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Honey Bee Foraging Plants of Kanha Shanti Vanam, Ranga Reddy, Telangana, India

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Abstract

Bee foraging plants of Kanha Shanti Vanam, Ranga Reddy, Hyderabad, Telangana, the study conducted between June 2023 to November 2024 covered all seasons. The study revealed that there are more than 200 plant species useful for nectar and pollen source for honey bees. The important plants species for bee foraging are, the species of *Eucalyptus, Syzygium, Cassia, Azadirachta, Citrus, Pongamia, Brassica, Areca, Cocos, Albezia, Lagerstroemia, Sapindus* and *Tecoma* etc. The current study helps for beekeeping activities in Kanha Shanti Vanam and other beekeepers of the State of Telangana.

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Forage, Kanha, Pollen, Honey Bees, Nectar, Species, Telangana.

Introduction

The bees and plants are co-evolved during middle cretaceous period (Michener, 1969). Bees are depending on flowering plants for food in the form of pollen and nectar. Similarly, plants also depending on bees for pollination. The mutual interdependency of the anthophilous insects and entomophilous angiosperms hastened their co evolution (Suryanarayana, 1986).

The relationship between bees and plants stems from cretaceous times, roughly 100 million years ago (Velthius, 2015). The flowering plants of different plant families are blooming at different time intervals. Pollen and nectar availability to foraging bees fluctuated with time of the year and flowering of different species of plants (Free, 1970). The phase of the blooming period does not commence simultaneously in all the honey-flora participating in the main honey-flow. Depending on the soil type, climatic factors and the habitat of the vegetation, the time of blooming may change for even and the same nectar plant (Rodionov and Shabanshov, 1986). The honey plants participating in the main honey-flow do not confine everywhere; each of them has restricted to quite definite climatic conditions and particular regions or area. Therefore, the types of honey harvest not similar in all the area and regions of a country. The flowering dates of some of the important honey plants in Poland has been studied and made a list of plants useful for honeybees (Gromisz, 1993).

Study Area

Kanha Shanti Vanam is the Global Headquarters of the Sri Ram Chandra Mission (Heartfulness Institute), situated approximately 8 km from NH-44 Thimmapur, in Nandigama Mandal, Ranga Reddy District, Hyderabad, Telangana, India. The Heartfulness Institute (HFI) spans over 535 acres, lies between 15° 48′ 32″ and 19° 55′ 46″ N latitude and 77° 09′ 02″ and 81° 18′ 51″ E longitude, altitude around 450 m MSL (Plate-1), and features a diverse range of plantations, showcasing a successful model of semi-arid landscaping. The site includes rainforests, mounts, yatra gardens, and different types of plantations.

Materials and Methods

The investigation on bee foraging flora of Kanha Shanti Vanam, Ranga Reddy district, Hyderabad, Telangana, were conducted from June 2023 to November 2024 covered all seasons. The identified bee foraging flora and classification was further grouped into pollen yielding plant, nectar yielding plant and both pollen and nectar yielding plant conformed by visual observation and collection of food by honey bees (Naim and Phadke, 1976). The identification of plants done by using the help of standard floras (Gamble, 1936; Pullaiah, 2015).

Results and Discussion

The identified bee foraging flora and classification was further grouped into pollen yielding plant, nectar yielding plant and Pollen and nectar yielding plant, foraging value also given based on CBRTI, KVIC (2023). The study revealed that more than 200 plants are useful to honeybees. However, the present paper lists about 200 bee plant species (Table-1 & Plate-2), which are well distributed and common in the study area.

The identified bee flora comprises of ornamentals, timber, medicinal, fruits, vegetables and other commercial important plants etc. Some of the common and important bee forage plants are, the species of *Eucalyptus, Syzygium, Cassia, Azadirachta, Citrus, Pongamia, Brassica, Areca, Cocos, Albezia, Lagerstroemia, Sapindus* and *Tecoma* etc. The study area has all four species of Apis genera namely *Apis dorsata*, *Apis florea*, *Apis cerana indica* and *Apis mellifera*. The above results indicates that, the area has rich bee-flora and suitable for commercial beekeeping.

