DOI:10.26524/krj.2022.8

Kongunadu Research Journal 9 (1): 53-61, 2022
Publisher: Kongunadu Arts and Science College, Coimbatore.

https://krjournal.com/index.php/krj/article/view/537

RESEARCH ARTICLE

SURVEY AND DOCUMENTATION OF PLANT SPECIES IN NORTH COIMBATORE

Sneha, V., Monisha, B., Sridharan, C., Nandhini, A. and Revathi, P.*
PG and Research Department of Botany, Kongunadu Arts and Science College (Autonomous), Coimbatore – 641029, Tamil Nadu, India

ABSTRACT

Due to the civilization, the core environmental changes has been observed in city where still documentation of cultivated and wild species has yet to be done for future studies over the seasonal changes and study of relationship between human and plants in recent scenario. Based on this fundamental concept, the study area has been chosen for the documentation of plant species in north Coimbatore city area to accomplish the project. The planned study area comprises of Periyanaicken palayam, Annur, Karamadai, Sarcarsamakulam. There are hundred plant species documented in this floristic study. Out of which 62 are domesticated plants as ornamental or other consumption purposes and 37 are wild plants around the residing area. This analysis indicated that the documented plant species comes under 40 taxonomic families. Highest species found in the family Fabaceae (15), Apocyanaceae (7), Solanaceae (5), Malvaceae (5), Acanthaceae (5). It is also revealed that the documented domesticated plant species are with the high number of Tree habits (40%) whereas documented wild plant species are with the high number of Herb habits (46%) than other habits. Among which most of the plants are used for domestic consumption, ornamentation and few are medicine. In this survey, no rare status plants have been observed and the area is completely civilized and the land area around the residence has been highly influenced by human beings. The wild species documented in this area are herbaceous weed plants blooming at every rainy season. This study concluded that the wild plants are highly destroyed for various purposes and lead to have only herbaceous weeds around us. Hence the cultivation of trees and protection management has to be initiated to increase the green cover of the study area to regain the misty, moderate climate as the identity of Coimbatore. It will definitely improve the wild fauna lives of the area and other ecological services from vegetation.

Keywords: North Coimbatore, Domesticated plants, Wild Plants, Documentation, Plant protection

1. INTRODUCTION

A flora is an inventory of the plants of a defined biogeographical region. The floristic studies are considered as the backbone of the assessment of phytodiversity, conservation management and sustainable utilization of bioresources of a region. Those are helpful in providing clues of changing floristic pattern, new invasions, current status, rare, endemic and threatened (RET) taxa in a phytogeographical area. A thorough taxonomic study of the flora and forest is essential to understand and assess the richness of their biodiversity. Quantitative inventories help to identify species that are in different stages of vulnerability [1] as well as the various factors that influence the existing vegetation in any region. Moreover in any resource management programs, continuous updating of data about any vegetation, flora and economically relevant plants of the region is an important component of bio-prospecting tools [2].

India possesses a rich biological diversity and incorporates two megadiversity centers. However, large concern exists on the conservation and sustainable utilization of these rich bioresources. The majority of rural communities living in

*Correspondence: Revathi, P., PG and Research Department of Botany, Kongunadu Arts and Science College, Coimbatore - 641029, Tamil Nadu, India. E.mail: revathip_bo@kongunaducollege.ac.in

mountain and hill regions use wild and non-cultivated edible plant species for food, medicine and other purposes [3, 4, 5]. Both in anthropology and ecology, a now classical distinction has been made between hunter gatherers and agriculturalists. The former were seen to rely regularly on non-cultivated managed plants, and the latter strictly on cultivated ones [6].

In recent years, various studies have shown that non-cultivated wild gathered plants play an important role in supplying seasonal food in rural Mediterranean communities [7] (Rivera et al. 2005). However, their availability, use, status and contribution to livelihood security are poorly documented, and they have been generally overlooked in recent agro-biodiversity conservation and management programmes [8]. Without flora and fauna, humans cannot exist. The flora generates and releases oxygen, which is needed by the fauna for respiratory purposes. In return, the fauna produces and releases carbon dioxide, which is needed by the flora for photosynthesis. It's a symbiotic kind of relationship. In the same line, humans cannot get by without both flora and fauna. The oxygen that we breathe in comes from the flora, and the carbon dioxide we exhale is vital for the flora. Besides, plants are an essential resource for human well-being. Ecology is the study of the relation and the interactions between organisms and their environment. It comprises the floral and faunal communities of an area. With changes in environmental conditions, structure, density and composition of plants, animals also undergo changes [9].

