Sprengel	Anacardiaceae	4	D	A	H	F(1)
40	<i>Buddleja asiatica</i> Lour.	Buddlejaceae	4	SE	A	H	DD
41	<i>caesalpinia sepiaria</i> Roxb.	Caesalpinioideae	6	SE	A	H	DD
42	<i>Capparis grandis</i> L.f	Capparaceae	1	Sc	A	H	F
43	<i>capparis sepiaria</i> L.	Capparaceae	2	Sc,D	A	H	F
44	<i>Capparis zeylancia</i> L.	Capparaceae	5	Sc,D	A	H	F
45	<i>Caralluma attenuata</i> Wight	Asclepiadaceae	1	Sc	H	H	DD
46	<i>Caralluma umbellata</i> Haw.	Asclepiadaceae	1	Sc	H	H	DD
47	<i>Careya arborea</i> Roxb.	Lecythidaceae	3	D	A	H	F
48	<i>Carissa spinarum</i> L.	Apocynaceae	1	Sc	A	H	F
49	<i>Caryota urens</i> L.	Palmae	3	SE	A	H	F(1)
50	<i>Cassia absus</i> L.	Caesalpinioideae	1	Sc	H	H	DD
51	<i>Cassia fistula</i> L.	Caesalpinioideae	4	Sc,D	A	H	DD
52	<i>Cassia tora</i> L.	Caesalpinioideae	6	D,Sc	H	H	DD
53	<i>Castanea crenata</i> siebold & Zucc.	Fagaceae	6	SE	A	M	DI
54	<i>Celastrus paniculatus</i> Willd.	Celastraceae	6	SE	H	Pm	F(A)
55	<i>Centella asiatica</i> (L.) urban	Umbelliferae	5	SE	H	H	DI
56	<i>Chenopodium ambrosioides</i> L.	Chenopodiaceae	5	SE	H	H	DI
57	<i>Chrozophora rottleri</i> Geiseler	Euphorbiaceae	2	D	H	M	DD
58	<i>Cinchona succirubra</i> Klotzsch	Rubiaceae	4	SE	A	H	F
59	<i>Cinnamomum camphora</i> (L.) J.S.Presl.	Lauraceae	4	SE	A	H	F
60	<i>Cinnamomum iners auct.non</i> Blume	Lauraceae	3	SE	A	H	F

