



FLORISTIC DIVERSITY OF NHAVARA VILLAGE, SHIRUR TEHSIL REGION, PUNE DISTRICT

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Abstract: Floristic diversity was performed in Nhavara Village Shirur Tehsil, Pune (Maharashtra) in Monsoon season. The observed plants were collected, photographed and identified by using standard identification keys. The vegetation was arid to semiarid and dry deciduous, thorny scrub type. A total 129 plants belonging to more than 50 families were observed. Among 50 families, Fabaceae, Caesalpiniaceae, Amaranthaceae, Mimosaceae, Euphorbiaceae, Apocynaceae and Asteraceae are the most dominant family. Out of 129 plants, genera like *Sesbania*, *Cassia*, *Acacia*, *Euphorbia*, *Ficus*, *Amaranthus*, *Ocimum*, and *Abutilon* etc. are dominant and it can be concluded that Fabaceae, Caesalpiniaceae, Amaranthaceae and Mimosaceae are the dominant and leading family, species wise as well as genera wise, followed by, Euphorbiaceae and Moraceae. Fungi diversity shows Ascomycetes and Basidiomycetes members from which Basidiomycetes are found to be dominant in the study area. The floristic information of the tree flora of Nhavara indicates the importance of the village as an Ecosystem.

Keywords: Biodiversity, Floristic studies, Vegetation, Village Survey.

I. INTRODUCTION

Biodiversity is the degree of variation of life forms within a given ecosystem, biome, or on an entire planet. Floristic study and diversity assessments are necessary to understand the present diversity status and conservation of biodiversity. Plant Biodiversity is essential to maintain the stability of the ecosystem. Biodiversity is the capital asset of a nation and forms the foundation upon which the human civilization is built. Biodiversity offers several direct and indirect economic benefits to human kind. Among different groups of plants, flowering plants play an important role and will continue to play a major role in shaping the world's civilization (Yadav & Sardesai, 2002). The present study area of Nhavara village is located in Shirur tehsil of Pune district in Maharashtra, India. It is situated 23km away from sub-district headquarter Shirur (Tehsildar office) and 60km away from district headquarter Pune. As per 2009 stats, Nhavara is the gram panchayat of Nhavara village. The total geographical area of village is 3471.88 hectares. The current study focuses on documentation of diversity of plant species in Nhavara Village of Shirur tehsil from Pune district (Maharashtra), India.

II. Material and Methods

Study Area:

Nhavara village is located in Shirur tehsil of Pune district in Maharashtra, India. It belongs to Desh or Paschim Maharashtra region. It has an altitude of 186 meters above sea level. It is situated 23km away from sub-district headquarter Shirur (tehsildar office) and 60km away from district headquarter Pune and 191km from state capital Mumbai. As per 2009 stats, Nhavara is the gram panchayat of Nhavara village. Pincode of Nhavara village locality is 412211 and postal head office is Nhavara. Alegaon (Paga) (7KM), Nirvi (7KM), Andhalgoan (7KM), Gunat (7KM), Nimone (7KM) are the nearby villages to Nhavara. Nhavara is surrounded by Daund Taluka towards South, Shrigondha Taluka towards East, Parner Taluka towards North, and Purandar Taluka towards South. Shirur, Dound, Purandar, Shrigondha and Saswad are the nearby cities to Nhavara village for all major economic activities. The total Geographical area of village is 3471.88 hectares. There are about 1,561 houses in Nhavara village. The village Nhavara having climatic condition of hot temperature and scanty rainfall. The region having the minimum temperature as low as 10°C to 15°C and maximum temperature as high as 40°C to 45°C (Ganorkar R. P. & Kshirsagar A.D. 2013).

Floristic Analysis (Data collection): In this Nhavara village survey floristic diversity is documented by walking survey in the month October 2024. The observed plants were collected, photographed and identified by using flora of Maharashtra Vol-I & Vol-II by Singh N. P. and Karthikeyan S. and documented in the form of Photographs.

