



Floristic Study of Galana Fort Area of Malegaon Taluka, Dist-Nashik, Maharashtra, India

J. T. Jadhav

Department of Botany, M.S.G. College, Malegaon (MS), India

ABSTRACT

The present study for investigation was carried out in order to explore the existing floristic composition in Galana fort area District-Nashik (Maharashtra). The present area of Galana fort is selected for the floristic study. Galana fort is located between 20.7733387° N and 74.5333314° E. The total geographical area is 121,400 m². Due to drought conditions of the area and adverse geographical conditions plant wealth are poor. This area has been given less attention of its vegetation. The vegetation was arid and dry deciduous, thorny scrub type. Based on the present study, the area is represented by 56 families, 114 genera and 141 species of the plant. Caesalpiniaceae and Mimosaceae was the dominant families followed by Fabaceae and Poaceae. The floristic information of the tree flora of Galana fort is now available for the first time with this publication.

Keywords: floristic, Galana fort, Malegaon, Maharashtra.

INTRODUCTION

The present research paper on floristic study plays an important role in the economic and social development of India. The natural vegetation made us all kinds of essential primary requirements of the human needs in the form of food, fodder, fuel, medicine, timber, resins, and oil (Farooque N.A. and Saxena K.G, 1996). Plant communities play an important role in sustainable management by maintaining biodiversity to conserve the environment (Phillips O.L, et.al. 2003). Both are necessary to understand the present diversity status and conservation of biodiversity. Floristic study is a necessary for research in population and community ecology to understanding the the distribution pattern of plant species. Floristic studies acquire increasing importance in recent years in response to the need of developing and under developing countries to assess their plant wealth, (Whittaker R. and Niering W.A, 1965). Many floristic diversity studies have been conducted in different parts of world, Aher (2015), Kamble V.V, and Yele.R.B (2020), Patil D.A. and Tayade S.K. (2012), Sukumar R, et.al (1992) and Sagar R, et.al (2003). The floristic studies are undertaken by many researchers worldwide. The present study area of Galana fort of Nashik district is selected for the floristic studies because it has not explored largely. Galana fort is located in Malegaon taluka of Nashik district. It lay on the border of the Deccan.

RESEARCH METHODOLOGY

Study Area

Galana fort is located between 20.7733387° N and 74.5333314° E. The total geographical area is 121,400 m². It lay on the border of the Deccan. The vegetation was arid and dry deciduous, thorny scrub type. The climate is markedly periodic and characterized by dryness on the whole except monsoon period. The base village Galana is well connected by motor road to Malegaon, it is 35 Km from Malegaon head quarter.

Floristic Analysis

In the whole study area exploration were undertaken during all seasons in 2019 to 2020 before first lockdown of Covid-19 pandemic. The name and information were collected based on morphological characters. Identification and list of plant species were prepared by referring literatures and floras of Hooker, J (1875), Cook, T (1908, 1958), Potdar (2012), Sharma (1996) and Lakshminarsimhan P and Sharma B.D (1990).

Table 1: Plant species reported from Galana fort forest area of Nashik district, Maharashtra

