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Documentation of Plant Species in Homegardens of Three Physiographic Regions of Hassan District, Karnataka

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***Abstract*:** The study was conducted in homegardens of the villages in three physiographic regions, Malnad, Semi-Malnad, and Maidan region of Hassan district, to document information on plant species in home gardens. In total, 299 plant species (96 trees, 82 shrubs, 70 herbs, and 52 climbers) belonging to 86 families and 232 genera were found growing naturally or cultivated from the homegarden. The family Fabaceae had the highest number of species, followed by Cucurbitaceae, Euphorbiaceae and Apocynaceae. The most common of the plants were ornamental (94 spp.), followed by medicinal (68 spp.), edible fruit (44 spp.) and vegetable (56 spp.), and other uses (38 spp.). The findings of the study, home gardens are a type of production system that is kept for the purpose of collecting a variety of products and are key avenues for species conservation and food.

Keywords: Hassan, Homegardens, Malnad, Semi-Malnad, Maidan region, Western Ghats

The home garden is a typical area of land surrounding a house where several species of plants are cultivated with a diverse mixture of perennial and annual plant species, arranged in a multilayered vertical structure and primarily tended by members of the household, with their products primarily for household consumption (Watson and Eyzaguirre 2002, Kumar and Nair 2004). A traditional home garden, on the other hand, is a significant part of a farmer's farming system and an addition to the land, where a variety of trees, shrubs, and herbs are grown for edible products and cash income, as well as a variety of outputs with both production and service values, such as aesthetic and ecological benefits. Species diversity and composition of home gardens are influenced by ecological, socioeconomic, and cultural factors (Kumar and Nair 2004). Traditional home garden practices are thought to be influenced by the form of human culture, history, desires, beliefs; and are places that have long been regarded as symbols of prestige and pride (Tangjang and Arunachalam 2009). Many countries recognize the role of home gardens in the production of food, medicine, and other useful items, as well as nutritional protection and human livelihoods (Watson and Eyzaguirre 2002, Galhena et al 2013). Home gardens act as living seed banks and a repository for plant genetic resources, ensuring the survival of rare and endangered plants as well as extinction-threatened species (Eyzaguirre and Linares 2001). Home gardens are suitable for the in situ conservation of plant genetic resources because of the high and sustained diversity of cultivated and wild plant species (Watson and Eyzaguirre 2002). Home gardens, mostly operated by women, provide essential daily inputs for the household in the form of vegetables, tubers, medicinal plants, fruit and flower-bearing plants, so improving household food security, nutrition, and well-being. Traditional agricultural types and beneficial plants are preserved in these 'living gene banks,' which are mostly maintained by women's. Home gardens have been reported mainly from the tropical and sub-tropical regions in India, primarily concentrated in high rainfall areas in the Western Ghats region of Kerala (Kunhamu et al 2015, George and Christopher 2020), and Uttara Kannada district of Karnataka (Bhat et al 2014, Bhat and Rajanna 2016). The current study attempted to collect and document information on the use of plant species in village home gardens in three physiographic regions, the Malnad, Semi-Malnad, and Maidan region of Hassan district Karnataka, India.

MATERIAL AND METHODS

Study area: Hassan district is located in the south-western part of Karnataka state in India. It lies between 12° 13′ and 13° 33′ North latitudes and 75° 33′ and 76 º 38′ East longitudes. The district begins at the base of the steep Western Ghats and continues into the gently rolling Deccan Plateau and is divided into three physiographic regions, viz. the high hilly region 'Malnad' undulating to rolling lands

'Semi-Malnad' and the plain region 'Maidan' (Fig. 1). The Malnad area, located in the western part of the district, lies on the crest of the Western Ghats. Agriculture is the main occupation of the people, cereals and potatoes are the main crops, with coffee and cardamom plantations in the 'Malnad' region. The population of this region is predominantly Hindus, and a few Muslim and Christian families and tribal community such as Hakki Pikki and Meda. The majority of rural families spend time at home tending to their gardens.

Data collection: The 36 home gardens were chosen for inventorying the floristic composition in 12 villages across three physiographic regions: 13 home gardens from Malsavara, Hegadde, Karadigala, Hondravalli in the Malnad area, 12 home gardens from Hallimysore, Kattaya, Halebeedu, Madihalli in the Semi-Malnad region, and 13 home gardens from Gowdagere, Nuggehalli, Gandasi, Arakere in the Maidan region (Fig 1). A systematic survey of plant species was conducted in each home garden during different season. The household was interviewed to know about the local names and uses of the plant species growing in their backyard gardens. Plants were identified using local flora (Saldhana and Nicolson 1976, Saldhana 1984 and 1996). To prevent taxonomic inflation, the plant names were rechecked and authenticated using the plant list (www.theplantlist.org), and the synonyms were removed.