61	<i>Cissampelos pareira</i> L.	Menispermaceae	3	D	H	D	F(1)
62	<i>Cissus quadrangularis</i> L.	Vitaceae	1	Sc	A	H	F
63	<i>Citrus medica</i> L.	Rutaceae	3	D	A	H	F
64	<i>Clematis gouriana</i> Roxb. ex.DC.	Ranunculaceae	4	D,SE	H	H	DI
65	<i>Clerodendrum serratum</i> (L.) Moon	Verbenaceae	6	SE	A	H	F
66	<i>Clitoria ternatea</i> L.	Papilionoideae	6	Sc	H	H	DD
67	<i>Cochlospermum gossypium</i> DC.	Cochlospermaceae	1	D	A	H	F
68	<i>Coleus barbatus</i> (Andrews) Benth.	Labiatae	6	SE	H	H	DI
69	<i>Commiphora caudata</i> (Wight & Arn) Engl.	Burseraceae	1	SE	A	Pm	F(1)
70	<i>Conyza stricta</i> Willd.	Compositae	6	SE	H	Gm	DD
71	<i>Crinum latifolium</i> L.	Amaryllidaceae	5	Sc	H	H	DD
72	<i>Crotalaria laburnifolia</i> L.	Papilionoideae	1	Sc	A	H	DD
73	<i>Cryptolepis buchananii</i> Roemer & Schultes	Asclepiadaceae	4	SE	H	H	DD
74	<i>Curculigo orchioides</i> Gaertner	Hypoxidaceae	6	Sc	H	H	DD
75	<i>Cynodon dactylon</i> (L.) Pers.	Gramineae	3	D,Sc	H	H	DI
76	<i>Cyperus rotundus</i> L.	Cyperaceae	3	Sc	H	H	DI
77	<i>Dalbergia latifolia</i> Roxb.	Papilionoideae	2	D	A	H	DD
78	<i>Datura metel</i> L.var.fastosa L.Safford	Solanaceae	5	Sc	H	H	DD
79	<i>Decalapis hamiltonii</i> Wight & Arn.	Asclepiadaceae	6	D,Sc	A	H	DD
80	<i>Desmodium gangeticum</i> (L.) DC.	Papilionoideae	6	SE	H	H	DD
81	<i>Desmodium triflorum</i> (L.) DC.	Papilionoideae	6	D	H	H	DD
82	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	2	D	A	M	F
83	<i>Echinops echinatus</i> Roxb.	Compositae	1	SE	H	H	DI
84	<i>Eclipta alba</i> (L.) Massk.	Compositae	2	Sc	H	Gm	DI
85	<i>Embelia ribes</i> Burm.f.	Myrsinaceae	6	SE	A	H	F(1)
86	<i>Emblia officinalis</i> Gaertner	Euphorbiaceae	3	Sc	A	H	F(1)
87	<i>Emilia sonchifolia</i> (L.) DC.	Compositae	6	SE	H	H	DI
88	<i>Erythrina variegata</i> L.	Papilionoideae	6	Sc	A	H	DD
89	<i>Eupatorium glandulosum</i> Kunth	Compositae	6	SE	H	H	DI
90	<i>Euphorbia hirta</i> L.	Euphorbiaceae	5	Sc,D	H	M	F(A)
91	<i>Feronia elephantum</i> Corr. serr.	Rutaceae	3	D	A	Pm	F
92	<i>Ficus benghalensis</i> L.	Moraceae	4	SE	A	H	DI
93	<i>Fumaria parviflora</i> Lam.	Cyperaceae	6	SE	H	H	DI
94	<i>Garuga pinnata</i> Roxb.	Burseraceae	1	SE	A	Pm	F(1)
95	<i>Gmelina arborea</i> Roxb.	Verbenaceae	1	Sc	A	H	F
96	<i>Gymnema sylvestre</i> (Retz.) R.Br.	Asclepiadaceae	2	D	A	H	DD
97	<i>Hedychium flavescens</i> Lodd.	Zingiberaceae	6	SE	H	H	F(A)
98	<i>Helicteres isora</i> L.	Sterculiaceae	2	Sc	A	H	DD
99	<i>Hemidesmus indicus</i> (L.) R.Br.	Asclepiadaceae	2	Sc	H	H	DD
100	<i>Heracleum rigens</i> Wallich ex DC.	Umbelliferae	6	SE	H	Pm	DI
101	<i>Holarrhena antidysenterica</i> Wallich	Apocynaceae	2	Sc	A	H	DD
102	<i>Homonoia riparia</i> Lour.	Euphorbiaceae	3	SE	A	D	DD
103	<i>Ichnocarpus frutescens</i> (L.) R.Br.	Apocynaceae	3	SE	A	H	DD
104	<i>Jatropha curcas</i> L.	Euphorbiaceae	6	Sc	A	M	DD
105	<i>Justicia gendarussa</i> Burm.f.	Acanthaceae	6	Sc	A	H	DD
106	<i>Leonotis nepetiifolia</i> (L.) R.Br.	Labiatae	2	SE	H	H	DI
107	<i>Limonia crenulata</i> Roxb.	Rutaceae	2	D	A	H	F
108	<i>Mallotus philippensis</i> Muell.Arg.	Euphorbiaceae	3	SE	A	D	DD
109	<i>Malvastrum coromandelianum</i> (L.) Garcke	Malvaceae	6	SE	H	H	DI
110	<i>Melia azedarach</i> L.	Meliaceae	6	SE	A	H	F(1)
111	<i>Michelia champaca</i> L.	Magnoliaceae	4	SE	A	H	DD
112	<i>Mimosa pudica</i> L.	Mimosoideae	5	Sc	H	Pm	DD
113	<i>Mucuna prurita</i> Hook.	Papilionoideae	6	D	H	H	DD
114	<i>Nicandra physalodes</i> (L.) Gaertner	Solanaceae	5	D	A	H	F
115	<i>Ocimum canum</i> Sims.	Labiatae	2	Sc	H	H	DI
116	<i>Oldenlandia corymbosa</i> L.	Rubiaceae	5	Sc	H	H	DD
117	<i>Oxalis corniculata</i> L.	Oxalidaceae	4	D	H	H	F(A)
118	<i>Passiflora foetida</i> L.	Passifloraceae	3	Sc	H	H	F(A)
119	<i>Pavetta indica</i> L.	Rubiaceae	6	Sc	A	H	F
120	<i>Pergularia extensa</i> (Jacq.) N.E.Br.	Asclepiadaceae	1	Sc	H	H	DD
121	<i>Persea gratissima</i> Gaertner.f.	Lauraceae	3	SE	A	H	F(1)
122	<i>Phyllanthus urinaria</i> L.	Euphorbiaceae	5	D	H	M	DD
123	<i>Physalis peruviana</i> L.	Solanaceae	6	Sc	H	H	F
124	<i>Pithecellobium dulce</i> (Roxb.) Benth	Mimosoideae	4	SE	A	H	F(A)
125	<i>Plantago asiatica</i> L.	Plantaginaceae	6	D	H	H	DD