Crop wild relatives remain the largest reservoir of genetic diversity for crop improvement and have been utilized for major gene disease and pest resistance, and abiotic stress tolerance [10]. It is estimated that on the Earth there are between 300,000 and 500,000 species of higher plants, of which approximately 369,000 have been identified or described [11]. Many species are still unknown to science, while perhaps a third is at risk of extinction [12]. Approximately, 2,500 species have undergone some degree of domestication, and 250 species are considered to be fully domesticated, in the sense that their full lifecycle became dependent on human cultivation [13, 14].

Flora of southern Western Ghats regions of Coimbatore and Nilgiri mountains were botanically described by Gardener (1845), Lushington (1902), Fischer (1906, 1921) and Bladder (1908). The flora in Coimbatore city and its environs was studied by Chandrabose (1967), and Chandrabose and Nair (1988) published the Flora of Coimbatore. Some additions to the flora of Anamalai hills of Coimbatore district were compiled by Vajravelu and Joseph (1974) and no comprehensive floristic account of the floristic diversity of Coimbatore, particularly on the plants of the Madukkarai hills of Coimbatore and its environs [15].

Due to civilization, the core environmental changes have been observed in cities where documentation of cultivated and wild species has yet to be done for future studies over the seasonal changes and study of relationship between humans and plants in recent scenarios. Based on the above fundamentals, the following objectives have been framed to accomplish the project.

- ✓ To categorize the area for study to document the floristic composition.
- ✓ To identify and documentation of flowering plants available in the study period (November to April).
- ✓ To know the availability of the various plant species in the area.
- ✓ To identify the cultivation and wild plant species of the selected area
- ✓ To create awareness about the availability of plant species and beneficial information for the researchers.

2. MATERIALS AND METHODS

2.1. Study Area

Coimbatore North comprises of Periyanaickenpalayam, Annur, Karamadai, Sarcarsamakulam (S. S. Kulum). Coimbatore is located at11.0161°N 76.971°E. The city is located on the bank of Noyyal River surrounded by Western Ghats, at a distance of 490 kilometres (300 mi) south-west of Chennai, 190 kilometres (120 mi) south of Mysore, 330 kilometres (210 mi) south of Bangalore. It is located in the western part of the

state in the Kongu Nadu region. The annual rainfall throughout the year is 616.7mm. A project plan was framed on the theme of beneficial and ornamental flowering wild and cultivated available plants in Coimbatore. Local community blended flora was an important part of this study. The study area map is represented in (Figure -1).*2.2 Methods of Data Collection*

In this floristic study, the flowering vascular plants of cultivated and wild species have been documented during November 2021 to April 2022 in the North Coimbatore city area. Four visits of each zone of the study area were made and plants collected with different flowering seasons are considered for more information. The photos collected from the area have been considered for the identification of the same with the help of taxonomists. The identified plant species are traced for their family and common name. The collected information has been tabulated and photographs are documented.

Fig. 1. Study area of North Coimbatore, Tamil Nadu, India

The data is analyzed for the availability of the species for their composition in north Coimbatore, family dispersion, and habit status over the cultivated and wild plant species of the study area. Before starting the field work, preliminary information about the geographical area of study, its physiological features, climatic seasons, etc. were collected. The photographs of the plant are represented in the plate 1 to 4.

3. RESULTS AND DISCUSSION

The survey results provided that there are 102 plant species of wild and cultivated plant species in study area (Table 1 & 2). The observed plants have been identified and photographs are hoarded. The documented plant species common name, local name, botanical name, family have been tabulated (Table 3, 4 & 5). The plant comes under 41 families whereas the habit is maximally recorded as Trees for cultivated and Herbs in wild categories.

In a previous study, 300 plant species belonging to 206 genera and 72 families have been recorded from the area under study. The monocots were represented by 59 species belonging to 35 genera and 7 families, and dicots contributing 241 species belonging to 169 genera and 65 families. Based on habit classification of the enumerated plants, the majority of species were herbs (176 species) followed by climbers (53 species), trees (39 species) and shrubs (32 species) [16].