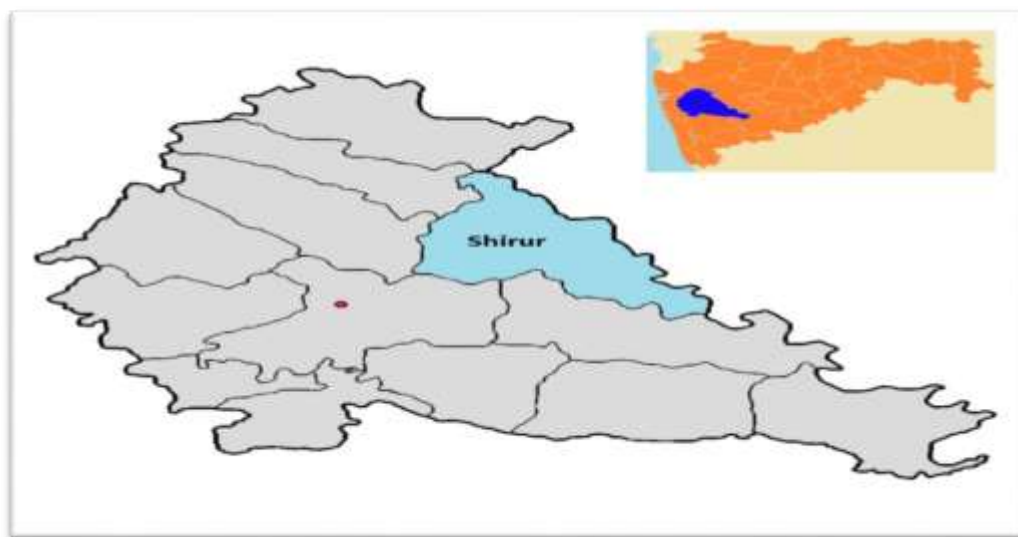


Figure no. 1: Map of Shirur Tehsil, Pune District.

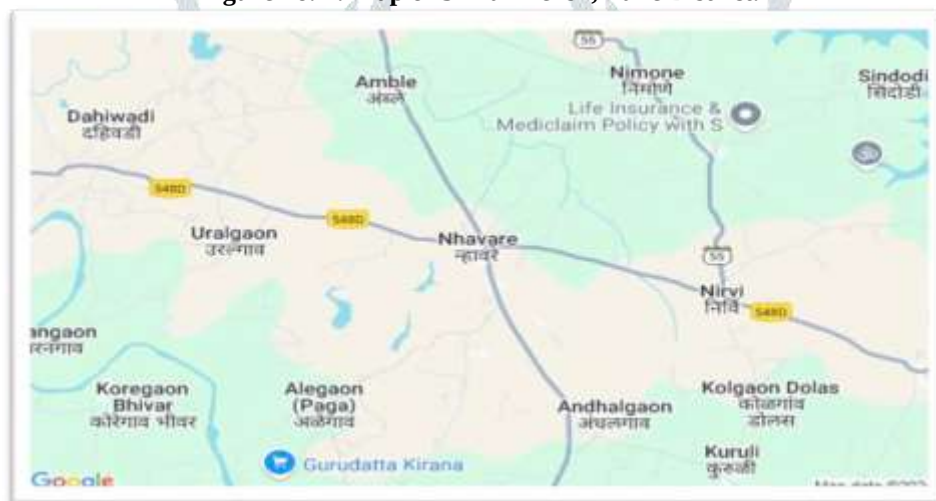


Figure no. 2.: Map of Nhavara Village, Shirur Tehsil, Pune District.

III. RESULTS AND DISCUSSION:

In this Survey, over 129 plants belonging to more than 50 families were found in natural Habitat. Among 50 families, Fabaceae, Caesalpiniaceae, Amaranthaceae, Mimosaceae, Euphorbiaceae, Apocynaceae and Asteraceae are the most dominant family. Out of 129 plants, genera like *Sesbania*, *Cassia*, *Acacia*, *Euphorbia*, *Ficus*, *Amaranthus*, *Ocimum*, and *Abutilon* etc. are dominant. From the above observation, it can be concluded that Fabaceae, Caesalpiniaceae, Amaranthaceae and Mimosaceae are the dominant and leading family, species wise as well as genera wise, followed by, Euphorbiaceae and Moraceae. During this study wooden log shows some common members of the fungal community from Ascomycetes and Basidiomycetes. Fungi from Basidiomycetes are found to be dominant in the study area.

