



Important ornamental plants of Bharatpur Metropolitan City, Nepal

Manoj K.L. Das*

manojdas068@gmail.com

Abstract

The practices of decorating home gardens and public places by ornamental plants have been known from ancient time. The present study was destined to document about the circumstances of ornamental plants in Bharatpur Metropolitan City. Informations were collected by questionnaires, interview and direct observation. 90 ornamental plants were documented belonging to 49 families. Out of them, 42 plants belong to the herbs, 28 plants are shrubs, 14 plants are trees and 3 plants of each were represented as climbers and epiphytic herbs respectively. 59 plants were cultivated for flowers. The most dominant ornamental plants are *Tagetes patula* (saypatri) *Rosa indica* (rose), *Hibiscus rosa sinensis* (Ghanti phool) *Bougainvillia glabra* (Kagaje phool) and *Aloe vera* (Gheu Kumari). The Plate families like *Malvaceae*, *Asteraceae*, *Apocyanaceae*, *Fabaceae* and *Euphorbiaceae* are frequently found in study area.

Keyword: Ornamental plant, herb, shrub, trees, Bharatpur Metropolitan City

Introduction

The ornamental or garden plants are grown for the display of aesthetic features including flowers, leaves, scent, foliage texture, fruit, stem and bark. (Christenusz 2016). In some cases, unusual features may be considered to be of interest such as the thorns or spines of cacti. Flowers are immemorial source a source of inspiration of poet (Pandey 2005). The ornamental plants are cultivated for decorative purpose landscape, design projects, as house plants, cut flowers, religious ceremony and wedding. The cultivation of these plants are called as floriculture a major branch of horticulture (While field 2002). The love of flowers goes back to thousands of year in history of mankind. Egyptians and Assyrain had launched the art of cultivation of ornamental plants (Bose, 1989).

The Bharatpur Metropolitan City is the main business and medical hub of Nepal and head quarter of Chitwan Province number 3. Chitwan has a tropical flora and great biodivertification. The first national park, Chitwan National Park of Nepal is situated as neighbor of Bharatpur MC. The Chitwan is located in the tropical zone of inner Terai region of Nepal. Geographically; it is situated in nearly central part of Nepal lies between Chure and Mahabharat range and about 415-650 mt. in altitude. The Chitwan is located between latitude of 83° 55'w to 84° 48' w and longitude 27° 21' N to 27°46' N. The area of Chitwan is about 2221 square Kilometer. This district has a lot of tropical flora. The vegetation of Chitwan is described in relation to its bioclimatic zones, altitude, latitude and pattern of rain fall (Das, 2016).

* Dr. Das is Reader in Botany at Birendra Multiple Campus

Most of the people of Chitwan are plants lovers because the ancestries of them are basically farmers in prior. There are about a dozen of nurseries are established in the Bharatpur. The Aadhar Nursery is the most dominant. There are more than two hundred varieties of ornament is for like hedge, shrubs, palms, cacti, succulent plants, ornamentals, pteridophytes ornamental trees, climbers indoors plants, bulbous plants, lawn grasses, etc, are available (Koirala and Das 2017).

Ornamental plants of nurseries play important role in socio-economic impact in Bharatpur M.C. (Koirala and Das 2017). Beside these, the ornamental plants have high aesthetic value and plays significant role in controlling pollution and beauty of city. (Ripmeestre M. 2009) The present paper deals with the habit, plants to be used as ornamental purpose and life span of important ornamental plants of Bharatpur MC.

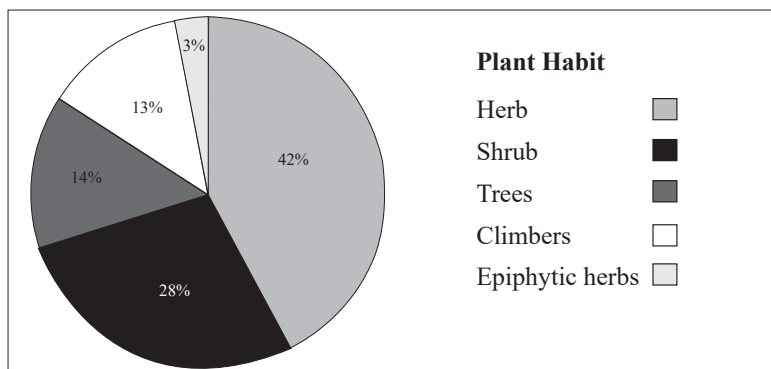
Material and methods:

The current research work was based on both primary and secondary data. The primary data were collected from the field visit, interview, direct observation informal discussion and secondary data were collected from the prevalent literature, textbooks, journals, research paper and different websites. For this research work, the researcher concerned with different nurseries, hospitals, hotels, collages and garden loving householder, from December to May, 2018 but this work was mainly focused on nurseries in Bharatpur MC.