126	<i>Plectanthus coleoides</i> Benth.	Labiatae	5	SE	A	H	DI
127	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	3	SE	A	H	DD
128	<i>Polyalthia cerasoides</i> (Roxb.) Beddome	Annonaceae	2	Sc	A	H	F(1)
129	<i>Polygonum glabrum</i> Willd.	Polygonaceae	5	D	H	H	DI
130	<i>Polygonum plebeium</i> R.Br.	Polygonaceae	5	D	H	H	DI
131	<i>Pongamia glabra</i> Vent.	Papilionoideae	4	Sc	A	H	DD
132	<i>Portulaca oleracea</i> L.	Portulacaceae	6	SE	H	H	DD
133	<i>Premna tomentosa</i> Willd.	Verbenaceae	3	SE	A	H	F
134	<i>Pterocarpus marsupium</i> Roxb.	Papilionoideae	4	Sc	A	H	DD
135	<i>Punica granatum</i> L.	Punicaceae	6	SE	A	H	F
136	<i>Rhinacanthus communis</i> Ness	Acanthaceae	3	SE	H	H	DD
137	<i>Ricinus communis</i> L.	Euphorbiaceae	6	Sc	A	H	F(A)
138	<i>Rubia cordifolia</i> L.	Rubiaceae	6	SE	H	H	F(1)
139	<i>Ruellia prostrata</i> Poiret	Acanthaceae	2	Sc	H	H	DD
140	<i>Rumex nepalensis</i> Sprengel	Polygonaceae	6	SE	H	H	DI
141	<i>Rungia repens</i> (L.) Nees	Acanthaceae	5	SE	H	H	DD
142	<i>Scilla indica</i> (Wight) Baker	Liliaceae	3	Sc	H	H	DD
143	<i>Secamone emetica</i> (Retz.) Schultes	Asclepiadaceae	2	Sc	A	H	DD
144	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	2	SE	A	M	F(1)
145	<i>Sesbania aegyptiaca</i> Poiret	Papilionoideae	2	SC	A	H	DD
146	<i>Sida acuta</i> Burm.f.	Malvaceae	5	Sc	H	H	DD
147	<i>Sida rhombifolia</i> L.	Malvaceae	3	Sc	H	H	DD
148	<i>Sigesbeckia orientalis</i> L.	Compositae	5	SE	H	Gm	DI
149	<i>Solanum indicum</i> auct.non.L.	Solanaceae	3	Sc	A	H	F
150	<i>Solanum nigrum</i> L.	Solanaceae	5	Sc	A	H	F
151	<i>Spilanthes acmella</i> Murray	Compositae	6	SE	H	H	DI
152	<i>Stellaria media</i> (L.) Villars	Caryophyllaceae	4	SE	H	H	DD
153	<i>Stephania japonica</i> (Thunb.) Miers	Menispermaceae	5	D	H	D	F(1)
154	<i>Sterculia urens</i> Roxb.	Sterculiaceae	1	D	A	H	DD
155	<i>Strychnos nux-vomica</i> L.	Loganiaceae	3	Sc	A	H	F
156	<i>Taraxacum officinale</i> Wigg.	Compositae	3	SC	H	H	DI
157	<i>Tephrosia purpurea</i> (L.) Pers.	Papilionoideae	1	Sc	H	H	DD
158	<i>Terminalia arjuna</i> Wight & Arn.	Combretaceae	4	Sc,D	A	Pm	F(1)
159	<i>Terminalia bellirica</i> (Gaertner) Roxb.	Combretaceae	3	Sc,D	A	Pm	F(1)
160	<i>Terminalia chebula</i> Retz.	Combretaceae	3	Sc,D	A	Pm	F(1)
161	<i>Tinospora cordifolia</i> Hook.f. & Thomson	Menispermaceae	3	D	A	D	F
162	<i>Tithonia diversifolia</i> (Hemsley) A.Gray	Compositae	5	SE	A	H	DI
163	<i>Tragia involucrata</i> L.	Euphorbiaceae	6	SE	H	M	DD
164	<i>Trema orientalis</i> (L.) Blume	Ulmaceae	1	D,Sc	A	D	F(1)
165	<i>Trichodesma zeylanicum</i> (Burm.f.)	Boraginaceae	6	Sc	H	H	DI
166	<i>Vallis solanacea</i> (Roth) Kuntze	Apocynaceae	1	Sc	A	H	DD
167	<i>Vanda tessellata</i> (Roxb.) Don.	Orchidaceae	6	SE	H	H	DD
168	<i>Ventilago maderaspatana</i> Gaertner	Rhamnaceae	1	D,Sc	A	H	DI
169	<i>Vinca major</i> L.(<i>Catharanthus roseus</i>)	Apocynaceae	6	Sc	H	H	DD
170	<i>Waltheria indica</i> L.	Sterculiaceae	4	Sc	H	H	DD
171	<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Apocynaceae	1	Sc,D	A	H	DD
172	<i>Xanthium strumarium</i> L.	Compositae	6	SE	H	M	DD

