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DIGITIZATION OF LEGUMINOSAE TREE PLANTS FROM KINWAT AND MAHUR FOREST RANGES OF NANDED DISTRICT IN MAHARASHTRA

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ABSTRACT

Kinwat and Mahur taluka of Nanded districts has old heritage of medicinal plants and herbal medicine. Forest is rich in biodiversity and consists of rare medicinal plants. Biogeographical condition such as altitude, soil type and average rain fall make the vegetation diversity in this area. The local tribes Andh, Gond, Kolam, Naikde and pradhan use forest resources for their day to day life.

In the present research 27 leguminosae plants were identified through the quadrat method from the study area. Digitization was carried out using morphological information of the plant, taxonomically important photographs and ethnomedicinal uses along with other information related to the plant. Hyperlink computer technique was used while doing the digitization. The present digitization of leguminosae tree plant will give instant global access to the plants information and easy to maintain and process this information.

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INTRODUCTION

Kinwat and Mahur taluka of Nanded districts has old heritage of medicinal plants and herbal medicine. Forest is rich in biodiversity and consists of rare medicinal plants. Biogeographical condition such as altitude, soil type and average rain fall make the vegetation diversity in this area.

The kinwat taluka geographically situated at 19° 25' to 19° 55' North latitude to 77° 51' to 78° 19' East longitude and covering about 57,800 hectares under forest which is about 27.25 % percentage of total area (Ghorband and Biradar, 2012). Mahur taluka is geographically situated between 19° 49' to 19° 83' North latitude and 77° 01' to 77° 55' East longitude. The total geographical area of taluka is 52,160 hectares out of which 14397.39 hectares land area covered with forest and 37762.61 hectares are non-forested area (Vijigiri and Bembrekar, 2015). Both these region has rich biodiversity because of the environmental condition. The present work deals with the digitization of the leguminosae tree plants diversity in the kinwat and Mahur forest ranges.

The use of electronic communication and dominance of the Internet has created a major change in the way information is presented and stored. Taxonomically important set of digital

photograph of plants in their natural habitat can be supplemented with the taxonomical description and other information related to the species. This digitized information of the plants is very useful for the researcher.

MATERIALS AND METHODS

Leguminosae tree plants survey was carried out in the Kinwat and Mahur forest ranges of Nanded district using quadrat method. 100 m × 100 m quadrat was taken for survey of the leguminosae tree plants in the study area (Misra, 1968). While taken the quadrat the maximum diverse area of the forest was taken in the account.

Digitization was carried out using ethnomedicinal uses, morphological information of the plants along with other importance were also summarized in the present study. Hyperlink computer technique was used while doing the digitization (Dalitz and Homeie, 2004; Schmidt, *et.al.*, 2009). Nikon Coolpix P510 camera was used for the digital photograph of the plants. The characters of the plants which were taken in the consideration are Scientific Name of the plant, its classification, distribution and GPS location from the study area. In addition to this common names like English, Hindi, Marathi, Sanskrit were given. It also provides plant morphology which includes habit, root, stem, leaves, flower,

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fruit, seeds, flowering and fruiting periods and economic importance of the species (Anonymous, 1948; Kirtikar and Basu, 1975; Nadkarni and Nadkarni, 1976; Naik, 1998; Yadav and Sardesai, 2000).

RESULTS

Total 27 leguminosae tree plants were occurred in 45 quadrate of the study area. Out of this 27 leguminosae plants, 09 were belonging to the Papilionaceae, 6 were belonging to the caesalpinaceae and 12 were belonging to the family mimosaceae.

Plants belonging to these families were *Butea monosperma* (Lam.) Taub., *Dalbergia lanceolaria* subsp. *Paniculata* (Roxb.) Thoth., *Dalbergia sissoo* DC., *Desmodium oojainense* (Roxb.) H.Ohashi, *Erythrina suberosa* Roxb., *Gliricidia sepium* (Jacq.) Walp., *Pongamia pinnata* (L.) Pierre, *Pterocarpus marsupium* Roxb., *Peltophorum pterocarpum* (DC.) K.Heyne, *Bauhinia recemosa* Lam., *Caesalpinia pulcherrima* (L.) Sw., *Cassia fistula* L., *Sennasiamea* (Lam.) H. S. Irwin & Barnaby, *Delonix regia* (Hook.) Raf., *Tamarindus indica* L., *Acacia farnesiana* (L.) Willd., *Acacia catechu* (L.f.) Willd.,

Leguminosae tree plants flower Photographs from the study area



Albizia leback (L.) Benth.