Table.1 List of Honey Bee Foraging Plants of Kanha Shanti Vanam-KSV

S.No.	Name of the Plant	Habit	Family	Source & Phenology
1	*Barleria cristata* L.	H	Acanthaceae	N2 & P1 – 11- 3
2	*Rungia repens* Nees	H	Acanthaceae	N3 & P3 – 7-8
3	*Ruelllia tuberosa* L.	H	Acanthaceae	N2 & P2 – 6-11
4	*Thunbergia grandiflora* Roxb.	C	Acanthaceae	N3 & P2 – 1-3
5	*Adhatoda zeylanica* Medic.	S	Acanthaceae	N3 & P2 4-11
6	*Andrographis paniculata* (Burm.f.) Wall. ex Nees	H	Acanthaceae	N2 & P2 8-12
7	*Barleria prionitis* L.	S	Acanthaceae	N2 & P1 11-3
8	*Justicia betonica* L.	S	Acanthaceae	N2 & P2 10-4
9	*Justicia gendarussa* L.	S	Acanthaceae	N2 & P2 8-10
10	*Ruellia tuberosa* L.	H	Acanthaceae	N2 & P2 6-11
11	*Thunbergia grandiflora* (Roxb.ex Rottl.) Roxb.	C	Acanthaceae	N3 & P2 1-3
12	*Agave americana* L.	S	Agavaceae	N3 & P3 9-11
13	*Trianthema portulacastrum* L.		Aizoaceae	N2 & P2 1-12
14	*Alangium salvifolium* (L.f.) Wang.	T	Alangiaceae	N2 & P2 3-6
15	*Achyranthes aspera* L.	H	Amaranthaceae	N2 & P2 – 1-12
16	*Aerva javanica* Juss.	H	Amaranthaceae	N3 & P3 – 3-7

17	*Alternanthera sessilis* (L.) R.Br.ex DC	H	Amaranthaceae	N2 & P1 – 1-12
18	*Celosia argentea* L.	H	Amaranthaceae	N2 & P2 – 8-9
19	*Aerva lanata* (L.) Juss. Ex Schult.	H	Amaranthaceae	N2 & P1 7-3
20	*Alternanthera sessilis* (L.) R.Br. ex DC.	H	Amaranthaceae	N2 & P1 1-12
21	*Celosia argen*tea L.	H	Amaranthaceae	N2 & P2 7-12
22	*Crinum asiaticum* L.	S	Amaryllidaceae	N3 & P2 5-10
23	*Mangifera indica* L.	T	Anacardiaceae	N2 & P3 – 3-4
24	*Semecarpus anacardium* L.f.	T	Anacardiaceae	N2 & P3 – 6-7
25	*Anacardium occidentale* L.	T	Anacardiaceae	N1 & P2 1-5
26	*Buchanania lanzan* Spreng.	T	Anacardiaceae	N2 & P3 1-5
27	*Lannea coromandelica* (Houtt.) Merr.	T	Anacardiaceae	N2 & P2 2-5
28	*Spondias pinnata* (L.f.) Kurz	T	Anacardiaceae	N2 & P2 2-3
29	*Centella asiatica* (L.) Urban	H	Apiaceae	N1 & P3 4-11
30	*Coriandrum sativum* L.	H	Apiaceae	N1& P1 3-8
31	*Wrightia tinctoria* R.Br.	T	Apocynaceae	N1 & P3 – 3-6
32	*Asclepias curassavica* L.	S	Apocynaceae	N2 & P2 – 4-6
33	*Calotropis gigantea* (L.) R.Br.ex Ait	S	Apocynaceae	N2 & P1 – 4-6
34	*Cocos nucifera* L.	T	Areaceae	N1 & P1 1-12
35	*Areca catechu* L.	T	Arecaceae	N2 & P2 1-12
36	*Borassus flabellifer* L.	T	Arecaceae	N1 & P1 1-12
37	*Caryota urens* L.	T	Arecaceae	N1 & P3 1-12
38	*Cocos nucifera* L.	T	Arecaceae	N1 & P1 1-12
39	*Elaeis guineensis* Jacq.	T	Arecaceae	N2 & P1 1-12
40	*Phoenix sylvestris* (L.) Roxb	T	Arecaeae	N2 & P3 – 12-2
41	*Ageratum conyzodies* L.	H	Asteraceae	N3 & P3 –2-11
42	*Eclipta prostrata* (L.) L.	H	Asteraceae	N2 & P2 –1-12
43	*Eupatorium odoratum* L.	H	Asteraceae	N2 & P3 –4-5
44	*Parthenium hysterophorus* L.	H	Asteraceae	N3 & P3 –1-12
45	*Tridax procumbens* L.	H	Asteraceae	N2 & P2 1-12
46	*Guizotia abyssinica* (L.f.) Cass.	H	Asteraceae	N1 & P1 9-11
47	*Helianthus annuus* L.	H	Asteraceae	N1 & P1 1-12
48	*Vernonia cinerea*	H	Asteraceae	N1 & P2 3-5
49	*Xanthium indicum* Koen.	S	Asteraceae	N3 & P1 3-6
50	*Averrhoa carambola* L.	T	Averrhoaceae	N1 & P2 3-5
51	*Barringtonia acutangula* Gaertn.	T	Barringtoniaceae	N2 & P2 4-9
52	*Jacranda mimosifolia* D.Don	T	Bignoniaceae	N2 & P2 –5-7
53	*Millingtonia hortensis* L.f.	T	Bignoniaceae	P2 7-9
54	*Oroxylum indicum* (L). Vent.	T	Bignoniaceae	N3 & P2 4-6
55	*Spathodea campanulata* Beauv.	T	Bignoniaceae	N2 & P2 3-6
56	*Bombax ceiba* L.	T	Bombacaceae	N1 & P1 2-3
57	*Ceiba pentandra* (L.) Gaertn.	T	Bombacaceae	N1 & P1 3-5