(Source: Proc. National Seminar on Conservation of Eastern Ghats)

IS REPRODUCTIVE SUCCESS A TOOL TO SPECIES RECOVERY? : A CASE STUDY ON RET FOREST GENETIC RESOURCES IN KOLLI HILLS, EASTERN GHATS

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Abstract

*Conservation programs stressing protection of Rare, Endangered and Threatened (RET) species rarely focus on breeding system, reproductive success and regeneration in natural populations. In diverse environments plant populations often exhibit variations in reproductive fitness and success components. A species recovery program was attempted in three RET taxa namely *Aristolochia tagala*, *Smilax zeylanica* and *Canarium strictum* in Kolli hills, Eastern ghats and Silent Valley, Western Ghats. Forty reproductively mature individuals in each of the said species were tagged in both the locations and were observed for three consecutive years. Parameters such phenology, reproductive success and regeneration were studied. Vegetative and reproductive phenology in both the species were distinct in both populations. In Kolli all the three species showed lower reproductive success compared to silent valley. Even though the Kolli *A.tagala* populations flowered for a longer duration the pre emergent success values were much lower (0.020) to Silent valley (0.11). *A.tagala* is pollinated by *Microdipterans* intra florally and is adapted to fly trap mechanism. Owing to pollinator limitation the number of insects trapped within flowers was lower in Kolli. In *C.strictum* the genetic bottle neck is post zygotic. Most female trees show strong family structure which is an indicator of seed dispersers. Owing to fragmentation there is reduction in reproductive success. The implication of reproduction in devising exsitu and insitu conservation strategies is discussed in detail.*

(Source: Proc. National Seminar on Conservation of Eastern Ghats)

ZONATION PATTERN OF MUTHUPET – KORAIYUR ESTUARINE COMPLEX

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Abstract

Zonation is a dominant theme in the voluminous literature of mangroves (Frith, 1977). The often conspicuous zonation of mangrove is the most noted feature of mangrove forest structure. Zonation in mangroves represent a most popular and invoked mechanism of successional sequence from pioneer colonizers to mature climax forest (Snedaker, 1982). In Watson's (1982) view frequency of tidal inundation, salinity and soil type were the important determinants of mangrove zonation. Johnstone (1983) discuss zonation patterns as successional sequences. The general belief is that mangrove trees invariably modify the environment in ways which stimulate succession and that the observed mangrove zonation recapitulates succession.

