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Documentation of Cultivated species Of Ballari District,Karnataka

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Abstract :

Ballari district in Karnataka, India, is a significant agricultural hub, with a diverse range of cultivated plants playing a crucial role in the local economy and food security. This study aimed to document the variety of cultivated plants in Ballari district, including crops, horticultural plants. Our survey revealed that the district cultivates a wide range of plants, including cereals like paddy, wheat, and jowar; pulses like Bengal gram, red gram, and green gram; oilseeds like groundnut, sunflower, and; commercial crops like sugarcane, cotton, and tobacco; and horticultural crops like mango, banana, and tomato. Additionally, various medicinal plants like aloe vera, ashwagandha, and tulsi are also cultivated in the region. The study highlights the importance of preserving and promoting this plant diversity to ensure sustainable agriculture, food security, and livelihoods for the local communities. Further research and conservation efforts are necessary to protect and enhance the cultivated plant diversity in Ballari district.

Keywords - Sustainable, Cultivated, Plant Diversity, Conservation.

INTROUCTION

Human have learned to cultivate plants for leading a settled life. The process of cultivation of plants for fulfilling the needs for food and fodder began during the middle stone age (Mesolithic age).Human civilization got transformed from food gatherers to food producers. The passage of time, it became more advanced as better tools were developed and used in agriculture. This became important as it fulfilled the basic needs of food, shelter and clothing. The fruits, vegetables cereals and fodder for cattle provided by plants formed the basis of every day needs of humans. Crops such as rice, wheat, maize sorghum, sugarcane, potato, beans and soybean were domesticated primarily in almost all parts of the world. This unit provides you a description about the major centers of origin of crop plants and their subsequent distribution in different parts of the world.

History and Science of Cultivated Plants narrates how humans transitioned from foragers to farmers and have arrived at present day industrial agriculture-based civilization. It entails myths, historical accounts, and scientific concepts to describe how human efforts have shaped and produced easier to grow, larger, tastier, and more nutritious fruits, vegetables, and grains from wild plants. Using examples of various economically and socially important crops central to human civilization, the book describes the origin of crop plants, the evolution of agricultural practices.

MATERIALS AND METHODS

The district of Bellary is one among 31 districts of the state of Karnataka in the Union of India, especially the South India. Bellary district, having seven taluk as situated between 14° 30' and 15° 50' North latitude and 75° 40'and 77° 11' East longitude. The district has semi-arid climate and hot summers with 600 mm rainfall. Ballari's vegetation consists of dry deciduous forests, scrublands and grasslands.

Current research has been carried out from JAN-JUN (2023-24). The collected plants are identified with the aid of flora (Cook, 1903 – 1958; Gamble, 1915 – 1934; Saldanha & Nilcolson, 1976; Sing, 1988; Saldanha, 1984 – 1996; Seetharam et al., 2000; Kotresha & Sidanand Kambar, 2016; Seetharam et al., 2018; Yoganarasimhan et al., 2018). The plant names were updated using the plant list. The plants collected were subjected to chemical treatment for killing, fixing and made herbarium accordingly, indicating the conservation status as per IUCN red list of threatened species.

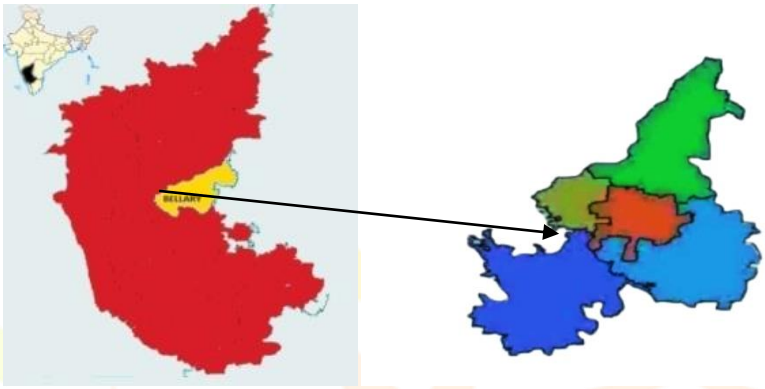


Fig.1: Map of 1. India, 2. Karnataka, 3. Ballari district.