RESULTS AND DISCUSSION

In the current study, a variety of plant species were grown and maintained in the home gardens survey from three physiographic regions; 299 plant species distributed in 232 genera and under 86 families were recorded growing naturally or cultivated in the home gardens. There were 96 species of trees, 82 species of shrubs, 70 species of herbs, and 52 species of climbers (Table 1). The most dominant family is the Fabaceae with 19 species followed by Cucurbitaceae Euphorbiaceae, Amaranthaceae. These findings are in conformity with Kerala (182 species, George and Christopher 2020), Jharkhand (101 species, Sinku et al 2021), and Karnataka, the home gardens of Honnavara (193 species, Bhat and Rajanna 2014), Karwar (210 species, Bhat et al 2014), and Halakki Vokkaliga community in Uttara Kannada District (231 species, Bhat and Rajanna 2016).

Home gardens, according to local perceptions, have the following major use categories: ornamental (94 species) followed by, medicinal, edible fruit and vegetable (Fig. 2). Ornamental plants are the most important use category with the recorded 94 species. The presence of more ornamental and commercial plants in home gardens has been identified as a sign of high urbanisation and modernization among home gardening families. The most frequently grown ornamentals, cultivated in more than 50% of all home gardens, were *Codiaeum variegatum Caladium bicolor, Crossandra infundibuliformi, Catharanthus roseus, Chrysanthemum indicum, Hibiscus rosa-sinensis, Nerium oleander,* and *Tagetes erecta.* There were fewer variations in ornamental plant diversity between the three physiographic areas. Nonetheless, the Malnad region had a high number of ornamentals (94 species), while the Semi-Malnad region had a low number of ornamentals (90 species), and the Maidan region (79 species). The majority of the species, however, were in all of the regions. Ecologically, the Malnad and Semi-Malnad regions were more similar than the Plains or Maidan regions. In addition, the Maidan region has fewer species than the other two regions. Many plants are used as medicine in home remedies by a large number of rural

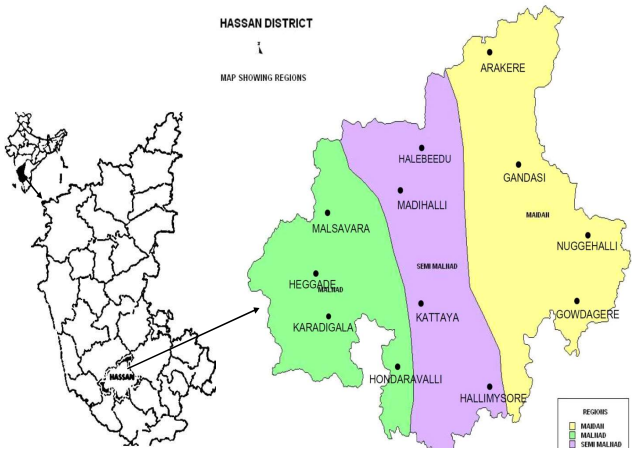
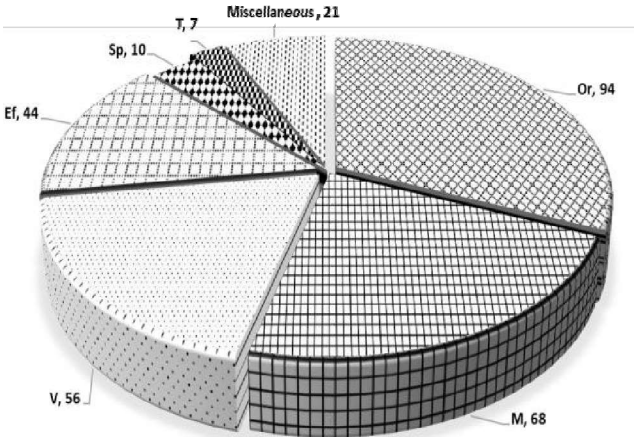


Fig. 1. Hassan district showing the three physiographical regions of villages of the study area



Or-Ornamental, M-Medicinal, V-Vegetables, Ef-Edible fruit, Sp-Spices, T-Timbers, Miscellaneous (Beverages, drinks, dye, fencing, seasonings and shade tree)

Fig. 2. Uses of home garden plant species in Hassan District

Table 1. Useful plant species in home gardens of three physiographic regions in Hassan, Karnataka, India