| Sr. No | Botanical name | Family | Common name |
|--------|---|----------------|---------------------|
| 1 | <i>Agave americana</i> L. | Agavaceae | Kekati |
| 2 | <i>Agave angustifolia</i> Haw. | Agavaceae | Ghaypat |
| 3 | <i>Achyranthes aspera</i> L. | Amaranthaceae | Aaghada |
| 4 | <i>Alternanthera sessilis</i> (L.) R.Br. | Amaranthaceae | Jalgambha/Tandaleya |
| 5 | <i>Amaranthus roxburghianus</i> Nevski | Amaranthaceae | Tandulja |
| 6 | <i>Amaranthus spinosus</i> L. | Amaranthaceae | Kante Math |
| 7 | <i>Celosia argentea</i> L. | Amaranthaceae | Kuradu |
| 8 | <i>Lannea coromandelica</i> (Houtt.)Merr. | Anacardiaceae | Mohadal |
| 9 | <i>Mangifera indica</i> L. | Anacardiaceae | Aamba |
| 10 | <i>Rhus mysorensis</i> G.Don | Anacardiaceae | Amboni |
| 11 | <i>Annona squamosa</i> L. | Annonaceae | Sitaphal |
| 12 | <i>Annona reticulate</i> L. | Annonaceae | Ramphal |
| 13 | <i>Polyalthia longifolia</i> L. | Annonaceae | Ashok |
| 14 | <i>Catharanthus roseus</i> L. | Apocynaceae | Sadaphuli |
| 15 | <i>Nerium indicum</i> Mill. | Apocynaceae | Kaner |
| 16 | <i>Plumeria acuminata</i> Alt. | Apocynaceae | Dev-chapha |
| 17 | <i>Plumeria alba</i> L. Pandhara | Apocynaceae | Chapha |
| 18 | <i>Colocasia esculenta</i> (L.)Schott. | Arecaceae | Alu |
| 19 | <i>Calotropis procera</i> (Ait.) R. Br. | Asclepiadaceae | Rui |
| 20 | <i>Calotropis gigantea</i> (L.) R. Br. | Asclepiadaceae | Mandar |
| 21 | <i>Asparagus africanus</i> Lam. | Asparagaceae | Shatawari |
| 22 | <i>Acanthospurmum hispidum</i> DC. | Asteraceae | Shingad kata |
| 23 | <i>Bidens biternata</i> (Lour.) | Asteraceae | Chirchitta |
| 24 | <i>Parthenium hysterophorus</i> L | Asteraceae | Gajar ghas |
| 25 | <i>Tridax procumbens</i> L | Asteraceae | Ekdandi |
| 26 | <i>Zennia peruviana</i> (L.) L. | Asteraceae | Ranzendu |
| 27 | <i>Adansonia digitata</i> L. | Bombacaceae | Gorakh chinch |
| 28 | <i>Boswellia serrata</i> Roxb. | Burseraceae | Salai / Sarpal |
| 29 | <i>Bambusa arundinacea</i> (Retz.) Willd. | Bambusaceae | Bambu |
| 30 | <i>Opuntia dillenii</i> Mill. | Cactaceae | Sabar |
| 31 | <i>Opuntia elatior</i> Mill. | Cactaceae | Nivdung |
| 32 | <i>Bauhinia purpurea</i> L. | Caesalpinaceae | Kanchan |
| 33 | <i>Bauhinia racemosa</i> Lamk. | Caesalpinaceae | Apta |
| 34 | <i>Caesalpinia bonduc</i> L. | Caesalpinaceae | Sagargota |
| 35 | <i>Caesalpinia decapetala</i> (Roth) Alston | Caesalpinaceae | Chillar |
| 36 | <i>Caesalpinia pulcherrima</i> (L.) Sw. | Caesalpinaceae | Sankarshawar |
| 37 | <i>Cassia auriculata</i> L. | Caesalpinaceae | Aavhali |
| 38 | <i>Cassia pumila</i> Lam. | Caesalpinaceae | Sarmal |
| 39 | <i>Cassia tora</i> L. | Caesalpinaceae | Torota |
| 40 | <i>Cassia obtusifolia</i> L. | Caesalpinaceae | Wild tarota |
| 41 | <i>Delonix regia</i> Raf. | Caesalpinaceae | Gul mohur |
| 42 | <i>Hardwickia binata</i> Roxb. | Caesalpinaceae | Anjan |
| 43 | <i>Tamarindus indica</i> L. | Caesalpinaceae | Chinch |
| 44 | <i>Cleom gynandra</i> (L.)DC. | Capparidaceae | Pandhari - Tilavan |
| 45 | <i>Gynandropsis pentaphylla</i> (L.)DC. | Capparidaceae | Pandhari - Tilavan |
| 46 | <i>Casuarina equisetifolia</i> Lour. | Casurinaceae | Suru |
| 47 | <i>Cana indica</i> L. | Cannaceae | Karadal |
| 48 | <i>Gymnosporia montana</i> (Roth) Benth. | Celastraceae | Henkal |
| 49 | <i>Coccinia grandis</i> (L.)Voigt | Cucurbitaceae | Tindora/Tondli |
| 50 | <i>Luffa acutangula</i> (L.) Roxb. | Cucurbitaceae | Randodka |
| 51 | <i>Ipomoea cairica</i> (L.) Sweet | Convolvulaceae | Garvel |
| 52 | <i>Terminalia catappa</i> L. | Combretaceae | Desi badam |