RESULT AND DISCUSSION :

This Study presents a comprehensive documentation of 80 species of cultivated plants and those were tabulated including Botanical names, Vernacular name, IUCN Status, Habit, Uses in the table. Habit of plant shows most of them are 35 Herb (43.75%), 30 Shrub (37.5%), 10 Tree (12.5%),5 Climber (6.25%) Fig. 1. Among life forms of the collected species, majority of the species were perennials 70 species (89.74%) and by annuals 8 species (10.25%) in Fig 2.

An evaluation of 78 cultivated species revealed that there are 60 species in least concern category (76.92%), 50 species are of Not applicable category (64.10%), followed by 3 species in Endangered category (3.84%) and 2 species in vulnerable category (2.56%) in Fig 3. The most dominant families are Poaceae, Acanthaceae with 6 species (7.5%), Aracaceae, Asteraceae 5 species (6.25%), Amaryllidaceae, Araceae with 4 species (5%) in Fig 4.

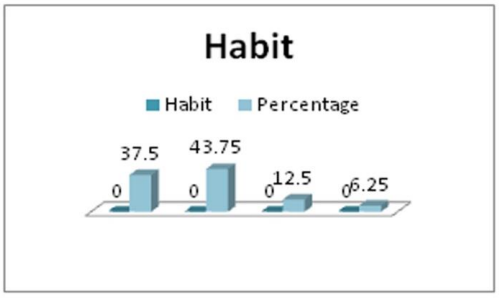


Fig 1: Habit of Cultivated Plants

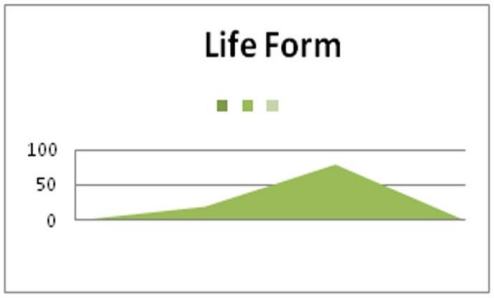


Fig 2: Life form of Cultivated Plants.

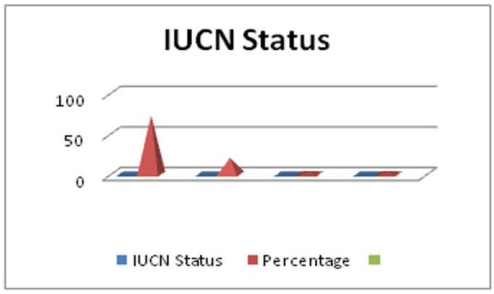


Fig 3:IUCN Status of Cultivated Plants.