Sl No	Family / Botanical name	Habit	Physiographic regions			Uses
			Malnad	Semi-Malnad	Maidan	
Acanthaceae						
1.	*Asystasia gangetica* (L.) T.Anderson	H	+	+	+	Or
2.	*Barleria cristata* L.	S	+	+	+	Or
3.	*Barleria prionites* L.	S	+	+	+	Or
4.	*Crossandra infundibuliformis* (L.) Nees	S	+	+	+	Or
5.	*Eranthemum pulchellum* Andrews.	S	+	+	-	Or
6.	*Justicia adhatoda* L.	S	+	+	+	M
7.	*Thunbergia alata* Bojer ex Sims	C	+	+	+	Or
8.	*Thunbergia erecta* (Benth.) T. Anderson	S	+	+	+	Or
9.	*Thunbergia grandiflora* (Roxb. ex Rottl.) Roxb.	C	+	+	+	Or
Acoraceae						
10.	*Acorus calamus* L.	H	+	+	+	M
Agavaceae						
11.	*Agave americana* L.	S	+	+	+	Fe
Amaranthaceae						
12.	*Achyranthes aspera* L.	H	+	+	+	M
13.	*Aerva lanata* (L.) Juss.	H	+	+	+	M
14.	*Alternanthera bettzickiana* (Regel) G.Nicholson	H	+	+	+	Or
15.	*A. dentata* L.	H	+	+	+	Or
16.	*A. sessilis* (L.) R. Br. ex DC.	H	+	+	+	V
17.	*A. caudatus* L.	H	+	+	+	V
18.	*A. hybridus* L.	S	+	+	+	V
19.	*Amaranthus spinosus* L.	H	+	+	+	V
20.	*A. tricolour* L.	H	+	+	+	V
21.	*A. viridis* L.	H	+	+	+	V
22.	*Beta vulgaris* L.	H	+	+	+	V
23.	*Celosia argentea* L.	H	+	+	+	V
24.	*Gomphrena globosa* L.	H	+	+	+	Or
Amaryllidaceae						
25.	*Allium cepa* L.	H	+	+	+	V
26.	*Crinum viviparum* (Lam.) R.Ansari & V.J.Nair	H	+	+	+	Or
27.	*Hippeastrum puniceum* (Lam.) Voss	H	+	+	-	Or
28.	*Hymenocallis littoralis* (Jacq.) Salisb.	H	+	+	+	Or
29.	*Scadoxus multiflorus* (Martyn) Raf.	H	+	+	-	Or
Anacardiaceae						
30.	*Spondias pinnata* (L. f.) Kurz	T	+	+	+	Ef
31.	*Anacardium occidentale* L.	T	+	+	+	Ef
32.	*Mangifera indica* L.	T	+	+	+	Ef
33.	*Spondias dulcis* Parkinson	T	+	-	-	Ef
Annonaceae						
34.	*Annona muricata* L.	T	+	+	-	Ef
35.	*A. reticulata* L.	T	+	+	+	Ef

Cont...

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Sl No	Family / Botanical name	Habit	Physiographic regions			Uses
			Malnad	Semi-Malnad	Maidan	
36.	*A. squamosa* L.	T	+	+	+	Ef
37.	*Polyalthia longifolia* (Sonn.) Thwaites	T	+	+	+	Or
Apiaceae						
38.	*Anethum graveolens* L.	H	+	+	+	V
39.	*Centella asiatica (*L.) Urb.	H	+	+	+	M
40.	*Coriandrum sativum* L.	H	+	+	+	Sp
41.	*Eryngium foetidum* L.	H	+	+	+	V
42.	*Foeniculum vulgare* Mill.	H	+	+	+	V
Apocynaceae						
43.	*Allamanda blanchetii* A.DC.	C	+	-	-	Or
44.	*A. cathartica* L.	C	+	+	+	Or
45.	*Alstonia scholaris* (L.) R.Br.	T	+	+	+	M
46.	*Cascabela thevetia* (L.) Lippold	T	+	+	+	Or
47.	*Catharanthus roseus* (L.) G.Don	S	+	+	+	Or
48.	*Holarrhena pubescens* Wall. ex G.Don	S	-	+	+	M
49.	*Nerium oleander* L.	S	+	+	+	Or
50.	*Plumeria obtusa* L.	T	+	+	+	Or
51.	*P. rubra* L.	T	+	+	+	Or
52.	*Rauvolfia serpentina* (L.) Benth. ex Kurz	S	+	-	-	M
53.	*R. tetraphylla* L.	S	+	-	-	M
54.	*Tabernaemontana alternifolia* L.	S	+	-	-	Or
Araceae						
55.	*Alocasia macrorrhiza* (L.) G.Don	S	+	+	-	V
56.	*Amorphophallus bulbifer* (Roxb.) Blume	S	+	+	-	V
57.	*A. commutatus* (Schott) Engl.	S	+	-	-	V
58.	*A. paeoniifolius*	S	+	+	-	V
59.	*Caladium bicolor* (Aiton) Vent.	H	+	+	-	Or
60.	*Colocasia esculenta* (L.) Schott	S	+	+	-	V
61.	*Pistia stratiotes* L.	H	+	+	+	Or
Arecaceae						
62.	*Areca catechu* L.	T	+	+	+	M
63.	*Arenga wightii* Griff.	T	+	-	-	M
64.	*Caryota urens* L.	T	+	+	-	D
65.	*Cocos nucifera* L.	T	+	+	+	D
Aristolochiaceae						
66.	*Aristolochia tagala* Cham.	C	+	+	-	Or
Asclepiadaceae						
67.	*Calotropis gigantea* (L.) Dryand.	S	+	+	+	M
68.	*Gymnema sylvestre* (Retz.) R.Br. ex Sm.	C	+	+	+	M
69.	*Hemidesmus indicus* (L.) R.Br. ex Schult.	H	+	+	+	M
Asparagaceae						
70.	*Asparagus racemosus* Willd.	C	+	+	+	M

Cont...