Table No. 1: List of Plants at Nhavara Village, Shirur District, Pune (M.H, India)

Botanical Name	Family	Common Name
<i>Adhathoda vasica</i> Nees	Acanthaceae	Adulsa
<i>Barleria prionitis</i> L.	Acanthaceae	Kate koranti
<i>Barleria prionitis</i> L.	Acanthaceae	Pivali koranti

<i>Crossandra infundibuliformis</i> (L.) Nees	Acanthaceae	Aboli
<i>Agave Americana</i> L. var. <i>americana</i>	Agavaceae	Kektad (Ghayapat)
<i>Achyranthes aspera</i> L.	Amaranthaceae	Aaghada
<i>Alternanthera pungens</i> Kunth. <i>achyrantha</i> R.Br.	Amaranthaceae	Reshimkata
<i>Amaranthus roxburghianus</i> Nevsaki	Amaranthaceae	Tandulja
<i>Amaranthus spinosus</i> L.	Amaranthaceae	Kante Math
<i>Amaranthus tricolor</i> L.	Amaranthaceae	Math
<i>Celosia argentea</i> L.	Amaranthaceae	Kurdu
<i>Celosia argentea</i> var. <i>cristata</i> L.	Amaranthaceae	Cocks comb
<i>Gomphrena globosa</i> L.	Amaranthaceae	Supari
<i>Mangifera indica</i> L.	Anacardiaceae	Aamba
<i>Annona squamosa</i> L.	Annonaceae	Sitaphal
<i>Annona reticulate</i> L.	Annonaceae	Ramphal
<i>Polyalthia longifolia</i> L.	Annonaceae	Ashok
<i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae	Saptparni
<i>Cascabela thevetia</i> (L.) Lippold	Apocynaceae	Pivali Kanher
<i>Catharanthus roseus</i> L.	Apocynaceae	Sadaphuli
<i>Cryptostegia grandiflora</i> R. Br.	Apocynaceae	Indian Rubber Vine
<i>Nerium indicum</i> Mill.	Apocynaceae	Kanher
<i>Plumeria alba</i> L. Pandhara	Apocynaceae	Chapha
<i>Tabernaemontana divaricata</i> (L.) Br.	Apocynaceae	Chandni, Tagar
<i>Colocasia esculenta</i> (L.) Schott.	Arecaceae	Alu
<i>Calotropis procera</i> (Ait.) R. Br.	Asclepiadaceae	Rui
<i>Calotropis gigantea</i> (L.) R. Br.	Asclepiadaceae	Mandar
<i>Araucaria excelsa</i> Br.	Araucariaceae	Christ Mas Tree
<i>Parthenium hysterophorus</i> L.	Asteraceae	Gajar ghas
<i>Sonchus oleraceus</i> L.	Asteraceae	Sow thistle
<i>Tagetes erecta</i> L.	Asteraceae	Zendu
<i>Tridax procumbens</i> L.	Asteraceae	Kanphuli
<i>Vernonia cinerea</i> (L.) Less.	Asteraceae	Sahdevi
<i>Xanthium strumarium</i> L.	Asteraceae	Cocklebur
<i>Asparagus racemosus</i> Willd.	Asparagaceae	Shatawari
<i>Bombax ceiba</i> L.	Bombacaceae	Katesavar
<i>Tecoma stans</i> (L.) Juss.ex Kunth	Bignoniaceae	Yellow elder
<i>Bauhinia purpurea</i> L.	Caesalpiniaceae	Kanchan
<i>Cassia fistula</i> L.	Caesalpiniaceae	Bahava
<i>Cassia tora</i> L.	Caesalpiniaceae	Takala
<i>Cassia auriculata</i> L.	Caesalpiniaceae	Tarwad
<i>Caesalpinia pulcherrima</i> (L.) Sw.	Caesalpiniaceae	Shankasur
<i>Delonix regia</i> (Boj. Ex Hook.)Raf.	Caesalpiniaceae	Gul mohur
<i>Parkinsonia aculeata</i> L.	Caesalpiniaceae	Parkinsonia
<i>Peltophorum pterocarpum</i> (DC.) Baker ex K. H.	Caesalpiniaceae	Sonmohar
<i>Tamarindus indica</i> L.	Caesalpiniaceae	Chincha
<i>Opuntia elatior</i> Mill.	Cactaceae	Nivdung
<i>Carica papaya</i> L.	Caricaceae	Popai
<i>Cyperus rotundus</i> L.	Cyperaceae	Nagar motha
<i>Ipomoea carnea</i> Jacq. Subsp. <i>Fistulosa</i>	Convolvulaceae	Besharum
<i>Cana indica</i> L.	Cannaceae	Karadal
<i>Quisqualis indica</i> L.	Combretaceae	Lal Chameli
<i>Terminalia catappa</i> L.	Combretaceae	Desi badam
<i>Cucurbita foetidissima</i> Kunth	Cucurbitaceae	Buffalo gourd