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|-----|---|----------------|--------------------|
| 53 | <i>Terminalia chebula</i> (Gaertn.) Retz. | Combretaceae | Hirda |
| 54 | <i>Commelina benghalensis</i> L. | Commelinaceae | Kenpat |
| 55 | <i>Cyperus rotundus</i> L | Cyperaceae | Nagarmotha |
| 56 | <i>Euphorbia geniculata</i> L. | Euphorbiaceae | Dudhali |
| 57 | <i>Euphorbia hirta</i> L | Euphorbiaceae | Dudhi |
| 58 | <i>Euphorbia tirucalli</i> L | Euphorbiaceae | Sher |
| 59 | <i>Phyllanthus emblica</i> L. | Euphorbiaceae | Amla |
| 60 | <i>Ricinus communis</i> L. | Euphorbiaceae | Erand |
| 61 | <i>Acacia leucophloea</i> (Roxb.) Wild | Fabaceae | Hiwar/Himvar |
| 62 | <i>Abrus precatorius</i> L. | Fabaceae | Gunj |
| 63 | <i>Beutea monosperma</i> (Lam.) | Fabaceae | Palas |
| 64 | <i>Crotolaria medicaginea</i> Lam. | Fabaceae | Ranghas, Rattlepod |
| 65 | <i>Dalbergia sissoo</i> Roxb. | Fabaceae | Sisham |
| 66 | <i>Dichrostachys cinerea</i> (L.) Druce. | Fabaceae | Yelatur |
| 67 | <i>Gillricidia sepium</i> (Jacq.) Kunth ex Walp | Fabaceae | Giripushpa |
| 68 | <i>Heylandia latebrosa</i> (DC.) | Fabaceae | Hallia hirta |
| 69 | <i>Pithecellobium dulce</i> (Roxb.) Benth. | Fabaceae | Vilayti chinch |
| 70 | <i>Pongamia pinnata</i> L | Fabaceae | Karanj |
| 71 | <i>Aloe vera</i> (L.) Burm.f | Liliaceae | Korphad |
| 72 | <i>Clerodendrum phlomidis</i> L.f. | Lamiaceae | Arni |
| 73 | <i>Lavandula bipinnata</i> (Roth) Kuntze | Lamiaceae | Ghodegui |
| 74 | <i>Ocimum americanum</i> L. | Lamiaceae | Ran Tulas |
| 75 | <i>Ocimum basilicum</i> L. | Lamiaceae | Sabja |
| 76 | <i>Ocimum sanctum</i> L. | Lamiaceae | Tulsi |
| 77 | <i>Careya arborea</i> Roxb. | Lecythidaceae | Kumbhi / Kumbha |
| 78 | <i>Tribulus terrestris</i> L. | Zygophyllaceae | Gokharu |
| 79 | <i>Michelia champaca</i> L. | Magnoliaceae | Champa |
| 80 | <i>Abutilon indicum</i> (Link) Sweet | Malvaceae | Petari/Petara |
| 81 | <i>Hibiscus rosa-sinensis</i> L. | Malvaceae | Jaswandi |
| 82 | <i>Azadirachta indica</i> Juss. | Meliaceae | Neem, Nimba |
| 83 | <i>Melia azedarach</i> L. | Meliaceae | Limbara, Bakana |
| 84 | <i>Cocculus villosus</i> L. | Menispermaceae | Vasan vel |
| 85 | <i>Tinospora cordifolia</i> (Willd.) | Menispermaceae | Gulvel / Guduchi |
| 86 | <i>Acacia arabica</i> (Lam.) Willd. | Mimosaceae | Babul |
| 87 | <i>Acacia arabica</i> (Lam.) Willd. | Mimosaceae | Babul |
| 88 | <i>Acacia auriculiformis</i> A.Cunn. | Mimosaceae | Australian baval |
| 89 | <i>Acacia chundra</i> (Roxb. Ex. Rottl.) Willd. | Mimosaceae | Khair |
| 90 | <i>Acacia nilotica</i> L. | Mimosaceae | Babhool, Kikar |
| 91 | <i>Albizia procera</i> (Roxb.) Bth. | Mimosaceae | Safed siris |
| 92 | <i>Leucaena latisiliqua</i> (L.) Gills | Mimosaceae | Subabhul |
| 93 | <i>Mimosa pudica</i> L. | Mimosaceae | Touch-me- not |
| 94 | <i>Prosopis cineraria</i> (L.) Druce. | Mimosaceae | Khijado / Shami |
| 95 | <i>Prosopis julifera</i> (Sw.) DC. | Mimosaceae | Vedibabhul |
| 96 | <i>Samanea saman</i> (Jacq.) Merr. | Mimosaceae | Rain tree |
| 97 | <i>Ficus amplissima</i> L. | Moraceae | Pipri |
| 98 | <i>Ficus bengalensis</i> Linn. | Moraceae | Vad |
| 99 | <i>Ficus racemosa</i> L. | Moraceae | Umbar |
| 100 | <i>Ficus religiosa</i> L. | Moraceae | Pipal |
| 101 | <i>Ficus rumphi</i> Bl. | Moraceae | Payar |
| 102 | <i>Ficus tsiela</i> Roxb. | Moraceae | Pipli |
| 103 | <i>Moringa oleifera</i> Lam. | Moringaceae | Shevga / Drumstick |
| 104 | <i>Musa paradisaica</i> L. | Musaceae | Kela / Banana |
| 105 | <i>Callistemon lanceolatus</i> D.C. | Myrtaceae | Bottle brush |
| 106 | <i>Eucalyptus citriodora</i> HK.f. | Myrtaceae | Neelgiri |

