

Chapter: V

SUMMARY & CONCLUSION

Dissertation deals with Plant diversity assessment at Jarandeshwar hill (Tal. Koregaon). The study is based on survey of one year (2007). It has been presented in the five chapters. Introductory chapter emphasizes the importance of such studies. Aim of present problem and detailed review of literature pertaining to plant diversity studies given in the next chapters. Chapter three deals with methodology followed during this investigation. Chapter four deals with main features emerging out of present study. These observations were discussed with reference to the work done in other parts of India. The important findings of the present work can be summarized as follows.

1. Jarandeshwar hill is a track of dry deciduous forest. It covers a total area Ca. 199 ha. It is located at the border line of Padali and Jamb (Tal- Koregaon) and Mahuli (Tal - Satara) at Latitude N 17^o 44.013' and longitude E 074^o 06.291' and altitude 1227 m from mean sea level. It is 15 km away from Satara city towards east and 9 km away from Koregaon Tahasil towards north east.
 2. Study area experiences a variation in temperature from season to season. Generally in April and May temperature rises up to 38^oC to 40^oC. The coldest days are in the month of December- January. In these days temperature falls up to 14.4^oC. Rainfall ranges between 750-1250 mm per anum.
 3. Plant diversity study was initiated with the aim to know: 1) Plant diversity, 2) Ethnobotany (Food, fodder, timber, gum, resin yielding and Religious value) 3) Endemic status of flora, 4) wild ornamentals and 5) ecological status of Jarandeshwar hill.
 4. For the sake of convenience of study, area divided into four sides i.e. east, west, south and north.
 5. Soil of study area black to reddish black in color with high water holding capacity.
 6. Vegetation of community was studied by using different quadrat size. For herbaceous vegetation small quadrats (2 X 2m²) and for shrubby and climber quadrat size was 5 X 5m². Tree vegetation was analyzed by belt transect of 10 X 500 m² size.
 7. Ethnobotanical information was collected from natives and by using literatures.
 8. Vegetation composed of 233 species of plants. Dry element of vegetation is represented by species of *Acacia leucophloea*, *Agave americana*, *Albizia procera*, *Carissa carandas*, *Echinops echinatus*, *Lantana camara*, and *Lepidogathis trinervis* while deciduous element is shared by all the tree species.
 9. The present work reports 233 species which belonging to 183 genera and 65 families. Habit wise contribution in the vegetation of Jarandeshwar hill was trees (25.32%),
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shrubs (11.16%), climber (15.45%) and herbs (48.07%).

10. Among the total life forms dicotyledons contributed 198 species belonging to 153 genera and 54 families. In contrast to monocotyledons contributes only 35 species belonging to 30 genera and 11 families.

11. Sidewise distribution of vegetation revealed that, east and south side of the hill shows same number of species i.e. 174 each. On the east side proportion of dicot and monocot is 6:1 while on south side 10.6:1. vegetation was poor on north side (87 plant species).

12. Out of 65 families 33 families contributed only one genus and 28 families contribute only one species. Families contributing more than five species in their descending order were Fabaceae, Poaceae, Asteraceae, Caesalpiniaceae, Acanthaceae, Mimosaceae, Euphorbiaceae, Asclepiadaceae, Cyperaceae and Malvaceae.

13. Comparison first 10 families of the present study with related floras indicated 70% similarity with name of families though their sequence is different.

14. The Ecological data of tree species in Jarandeshwar hill shows the dominant species as *Anogeissus latifolia*, *Maytenus senegalensis*, *Terminalia elliptica*, *Tectona grandis*, *Lannea coromandelica* and *Boswellia serrata*.

15. The dominant shrub species are *Ixora nigicans*, *Grewia serrulata*, *Carissa carandas*, *Cassine glauca*, *Grewia orbiculata*, and *Clerodendrum serratum*.

16. The dominant climber species are *Cardispermum helecacabum*, *Cissampelos pareira*, *Cocculus hirsutus*, *Clitoria ternatea* and *Ventilago dentaculata*.

17. Dominant herb species are *Rungia repens*, *Blumea malcolmii*, *Apluda mutica*, *Aristida funiculata*, *Alysicarpus longifolius* and *Rostularia quenqueangularis*.

18. For different diversity indices on comparison of species number diversity index the maximum taxonomic diversity found at the south side of the hill and minimum diversity found at north side of the hill.

19. The dominant tree species with reference to IVI are *Anogeissus latifolia* (16.41), *Maytenus senegalensis* (9.98), *Terminalia elliptica* (9.73), *Tectona grandis* (9.36), *Lannea coromandelica* (7.94). Low IVI value indicates secondary type forest at study area.

20. Wild edible plant species recorded from Jarandeshwar hill were *Carissa carandas*, *Cassia tora*, *Clerodendrum serratum*, *Cucumis setosus*, *Diospyros melanoxylon*, *Embllica officinalis*, *Syzygium cumini*, *Tamarindus indica*, *Ziziphus mauritiana* and *Ziziphus oenoplia*.

21. Present study revealed 34 plants which are used by natives as medicine. Analysis of plants on the basis of medicinal part gave seven classes. They are whole plants (5 species), root (9), bark (3), leaves (10), flowers (1), fruits (2), seeds (5). Natives are using composite plant drugs which are obtained by mixing powders of shade drying parts of 8 different plants. Such drugs are used as general tonic.

22. Study area reports, 24 timber, 4 gum, 1 resin and 3 dye yielding plants. Six Devak plants were recorded in study area such as *Calatropis gigantia*, *Clematis gouriana*, *Cocculus hirsutus*, *Ficus bengalensis*, *Ficus racimosa* and *Ficus religiosa*. People are selective in using *Acacia catechue* and *Grewia tilifolia* for fuel as these plants give white smoke and reduce blackening of utensils.

23. 33 species of 9 families were recorded as fodder plants. These plants were mostly contributed by family Fabaceae and Poaceae.

24. Study area reports 9 ornamental plants from Jarandeshwar hill. These species are *Alysicarpous pubescens*, *Barleria gibsoni*, *Cassia fistula*, *Ceropegia hirsutas*, *Clematis gauriana*, *Delphinium malabaricum*, *Gloriosa superba*, *Pulicaria wightiana* and *Scenecio edgeworthii*

25. Vegetation of Jarandeshwar hill reports 25 species which are endemic to Maharashtra. These endemic plants belonging to 23 genera and 21 families. The proportion of endemic species in the vegetation is 11.54%. 14 species represented any one side of the hill and 9 species any two side of the hill. They need conservation measures.

The result clearly indicates that, the small patch of forest at Jarandeshwar hill represents dry deciduous forest. Out of the 233 species, 49 species are represented at single side of the hill. 25 species from study area are endemic to Maharashtra. Jarandeshwar hill is a major resource for herbal medicines, gum, resin, and fodder plants.

So there is need to conserve this forest for maintaining the biodiversity.