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			Malnad	Semi-Malnad	Maidan	
71.	*Dracaena terniflora* Roxb.	S	+	+	+	Or
72.	*Sansevieria roxburghiana* Schult.f.	H	+	+	+	Or
Asteraceae						
73.	*Chrysanthemum indicum* L.	H	+	+	+	Or
74.	*Cosmos sulphureus* Cav.	S	+	+	+	Or
75.	*Dahlia pinnata* Cav.	H	+	+	+	Or
76.	*Eclipta prostrata* (L.) L.	H	+	+	+	M
77.	*Emilia sonchifolia* (L.) DC. ex DC.	H	+	+	+	V
78.	*Sphagneticola trilobata* (L.) Pruski	C	+	+	+	Or
79.	*Tagetes erecta* L.	S	+	+	+	Or
80.	*Tithonia rotundifolia* (Mill.) S.F. Blake	S	+	+	+	Or
Balsaminaceae						
81.	*Impatiens balsamina* L.	H	+	+	+	Or
82.	*I. walleriana* Hook.f.	H	+	+	+	Or
Basellaceae						
83.	*Basella alba* L.	C	+	+	+	V
Bignoniaceae						
84.	*Pyrostegia venusta* (Ker Gawl.) Miers	C	+	+	+	Or
Bixaceae						
85.	*Bixa orellana* L.	S	+	+	-	Dy
Boraginaceae						
86.	*Cordia dichotoma* G.Forst.	T	+	+	+	Ef
Brassicaceae						
87.	*Brassica juncea* (L.) Czern.	H	+	+	+	Se
88.	*Raphanus raphanistrum subsp. sativus* (L.) Domin	H	+	+	+	V
Bromaliaceae						
89.	*Ananas comosus* (L.)Merr.	T	+	+	+	Ef
Cactaceae						
90.	*Cereus repandus* (L.) Mill.	S	-	+	+	Ef
Caesalpiniaceae						
91.	*Caesalpinia pulcherrima* (L.) Sw.	T	+	+	+	Or
92.	*Cassia fistula* L.	S	+	+	+	M
93.	*Saraca asoca* (Roxb.) Willd.	T	+	+	+	Or
Cannaceae						
94.	*Canna indica* L.	S	+	+	+	Or
Caricaceae						
95.	*Carica papaya* L.	T	+	+	+	Ef
Casuarinaceae						
96.	*Casuarina equisetifolia* L.	T	+	+	+	Or
Clusiaceae						
97.	*Calophyllum inophyllum* L.	T	+	-	-	M
98.	*Garcinia gummi-gutta* (L.) Roxb.	T	+	-	-	Ef

Cont...

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			Malnad	Semi-Malnad	Maidan	
Combretaceae						
99.	*Anogeissus latifolia* (Roxb. ex DC.) Wall. ex Guillem.	T	+	+	+	T
100.	*Combretum indicum*(L.) DeFilipps	C	+	+	+	Or
101.	*Terminalia bellirica*(Gaertn.) Roxb.	T	+	+	-	Ef
Commelinaceae						
102.	*Commelina benghalensis*L.	H	+	+	+	V
Convolvulaceae						
103.	*Ipomoea batatas* (L.) Lam.	C	+	+	+	V
104.	*I. hederifolia* L.	C	+	+	+	Or
105.	*I. purpurea* (L.) Roth	C	+	+	+	Or
106.	*I. quamoclit* L.	C	+	+	+	Or
Costaceae						
107.	*Cheilocostus speciosus* (J.Koenig) C.D. Specht	S	+	+	-	M
Crassulaceae						
108.	*Bryophyllum pinnatum* (Lam.) Oken	H	+	+	+	M
109.	*Echeveria runyonii* Rose	H	+	+	+	Or
Cucurbitaceae						
110.	*Benincasa hispida* (Thunb.) Cogn.	C	+	+	+	V
111.	*Citrullusl anatus* (Thunb.) Matsum. &Nakai	C	+	+	+	Ef
112.	*Coccinia grandis* (L.) Voigt	C	+	+	+	V
113.	*Cucumis melo* L.	C	+	+	+	Ef
114.	*C. sativus* L.	H	+	+	+	Ef
115.	*Cucurbita maxima* Duchesne	C	+	+	+	V
116.	*C. moschata* Duchesne	C	+	+	+	V
117.	*Diplocyclos palmatus* (L.) C. Jeffrey	C	+	+	+	M
118.	*Lagenaria siceraria*(Molina) Standl.	C	+	+	+	V
119.	*Luffaacut angula* (L.) Roxb.	C	+	+	+	V
120.	*L.cylindrica* (L.) M. Roem.	C	+	+	+	V
121.	*Momordica charantia* L.	C	+	+	+	V
122.	*M. dioica* Roxb. ex Willd.	T	+	-	-	V
123.	*Mukia maderaspatana* (L.) M. Roem.	C	+	+	+	Ef
124.	*Sechiume dule* (Jacq.) Sw.	C	+	+	+	V
125.	*Trichosanthes cucumerina* .L.	C	+	+	+	V
Cyperaceae						
126.	*Cyperus rotundus* L.	H	+	+	+	M
Dilleniaceae						
127.	*Dillenia pentagyna* Roxb.	T	+	-	-	St
Dioscoreaceae						
128.	*Dioscorea alata* L.	C	+	-	-	V
129.	*D. bulbifera* L.	C	+	+	-	V
130.	*D.pentaphylla*L.	C	+	+	-	V

Cont...