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|-----|---|----------------|-----------------------|
| 107 | <i>Lawsonia inermis</i> L. | Myrtaceae | Mehandi |
| 108 | <i>Psidium guajava</i> L. | Myrtaceae | Peru / Guava |
| 109 | <i>Syzygium cumini</i> (L.) Skeels. | Myrtaceae | Jambhul |
| 110 | <i>Martynia diandra</i> Glox. | Martyniaceae | Vaghnakhi |
| 111 | <i>Boerhavia diffusa</i> L. | Nyctaginaceae | Punarnava |
| 112 | <i>Bougainvillea Spectabilis</i> Willde. | Nyctaginaceae | Bougainvillea |
| 113 | <i>Jasminum multiflorum</i> (Burma.f.) Aners | Oleaceae | Chameli |
| 114 | <i>Nyctanthes arbor-tristis</i> Linn. | Oleaceae | Parijatak |
| 115 | <i>Argemone mexicana</i> L. | Papaveraceae | Bilayat |
| 116 | <i>Piper longum</i> Linn. | Piperaceae | Pimpli |
| 117 | <i>Pandanus amaryllifolius</i> Roxb. | Pandanaceae | Kevada |
| 118 | <i>Punica granatum</i> L. | Punicaceae | Dalimb |
| 119 | <i>Alloteropsis cimicina</i> (L.)Stapf | Poaceae | Summer grass |
| 120 | <i>Apluda mutica</i> | Poaceae | Mauritiangrass/phulia |
| 121 | <i>Cynadon dactylon</i> (L.)Pers. | Poaceae | Hariyali /Durva grass |
| 122 | <i>Digitaria ciliaris</i> (Retz) Koeler | Poaceae | Shika |
| 123 | <i>Eragrostis ciliaris</i> | poaceae | Gophertail lovegrass |
| 124 | <i>Melanocenchris jacquemontii</i> Jaub.& Spach | Poaceae | melanocenchris |
| 125 | <i>Setaria pumila</i> (Poir.)Roem.& Schult. | poaceae | Yellow foxtail/Kilu |
| 126 | <i>Zizipus jujube</i> Mill. | Rhamnaceae | Bor |
| 127 | <i>Citrus limon</i> (L.) Burm. | Rutaceae | Limbu /Lemmon |
| 128 | <i>Santalum album</i> L. | Santalaceae | Chandan |
| 129 | <i>Manilkara zapota</i> (L.) Van. | Sapotaceae | Chikoo |
| 130 | <i>Datura metel</i> L. | Solanaceae | Kala Dhotra |
| 131 | <i>Datura stramonium</i> L. | Solanaceae | Dhotara |
| 132 | <i>Solanum nigrum</i> L. | Solanaceae | Kangani/Red Makoi |
| 133 | <i>Cardiospermum halicacabum</i> L. | Sapindaceae | Kapalphodi |
| 134 | <i>Sapindus emarginatus</i> Vahl. | Sapindaceae | Ritha |
| 135 | <i>Grewia populifolia</i> DC. | Tiliaceae | Pithory |
| 136 | <i>Grewia tinax</i> (Forssk.) Fiori | Tiliaceae | Gangudi |
| 137 | <i>Duranta repens</i> L. | Verbenaceae | Duranta |
| 138 | <i>Lantana camara</i> L. | Verbenaceae | Ghaneri |
| 139 | <i>Tectona grandis</i> Linn. | Verbenaceae. | Sag, Sagwan |
| 140 | <i>Vitex negundo</i> L. | Verbenaceae | Nirgudi |
| 141 | <i>Cayratia auriculata</i> (Roxb.) Gamble | Vitaceae | Komala/Jambholi |
| 142 | <i>Tribulus terrestris</i> L. | Zygophyllaceae | Gokharu |