<i>Diplocyclos palmatus</i> (L.)C. Jeffrey	Cucurbitaceae	Shivlingi.
<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	Panphuti
<i>Euphorbia hirta</i> L.	Euphorbiaceae	Dudhi
<i>Euphorbia heterophylla</i> L.	Euphorbiaceae	Dudhani
<i>Euphorbia tirucalli</i> L.	Euphorbiaceae	Sher
<i>Euphorbia milii</i> Des Moul.	Euphorbiaceae	Crown of thorns
<i>Phyllanthus fraternus</i> Webstr.	Euphorbiaceae	Bhui-amla
<i>Phyllanthus emblica</i> Wight. Ic.	Euphorbiaceae	Amla
<i>Ricinus communis</i> L.	Euphorbiaceae	Erand
<i>Abrus precatory</i> , us L.	Fabaceae	Gunj
<i>Clitoria ternatea</i> L.	Fabaceae	Gokarna
<i>Dalbergia sissoo</i> Roxb.	Fabaceae	Shisham
<i>Indigofera cordifolia</i> Heyne ex Roth.	Fabaceae	Godadi
<i>Konnedia prostrata</i> L.	Fabaceae	Scarlet coral Pea
<i>Lablab purpureus</i> (L.) Sweet	Fabaceae	Pavta, Wala
<i>Macroptilium lathyroides</i> (L.)Urban	Fabaceae	Purple bush-bean
<i>Pongamia pinnata</i> L.Pierre	Fabaceae	Karanj
<i>Rhynchosia minima</i> (L.) DC.	Fabaceae	Dhakta ranghevada
<i>Sesbania grandiflora</i> (L.) Poir	Fabaceae	Hadaga
<i>Sesbania sesban</i> (L.) Merr.	Fabaceae	Shewri
<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Unhali
<i>Coleus amboinicus</i> Lour.	Lamiaceae	Soup mint
<i>Ocimum tenuiflorum</i> L. Sp.	Lamiaceae	Tulas
<i>Ocimum americanum</i> L.	Lamiaceae	Ran Tulas
<i>Ocimum basilicum</i> L.	Lamiaceae	Sabja
<i>Aloe vera</i> (L.)Burm.f	Liliaceae	Korphad
<i>Lawsonia inermis</i> L.	Lythraceae	Mehandi
<i>Abutilon theophrasti</i> Medik.	Malvaceae	Velvet Leaf Plant
<i>Abutilon indicum</i> L.	Malvaceae	Mudra
<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Jaswandi
<i>Azadirachta indica</i> Juss.	Meliaceae	Neem, Nimba
<i>Acacia nilotica</i> (L.) Willd. Ex Del.	Mimosaceae	Babhool, Kikar
<i>Acacia arabica</i> (Lam.) Willd.	Mimosaceae	Babul
<i>Acacia chundra</i> (Roxb. ex. Rottl.) Willd.	Mimosaceae	Khair
<i>Acacia auriculiformis</i> A.Cunn.	Mimosaceae	Australian baval
<i>Albizia lebbek</i> (L.) Bth.	Mimosaceae	Siris
<i>Leucaena latisiliqua</i> (L.) Gills	Mimosaceae	Subabhul
<i>Mimosa pudica</i> L.	Mimosaceae	Chu-mui
<i>Prosopis julifera</i> (Sw.) DC.	Mimosaceae	Vedibabhul
<i>Ficus benghalensis</i> Linn.	Moraceae	Vad
<i>Ficus carica</i> L. Sp.	Moraceae	Anjeer
<i>Ficus racemosa</i> L.	Moraceae	Umbar
<i>Ficus religiosa</i> L.	Moraceae	Pipal
<i>Moringa oleifera</i> Lamk	Moringaceae	Shevga
<i>Tinospora cordifolia</i> (Willd.)	Menispermaceae	Gulvel
<i>Callistemon citratus</i> (Curtis) Skeels	Myrtaceae	Bottle brush
<i>Eucalyptus citriodora</i> HK.f.	Myrtaceae	Neelgiri
<i>Psidium guajava</i> L.	Myrtaceae	Peru
<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	Jambhul