In another study, the total area of Karunya university campus constitutes about 0.001770% of the total area of the Western Ghats. If a small part of the Western Ghats is so diverse, then one can imagine the biodiversity of the whole Western Ghats. Identified different trees from 53 genera belonging to 27 families and ornamental plants from 58 genera belonging to 32 families and have studied their properties and uses [17].

Synthesis of ethnomedical uses and modern biological knowledge has been done on 40 medicinal plants used by women in hamlets in and around Anaikatty hills of Coimbatore District, Tamil Nadu. Women in these areas possess a rich knowledge of medicinal plants and still continue the medical tradition of using plants as medicine for themselves, their families and others around them [18].

A previous study reported that 30 plant species belong to 26 genera and 21 families. Among plant families Arecaceae and Fabaceae are dominant

with 3 species followed by Moraceae, Poaceae, Apocynaceae, Typhaceae and Solanaceae with 2 species each and rest of the families with 01 species each respectively [19]. In the present study, though the information is not collected from the indigenous people but the urban flora distribution has been evaluated and represented.

Habit

Habit of cultivated plant species recorded as Herb 11, shrub 22, climbers 7, and tree 26 of the plant specimens. It indicates the cultivation of trees for various purposes in the study area. It needs to improve further to get all the ecological services.

The hamlets lying adjacent to the Periyanayakkanpalayam forest range have been evaluated in a previous survey. The floral elements in the tribal hamlets are dominated by wild shrubs and trees whereas in the harijan hamlet they are dominated by herbaceous plants and cultivated crops. Some ethnobotanical studies have been conducted on the use of medicinal plants by the Irula tribes in Coimbatore and Anaikatty [20, 21].

Habit of wild plant species recorded in present survey as Herb 16, shrub 08, climbers 1, and tree 09 of the plant specimens. It indicates that the high anthropogenic influence causes the herb domination in and around the residence of study area.

Table 1. List of Domesticated Plant species in North Coimbatore

S. No.	Scientific Name	Family	Habit	Common Name
1.	*Abelmoschus esculentus L.*	Malvaceae	Herb	Ladies Finger
2.	*Alangium salviifoliunm* (L.F)	Comaceae	Tree	Alanji
3.	*Aloe barbadensis L.*	Asphodelaceae	Herb	Aloe Vera
4.	*Amaranthus spinosus L.*	Amaranthaceae	Herb	Spiny Amaranth
5.	*Arachis hypogaea L.*	Fabaceae	Herb	Groundnut
6.	*Areca catechu*	Arecaceae	Tree	Areca palm
7.	*Azadirachta Indica*	Meliaceae	Tree	Neem
8.	*Bougainvillea spectabilis* L.	Myctaginaceae	Small Tree	Great Bougainvillea
9.	*Caesalpinia pulcherrima L.*	Fabaceae	Tree	Peacock Flower
10.	*Canna Indica L.*	Cannaceae	Herb	African Arrowroot
11.	*Cassia fistula L.*	Fabaceae	Tree	Golden Shower Tree
12.	*Celosia spicata L.*	Amaranthaceae	Shrub	Silver Cockscomb
13.	*Citrus cavaleriei (H.Lev)*	Rutaceae	Tree	Ichang Papeda
14.	*Citrus limon L.*	Rutaceae	Tree	Lemon
15.	*Clitoria ternatea* L.	Fabaceae	Climber	Butterfly Pea
16.	*Cocos nucifera* L.	Arecaceae	Tree	Coconut Tree
17.	*Coriandrum sativam L.*	Apiaceae	Herb	Coriander
18.	*Crossandra infundibuliformis L.*	Acanthaceae	Shrub	Firecracker Flower
19.	*Cucurbita maxima* Ducheshe	Cucurbitaceae	Climber	Pumpkin
20.	*Epipremnum aureum L.*	Araceae	Climber	Golden Pothos
21.	*Ficus carica L.*	Moraceae	Tree	Fig
22.	*Gossypium arboreum L.*	Malvaceae	Shrub	Cottom