Result and discussion:

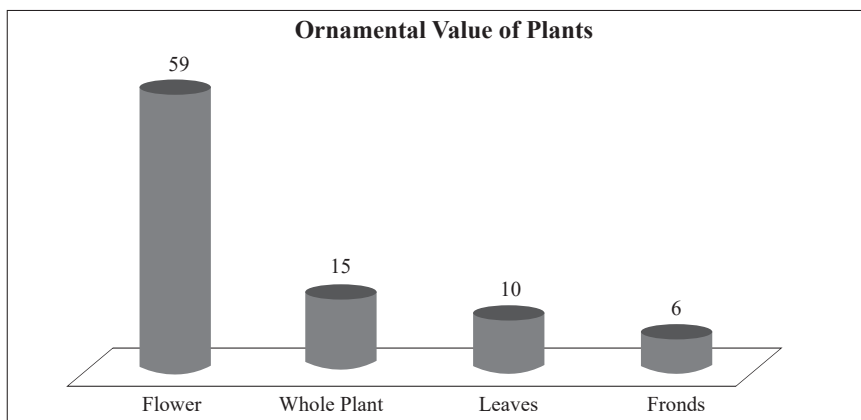
The study area has a lot of ornamental plants diversity. These plants play remarkable role in many ways as a whole, 90 ornamental plants belonging to 49 families has been recorded in Bharatpur MC a 50 list of ornamental plants along with their scientific name, common name, family, habit, ornamental parts categories and growing pattern are mentioned in Appendix I.

Among the documented ornamental plans, the families Fabaceae and Asteraceae are dominant each family has eight genera. 2nd dominant families are Apocyanaceae having five genera. The moderate families are Euphorbiaceae, Oleaceae, Commelinaceae, Orchidaseae, Aspergaceae. The less dominant families are as Phodelaceae, Arucuxiaceae, Nyctaginaceae, Cyperaceae, Ranunculaceae, Moraceae, Balsminaceae, Rubiaceae, Brassicaceae, Amaranthaceae, Convovulaceae, Cupressaceae, Acanthaceae, Lythaceae, Annoceae, Bignoniaceae, Violaceae, Portulaceae and Zamiaceae.



Out of ninety documented plants are herbs 28 plants are shrubs and 14 plants belong to trees whereas 3 plants are climbers and remaining 3 are epiphytic herbs.

Different ornamental plants are documented where flowers, leaves whole plant and fronds as the ornamental parts are identified. The predominant ornamented parts are flowers as it comprises 59 of them out of 90 documented plants 15 plants consists whole plant as ornamental value. Here, whole plants generally mean to palms, cacti and succulent. 10 plants have leaves for the ornamental purpose. 6 plants have leaves as ornamental purpose



Conclusion

The current study contributes to the documentation important ornamental plants of Bharatpur MC. The Fabaceae Asteraceae and Apocyanaceae families are important for the ornamental plants. The beautiful flowers of ornamental plants have great significant for attraction of human beings. Despite the development in the field floriculture, more than 50% of plants are still imported from India. The ornamental plants play significant role in decorating home garden, and public places. The concept of Bharatpur MC as "Green City" plays important role in reducing pollution increases the beauty of city and reduce the poverty in urban people.

Reference

- Christennusz, M.T. and Byng J.W 2010; 'The number of known plants species in the world and its annual increase' *phytotaxa, magnolia press* 26(3): 20,2017
- Whitefield P 2002; How to make a forest garden (pp113) Permanane publication ISBN 978-1-85629-008-7
- Pandey DS and Singh NP 2005; Common flowers of India, Publication division, ministry of information and Broadcasting, Government of India
- Bose TK and Yadav LP, Commercial flowers, Naya Prokash, Calcuta
- Koirala S and Das MKL 1917; 'Study of current status of ornamental plants and their documentation in Bharatpur Chitwa, dissertation, Birendra Multiple Campus.
- Das M.K.L 2015; Enumeralition of wild flora of Birendra Multiple Campus Vivek Vo. 15 pp 183-191; ISSN: 23050-8639
- Ripmeestra M, 2009; "Lawn" Encyclopedia of urban studies Ed. Ray Hutchinson