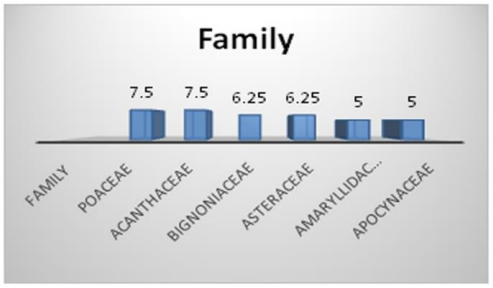
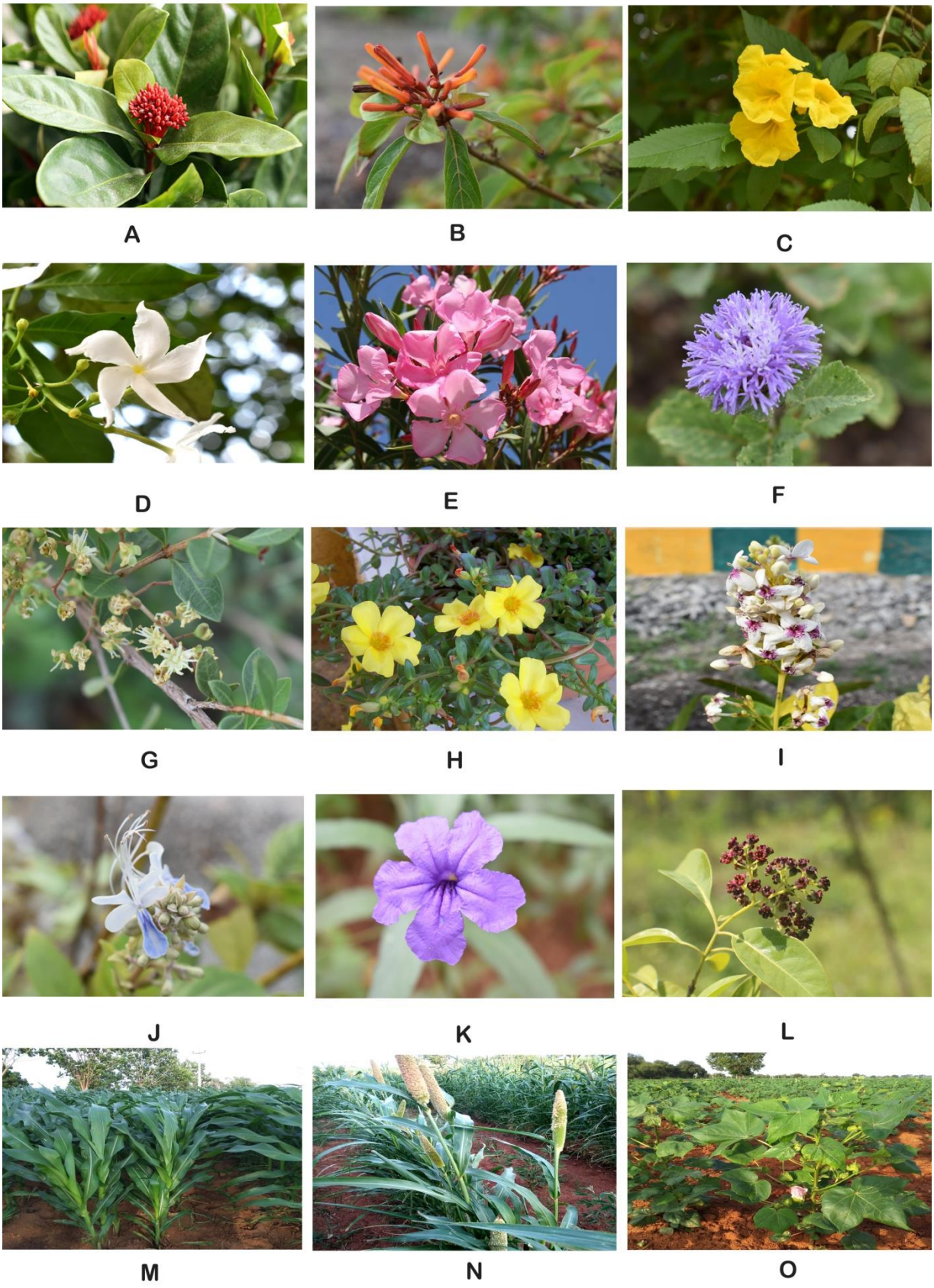


Fig 4: Family of cultivated plants.



A) *Ixora chinensis* Lam.	B) *Hamelia patens* Jacq.	C) *Tecoma stans* (L.) juss. ex kunth.
D) *Tabernaemontana divaricata* (L).	E)*Nerium oleander* L.	F)*Centratherum punctatum* Cass
G) *Lawsonia inermis* L.	H) *Portulaca umbraticola* Kunth.	*I) Pseuderanthemum maculatum*
J) *Rotheca serrata* (L.) Steane & Mabb.	K) *Ruellia simplex* C.Wright	L) *Santalum album* L.
M) *Zea mays* L.	N) *Cenchrus americanus* (L.).	O)*Gossypium hirsutum* L.

Table 1 Shows cultivated plants in Ballari District .