23.	*Hibiscus rosa sinensis L.*	Malvaceae	Shrub	China-Rose
24.	*Ixora chinensis (Lem)*	Rubiaceae	Shrub	Chinese Ixora
25.	*Jasminum auriculatum(vahl.)*	Oleaceae	Shrub	Jasmine
26.	*Jasminum grandiflorum L.*	Oleaceae	Shrub	Spanish Jasmine
27.	*Jasminum multiflorum (Burm.f.)*	Oleaceae	Climber	Star Jasmine
28.	*Justica adathoda L.*	Acanthaceae	Shrub	Malabar Nut
29.	*Lagenaria siceraria (molina)*	Cucurbitaceae	Climber	Bottle Guard
30.	*Lawsonia inermis L.*	Lythraceae	Shrub	Henna
31.	*Mangifera indica L.*	Anacardiaceae	Tree	Mango
32.	*Mangnolia champaca* (L.) Figlar.	Magnoliaceae	Tree	Champak
33.	*Mimusops elengi L.*	Sapotaceae	Tree	Spanish Cherry
34.	*Mirabilis jalapa* L.	Myctaginaceae	Herb	Four-O-Clock
35.	*Momordica charantia* L.	Moringaceae	Climber	Bitter-Melon
36.	*Moringa oleifera Lam*	Moringaceae	Tree	Drum Stick
37.	*Murraya koenigii L.*	Rutaceae	Tree	Curry Leaves
38.	*Musa acuminata L.*	Musaceae	Tree	Banana
39.	*Nerium oleander L.*	Apocynaceae	Shrub	Nerium
40.	*Ocimum tenuiflorum L.*	Lamiaceae	Herb	Sacred Basil
41.	*Passiflora foetida L.*	Passifloraceae	Climber	Passion Flower
42.	*Phyllanthus emblica L.*	Phyllanthaceae	Tree	Amla
43.	*Plumeria pudica (jacq)*	Apocynaceae	Shrub	Bridal Bouquet
44.	*Psidium guajava L.*	Myrtaceae	Small tree	Guava
45.	*Punica granatum L.*	Lythraceae	Shrub	Pomegranate
46.	*Ricinus communis L.*	Euphorbiaceae	Shrub	Castor
47.	*Rosa damascena L.*	Rosaceae	Shrub	Rose
48.	*Senna auriculata L.*	Fabaceae	Shrub	Avaram Senna
49.	*Solanum lycopersicum L.*	Solanaceae	Shrub	Tomato
50.	*Solanum melongena L.*	Solanaceae	Shrub	Brinjal
51.	*Solanum torvum L.*	Solanaceae	Shrub	Turkey Berry
52.	*Solanun nigrum L.*	Solanaceae	Shrub	Black Nightshade
53.	*Sorghum bicolor L.*	Poaceae	Herb	Great Millet
54.	*Syzygium cumini L.*	Myrtaceae	Tree	Java Plum
55.	*Tabernaemontana corymbosa*	Apocynaceae	Shrub	Great Rosebay
56.	*Tabernaemontana divaricata R.*	Apocynaceae	Shrub	Pinhweel Flower
57.	*Tarmarindus indica L.*	Fabaceae	Tree	Tamarind
58.	*Tecoma stans L.*	Bignoniaceae	Shrub	Yellow Bells
59.	*Terminalia arjuna L.*	Combretaceae	Tree	Arjun Tree
60.	*Terminalia catappa L.*	Combretaceae	Tree	Tropical Almond
61.	*Vachellia nilotica L.*	Fabaceae	Tree	Gum Arabic
62.	*Vitex negundo L.*	Verbanaceae	Small tree	Chinese Chaste Tree