(Source: Proc. National Seminar on Conservation of Eastern Ghats)

Table 1: List of mangroves and their associates of Muthupet

S.No	Family	Botanical term	Habit
1.	Menispermaceae	<i>Tinospora cordifolia</i> (Wild)	Climber
2.	Capparidaceae	<i>Cadapa indica</i>	Shrub
3.	Malvaceae	<i>Sida cordata</i> (Bum.f.)	Herb
		<i>Thespesia populnea</i>	Tree
4.	Zygophyllaceae	<i>Tribulus terrestris</i>	Herb
5.	Rhamnaceae	<i>Zizyphus mauritiana lam.</i>	Thorny tree
6.	Vitaceae	<i>Cissus quadrangularis</i>	Rambling shrub
7.	Fabaceae	<i>Cassia auriculata.</i>	Shrub
		<i>Cassia suratensis Burm f.</i>	Shrub
		<i>Dalbergia spinosa Roxb.</i>	Stragler
		<i>Derris trifoliata Lour</i>	Stragler
		<i>Tephrosia purpurea</i>	Under shrub
		<i>Prosopis chilensis (Molina) Stuntz.</i>	Tree
8.	Loran thaceae	<i>Loranthus falcatus</i>	Parasite
9.	Lytraceae	<i>Ammania baccifera</i>	Herb
10.	Cucurbitaceae	<i>Coccinia grandis</i>	Climber
11.	Cactaceae	<i>Opuntia monocantha</i> (Willd)	Succulent
		<i>Opuntia stricta (Haw.)</i>	Succulent
12.	Aizoaceae	<i>Sesuvium portulacastrum</i>	Prostrate herb
13.	Molluginaceae	<i>Molluga nudicaulis Lam</i>	Herb
14.	Rubiaceae	<i>Pavetta indica.</i>	Shrub
15.	Compositae	<i>Eclipta prostrata</i>	Herb
		<i>Vernonia cinera</i>	Herb
16.	Myrcinaceae	<i>Aegiceros corniculatum (Linn.)</i>	Small tree
		<i>Blanco</i>	
17.	Salvadoraceae	<i>Azima tetracantha Lam.</i>	Shrub
18.	Boraginaccae	<i>Cyanoglossum glochidiatum Linn</i>	Herb
19.	Convolvulaceae	<i>Cressa cretica.</i>	Herb
		<i>Ipomoea obscura</i>	Herb
		<i>Ipomoea pescaprae</i>	
20.	Solanaceae	<i>Solanum trilobatum</i>	Stragler
21.	Pedaliaceae	<i>Pedaliium murex.</i>	Herb
22.	Martyniaceae	<i>Martynia annua.</i>	Herb
23.	Acanthaceae	<i>Acanthus ilicifolius</i>	Shrub
24.	Verbenaceae	<i>Clerodendrum inerme</i>	Shrub
		<i>Phyla nodiflora</i>	Herb
25.	Avicenniaceae	<i>Avicennia marina (Forsk.)</i>	Tree
26.	Labiatac	<i>Leucas asoera (willd.)</i>	Herb
27.	Chenopodiaceae	<i>Suaeda maritime.</i>	Herb
		<i>Suaeda monoica Forssk.ex.Gme.</i>	Under shrub
		<i>Suaeda nudiflora Mog.</i>	Under shrub
		<i>Salicornia bracheolata Roxs.</i>	Herb
28.	Aristolochiaceae	<i>Aristolochia bracheolata Lam</i>	Herb