SL NO	NAME OF SPECIES	FAMILY	VERACULAR NAME	IUCN STATUS	HABIT	LIFE FORM	USES
01	*Allium Sativum*L.	Amaryllidaceae	Garlic, Lahsun	LC	H	P	Ornamental
02	*Acalypha wilkesiana* Müll.Arg.	Euphorbiaceae	Copper Leaf	LC	S	P	Ornamental
03	*Allium cepa* L	Amaryllidaceae	Onion	LC	H	P	Food
04	*Alocasia macrororhiza* (L) G. Don	Araceae	Mankand, Kalmankand	LC	H	P	Ornamental
05	*Annona squamosa* L.	Annonaceae	Sithapala	LC	T	P	Ornamental
06	*Asclepias tuberosa* L.	Apocynaceae	Butterfly Weed	LC	H	P	Ornamental
07	*Borassus fiabellifer* L.	Arecaceae	Palmyra Palm	LC	T	P	Food
08	*Bougainvillea spectabilis*	Nyctaginaceae	Kempu Gonde	NA	C	P	Ornamental
09	*Brassaia actionophylla Endl*.	Araliaceae	Umbrella Tree	LC	S	P	Ornamental.
10	*Caesalpinia pulcherrima* (L.) Sw.	Fabaceae	Peacock flower	LC	S	P	Ornamental
11	*Caladium bicolor* (Ait. Ex Dryand.) Vent.	Araceae	Kala Tora	LC	H	P	Ornamental
12	*Calendula officinalis* L.	Asteraceae	Zergul, Genda	LC	H	A	Ornamental
13	*Calliandra tergemina* (L.) Benth.	Fabaceae	Raktakanchan	LC	S	P	Ornamental
14	*Canna indica* L.	Cannaceae	Indian Shot	LC	H	P	Ornamental
15	*Carthamus tinctorius* L.	Asteraceae	Kusum, Kardi	LC	H	A	Ornamental
16	*Caryota urens* L.	Arecaceae	Fishtail Palm	LC	T	P	Ornamental
17	*Cascabela thevetia* (L.) Lippold	Apocynaceae	Yellow Oleander	LC	S	P	Ornamental
18	*Centratherum punctatum Cass.*	Asteraceae	Larkdaisy	NE	H	P	Ornamental
19	*Clematis terniflora* DC.	Ranunculaceae	Sweet Autumn Clematis	LC	C	P	Ornamental
20	*Cocous nucifera* L	Arecaceae	Coconut	LC	T	P	Food
21	*Colocasia esculenta* (L.) Schott	Araceae	Arvi, Kachalu	LC	H	P	Food
22	*Combretum indicum* (L.) DeFilipps	Combretaceae	indian creeper	LC	S	P	Ornamental
23	*Cordia sebestena* L.	Boraginaceae	Indian Cherry	LC	S	P	Ornamental
24	*Cosmos bipinnata* Cav.	Asteraceae	Chauda Raj	LC	H	A	Ornamental
25	*Costus speicosa*	Costaceae	Wild Ginger	LC	H	P	Food
26	*Crossandra infundibuliformis* (L.) Nees	Acanthaceae	Firecracker	LC	S	p	Ornamental
27	*Crossandra mucronata* Lindau	Acanthaceae	kanakaambara	NA	H	p	Ornamental
28	*Crossandra* Salisb.	Acanthaceae	firecracker flower	LC	S	p	Ornamental
29	*Deffenbachia picta* schott	Araceae	Painted Calathea	LC	S	P	Ornamental
30	*Dracaena spicata Roxb.*	Asparagaceae	Spicate Dracaena	NA	S	P	Ornamental
31	*Duranta erecta* L.	Verbenaceae	Golden Dewdrop	LC	S	P	Ornamental
32	*Haemanthus multiflorus* Martyn	Amaryllidaceae	March Lily	LC	H	P	Ornamental
33	*Hamelia patens* Jacq.	Rubiaceae	Firebush	LC	S	p	Ornamental
34	*Helianthus annuus* L.	Asteraceae	Suryakanthi	LC	H	A	Food
35	*Heliconia angusta Vell.*	Heliconiaceae	Wild Lobster Claw	LC	H	P	Ornamental
36	*Hibiscus arnottianus* A.Gray	Malvaceae	kokio keo	EN	S	P	
37	*Hymenocallis speciosa* (L. f. ex salisb.)	Amaryllidaceae	Marsh Spider Lily	LC	H	P	Ornamental
38	*Ixora chinensis* Lam.	Rubiaceae	Chethi	NA	S	p	Ornamental
39	*Jasminum grandiflorum* L.	Oleaceae	Spanish Jasmine	LC	S	P	Ornamental
40	*Jasminum multiflorum* (Burm.f.) Andrews	Oleaceae	Dodda Kadu Mallige	NA	H	P	Ornamental
41	*Jasminum sambac* (L.) Aiton	Oleaceae	Arabian Jasmine	NA	S	p	Ornamental