Table 2. List of Wild Plant species in North Coimbatore

S. No	Scientific Name	Family	Habit	Common Name
1.	*Abutilon hirtum (Lam)*	Malvaceae	Herb	Indian mallow
2.	*Abutilon indicum* L.	Malvaceae	Shrub	Monkey Bush
3.	*Alangium salviifolium L. F*	Comaceae	Tree	Hill sack tree
4.	*Albizia julibrissin L.*	Fabaceae	Tree	Silk tree
5.	*Barleria cristata L.*	Acanthaceae	Shrub	Philippine violet
6.	Blumea lacera L.	Asteraceae	Herb	Lettuce-Leaf Blumea
7.	*Calotropis gigantea (Linn.) Aiton f.*	Apocynaceae	Shrub	Crown flower
8.	*Calotropis procera L.*	Apocynaceae	Shrub	Giant milkweed
9.	*Catharanthus roseus L.*	Apocynaceae	Herb	Cape periwinkle
10.	*Cleome gynandra* L.	Cleomaceae	Herb	Spider Flower
11.	*Cleome rutidosperma DC.*	Cleomaceae	Herb	Fringed spider flower
12.	*Cleome viscosa* L.	Cleomaceae	Herb	Asian Spider Flower
13.	*Coccinia grandis (L.) Voigt.*	Cucurbitaceae	Climber	Ivy gourd
14.	*Commelina benghalensis L.*	Commelinaceae	Herb	Benghal dayflower
15.	*Cynodon dactylon L.*	Poaceae	Herb	Bermuda grass
16.	*Delonix regia (Hook.) Raf.*	Fabaceae	Tree	Royal Poinciana
17.	*Duranta erecta L.*	Verbenaceae	Shrub	Golden dewdrop
18.	*Evolvulus alsinoides L.*	Convolvulaceae	Herb	Dwarf morning-glory
19.	*Ficus benghalensis L.*	Moraceae	Tree	Banyan
20.	*Ficus religiosa L.*	Moraceae	Tree	Arasamaram
21.	*Ipomoea obscura L. Ker Gawl.*	Convolvulaceae	Herb	Obscure morning glory
22.	*Lantana camara L.*	Verbanaceae	Shrub	Lantana
23.	*Leucas aspera L.*	Laminaceae	Herb	Tamba
24.	*Mesosphaerum suaveolens (L.) Kuntze*	Lamiaceae	Herb	Mint weed
25.	*Millettia pinnata L.*	Fabaceae	Tree	Indian beech
26.	*Millingtonia hortensis L.f.*	Bignoniaceae	Tree	Indian cork tree
27.	*Muntingia calabura (L.)*	Muntingiaceae	Tree	Jamaica tree
28.	*Oldenlandia corymbosa L.*	Rubiaceae	Herb	Old World Diamond-Flower
29.	*Peltophorum pterocarpum (DC.) Backer ex K. Heyne*	Fabaceae	Tree	Copper pod
30.	*Perityle emoryi*	Asteraceae	Herb	Emorya rocks rockdaisy
31.	*Phyllanthus amarus* Schum. & Thonn.	Phyllanthaceae	Herb	Child Pick-A-Back
32.	*Pinus densiflora L.*	Pinaceae	Tree	Japanese red pine
33.	*Prosopis juliflora (S.w)*	Fabaceae	Shrub	Mesquite
34.	*Ruellia tuberosa L.*	Acanthaceae	Herb	Cracker plant
35.	*Solanum surattense Burm. f.*	Solanaceae	Shrub	Wild Eggplant
36.	*Thunbergia erecta* (Benth.) T. Anderson	Acanthaceae	Shrub	Bush Clock Vine
37.	*Tridax procumbens L.*	Asteraceae	Herb	Coat buttons

Table 3. Number of Families From domesticated and Wild Plants

S. No	Family	No of species
1.	Acanthaceae	5
2.	Amaranthaceae	2
3.	Anacardiaceae	1
4.	Apiaceae	1
5.	Apocynaceae	7
6.	Araceae	1
7.	Arecaceae	2
8.	Asphodelaceae	1
9.	Asteraceae	3
10.	Bignoniaceae	2
11.	Cannaceae	1
12.	Cleomaceae	3
13.	Comaceae	2
14.	Combretaceae	2
15.	Convolvulaceae	2
16.	Cucurbitaceae	3
17.	Euphorbiaceae	1
18.	Fabaceae	12
19.	Lamiaceae	2
20.	Lythraceae	2
21.	Lythraceae	3
22.	Magnoliaceae	1
23.	Malvaceae	5
24.	Meliaceae	1
25.	Moraceae	3
26.	Moringaceae	2
27.	Muntingiaceae	1
28.	Musaceae	1
29.	Myctaginaceae	2
30.	Myrtaceae	2
31.	Oleaceae	3
32.	Passifloraceae	1
33.	Phyllanthaceae	2
34.	Pinaceae	1
35.	Poaceae	2
36.	Rosaceae	1
37.	Rubiaceae	2
38.	Rutaceae	3
39.	Sapotaceae	1
40.	Solanaceae	5
41.	Verbanaceae	2