58	*Cordia dichotoma* Forst.f.	T	Boraginaceae	N2 & P2 3-4
59	*Ehretia laevis* Roxb.	T	Boraginaceae	N1 & P2 2-4
60	*Trichodesma indicum* R.br.	H	Boraginaceae	N3 & P2 10-12
61	*Brassica juncea* (L) Czern.	H	Brassicaceae	N2 & P2 –2-3
62	*Raphanus sativus* L.	H	Brassicaceae	N1 & P1 2-3
63	*Boswellia serrata* Roxb. ex Colebr.	T	Burseraceae	N3 & P2 4-6
64	*Canarium strictum* Roxb.	T	Burseraceae	N3 & P2 3-5
65	*Garuga pinnata* Roxb.	T	Burseraceae	N3 & P2 4-5
66	*Bauhinia purpurea* L.	T	Caesalpiniaceae	N2 & P3 –9-12
67	*Bauhinia variegata* Wt.	T	Caesalpiniaceae	N2 & P3 –2-4
68	*Tamarindus indica* L.	T	Caesalpiniaceae	N1 & P3 –3-5
69	*Caesalpinia pulcherrima* (L.) Sw.	S	Caesalpiniaceae	N3 & P3 1-12
70	*Peltophorum pterocarpum* (DC.) Baker ex Heyne	T	Caesalpiniaceae	N2 & P1 3-5
71	*Cassia auriculata* L	S	Caesalpiniaceae	N2 & P2 10-5
72	*Delonix elata* (L.) Gamble	T	Caesalpiniaceae	N3 & P3 3-4
73	*Delonix regia* (Boj. ex Hk.) Raf.	T	Caesalpiniaceae	N3 & P2 5-6
74	*Capparis zeylanica* L.	C	Capparaceae	N3 & P3 –12-4
75	*Capparis grandis* L.f.	S	Capparidaceae	N3 & P3 4-5
76	*Cleome viscosa* L.	H	Capparidaceae	N1 & P2 7-1
77	*Crataeva magna* (Lour.) DC	T	Capparidaceae	N2 & P2 12-4
78	*Garcinia indica* (Du Petit-Thou.) Choisy	T	Clusiaceae	N1 & P1 3-5
79	*Mammea suriga* Kosterm.	T	Clusiaceae	P1 3-4
80	*Mesua ferrea* L.	T	Clusiaceae	P1 1-4
81	*Terminalia arjuna* (Roxb.) Wt.& Arn.	T	Combretaceae	N2 & P2 –4-6
82	*Terminalia cattappa* L.	T	Combretaceae	N1 & P3 2-8
83	*Anogueissus latifolia* Wall	T	Combretaceae	N2 & P1 12-1
84	*Combretum indicum* L.	C	Combretaceae	N3 & P3 2-4
85	*Terminalia bellirica* (Gartn.) Roxb.	T	Combretaceae	N2 & P3 4-5
86	*Terminalia chebula* Retz.	T	Combretaceae	N1 & P2 5-6
87	*Jaquemontia violacea* (Jacq.) G.Don.	C	Convolvulaceae	N1 & P1 6-12
88	*Argyreia nervosa* (Burm.f.) Bojer	C	Convolvulaceae	N3 & P1 6-12
89	*Cordia dichotoma* Forst.f.	T	Cordiaceae	N3 & P3 –3-4
90	*Dillenia indica* L.	T	Dilleniaceae	N3 & P1 3-4
91	*Dillenia pentagyna* Roxb.	T	Dilleniaceae	N3 & P1 1-3
92	*Diospyros ferrea* (Willd.) Bakh.	T	Ebenaceae	N2 & P2 2-5
93	*Diospyros melanoxylon* Roxb.	T	Ebenaceae	N1 & P3 1-4
94	*Elaeocarpus sphaericus* K. Schum.	T	Elaeocarpaceae	N2 & P2 9-10
95	*Muntingia calabura* L.	T	Elaeocarpaceae	N2 & P2 1-12
96	*Erythroxylum monogynum* Roxb.	T	Erythroxylaceae	N1 & P2 2-4