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Sl No	Family / Botanical name	Habit	Physiographic regions			Uses
			Malnad	Semi-Malnad	Maidan	
Elaeocarpaceae						
131.	*Elaeocarpus serratus* L.	T	+	+	-	Ef
Euphorbiaceae						
132.	*Acalypha hispida* Burm.f.	S	+	+	-	Or
133.	*A. wilkesiana* Müll.Arg.	S	+	+	+	Or
134.	*Brideliaretusa (*L.) A. Juss.	T	+	+	+	T
135.	*Codiaeum variegatum* (L.) Rumph. ex A.Juss.	S	+	+	+	Or
136.	*Euphorbia cyathophora* Murray	S	+	+	+	Or
137.	*E. neriifolia* L.	S	+	+	+	Or
138.	*E. pulcherrima* Willd.exKlotzsch	S	+	+	+	Or
139.	*E. atirucalli* L.	T	+	+	+	Or
140.	*E. aumbellata* (Pax) Bruyns	S	+	+	+	Fe
141.	*Jatropha curcas* L.	S	+	+	+	M
142.	*Macaranga peltata* (Roxb.) Müll.Arg.	T	+	+	+	Or
143.	*Mallotus philippensis* (Lam.) Müll.Arg.	T	+	+	+	Dy
144.	*Manihot esculenta* Crantz	T	+	+	+	V
145.	*Ricinus communis* L.	S	+	+	+	M
Fabaceae						
146.	*Abrus precatorius* L.	C	+	+	+	M
147.	*Acacia auriculiformis* Benth.	T	+	+	+	T
148.	*Albizial ebbeck* (L.) Benth.	T	+	+	+	T
149.	*Bauhinia acuminata* L.	T	+	+	+	Or
150.	*B. purpurea* L.	T	+	+	+	Or
151.	*Cajanus cajan* (L.) Millsp.	S	+	+	+	V
152.	*Cicera rietinum* L.	H	+	+	+	V
153.	*Clitoria ternatea* L.	C	+	+	+	Or
154.	*Cyamopsis tetragonoloba* (L.) Taub.	H	+	+	+	V
155.	*Delonix regia* (Hook.) Raf.	T	+	+	+	Or
156.	*Erythrina stricta* Roxb.	T	+	+	+	St
157.	*Gliricidia sepium* (Jacq.) Walp.	T	+	+	+	St
158.	*Glycine max* (L.) Merr.	H	+	+	+	V
159.	*Lablab purpureus* (L.) Sweet	C	+	+	+	V
160.	*Pongamia pinnata* (L.) Pierre	T	+	+	+	M
161.	*Psophocarpus tetragonolobus* (L.) DC.	C	+	-	-	V
162.	*Sesbania grandiflora* (L.) Pers.	T	+	+	+	V
163.	*Tamarindus indica* L.	T	+	+	+	Ef
164.	*Vigna mungo* (L.) Hepper	C	+	+	+	V
Lamiaceae						
165.	*Mentha arvensis* L.	H	+	+	+	Sp
166.	*Ocimum basilicum* L.	H	+	+	+	M
167.	*O. tenuiflorum* L.	H	+	+	+	M
168.	*Plectranthu samboinicus* (Lour.) Spreng.	H	+	+	+	M

Cont...

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Sl No	Family / Botanical name	Habit	Physiographic regions			Uses
			Malnad	Semi-Malnad	Maidan	
169.	*P. scutellarioides*(L.) R.Br.	S	+	+	+	Or
170.	*Pogostemon heyneanus* Benth.	H	+	+	-	M
171.	*Salvia coccinea* Buc'hoz ex Etl.	H	+	+	+	Or
Lauraceae						
172.	*Cinnamomum verum* J.Presl	T	+	+	-	Sp
173.	*Persea americana* Mill.	T	+	+	-	Ef
Lecythidaceae						
174.	*Careya arborea* Roxb.	T	+	+	+	M
175.	*Couroupita guianensis* Aubl.	T	+	+	+	M
Liliaceae						
176.	*Aloe vera* (L.) Burm.F.	H	+	+	+	M
177.	*Gloriosa superba* L.	C	+	+	+	M
Lythraceae						
178.	*Lawsonia inermis* L.	S	+	+	+	Or
Magnoliaceae						
179.	*Magnolia champaca* (L.) Baill. ex Pierre	T	+	+	+	Or
Malvaceae						
180.	*Abelmoschus esculentus* (L) Moench	S	+	+	+	M
181.	*Bombax ceiba* L.	T	+	+	+	M
182.	*Dombeya burgessiae* Gerrard ex Harv.	S	+	-	-	Or
183.	*Gossypium arboreum* L.	S	+	+	+	Fi
184.	*Grewia iliifolia* Vahl	T	+	+	+	Ef
185.	*Hibiscus mutabilis* L.	S	+	+	+	Or
186.	*H. rosa-sinensis* L.	T	+	+	+	Or
187.	*H. syriacus*L.	S	+	+	-	Or
188.	*Malva viscuspenduliflorus* Moc. & Sessé ex DC.	S	+	+	+	Or
189.	*Thespesia populnea* (L.) Sol.ex Correa	T	+	+	+	M
Marantaceae						
190.	*Maranta arundinaceae* L.	H	+	-	-	M
Meliaceae						
191.	*Azadirachta indica* A. Juss.	T	+	+	+	M
192.	*Melia azedarach* L.	T	+	+	+	M
Menispermaceae						
193.	*Tinospora sinensis* (Lour.) Merr.	C	+	+	+	M
Mimosaceae						
194.	*Adenanthera pavonia* L.	T	+	+	+	Or
Moraceae						
195.	*Artocarpus altilis* (Parkinson ex F.A. Zorn) Fosberg	T	+	-	-	V
196.	*Artocarpus heterophyllus* Lam.	T	+	+	+	Ef
197.	*A. hirsutus* Lam.	T	+	+	-	Ef
198.	*Ficus benghalensis* L.	T	+	+	+	M
199.	*F. racemosa* L.	T	+	+	+	Ef