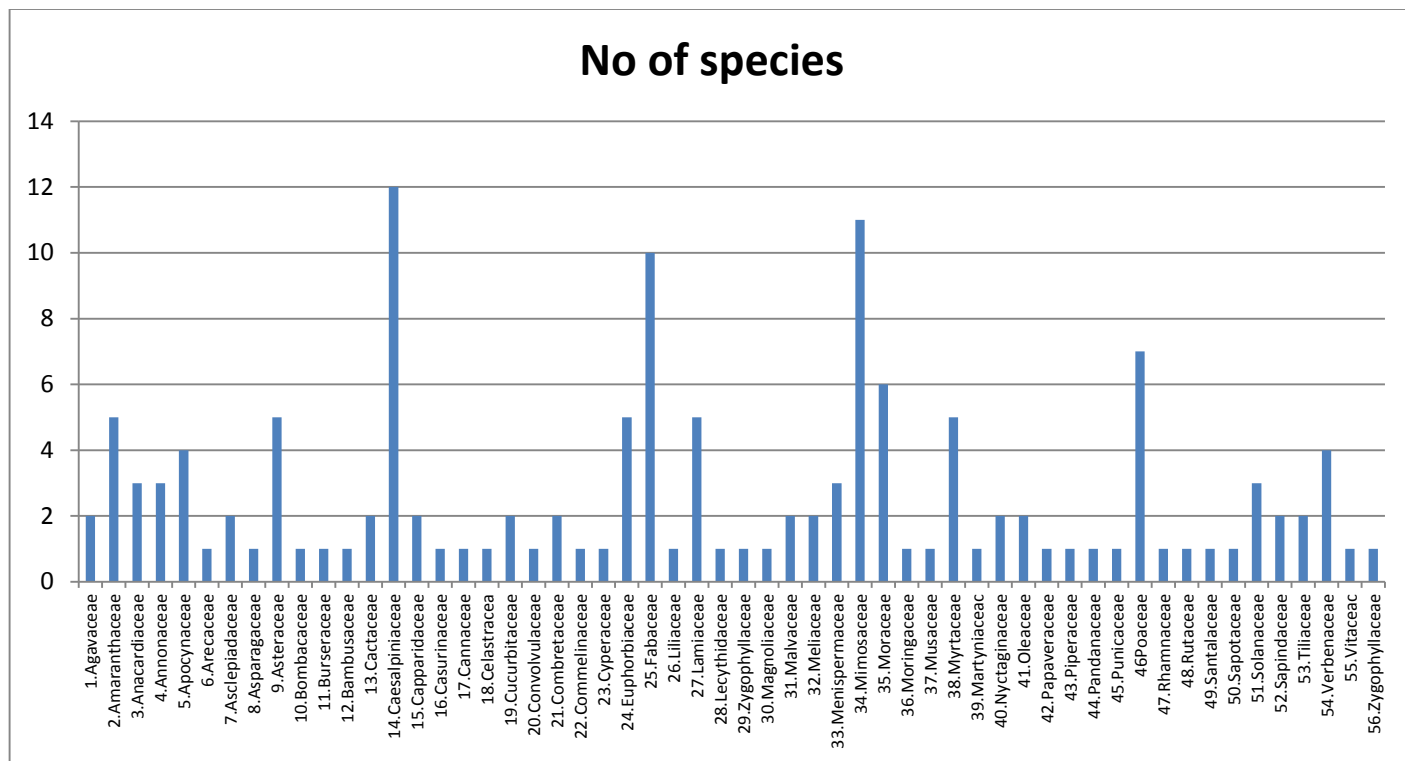


Fig. 1. Family wise distribution of species in Galana Fort Forest of Nashik district (Maharashtra).