<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Punarnava
<i>Bougainvillea Spectabilis</i> Willde.	Nyctaginaceae	Bougainvillea
<i>Mirabilis jalapa</i> L.	Nyctaginaceae	Gulbaksha
<i>Jasminum multiflorum</i> (Burma.f.) Aners	Oleaceae	Chameli
<i>Jasminum sambac</i> (L.) Aiton	Oleaceae	Mogra
<i>Nyctanthes arbor-tristis</i> Linn.	Oleaceae	Parijatak
<i>Cocous nucifera</i> L.	Palmae	Naral, Mad
<i>Argemone mexicana</i> L.	Papaveraceae	Bilayat, Pivla Dhotara
<i>Passiflora caerulea</i> L.	Passifloraceae	Krishnakamal
<i>Pedaliium murex</i> L. Syst.Nat.	Pedaliaceae	Sarata, Mothe Gokhru
<i>Piper betel</i> L.	Piperaceae	Betal
<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Wild Leadwort
<i>Punica granatum</i> L.	Punicaceae	Dalimb
<i>Portulaca grandiflora</i> Hook.	Portulacaceae	Rose moss
<i>Setaria viridis</i> (L.) P.Beauv.	Poaceae	Green foxtail
<i>Zizipus mauritiana</i> Lam.	Rhamnaceae	Bor
<i>Aegle marmelos</i> L.Corr.	Rutaceae	Bael, Bilva
<i>Citrus limon</i> (L.) Burm.	Rutaceae	Limbu
<i>Ruta graveolens</i> L.	Rutaceae	Herb-of-grace
<i>Santalum album</i> L.	Santalaceae	Chandan
<i>Manilkara zapota</i> (L.) Van.	Sapotaceae	Chikoo
<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Kapalfodi
<i>Datura metel</i> L.	Solanaceae	Kala Dhotra
<i>Datura stramonium</i> L.	Solanaceae	Dhotara
<i>Lantana camara</i> L.	Verbenaceae	Ghaneri
<i>Tectona grandis</i> Linn.	Verbenaceae.	Sag, Sagwan
<i>Vitex negundo</i> L.	Verbenaceae	Nirgundi
<i>Cissus quadrangularis</i> L.	Vitaceae	Winged treebine