97	*Phyllanthus emblica* L.	T	Euphorbiaceae	N3 & P2 –3-5
98	*Bridelia retusa* (L.) Spr.	T	Euphorbiaceae	N3 & P3 2-3
99	*Emblica officinalis* Gaertn.	T	Euphorbiaceae	N3 & P2 3-5
100	*Mallotus philipensis* MuellArg	T	Euphorbiaceae	P1 8-11
101	*Phyllanthus acidus* (L) Skeels	T	Euphorbiaceae	N2 & P2 4-6
102	*Butea monosperma* (Lam.) Kuntze	T	Fabaceae	N2- 5-9
103	*Dalbergia paniculata* Roxb.	T	Fabaceae	N1 & P2 3-5
104	*Pongamia pinnata* (L.) Pierre	T	Fabaceae	N1 & P1 3-6
105	*Dalbergia sissoo* Roxb. ex DC	T	Fabaceae	N1 & P2 8-11
106	*Crotalaria juncea* L.	H	Fabaceae	N3 & P3 9-12
107	*Erythrina variegata* L.	T	Fabaceae	N2 & P2 3-6
108	*Lablab purpureus* subsp. purpureus	C	Fabaceae	N2 & P2 3-6
109	*Pterocarpus marsupium* Roxb.	T	Fabaceae	N2 & P2 3-5
110	*Pterocarpus santalinus* L.	T	Fabaceae	N2 & P2 3-5
111	*Sesbania grandiflora* (L.) Poir.	T	Fabaceae	N1 & P1 2-4
112	*Vigna radiata* (L.) R. Wilczek	C	Fabaceae	N2 & P2 1-3
113	*Vigna mungo* (L.) Hepper	C	Fabaceae	N2 & P2 1-3
114	*Flacourtia indica* (Burm.f.) Merr.	S	Flacourtiaceae	N1 & P2 11-2
115	*Flacourtia montana* Grah. Attak	S	Flacourtiaceae	N1 & P2 11-2
116	*Chloroxylon swietenia* DC.	T	Flindersiaceae	N2 & P2 3-4
117	*Ocimum sanctum* L	H	Lamiaceae	N3 & P3 6-9
118	*Orthosiphon glabratus* Benth.	H	Lamiaceae	N2 & P2 7-12
119	*Pogostemon heyneanus* Benth.	H	Lamiaceae	N2 & P3 11-12
120	*Actinodaphne angustifolia* Nees	T	Lauraceae	N1 & P1 11-2
121	*Cassytha filiformis* L.	C	Lauraceae	N3 & P3 7-4
122	*Litsea glutinosa* (Lour) C.B. Robin.	T	Lauraceae	N1 & P1 1-10
123	*Litsea monopetala* (Roxb.) Pers.	T	Lauraceae	N3 & P3 12-1
124	*Careya arborea* Roxb.	T	Lecythidaceae	N2 & P2 2-4
125	*Couropita guianensis* Aubl.	T	Lecythidaceae	N3 & P3 3-5
126	*Barringtonia racemosa* Bl.	T	Lecythidaceae	N3 & P3 3-5
127	*Erythroxylon monogynum* Roxb.	T	Linaceae	N2 & P1 1-12
128	*Lagerstroemia indica* L.	T	Lythraceae	N2 & P2 7-9
129	*Lagerstroemia parviflora* Roxb.	T	Lythraceae	N1 & P2 4-6
130	*Lagerstroemia speciosa* Pers.	T	Lythraceae	N3 & P2 3-4
131	*Lawsonia inermis* L.	S	Lythraceae	N1 & P1 3-9
132	*Woodfordia fruticosa* (L.) Kurz	T	Lythraceae	N1 & P2 3-10
133	*Lagerstroemia parviflora* Roxb.	T	Lythridaceae	N1 & P2 4-6
134	*Abutilon indicum* (L.) Sweet.	S	Malvaceae	N2 & P2 1-12
135	*Lannea coromandelica* (Houtt.) Merr.	H	Meliaceae	N2 & P2 – 2-5
136	*Azadirachta indica* Juss.	T	Meliaceae	N2 & P3 5-8
137	*Aglaia elaeagnoidea* Benth.	T	Meliaceae	N3 & P2 1-2