Cont...

Table 1. Useful plant species in home gardens of three physiographic regions in Hassan, Karnataka, India

Sl No	Family / Botanical name	Habit	Physiographic regions			Uses
			Malnad	Semi-Malnad	Maidan	
200.	*F.r eligiosa* L.	T	+	+	+	M
201.	*Morus alba* L.	T	+	+	+	Ef
202.	*Streblus asper* Lour.	T	+	+	+	M
Moringaceae						
203.	*Moringa oleifera* Lam.	T	+	+	+	V
Musaceae						
204.	*Musa* × *paradisiaca* L.	S	+	+	+	Ef
Myristicaceae						
205.	*Myristica fragrans* Houtt.	T	+	-	-	Sp
Myrtaceae						
206.	*Callistemon viminalis* (Sol. ex Gaertn.) G.Don ex Loudon	T	+	+	+	Or
207.	*Eucalyptus globulus* Labill.	T	+	+	+	T
208.	*Psidium guajava* L.	T	+	+	+	Ef
209.	*Syzygium aromaticum* (L.) Merr. & L.M.Perry	T	+	-	-	Sp
210.	*Syzygium cumini* (L.) Skeels	T	+	+	+	Ef
211.	*S. jambos* (L.) Alston	T	+	+	+	Ef
212.	*S. samarangense* (Blume) Merr. & L.M.Perry	T	+	+	+	Ef
Nyctaginaceae						
213.	*Boerhavia iffusa* L.	H	+	+	+	M
214.	*B.glabra* Choisy	S	+	+	+	Or
215.	*B. spectabilis* Willd.	S	+	+	+	Or
216.	*Mirabilis jalapa* L.	H	+	+	+	Or
Oleaceae						
217.	*Jasminum grandiflorum* L.	C	+	+	+	Or
218.	*J. multiflorum* (Burm.f.) Andrews	C	+	+	+	Or
219.	*J. sambac* (L.) Aiton	C	+	+	+	Or
220.	*Nyctanthes arbor-tristis* L.	T	+	+	+	Or
Orchidaceae						
221.	*Vanilla planifolia* Jacks. ex Andrews	C	+	-	-	Fl
Oxalidaceae						
222.	*Averrhoa bilimbi* L.	T	+	+	-	Ef
223.	*A. carambola* L.	T	+	+	+	Ef
Passifloraceae						
224.	*Passiflora edulis* Sims	C	+	+	-	Ef
225.	*P. foetida* L.	C	+	+	+	Or
Pedaliaceae						
226.	*Sesamum indicum* L.	H	+	+	+	V
Phyllanthaceae						
227.	*Phyllanthus acidus* (L.) Skeels.	T	+	+	+	Ef
228.	*P. emblica* L.	T	+	+	+	Ef
Piperaceae						
229.	*Piper betle* L.	C	+	+	+	M

Cont...

Table 1. Useful plant species in home gardens of three physiographic regions in Hassan, Karnataka, India

Sl No	Family / Botanical name	Habit	Physiographic regions			Uses
			Malnad	Semi-Malnad	Maidan	
230.	*P. longum* L.	C	+	+	-	M
231.	*P. nigrum* L.	C	+	+	-	Sp
Plantaginaceae						
232.	*Angelonia salicariifolia* Bonpl.	H	+	-	-	Or
233.	*Russeliaequis etiformis* Schltdl. & Cham.	S	+	+	+	M
234.	*Plumbago indica* L.	S	+	+	+	M
235.	*Plumbago zeylanica* L.	S	+	+	+	M
Poaceae						
236.	*Bambusa bambos* (L.) Voss	T	+	+	+	V
237.	*Cymbopogon citratus* (DC.) Stapf.	H	+	+	+	Se
238.	*C. dactylon* (L.) Pers.	H	+	+	+	M
239.	*Saccharum officinarum* L.	S	+	+	+	D
Polygonaceae						
240.	*Antigonon leptopus* Hook. & Arn.	C	+	+	+	Or
Portulacaceae						
241.	*Portulaca grandiflora* Hook.	H	+	+	+	Or
242.	*P. oleracea* L.	H	+	+	+	V
243.	*Talinum portulacifolium* (Forssk.) Asch. ex Schweinf.	S	+	+	+	V
Proteaceae						
244.	*Grevillea robusta* A. Cunn. ex R. Br.	T	+	+	+	T
Punicaceae						
245.	*Punica granatum* L.	S	+	+	+	Ef
Ranunculaceae						
246.	*Naravelia zeylanica* (L.) DC.	C	+	+	-	Or
Rhamnaceae						
247.	*Ziziphus jujuba* Mill.	T	+	+	+	Ef
Rosaceae						
248.	*Rosa alba* L.	S	+	+	+	M
249.	*Rosa centifolia* L.	S	+	+	+	M
Rubiaceae						
250.	*Chassalia curviflora* (Wall.) Thwaites	S	+	-	-	M
251.	*Coffea arabica* L.	S	+	+	-	Br
252.	*Ixora brachiata* Roxb.	T	+	+	-	Or
253.	*I. chinensis* Lam.	S	+	+	-	Or
254.	*I. coccinea* L.	S	+	+	+	Or
255.	*Mussaenda erythrophylla* Schum. & Thonn	S	+	+	-	Or
256.	*M. frondosa* L.	S	+	-	-	Or
257.	*Neolamarckia cadamba* (Roxb.) Bosser	T	+	+	-	M
Rutaceae						
258.	*Aegle marmelos* (L.) Corrêa	T	+	+	+	M
259.	*Citrus aurantiifolia* (Christm.) Swingle	S	+	+	+	D
260.	*C. maxima* (Burm.) Merr.	T	+	+	-	Ef