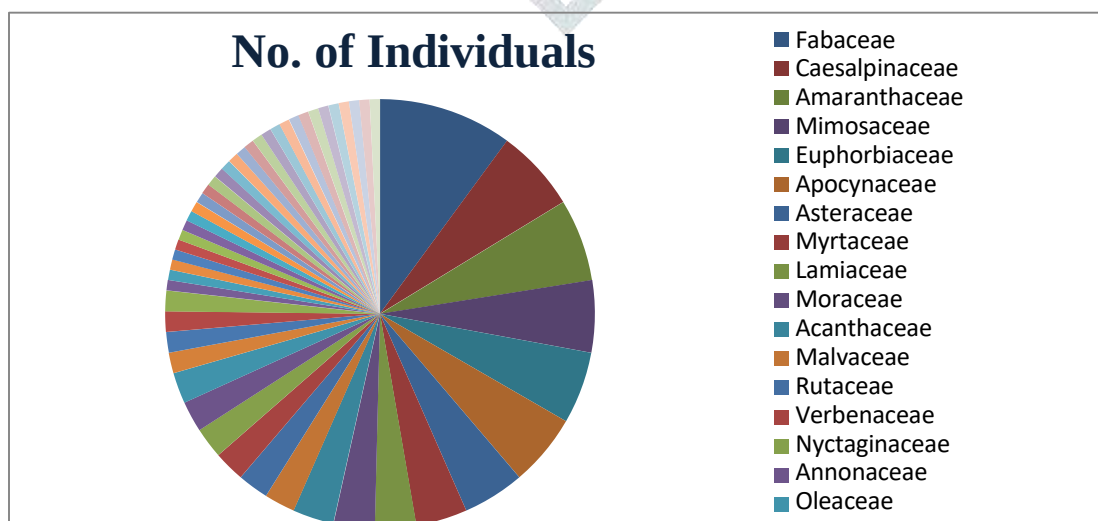


Figure no. 3: Dominant Families of Plants

Table No. 2: Dominant Family of the Area

Sr. No.	Name of the Family	No. of Individuals
1.	Fabaceae	13
2.	Caesalpinaceae	08
3.	Amaranthaceae	08
4.	Mimosaceae	07
5.	Euphorbiaceae	07
6.	Apocynaceae	07
7.	Asteraceae	06
8.	Myrtaceae	05
9.	Lamiaceae	04
1.	Moraceae	04
11.	Acanthaceae	04
12.	Malvaceae	03
13.	Rutaceae	03
14.	Verbenaceae	03
15.	Nyctaginaceae	03
16.	Annonaceae	03
17.	Oleaceae	03
18.	Asclepiadaceae	02
19.	Combretaceae	02
20.	Cucurbitaceae	02
21.	Solanaceae	02
22.	Agavaceae	01
23.	Anacardiaceae	01
24.	Arecaceae	01
25.	Araucariaceae	01
26.	Asparagaceae	01
27.	Bombacaceae	01
28.	Bignoniaceae	01
29.	Cactaceae	01
30.	Caricaceae	01
31.	Convolvulaceae	01
32.	Cyperaceae	01
33.	Cannaceae	01
34.	Crassulaceae	01
35.	Liliaceae	01
36.	Lythraceae	01
37.	Menispermaceae	01
38.	Meliaceae	01
39.	Moringaceae	01
40.	Palmae	01
41.	Papaveraceae	01
42.	Passifloraceae	01
43.	Piperaceae	01
44.	Pedaliaceae	01
45.	Plumbaginaceae	01
46.	Punicaceae	01
47.	Portulacaceae	01
48.	Poaceae	01
49.	Rhamnaceae	01
50.	Santalaceae	01
51.	Sapindaceae	01
52.	Vitaceae	01



Photograph No. 1: Some observed Plants

Table No. 3: List of Fungi

Sr. No.	Name of the Fungus	Family	Class
1.	<i>Hypoxylon</i> sp.	Xylariaceae	Ascomycetes
2.	<i>Daldinia</i> sp.	Hypoxylaceae	Ascomycetes
3.	<i>Schizophyllum</i> sp.	Schizophyllaceae	Basidiomycetes
4.	<i>Polyporus</i> sp.	Polyporaceae	Basidiomycetes
5.	<i>Daedalea</i> sp.	Fomitopsidaceae	Basidiomycetes
6.	<i>Puccinia</i> sp.	Pucciniaceae	Basidiomycetes
7.	<i>Pleurotus</i> sp.	Pleurotaceae	Basidiomycetes



Photograph No. 2: Some observed fungi

IV. CONCLUSION:

Present study revealed that, over 129 plants belonging to more than 50 families and 7 Fungi from 2 classes were studied. Floristic vegetation and fungal diversity is very much affected by local activities and their natural regeneration prevented due to heavy cuttings, grazing etc. mining activities. The influence of industrialization, over population, loss of potential habitat, climatic changes etc., have altered the vegetation pattern of the area. This has definitely affected flora. There is a need to be protect and conserve this species for the future generation.

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