138	*Aphanamixis polystachya* Parker	T	Meliaceae	N3 & P2 4-5
139	*Azadirachta indica* Juss.	T	Meliaceae	N2 & P3 5-9
140	*Melia azedarach* L.	T	Meliaceae	N2 & P2 1-7
141	*Coculus hirsutus* Theob.	C	Menispermaceae	N3 & P1 8-11
142	*Tinospora cordifolia* Miers	C	Menispermaceae	N3 & P1 8-11
143	*Prosopis juliflora* DC.	T	Mimosaceae	N1 & P1 9-3
144	*Leucaena leucocephala* (Lam.) de Wit	T	Mimosaceae	N3 - 7-11
145	*Acacia auriculiformis* A. Cunn. ex Bth.	T	Mimosaceae	N2 & P2 1-5
146	*Acacia leucophloea* (Roxb.) Willd.	T	Mimosaceae	N2 & P1 8-11
147	*Acacia nilotica* (L.) Willd. ex Del.	T	Mimosaceae	N3 & P2 1-9
148	*Adenanthera pavonina* L.	T	Mimosaceae	N2 & P2 2-5
149	*Dichrostachys cinerea* (L.) Wt. & Arn.	S	Mimosaceae	N2 & P2 6-11
150	*Parkia timoriana* (DC.) Merri.	T	Mimosaceae	N3 & P2 10-12
151	*Prosopis cineraria* (L.) Druce	T	Mimosaceae	N2 & P2 9-4
152	*Prosopis juliflora* (Swartz) DC.	T	Mimosaceae	N1 & P1 9-3
153	*Xylia xylocarpa* (Roxb.) Taub.	T	Mimosaceae	N2 & P2 3-4
154	*Artocarpus heterophyllus* Lam.	T	Moraceae	P3 3-4
155	*Morus alba* L.	S	Moraceae	P2 3-4
156	*Moringa oleifera* Lam.	T	Moringaceae	N1 & P2 1-12
157	*Eucalyptus globulus* Labill.	T	Myrtaceae	N2 & P1 2-4
158	*Psidium guajava* L.	T	Myrtaceae	N3 & P3 5-6
159	*Syzygium cumini* (L.) Skeels	T	Myrtaceae	N1 & P1 5-6
160	*Punica granatum* L.	S	Myrtaceae	N & P 4-5
161	*Combretum albidum* G.Don	C	Myrtaceae	N & P 2-6
162	*Psidium guajava* L.	T	Myrtaceae	N1& P1 10-12
163	*Syzygium cumini* (L.) Skeels	T	Myrtaceae	N1& P1 4-6
164	*Syzygium jambos* (L.) Alst.	T	Myrtaceae	N1 & P1 9-11
165	*Bougainvillea spectabilis* Willd	S	Nyctaginaceae	P-8-12
166	*Sesamum indicum* L.	H	Pedaliaceae	N1 & P2 7-9
167	*Zea mays* L.	H	Poaceae	P – 7-8
168	*Antigonon leptopus* Hk. & Arn.	C	Polygonaceae	N1 & P2 1-12
169	*Polygonum glabrum* Willd.	C	Polygonaceae	N2 & P2 6-9
170	*Trianthema portulacastrum* L.	H	Portulaceae	N3 & P3 – 1-12
171	*Grevillea robusta* A.Cunn. ex R.Br.	T	Proteaceae	N1 & P1 3-6
172	*Punica granatum* L.	S	Lythraceae	N2 & P1 4-5
173	*Zizyphhus maurtiana* Lamk.	S	Rhamnaceae	N2 & P2 7-11
174	*Ziziphus oenoplia* (L.) Miller	C	Rhamnaceae	N1 & P1 8-11
175	*Scutia myrtina* (Burm.f.) Kurz	S	Rhamnaceae	N1 & P1 10-4
176	*Ziziphhus nummularia* (Burm.f.) Wt. & Arn.	S	Rhamnaceae	N1 & P3 4-6
177	*Adina cordifolia* Arsintega	T	Rubiaceae	N1 & P2 5-8