Table 4. Habit of Cultivated Plants

S. No.	Habit	Number of Species	% of Habit Distribution
1	Herb	9	14.51
2	Shrub	21	33.87
3	Climber	7	11.29
4	Tree	25	40.32

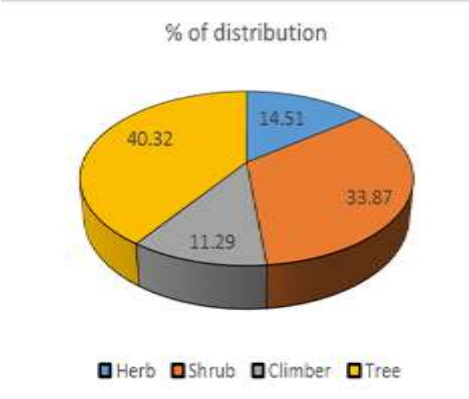

Fig. 2. Habit Distribution of Cultivated Plant Species

Table 5. Habit of Wild Plants

S. No.	Habit	Number of Species	% of Habit Distribution
1	Herb	17	45.94
2	Shrub	9	24.32
3	Climber	1	2.7
4	Tree	10	27.02

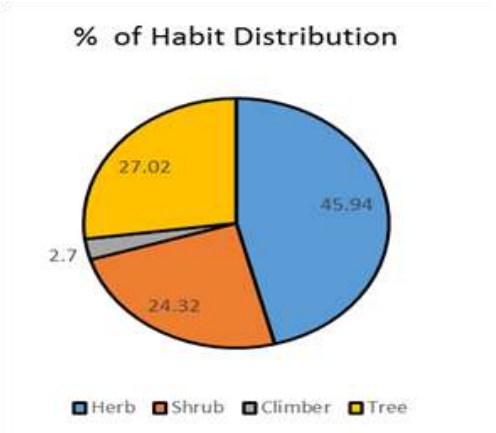

Fig. 3. Habit Distribution of Wild Plants Species

Many trees were very old and appear to be carefully conserved by the peoples looking to the benefits such as small timber for construction and agricultural purposes, fuel wood, fruits, fodder and other benefits rendered by trees [21]. In present study, domesticated for their commercial benefits or consumption benefits either may be for food or ornamental or shade due to their large canopy. The species like *Tarmarindus indica, Ficus carica, Mimusops elengi, Alangium salviifoliunm, Terminalia catappa, Cassia fistula* are cultivated for shade particularly since those trees are having large enough canopy.

4. CONCLUSION

There is not much awareness acquired by the local people about the importance and conservation of these wild plants, even though they play a significant role in our day-to-day life. The remarkable adaptation of plants, various disturbances including their ability to accumulate toxins in their environment suggest an important plant species in conservation. In this survey, no rare status plants have been observed in this study area. Hence it is indicating that the area is completely civilized and the land area around the residence has been highly influenced by human beings. The wild species documented in this area are herbaceous weed plants blooming at every rainy season.

This study suggests that the wild plants are highly destroyed for various purposes and lead to have only herbaceous weeds around us. The most benefited trees like *Azadirachta indica*, *Phyllanthus emblica, Psidium guajava, Moringa oleifera, Murraya koenigii* are domesticated for their commercial benefits or consumption benefits either may be for food or ornamental or shade due to their large canopy. Hence the cultivation of trees, greening of bare lands and protection management has to be initiated to increase the green cover of the study area – north Coimbatore to regain misty, moderate climate as the identity of Coimbatore. It will definitely improve the wild fauna lives of the area and other ecological services like rainfall, pure air and beauty of nature to enjoy.