Butea monosperma (Lam.) Taub



Caesalpinia pulcherrima (L.) Sw.



Cassia fistula L.



Sennasiamea (Lam.) H. S. Irwin & Barnaby



Dalbergia sissoo DC.



Delonix regia (Hook.) Raf.



Erythrina suberosa Roxb.,



Gliricidia sepium (Jacq.) Walp.



Peltophorum pterocarpum (DC.) K.Heyne



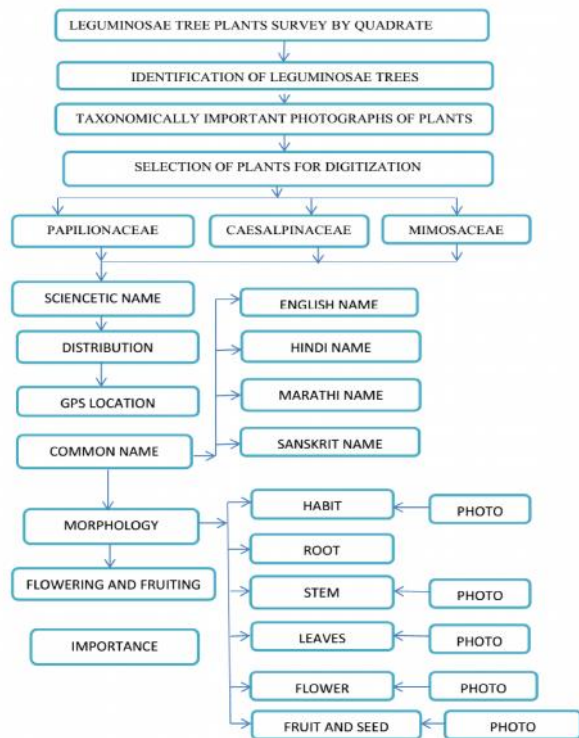
Pongamia pinnata (L.) Pierre



Prosopis juliflora (Sw.) DC.

Acacia leucophloea (Roxb.) Willd., *Acacia chundra* (Rottler) Willd., *Acacia nilotica* (L.) Delile, *Albizialeback* (L.) Benth., *Albizia procera* (Roxb.) Benth., *Albizia julibrissin* Durazz., *Albizia saman* (Jacq.) Merr., *Leucaenatisiliqua* (L.) Gillis & Stearn, *Pithecellobiumdulce* (Roxb.) Benth and *Prosopisjuliflora* (Sw.) DC.

Tree diagram of digitization



Taxonomically important plant photographs of these plants were taken like photographs of habit, stem, leaves, flower, fruits and seeds. These photographs were supplemented with the scientific name of the plants, common name including English name, Hindi name, Marathi name, Sanskrit name, classification of the plants, distribution, Habit, morphological description of the plants, economic importance, flowering and fruiting month and GPS location from the study area. All these character were taken into consideration while doing the digitization of the leguminosae tree plants from the kinwat and Mahur forest ranges of the Nanded district.

All these collected information and photographs was used to prepare the digital data about the leguminosae plants found in the kinwat and Mahur forest ranges. This information documented in the Power Point which linked with each other by the Hyperlink computer technique.

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It results into the digitized information system of the leguminosae plants. In this digitization work total 27 leguminosae plants from the study were documented. This digitization work can be summarized as per the tree diagram shown below.

CONCLUSION

This digitization work was useful for the leguminosae tree plants identification, and teaching taxon recognition. It also provided the useful information related to the species. It also provides the ecological information of the species. It will improve the collection and preservation of the plant specimen. It gives global access to the plants information and easy to process this information. This digitization technology can open the new research opportunity.

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