178	*Catunaregam spinosa* (Thunb.) Tirveng.	S	Rubiaceae	N1 & P1 5-11
179	*Citrus aurantifolia* Swing.	T	Rutaceae	N1 & P1 3-4
180	*Murraya koenigii* (L.) Spreng.	T	Rutaceae	N3 & P2 4-5
181	*Aegle marmelos* (L.) Corr.	T	Rutaceae	N2 & P1 3-6
182	*Citrus aurantifolia* (Christm. & Panz.) Swing.	T	Rutaceae	N1 & P1 3-4
183	*Murraya koenigii* (L.) Spr.	T	Rutaceae	N3 & P2 3-9
184	*Santalum album* L.	T	Santalaceae	N1 & P2 8-11
185	*Sapindus trifoliatus* L.	T	Sapindaceae	N1 & P2 9-12
186	*Sapindus emarginatus* Anon.	T	Sapindaceae	N1 & P2 9-12
187	*Dodonea viscosa* (L.) Jacq.	S	Sapindaceae	N2 & P2 7-10
188	*Schleichera oleosa* (Lour.) Oken	T	Sapindaceae	N2 & P2 2-3
189	*Madhuca longifolia* Mac Br.	T	Sapotaceae	N1 & P2 2-5
190	*Lycopersicon esculentum* Mill.	H	Solanaceae	N1 & P3 6 -12
191	*Sonneratia apetala* Buch. Ham.	T	Sonneratiaceae	N1 & P2 4-6
192	*Helicteres isora* L.	S	Sterculiaceae	N1 & P3 7-12
193	*Pterospermum acerifolium* Willd	T	Sterculiaceae	N1 & P3 4-11
194	*Pterospermum xylocarpum* (Gaertn.) Sant. &Wagh	T	Sterculiaceae	N1 & P3 9-12
195	*Sterculia urens* Roxb.	T	Sterculiaceae	N1 & P3 3-4
196	*Eurya japonica* Thunb.	S	Theaceae	N1 & P1 4-9
197	*Lantana camara* L	S	Verbanaceae	N3 & P3 6-10
198	*Phyla nodiflora* (L.) Greene	H	Verbenaceae	N1 & P3 1-12
199	*Premna tomentosa* Willd.	S	Verbenaceae	N1 & P2 3-6
200	*Premna latifolia* roxb.	S	Verbenaceae	N1 & P2 3-6

Bee forage Value N=Nectar Source, **P** – Pollen Source; **1** – Major Source, **2** – Medium Source, **3** - Minor Source. **Flowering Period: 1**– January, **2**- February, **3**- March….**12**-December.

Plate.1 Map of Study area Showing location of Telangana, Ranga Reddy District and Kanha Shanti Vanam.