FINDINGS

The investigation was carried out in order to explore the existing floristic composition in Galana fort, Malegaon (Maharashtra) during 2019-2020. The vegetation was arid to semiarid and dry deciduous, thorny type. The Study revealed that the presence of some important shrubs and trees in the area. Altogether 143 plants belonging to 56 families were studied. Among 56 families, *Caesalpinaceae*, *Mimosaceae*, *Fabaceae* and *Poaceae* are the dominant families. From 143 plants, genera like *Cassia*, *Caesalpinia*, *Acacia*, *Beutia* and *Crotolaria* etc. are dominant. It can be concluded that *Caesalpinaceae* is the dominant and leading family, species wise as well as genera wise, followed by *Mimosaceae*, *Fabaceae*, *Poaceae* and *Moraceae*. Rare species also reported during investigation are *Asparagus africanus*, *Adansonia digitata*, *Casuarina equisetifolia*, *Terminalia chebula*, *Ficus rumphi* and *Apluda mutica*.

CONCLUSION

The present floristic study provides a preliminary checklist of plant species. It is also revealed that, Over 143 plants belonging to more than 56 families were studied. Floristic vegetation is very much affected by local activities, visitors and heavy cuttings, grazing etc. The vegetation pattern altered due to influence of over population, loss of potential habitat, climatic changes etc. This entire fort forest area should be protected restricted to huge visitors and overgrazing cattles. It will be useful in suggesting for the stability and correlation among the species in future.

ACKNOWLEDGEMENT

Author (J.T.Jadhav) thanks Dr.Prashant Dada Hiray, General Secretary M. G. Vidyamandir, Nashik for encouragement.

REFERENCES

- [1]. Aher, S. Floristic diversity assessment of Parner Tahasil, Maharashtra (India). Indian J.Applied & Pure Bio, 2012, 30(2), p123-130
- [2]. Farooquee N.A. and Saxena K.G., Conservation and utilization of medicinal plants in high hills of the central Himalayas, Environ.Conserv.1996 (23) pp75-80.



- [3]. Kamble V.V, and Yele.R.B, floristic survey of monocotyledonous plants from Man tehsil of Satara district (Maharashtra) India. *Jour.Global Biosciences*, 2020: vol-9(4) pp 1749-1759.
- [4]. Patil D.A. and Tayade S.K., Floristic studies in Khandesh region (Maharashtra: India): an Overview, *Life sci. Leaf*. 2012(10), pp 30-38.
- [5]. Phillips O.L., Martinez R.V. and Vargas P.N., Efficient plot-based floristic assessment of tropical forests, *J. Tropi. Eco.* 2003, (19), 629-645.
- [6]. Sukumar R., Dattaraja H.S. and Suresh H.S., Long-term monitoring of vegetation in a tropical deciduous forest in Mudumalai, southern India, *Current Science*, 1992, (62), pp 608-613.
- [7]. Sagar R., Raghubanshi A.S. and Singh J.S., Tree species composition, dispersion and diversity along a disturbance gradient in a dry tropical forest region of India, *Forest Eco. & Manage*, 2003(186), pp 61-71 .
- [8]. [Whittaker R. and Niering W.A., Vegetation of the Santa Catalina Mountains, Arizona: A gradient analysis of the south slope, *Eco.* 1965, (46), pp 429-452.
- [9]. Hooker J. D., *The Flora of British India*. London.1904: 7- Vols. 1904. (Rrpr.ed.1954-1961.Kent.)(1872 1897).
Cooke T., *The Flora of the Presidency of Bombay* London. 2 vol: Repr.edition, 1958, B.S.I. Calcutta, pp1901-19.
Lakhminarsimhan P and Sharma B.D, *Flora of Nashik District*, BSI, Calcutta, India, 1990.
- [10]. Potdar, G. salunke, C and Yadav.S, *Grasses of Maharashtra*, 2012.