Table 1: List of mangroves and their associates of Muthupet

S.No	Family	Botanical term	Habit
1.	Menispermaceae	<i>Tinospora cordifolia</i> (Wild)	Climber
2.	Capparidaceae	<i>Cadapa indica</i>	Shrub
3.	Malvaceae	<i>Sida cordata</i> (Bum.f.)	Herb
		<i>Thespesia populnea</i>	Tree
4.	Zygophyllaceae	<i>Tribulus terrestris</i>	Herb
5.	Rhamnaceae	<i>Zizyphus mauritiana lam.</i>	Thorny tree
6.	Vitaceae	<i>Cissus quadrangularis</i>	Ramplng shrub
7.	Fabaceae	<i>Cassia auriculata.</i>	Shrub
		<i>Cassia suratensis</i> Burm f.	Shrub
		<i>Dalbergia spinosa</i> Roxb.	Stragler
		<i>Derris trifoliata</i> Lour	Stragler
		<i>Tephrosia purpurea</i>	Under shrub
		<i>Prosopis chilensis</i> (Molina) Stuntz.	Tree
8.	Loran thaceae	<i>Loranthus falcatus</i>	Parasite
9.	Lytraceae	<i>Ammania baccifera</i>	Herb
10.	Cucurbitaceae	<i>Coccinia grandis</i>	Climber
11.	Cactaceae	<i>Opuntia monacantha</i> (Willd)	Succulent
		<i>Opuntia stricta</i> (Haw.)	Succulent
12.	Aizoaceae	<i>Sesuvium portulacastrum</i>	Prostrate herb
13.	Molluginaceae	<i>Molluga nudicaulis</i> Lam	Herb
14.	Rubiaceae	<i>Pavetta indica.</i>	Shrub
15.	Compositae	<i>Eclipta prostrata</i>	Herb
		<i>Vernonia cinera</i>	Herb
16.	Myrcinaceae	<i>Aegiceros corniculatum</i> (Linn.)	Small tree
		Blanco	
17.	Salvadoraceae	<i>Azima tetracantha</i> Lam.	Shrub
18.	Boraginaccae	<i>Cyanoglossum glochidiatum</i> Linn	Herb
19.	Convolvulaceae	<i>Cressa cretica.</i>	Herb
		<i>Ipomoea obscura</i>	Herb
		<i>Ipomoea pescaprae</i>	
20.	Solanaceae	<i>Solanum trilobatum</i>	Stragler
21.	Pedaliaceae	<i>Pedaliium murex.</i>	Herb
22.	Martyniaceae	<i>Martynia annua.</i>	Herb
23.	Acanthaceae	<i>Acanthus ilicifolius</i>	Shrub
24.	Verbenaceae	<i>Clerodendrum inerme</i>	Shrub
		<i>Phyla nodiflora</i>	Herb
25.	Avicenniaceae	<i>Avicennia marina</i> (Forsk.)	Tree
26.	Labiatac	<i>Leucas asoera</i> (willd.)	Herb
27.	Chenopodiaceae	<i>Suaeda maritime.</i>	Herb
		<i>Suaeda monoica</i> Forssk.ex.Gme.	Under shrub
		<i>Suaeda nudiflora</i> Mog.	Under shrub
		<i>Salicornia bracheolata</i> Roxs.	Herb
28.	Aristolochiaceae	<i>Aristolochia bracheolata</i> Lam	Herb

(Source: Proc. National Seminar on Conservation of Eastern Ghats)

STUDIES ON SEED HANDLING AND STORAGE BEHAVIOUR OF CANARIUM STRICTUM ROXB. - A VULNERABLE TREE OF KOLLI HILLS

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Abstract

Canarium strictum is a vulnerable tree species in the Kolli hills of Eastern Ghats commercially exploited for its resin traded under the name *Kungulium*. *Canarium* drupes were collected from Kolli hills and standardized suitable seed handling and storage techniques. Studies suggested collection of drupes from the ground with or without exocarp is favourable for immediate germination while the intact drupes could be used for storage and propagation at a later period. Correlation studies between drupe morphological characters and seed filling percentage were carried out to work out suitable grading method. Drupe diameter was found to correlate with filling percentage and drupes were graded into two groups namely, above-20mm diameter class and below-20mm diameter class. Germination and all seedling growth characters such as root length, shoot length, root weight, shoot weight, collar diameter and total dry matter/ seedling were found to be superior in the above-20mm diameter class. The seeds show both mechanical and physiological dormancy and required pretreatment to improve germination. Removal of the thick exocarp from the drupes facilitated germination. Various pretreatments such as 1 day water soaking followed by 1 day sun drying, hot water soaking over night, alternate water soaking (1 day) and sun drying (1 day) for 3 cycles, 3 days continuous water soaking, 6 days continuous water soaking and sowing without exocarp (control) were tried. Alternate water soaking and sun drying for 3 cycles significantly improved the germination percentage to 77% compared to the control that recorded only 41%. Storage experiments suggested that *Canarium* drupes can be stored at 20 °C for 10 months with 42% germination.