

ELECTRONIC DATABASE OF SOME MEDICINAL PLANTS OF WARDHA DISTRICT

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ABSTRACT

Medicinal plants have been explored for treatment of numerous health alignments. The knowledge of use of plants as a source of medicine known in Ayurveda system of medicines since ancient time and is an important component of the health care system in India. Medicinal plants are not only used for primary health care in rural areas, but also in cities as well where modern medicines are predominantly used. General public prefer to use traditional medicines is growing rapidly due to the increase awareness and cost factor of the modern system of medicine. The Flora of Wardha district was studied earlier by Acharya in 1985. However no work was carried out in the direction of electronic herbarium and digital database of some medicinal plants of Wardha district of Maharashtra. Hence, the present study was carried out to know the different types of medicinal plants available. In the present study, 329 medicinal plants (296 genera) belonging to 76 families were reported. The electronic herbarium and digital database of plants was developed based on software DELTA (Descriptive Language for Taxonomy) package (Dallwitz *et al*, 2000), which includes indigenously developed set of more than two hundred morphological (Phenological) characters with variable states were incorporated in the software.

KEYWORDS: Medicinal Plants, Electronic Herbarium, Digital Database, Wardha

Wardha district is historically famous one located on the North eastern side of Maharashtra state. This district is geographically located at 20° 28' and 21° 21' latitudes and longitudes towards North and 78° 4' to 79° 15' longitudes towards East. (https://cultural.maharashtra.gov.in/english/gazetteer/WARDHA/gen_geography.html). The district receives average annual rain fall of 1090 mm with minimum and maximum temperature of 15°C and 47°C, respectively. (https://cultural.maharashtra.gov.in/english/gazetteer/WARDHA/gen_climate.html). The district covers an area of 6309 sq km, which is 2% area of the Maharashtra state. For administrative convenience, Wardha district has been subdivided into three subdivisions Wardha, Hinganghat and Arvi which are further divided into Wardha, Seloo, Deoli, Hinganghat, Samudrapur, Arvi, Ashti, Karanja tahsils, respectively. The current study was done to know about plants as well as the socio-economic and medicinal values of plant wealth of Wardha district by using digital technology. This digital technology has several advantages (permanent, original colours are retained, eco-friendly, no biodegradation, pathogenic/insect attack etc.) over the traditional method of herbarium preparation. Hence, it was thought worthwhile to study and prepare digital dicot biodiversity database of plants.

This new method is well accepted technique in advanced countries in Europe, America, Australia and India. Other important information such as distribution, flowering and fruiting period, status of the plants in the nature, common and vernacular name, socio-economic

values of plants etc. was added to the digital database for further uses.

MATERIALS AND METHODS

Field explorations were conducted during all seasons to know the diversity of plants especially medicinal plants existing in Wardha district. The study was based on extensive and intensive field surveys undertaken in all tahsils of Wardha district. Surveys were undertaken in the vacant spaces, wastelands, near dams, and road side fields and cultivated fields etc. for medicinal plants and collected digital photos of plants in their natural habitat and plant specimens for observation, identification and data preparation in the laboratory during the study period. The digital photos are then attached to the respective plant descriptions in the database. This database provides information about individual species description, various species differences for accurate identification, query and search method for identification of plant species etc. The identification of species has been done with the help of different literature sources such as Hooker (1885), Acharya (1985), Singh *et al*. (2000, 2001), Almeida (1996, 1998, 2001, 2003) and medicinal uses of these plants was referred by Kirtikar & Basu (1975).

RESULTS AND DISCUSSION

This database contains 575 dicot plants list till today. Nearly 329 medicinal plants species identified in Wardha district, which are used for the treatment of various diseases. For each species, descriptive

information has been provided along with valid botanical (ICBN) and family names followed by vernacular and common names, distribution in Wardha district, flowering and fruiting period, medicinal uses are mentioned in the database. The utility of plant species used in the study area by the local people for the treatment of various diseases was also mentioned briefly. Various medicinal plants have been identified separately under different life forms such as trees, shrubs, herbs and climbers. Out of 329 medicinal plants, 53 trees species and 46 shrubs (perennials) are medicinally important are found in Wardha. Nearly 176 species of herbaceous medicinal plants were recorded during the present explorations. Medicinal herbs of winter season are 54 species; summer season are 31 species and rainy season are 67 species. Six species of medicinal climbers and two species of rooted forms with free floating medicinal hydrophytes are founded there. Medicinal plants found on wastelands and roadsides are 73 species. Out of 329 medicinal plants 157 dicot weeds are medicinally important ones noted from different regions of the district.

Some Medicinal Vegetation of Wardha District

The following are some of common dicot medicinal plant species growing in Wardha namely *Achyranthes aspera* L., *Amaranthus viridis* L., *Annona squamosa* L., *Hibiscus rosa-sinensis* L., *Cassia fistula* L., *Cassia tora* L., *Cassia occidentalis* L., *Tamarindus indica* L., *Abrus precatorius* L., *Butea monosperma* (Lamk.) Kuntze., *Dalbergia sissoo* Roxb., *Trigonella foenumgraecum* L., *Mangifera indica* L., *Melia azadirachta* L., *Tridax procumbens* L., *Carica papaya* L., *Coriandrum sativum* L., *Cuscuta reflexa* Roxb., *Calotropis procera* (Ait.) R. Br., *Mentha arvensis* L., *Ocimum sanctum* L., *Vitex negundo* L., *Boerhavia diffusa* L., *Euphorbia hirta* L., *Embllica officinalis* Gaertn., *Jatropha curcus* L., *Phyllanthus niruri* L., *Ricinus communis* L., *Ficus benghalensis* L., *Ficus racemosa* L.,

Medicinal uses of some plants are: Some medicinal plants are very effective to cure various diseases like dry cough, tumors, liver diseases, antibiotic, antifungal, jaundice, joint pain, anthelmintic, nervous disorder, blood pressure, anti-inflammatory, infertility, antibacterial, antioxidant, internal bleeding, body ache, anemia, chest problems, chicken pox, sore throat, leprosy, menstrual problems, piles, eye trouble, heart diseases, swellings, respiratory diseases, skin infections, tuberculosis, appetite, lactation, dysentery, hypertensive, fever,

constipation, inflammation of liver, vomiting, asthma, cough, dysentery, bleeding, leucoderma, headache, blood sugar, bone fracture, burning sensation, cholera, common cold, diabetes, diarrhea, earache, epilepsy, goiter, hiccup, indigestion, inflammation, kidney stone and loose motion etc.

The present study indicates that Wardha district is quite biodiversity rich region for medicinal plants which are also economically important. Medicinal plants included 329 species belonging to 296 genera and 76 families. The dominant families of the present study are Fabaceae and followed by Caesalpiniaceae. Various parts of plants like the leaves, flowers, roots and the bark are useful in curing a wide range of health related issues. Leaves are the most preferred part for the treatment of various diseases. Plant parts are commercialized today in the form of powders, pills, oils, tablets, creams, etc. These forms of medicine are used in specific diseases and their mode of treatment is different in different regions. In many of the developing countries the use of plant drugs is increasing because of awareness and cheapness as compared to expensive of modern life saving drugs. Further, it is urgent need to cultivate and commercialize traditional medicinal plants for bio-diversity conservation point of view in the district. Conservation of bio-diversity is one of the important global responsibilities of mankind to ensure the safe future and there is a good scope to improve the supply of Ayurvedic medicines and uplift the economic conditions of rural farmers who contribute to the national economy. This database will help the scientific community to keep themselves updated on medicinal plant information where the research and development work being carried out for a particular medicinal plant.

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