Cont...

Table 1. Useful plant species in home gardens of three physiographic regions in Hassan, Karnataka, India

Sl No	Family / Botanical name	Habit	Physiographic regions			Uses
			Malnad	Semi-Malnad	Maidan	
261.	*C. medica* L.	S	+	+	-	Ef
262.	*C. reticulata* Blanco	T	+	+	-	Ef
263.	*C. sinensis* (L.) Osbeck	T	+	+	-	Ef
264.	*Murraya koenigii* (L.) Spreng.	T	+	+	+	Se
265.	*Ruta graveolens* L.	H	+	+	+	M
Santalaceae						
266.	*Santalum album* L.	T	+	+	+	M
Sapindaceae						
267.	*Cardiospermum halicacabum* L.	C	+	+	+	M
268.	*Sapindus laurifolius* Vahl.	T	+	+	+	M
Sapotaceae						
269.	*Manilkara zapota* (L.) P. Royen	T	+	+	+	Ef
270.	*Mimusops elengi* L.	T	+	-	-	Ef
Solanaceae						
271.	*Capsicum annuum* L.	S	+	+	+	Se
272.	*Cestrum nocturnum* L.	S	+	+	+	Or
273.	*Daturametel* L.	S	+	+	+	M
274.	*Lycopersicon lycopersicum* (L.) H. Karst.	S	+	+	+	V
275.	*S. americanum* Mill.	H	+	+	+	Ef
276.	*S. melongena* L.	S	+	+	+	V
277.	*S. mtorvum* Sw.	S	+	+	+	V
278.	*S. tuberosum* L.	H	+	+	+	V
Srelitziaceae						
279.	*Strelitzia reginae* Banks	S	+	+	+	Or
Theaceae						
280.	*Camellia sinensis* (L.) Kuntze	T	+	-	-	Br
Turneraceae						
281.	*Turnera ulmifolia* L.	S	+	+	+	Or
Verbenaceae						
282.	*Clerodendrum chinense* (Osbeck) Mabb.	S	+	+	-	Or
283.	*Duranta erecta* L.	S	+	+	+	Fe
284.	*Gmelina arborea* Roxb.	T	+	+	+	M
285.	*Lantana camara* L.	S	+	+	+	Fe
286.	*Stachytarpheta jamaicensis* (L.) Vahl	S	+	+	+	Or
287.	*Tectona grandis* L.f.	T	+	+	+	T
288.	*Vitex altissima* L.f.	T	+	+	+	M
289.	*V. negundo* L.	S	+	+	+	M
290.	*Volkameria inermis*L.	S	+	+	+	Or
Vitaceae						
291.	*Cissus quadrangularis* L.	C	+	+	+	V
Zingiberaceae						
292.	*Alpinia galanga* (L.) Willd.	H	+	+	-	M
293.	*Curcuma amada* Roxb.	H	+	+	-	Sp
294.	*C. aromatica* Salisb.	H	+	+	-	Sp
295.	*C. longa* L.	H	+	+	+	M
296.	*Elettaria cardamomum* (L.) Maton	S	+	-	-	Sp
297.	*Hedychium coronarium* J. Koenig	S	+	+	-	Or
298.	*Kaempferia galanga* L.	H	+	-	-	M
299.	*Zingiber officinale* Roscoe	H	+	+	+	Sp

Notes: (+) sign indicates presence of species; (-) sign indicates absence of species. **Habit**: H-Herb, S-Shrub, C-Climber, T-Tree. **Uses**: Br-Beverages, D-Drinks, Dy-Dye yielding, Ef-Edible fruit, Fe-Fencing, Fi-Fiber, Fl-Flavoring, M-Medicinal, Or-Ornamental, Se-Seasonings, Sp-Spices, St-Shade tree, T-Timbers, V-Vegetable

households. The locals used a total of 68 plant species to treat various ailments. Colds, coughs, and stomach disorders are usually treated with *Acorus calamus, Curcuma longa, Ocimum tenuiflorum, Ocimum basilicum* and *Zingiber officinale*. *Moringa oleifera* leaf, flowers, and fruits are used for edible purposes, while *Colocasia esculenta* leaf, petiole, and corm are used, and *Cucurbita moschata* tender shoot and fruits are used. Primary seasonal vegetables common in all the studied home gardens were *Abelmoschus esculentus, Coccinia grandis, Cucurbita maxima, Capsicum annum, Solanum melongena* and *Sechium edule* are the major cultivated crops round the year in most of the home gardens.