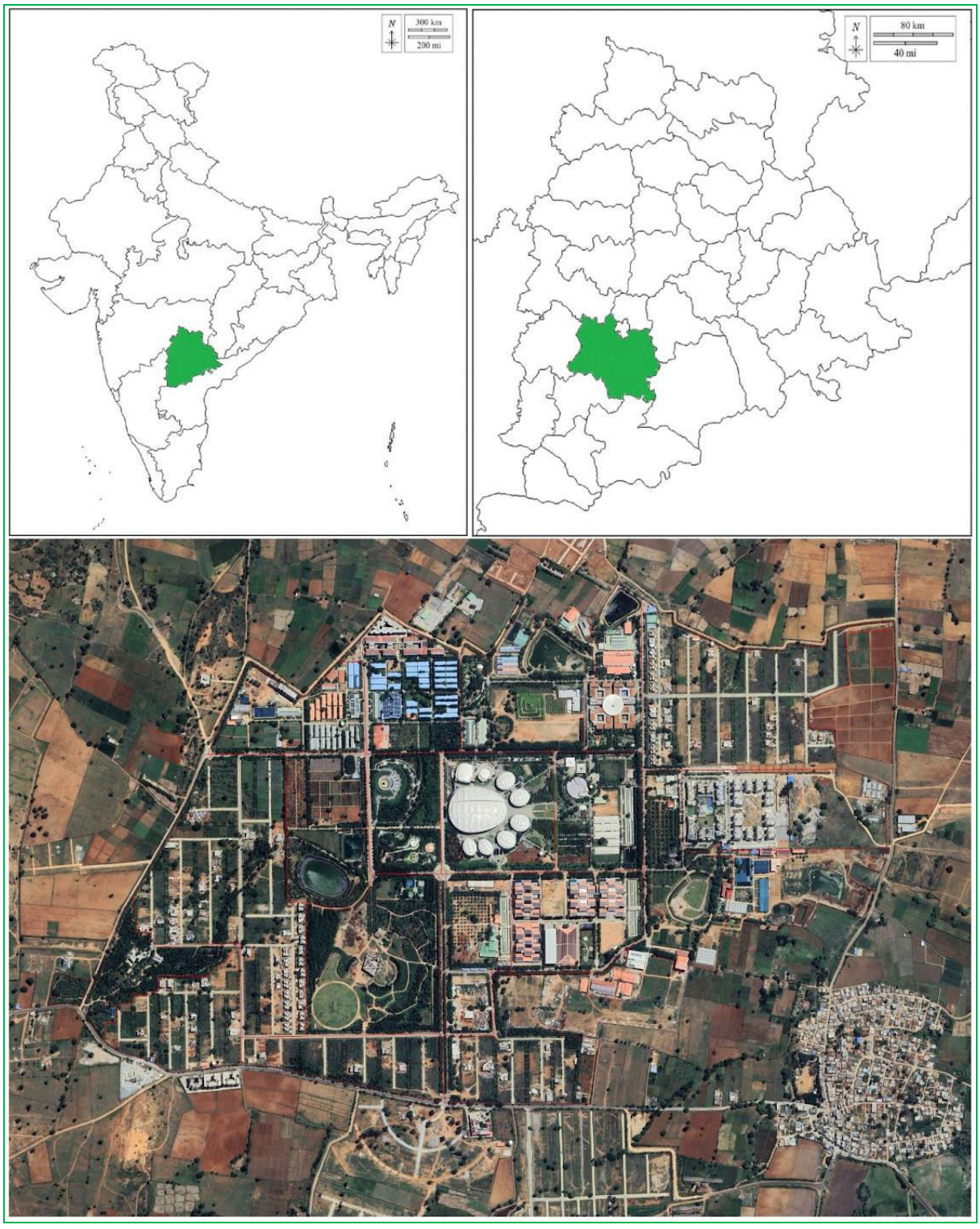
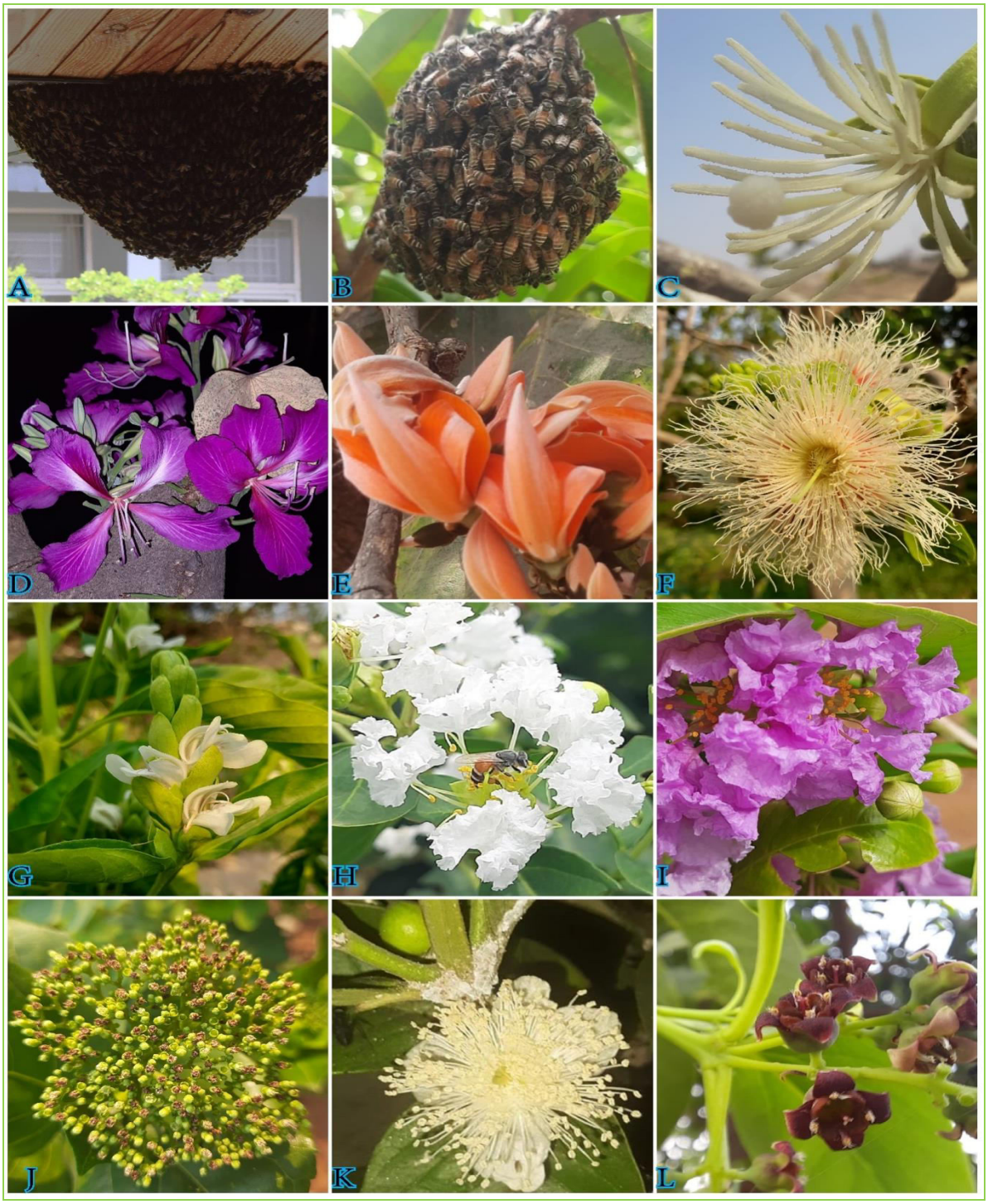


Plate.2 A. *Apis dorsata, B. Apis florea, C. Alangium salvifolium, D. Bauhinia purpurea, E. Butea monosperma, F. Careya arborea, G. Justicia adhatoda, H. Lagerstroemia indica, I. Lagerstroemia speciosa, J. Premna serratifolia, K. Psidium guajava and L. Santalum album.*



Conclusion

The study conducted in Kanha Santhi Vanam, Hyderabad, from June 2023 to November 2024, identified over 200 plant species as important source of nectar and pollen for honey bees. Key species includes Eucalyptus, Syzygium, Cassia, Azadiracta, Citrus, and Pongamia, which offer year-around foraging resources.

Plants were categorized as nectar-yielding, pollen-yielding, or both based on CBRTI and KVIC (2023) Guidelines. The presence of all four Apis species confirms the areas sustainability for beekeeping. The findings serve as a voluble guide for promoting sustainable apiculture and conserving bee-friendly flora in Telangana.

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