Appendix-I
Enumeration of ornamental plants of Bharatpur MC

S.N.	Botanical Name	Family	Common Name	Habit	Ornamental Parts	Ornamental Categorization	Growing Pattern
1	<i>Acalypha hispida</i>	Euphorbiaceae	Chenille plant	Shrub	Flowers	Ornamental Shrubs	Perennial
2	<i>Albizia julibrissin</i>	Fabaceae	Persian silk tree	Tree	Flowers	Ornamental trees	Perennial
3	<i>Aloe Vera (L.) Burm.f</i>	Asphodelaceae	Ghiukumari	Herb	Whole plant	Cacti and Succulents	Perennial
4	<i>Althaea rosea (L.) Cav.</i>	Malvaceae	Hollyhock	Herb	Flowers	Seasonal plants (winter)	Annual
5	<i>Agave americana L.</i>	Asparagaceae	Agave/Century plant	Herb	Whole plant	Cacti and Succulents	Perennial
6	<i>Cestrum diurnum L.</i>	Solanaceae	King of the day	Shrub	Flowers	Ornamental shrubs	Perennial
7	<i>Russelia equisetiformis Schlecht. & Cham.</i>	Plantaginaceae	Fountain plant	Herb	Flowers	Climbing plants	Climbers
8	<i>Allamanda blanchetii A.DC.</i>	Apocynaceae	Allamanda	Climber	Flower	Climbing Plants	Perennial
9	<i>Araucaria araucana (Molina) k. kouch</i>	Araucariaceae	Monkey puzzle tree	Tree	Whole plant	Ornamental trees	Perennial
10	<i>Amaryllis belladonna L.</i>	Amaryllidaceae	Naked lady lily	Herb	Flowers	Bulbous plants	Perennial
11	<i>Bauhinia pupurea (L.) Benth.</i>	Fabaceae	Butterfly tree	Shrub	Flowers	Ornamental shrubs	Perennial
12	<i>Bougainvillea glabra Choisy</i>	Nyctaginaceae	Bougainvillea/Paper flower	Climber	Flowers	Climbing plants	Perennial
13	<i>Canna indica L.</i>	Cannaceae	Sarbadaful	Herb	Flowers	Bulbous plants	Perennial
14	<i>Crinum asiaticum L.</i>	Amaryllidaceae	Spider lily	Herb	Flowers	Bulbous plants	Perennial
15	<i>Colocasia esculent (L.) Schott</i>	Araceae	Elephant ear	Herb	Leaves	Bulbous plants	Perennial
16	<i>Caladium mariscus (L.) Pohl</i>	Cyperaceae	Caladium/Swamp sawgrass	Shrub	Flowers	Bulbous plants	Perennial
17	<i>Catharanthus roseus (L.) G. Don, 1837</i>	Apocynaceae	Sadabahar	Herb	Flowers	Seasonal Plants (Summer)	Annual
18	<i>Cineraria geifolla L.</i>	Asteraceae	Cineraria	Herb	Flowers	Seasonal Plants (Winter)	Annual

19	<i>Calendula officinalis L.</i>	Asteraceae	Pot marigold	Herb	Flowers	Seasonal Plants (Winter)	Annual
20	<i>Cycas revoluta Thunb.</i>	Cycadaceae	Cycas/Sago Palm	Shrub	Whole plant	Ornamental palms	Perennial
21	<i>Calliandra haematocephala Hassk.</i>	Fabaceae	Power puff plant	Shrub	Flowers	Ornamental shrubs	Perennial
22	<i>Cassia fistula L.</i>	Fabaceae	Raj Briksha	Tree	Flowers	Ornamental trees	Perennial
23	<i>Clerodendrum sp</i>	Lamiaceae	Glory bower	Shrub	Flowers	Ornamental shrubs	Perennial
24	<i>Clitoria ternate L.</i>	Fabaceae	Asian pigeonwings	Climber	Flowers	Climbing plants	Perennial
25	<i>Dahlia pinnata Cav. 1791</i>	Asteraceae	Lahure Phool	Herb	Flowers	Bulbous plants/ Winter season	Annual
26	<i>Delphinium ajacis</i>	Ranunculaceae	Larkspur	Herb	Flowers	Seasonal plants (Winter)	Annual
27	<i>Dianthus caryophyllus L.</i>	Caryophyllaceae	Carnation	Herb	Flowers	Seasonal plants (Winter)	Annual
28	<i>Delonix regia (Boj.ex Hook) Raf.</i>	Fabaceae	Gulmohar	Tree	Flowers	Ornamental trees	Perennial
29	<i>Duranta erecta L.</i>	Verbenaceae	Golden dewdrop	Shrub	Leaves	Hedge Plants	Perennial
30	<i>Dracaena victoria W. Bull</i>	Asparagaceae	Dracaena	Herb	Leaves	Indoor plants	Perennial
31	<i>Euphorbia trigona Mill.</i>	Euphorbiaceae	African milk tree	Herb	Whole plant	Cacti and succulents	Perennial
32	<i>Euphorbia royleana Boiss.</i>	Euphorbiaceae	Sullu spurge	Shrub	Whole plant	Cacti and succulents	Perennial
33	<i>Ficus elastica var. belgica L.H.Bailey & E.Z.Bailey</i>	Moraceae	Rubber plant	Tree	Flowers	Ornamental trees	Perennial
34	<i>Gladiolus sps</i>	Asteraceae	Gerbera	Herb	Flowers	Seasonal	Annual
35	<i>Gomphrena globosa L.</i>	Amaranthaceae	Makhamali ful	Herb	Flowers	Seasonal plants (Winter)	Annual
36	<i>Gazania rigens (L.) Gaertn.</i>	Asteraceae	Gazania	Herb	Flowers	Seasonal Plants (Winter)	Annual
37	<i>Helianthus annuus L.</i>	Asteraceae	Sunflower	Herb	Flowers	Seasonal palms	Annual
38	<i>Hibiscus rosa sinensis L.</i>	Malvaceae	Ganti ful	Shrub	Flowers	Ornamental shrubs	Perennial
39	<i>Impatiens balsamina L.</i>	Balsaminaceae	Garden balsam	Herb	Flowers	Seasonal Plants (Winter)	Annual