Tubers are important components of the home garden and are consumed as vegetables by villagers in the Malnad area. The common tubers crops in the home garden are *Amorphophallus bulbifer, Colocasia esculenta, Dioscorea bulbifera, Ipomoea batatas* and *Manihot esculenta*. Green leafy vegetables rich in micronutrients, such as *Alternanthera sessilis, Amaranthus spinosus, Portulaca oleracea,* are also abundant in home gardens (Ray et al 2020). The edible fruit yielding plants such as *Artocarpus heterophyllus, Carica papaya, Citrus aurantiifolia, Mangifera indica, Psidium guajava*, and *Punica granatum* were usually planted in the front yard of the house so that the gardeners can keep an eye on them. *Garcinia gummi-gutta, Grewia tiliifolia, Mimusops elengi, Spondias pinnata, Syzygium jambos,* and *Ziziphus jujube* are just a few examples of underutilized edible plants that can be found in home gardens. Organically grown home garden crops, herbs, and fruits provide safe and nutritious food for households.

CONCLUSION

The purpose of the study is to inventory the plant diversity of home gardens in Hassan. The home garden is an integral component that provides vegetables, fruits, fuel wood, small timber, herbs, and spices, etc. There is an urgent need of such type of study that may be helpful in developing appropriate strategy for effective management of these valuable biological resources. The homegardens ensure crop diversification, provide diversified products through low in amount but nutritious in nature and conserve plant genetic resources.

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REFERENCES

Bhat S and Rajanna L 2014. Plant diversity studies in the rural homegardens of Honnavar Taluk of Uttara Kannada District, Karnataka, India. *Research and Review of Botany* **3**(3): 5-18.

Bhat S and Rajanna L 2016. Plant diversity studies and role of halakki community agroforestry homegardens of Uttara Kannada District, Karnataka, India. *International Journal of Life Sciences* **5**(2): 54-62.

Bhat S, Bhandary MJ and Rajanna L 2014. Plant diversity in the homegardens of Karwar, Karnataka, India. *Biodiversitas* **15**: 229-235.

Eyzaguirre and Linares OF 2001. A new approach to the study and promotion of homegardens. In: *People and Plants Handbook,* Issue 7: Growing diversity–people and plant genetic resources, 30 33. Kew: WWF-UNESCO-RBG.

Galhena DH, Freed R and Maredia KM 2013. Home gardens: a promising approach to enhance household food security and wellbeing. *Agriculture and Food Security* **2**: 8.

George MV and Christopher G 2020. Structure, diversity and utilization of plant species in tribal homegardens of Kerala, India. *Agroforestry Systems* **94**: 297-307.

Kumar BM and Nair PKR 2004. The enigma of tropical home gardens. *Agroforestry Systems* **61**: 135-152.

Kunhamu TK, Ajeesh R and Kumar V 2015. Floristic analysis of peri-urban homegardens of Southern Kerala, India. *Indian Journal of Ecology* **42**(2): 300-305.

Ray A, Ray R and Sreevidya EA 2020. How many wild edible plants do we eat-there a diversity, use, and implications for sustainable food system: An exploratory analysis in India. *Frontiers in Sustainable Food Systems* **4**: 56.

Saldanha CJ 1984. *Flora of Karnataka. Vol. 1*. Oxford & IBH Publishing. Co. Pvt. Ltd. New Delhi.

Saldanha CJ 1996. *Flora of Karnataka. Vol. 2*. Oxford & IBH Publishing. Co. Pvt. Ltd. New Delhi.

Saldanha CJ and Nicolson DH 1978. *Flora of Hassan District Karnataka, India.* Amerind Publishing Co. Pvt. Ltd, New Delhi.

Sinku SK, Oroan PR, Kumar A and Singh BK 2021. Plant composition, diversity and richness of homegardens in Jharkhand, India. *Indian Forester* **147**(3): 267-275.

Tangjang S and Arunachalan A 2009. Role of traditional home garden systems in north India. *Indian Journal of Traditional Knowledge* **8**(1): 47-50.

Tynsong H and Tiwari BK 2010. Plant diversity in the homegardens and their significance in the Livelihoods of War Khasi community of Meghalaya, North East India. *Journal of Biodiversity* **1**: 1-11.

Watson JW and Eyzaguirre PB 2002. Home Gardens and *In-situ* Conservation of Plant Genetic Resources in Farming Systems (ed.). *Proceedings of the Second International Home Gardens Workshop,* 17-19 July 2001, Witzenhausen, Germany. IPGRI, Rome, Italy.