REFERENCES

1. Padalia, H., Chauhan, N., Porwal, M. C. and Roy, P.S. (2004) Phytosociological observations on tree species diversity of Andaman Islands, India. *Curr. Sci.,* 87: 799–806.
2. Parthasarathy, N. (1999). Tree diversity and distribution in undisturbed and human-impacted sites of tropical wet evergreen forest in Southern Western Ghats, India. Biodivers. Conserv. 8: 1365 - 1381.
3. Dorji Y (2012). Women's roles in wild yam, conservation, management and use in Bhutan. In: Khadka M, Verma R, editors. Gender and biodiversity management in the Greater Himalayas, ICIMOD; p. 25–7.
4. Aryal, K.P., Berg, A., Ogle, B.M. (2009). Uncultivated plants and livelihood support: a case study from the Chepang people of Nepal. *Ethnobot. Res. Appl.* 7:409–22.
5. Hawksworth, D.L. (2006). Human exploitation of biodiversity and conservation: a question of balance? In: Hawksworth DL, Bull AT, editors. Human exploitation and biodiversity and conservation, vol. 15. Dordrecht: Springer; p. 2341–2.
6. Cordain, L., S.B. Eaton, A. Sebastian, N. Mann, S. Lindeberg, B.A. Watkins, J.H. O'Keefe, and J.Brand-Miller. (2005). Origins and evolution of the western diet: Health implications for the 21st century. *Am. J. Clin. Nutr.* 81:341-354.
7. Rivera, D., C. Obon, C. Inocencio, M. Heinrich, A. Verde, J. Fajardo, and R. llorach. (2005). The ethno-botanical study of local Mediterranean food Plants as Medicinal Resources in Southern Spain. *J. Physiol. Pharmacol.* 56 (S):97-114.
8. Kamal Prasad Aryal, Sushmita Poudel, Ram Prasad Chaudhary, Nakul Chettri, Pashupati Chaudhary, Wu Ning and Rajan Kotru (2018). Diversity and use of wild and non-cultivated edible plants in the Western Himalaya. *J. Ethnobiol. Ethnomedicine* 14:10.
9. Kiruthika, K., Sulaiman, M. and Gopalan, R. (2017). Additions to the flora of Coimbatore hills, Tamil Nadu, India. *J. Threat. Taxa*. 9(2), 9881–9884.
10. Clarice J. Coyne, Shiv Kumar, Eric J.B. (2020). von Wettberg, Edward Marques,Jens D.

Berger,Robert J. Redden,T.H. Noel Ellis,Jan Brus,Lenka Zablatzká,Petr Smýkal. Potential and limits of exploitation of crop wild relatives for pea, lentil, and chickpea improvement. Legume Science. 2:e36; 1-25.
11. Willis, K.J. (Ed.) (2017). State of the World"s Plants 2017. Report (Kew: Royal Botanic Gardens).
12. Pimm, S.L. and Joppa, L. N. (2015). How Many Plant Species are there, where are They, and at What Rate are They Going Extinct? Ann. Missouri Bot. Gard. 100, 170–176.
13. Meyer, R.S., DuVal, A.E., Jensen, H.R. (2012). Patterns and processes in crop domestication: an historical review and quantitative analysis of 203 global food crops. *New Phytol.* 196, 29–48.
14. Gaut, B.S., Seymour, D.K., Liu, Q., Zhou, Y. (2018). Demography and its effects on genomic variation in crop domestication. *Nat. Plants* 4, 512–520.
15. Palanisamy, N.K., Ferina, N., Amirulhusni, A. N., Mohd-Zain, Z., Hussaini, J., Ping, L. J. and Durairaj, R. (2014). Antibiofilm properties of chemically synthesized silver nanoparticles found against *Pseudomonas aeruginosa*. *J. nanobiotechnology*, 12(1), 1-7.
16. Jayanthi Palanisamy and Rajendran Arumugam (2014). Phytodiversity in the Madukkarai Hills of South Western Ghats. *Check List* 10(4): 883–892.
17. Philomena George, Chetan Arekar and Subhashini, D. (2011). Biodiversity survey of trees and ornamental plants in Karunya University, Coimbatore, India. *Academic Journals.* 3(9), 431-443.
18. Bhanumathi Natarajan, Berit Smestad Paulsen and P. Pushpangadan (1999) An Ethnopharmacological Study from the Coimbatore District, Tamil Nadu, India: Traditional Knowledge Compared With Modern Biological Science, *Pharmaceutical Biology*, 37:5, 378-390.
19. Harish Kumar, K. and Kiran B.R. (2017). Preliminary survey of Plant diversity in Bhadra Fish Farm, Karnataka. International Journal For Innovative Research In Multidisciplinary Field, 3(6), 277-279.
20. Lakshamanan, K.K. and Narayanan, A.S.S. (1990). Antifertility herbals used by the tribals in Anaikatty hills, Coimbatore district, Tamil Nadu. *J Econ Tax Bot* 14: 171–173.
21. Sankaranarayanan, A.S. (1988). Folk-lore medicines for jaundice from Coimbatore and Palghat districts of Tamil Nadu and Kerala, India. *Anc Sci Life* 7: 175–179.
22. Shivanna, H., Parasurama Janagiri and Sanjeev Kyatappanavar. (2005). Enumeration of Tree Species in Farm Lands of Gadag District of Karnataka. Karnataka *J. Agric. Sci.,* 18 (3): 850-853.

About The License