40	<i>Iberis amara</i>	Brassicaceae	Candytuft	Herb	Flowers	Ornamental shrubs/ Hedge Plants	Annual
41	<i>Ixora coccinea</i> L.	Rubiaceae	Ixora	Shrub	Flowers	Ornamental shrubs/ Hedge Plants	perennial
42	<i>Ipomea pupurea</i> (L.) Roth	Convolvulaceae	Morning glory	Climber	Flower	Climbing Plants	Perennial
43	<i>Jasminum officinale</i> L.	Oleaceae	Jasmine	Climber	Flowers	Climbing Plants	Perennial
44	<i>Juniperus</i> sps	Cupressaceae	Dhupi	Shrub	Whole plant	Ornamental shrubs	Perennial
45	<i>Justicia adhatoda</i> L.	Acanthaceae	Asuro/kalo vasak	Shrub	Flowers	Ornamental shrubs/ Hedge Plants	Perennial
46	<i>Lawsonia inermis</i> L.	Lythraceae	Henna	Shrub	Leaves and flowers	Hedge Plants	Perennial
47	<i>Lantana camara</i> L.	Verbenaceae	Banfanda	Shrub	Flowers	Hedge Plants	Perennial
48	<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Magnoliaceae	Champa	Tree	Flowers	Ornamental trees	Perennial
49	<i>Mammillaria longimamma</i> DC.	Cactaceae	Cactus	Herb	Whole plant	Cacti and succulents	Perennial
50	<i>Murraya paniculata</i> (L.) Jack	Rutaceae	Kamini	Shrub	Flowers	Ornamental Shrubs/ Hedge Plants	Perennial
51	<i>Nerium oleander</i> L.	Apocynaceae	Nerium	Shrub	Flowers	Rnamental shrubs	Perennial
52	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Parijat	Tree	Flowers	Ornamental trees	Perennial
53	<i>Opuntia chlorotica</i> Engelm. & Bigelow	Cactaceae	Pancake prickly bear	Herb	Whole plant	Cacti and succulents	Perennial
54	<i>Papaver somniferum</i> L.	Papaveraceae	Poppy	Herb	Flowers	Seasonal flowers (Winter)	Annual
55	<i>Philodendron</i> sp	Araceae	Philodendron	Herb	Leaves	Indoor plants/ Climbing plants	Perennial
56	<i>Plumeria rubra</i> L.	Apocynaceae	Temple tree	Tree	Flowers	Ornamental trees	Perennial
57	<i>Polyalthia longifolia</i> Sonn.	Annonaceae	Ashoka	Tree	Whole plant	Ornamental trees	Perennial
58	<i>Rosa</i> sps	Rosaceae	Gulf/Rose	Shrub	Flowers	Ornamental shrubs	Perennial
59	<i>Saraca asoca</i> (Roxb.) Willd.	Fabaceae	Ashoka tree	Tree	Whole plant	Ornamental trees	Perennial