42	*Jatropha integerrima* Jacq.	Euphorbiaceae	spicy jatropa	LC	S	P	Ornamental
43	*Lagerstroemia speciosa* (L.) Pers.	Lythraceae	Pride of India, Galgal	LC	T	P	Ornamental
44	*Lawsonia inermis* L.	Lythraceae	Madarangi	LC	S	p	Food
45	*Livistonia Chinensis* R. Br.	Arecaceae	Chinese Fan Palm	LC	T	P	Ornamental
46	*Musa paradisiaca*	Musaceae	Plantain	LC	H	P	Food
47	*Nerium oleander*L.	Apocynaceae	Oleander	LC	S	p	Ornamental
48	Oryza Sativa L.	Poaceae	Rice	LC	H	A	Food
49	*Peltophorum pterocarpum* (DC.) Backer ex K.*Heyne*	Fabaceae	Yellow poincaiana	LC	T	P	Ornamental
50	*Pentalinon luteum* (L.) B.F.Hansen	Apocynaceae	Wild Allamanda	NA	C	P	Ornamental
51	*Pentalinon luteum* (L.) B.F.Hansen & W underlin	Apocynaceae	Yellow Mandevilla	LC	C	p	Ornamental
52	*Podranea ricasoliana* (Tanfani) Sprague	Bignoniaceae	Chandni	LC	C	P	Ornamental
53	*Agave amica (Medik.) Thiede & Govaerts*	Asparagaceae	Tuberose	NA	H	P	Ornamental
54	*Portulaca pilosa* L.	Portulacaceae	Pink Purslane	NA	H	A	Ornamental
55	*Portulaca grandiflora Hook.*	Portulacaceae	kronportlak	NA	H	A	Ornamental
56	*Prunus dulcis* D.A.Webb	Rosaceae	Almond	EN	S	p	Food
57	*Pseuderanthemum maculatum* (G.Lodd.)	*Acanthaceae*	Golden Pseuderanthemum	LC	S	P	Ornamental
58	*Pseuderanthemum maculatum* (G.Lodd.) I.M.Turner	Acanthaceae	golden pseuderanthemum	EN	S	p	Ornamental
59	*Punica granatum* L.	Lythraceae	pomegranate	LC	S	A	Food
60	*Ravenala madagascariensis Sonn.*	Strelitziaceae	Traveler's Palm	LC	H	P	Ornamental
61	*Rotheca serrata* (L.) Steane & Mabb.	Lamiaceae	blue fountain bush	NA	S	A	Ornamental
62	*Roystonea regia* (Kunth) O.F . Cook	Arecaceae	Royal Palm	LC	T	P	Food
63	*Ruellia simplex* C.Wright	Acanthaceae	Desert Petunia	NA	H	P	Ornamental
64	*Saccharum officinarum* L.	Poaceae	Sugarcane	LC	H	P	Food
65	*Santalum album* L	Santalaceae	sandalwood	VU	T	p	Ornamental
66	*Sesamum indicum L.*	Pedaliaceae	Ellu	LC	H	A	Food
67	*Setaria italica* (L.) P. Beauv	Poaceae	Foxtail Millet	LC	H	A	Food
68	*Sorghum bicolor* (L.) Moench.	Poaceae	Sorghum	LC	H	A	Food
69	*Sphagneticola trilobata* (L.) Pruski	Asteraceae	Singapore Daisy	NA	H	P	Ornamental
70	*Stachytarpheta mutabilis* (Jacq.) Vahl	Verbenaceae	Red Porterweed	NA	S	p	Ornamental
71	*Tabebuia aurea*	Bignoniaceae	Rohida	VU	T	P	Ornamental
72	*Tagetes patula* L.	Asteraceae	Genda, Zergul	LC	H	A	Ornamental
73	*Tabebuia pallida* (Lindl.) Miers	Bignoniaceae	Whitewood	NA	S	p	Ornamental
74	*Tagetes erecta* L.	Asteraceae	Genda, Zergul	LC	H	A	Ornamental
75	*Tecoma fulva* (Cav.) G.Don	Bignoniaceae	Anantam	LC	S	P	Ornamental

76	*Tecomaria capensis* (Thunb.) Spach	Bignoniaceae	Kesar	LC	S	P	Ornamental
77	*Triticum aestivum* L.	Poaceae	Wheat	LC	H	A	Food
78	*Zea mays* L.	Poaceae	Maize	LC	H	A	Food

***Note*:** IUCN Status: LC- Least Concern | NT- Near Threatened | NA- Not Applicable .| VU : Vulnerable
HABIT: T- Trees | H- Herbs | S- Shrubs | Cl- Climbers. LIFE FORMS: A- Annual | P- Perennial.

CONCLUSION

This study demonstrates the significance of cultivated plants in advancing our understanding of specific research area. These findings have important implications for broader field or industry, and highlight the potential of cultivated plants to contribute to solving global challenges or improving human well-being. Our research underscores the value of cultivated plants as a tool for scientific discovery, and demonstrates the importance of continued investment in plant research and development.

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