60	<i>Salvia officinalis</i> L.	Lamiaceae	Sage		Herb	Flowers	Seasonal Plants (Winter)	Annual
61	<i>Tagetes erecta</i> L.	Asteraceae	Sayapatri		Herb	Flowers	Seasonal Plants (Winter)	Annual
62	<i>Tecoma stans</i> (L.) Juss. ex Kunth	Bignoniaceae	Yellow trumpet bush		Shrub	Flowers	Ornamental shrubs	Perennial
63	<i>Thevetia peruviana</i> (Pers.) k. Schum.	Apocynaceae	Karbir		Shrub	Flowers	Ornamental shrubs	Perennial
64	<i>Tradescantia zebria</i> (Schinz) D.R.Hunt	Commelinaceae	Inch plant		Herb	Leaves	Indoor plants	Perennial
65	<i>Tradescantia spathacea</i> Sw.	Commelinaceae	Moses-in-the-cradle		Herb	Leaves	Indoor plants	Perennial
66	<i>Viola tricolor</i> var. <i>hortensis</i> DC.	Violaceae	Garden pansy		Herb	Flowers	Seasonal Plants (Winter)	Annual
67	<i>Wodyetia bifurcate</i> A.K. Irvine	Arecaceae	Foxtail palm		Tree	Whole plant	Ornamental palms	Perennial
68	<i>Washingtonia robusta</i> H. Wendl	Arecaceae	Fan palm		Tree	Whole plant	Ornamental palms	Perennial
69	<i>Zinnia violaceae</i> Cav.	Asteraceae	Zinnia		Herb	Flowers	Seasonal Plants (Summer)	Annual
70	<i>Mahaviscus arboreus</i> Cav.	Malvaceae	Sleeping hibiscus		Shrub	Flowers	Ornamental	Perennial
71	<i>Portulaca</i> sp	Portulacaceae	Moss roses		Herb	Flowers	Seasonal Plants (Summer)	Annual
72	<i>Lathyrus odoratus</i> L.	Fabaceae	Sweet pea		Herb	Flowers	Seasonal Plants (Winter)	Annual
73	<i>Phlox</i> sp	Polemoniaceae	Phlox		Herb	Flowers	Seasonal Plants (Winter)	Annual
74	<i>Dendrobium fimbriatum</i> Hook.F.	Orchidaceae	Sungabha		Herb (Epiphyte)	Flowers	Ornamental orchids	Perennial
75	<i>Rhynchosylys retusa</i> (L.) Bl.	Orchidaceae	Sungabha		Herb (Epiphyte)	Flowers	Ornamental orchids	Perennial
76	<i>Vanda testacea</i> (Lindl.) Rehb.F.	Orchidaceae	Sungabha		Herb (Epiphyte)	Flowers	Ornamental orchids	Perennial

77	<i>Araucaria columnaris</i> J. R. Frost. Hook.	Araucariaceae	Christmas tree	Tree	Whole plant	Ornamental trees	Perennial
78	<i>Dracaena vermelha</i>	Asparagaceae	Dracaena	Herb	Leaves	Indoor plants	Perennial
79	<i>Revenala madagascariensis</i> Sonn.	Strelitziaceae	Traveller's palm	Tree	Whole plant	Ornamental palms	Perennial
80	<i>Zamia sps</i>	Zamiaceae	Zamia	Shrub	Leaves	Ornamental Shrubs	Perennial
81	<i>Petunia atkinsiana</i> (Sweet) D. Don ex W.H. Baxter	Solanaceae	Petunia	Herb	Flowers	Seasonal Plants (Winter)	Annual
82	<i>Spiraea sps</i>	Rosaceae	Spiraea	Shrub	Flowers	Ornamental shrubs	Perennial
83	<i>Adiantum phillipense</i> Linn.	Pteridaceae	Walking fern	Herb	Fronds	Ornamental ferns	Perennial
84	<i>Cheilanthes albomarginata</i> C.B. Clarke	Pteriaceae		Herb	Fronds	Ornamental ferns	Perennial
85	<i>Dryopteris cochleata</i> (D. Don)	Dryopteridaceae	Male fern	Herb	Fronds	Ornamental ferns	Perennial
86	<i>Lygodium japonicum</i> (Thunb.) Sw.	Lygodiaceae	Vine like fern	Climber	Fronds	Ornamental ferns/ climbing Plants	Perennial
87	<i>Nephrolepis cordifolia</i> (L.) K. Presl	Nephrolepidaceae	Erect sword fern	Herb	Fronds	Ornamental ferns	Perennial
88	<i>Anthurium spp</i>	Areceae	Anthurium	Herb	Leaves and flowers	Indoor plants	Perennial
89	<i>Jasminum grandiflorum</i> L.	Oleaceae	Royal jasmine	Climber	Flowers	Climbing Plants	Perennial
90	<i>Thuja spp</i>	Cupressaceae	Thuja	Tree	Leaves	Ornamental trees/ Hedge Plants	Perennial