ABSTRACT

The Angiospermic family Moraceae is an important family of tropical and subtropical ecosystem. The North East India is one of the centre of rich species diversity of Moraceae with more than 75 species out of the total about 140 Indian species reported under 7 genera. Among these the genus *Ficus* is the dominant one with more than 80% species followed by the genera *Artocarpus*, *Morus*, *Broussonetia*, *Streblus* and *Maclura*. Many economically and ethnobotanically important taxa of the family are well represented in the region. However, in spite of the rich species diversity, ecological and economic value, the family has not been subjected to any taxonomic studies. Due to the morphological complexities and taxonomic difficulties, the identification of many wild species particularly under the large genus *Ficus* is a challenging job. To fulfill the gap of taxonomy of the family Moraceae in north east India and to find out the diversity and socioeconomic value the present thesis work had been undertaken in the department of Forestry, NERIST during 2009-13. Based on extensive field survey conducted, data collected from communities, specimen collected, critical morphological investigation, etc the results of the work have presented in this thesis.

Taxonomic account of 62 species and 2 varieties under 6 genera viz *Artocarpus* (4 species), *Broussonetia* (2 species), *Ficus* (51 species), *Maclura* (2 species), *Morus* (4 species) and *Streblus* have been provided. The genus *Ficus* represents by 51 species. Many interesting records are made which include 5 new records to the state flora (*Ficus conglobata*, *F. pumila*, *F. racemosa*, *F. variegata* and *Streblus asper*) and 1 new record to India (*Ficus geocarpa*). Besides, the first record of the genus *Streblus* from the state through collection of *Streblus asper* is also made. Complete taxonomic enumeration of all the species of the family grouping systematically under their respective genera providing key to the genus, sub genus and species have been made. Full taxonomic citation with complete and correct nomenclature, morphological description, distribution, Phenology and list of specimens examined have been supported by line
drawing illustration and color plates. One of the significant aspects of the present study is the evaluation of microscopic floral characters which were neglected in most of the earlier works. Presentation of complete morphological characters including all the character of flower has been attempted. For most of the species the minute floral characters are studied and illustrated. To facilitate identification of the species color illustrated plates are included with the description. The best possible characters are used for key characters.

The rich species diversity of the Moraceae is found to be well and strongly associated with the rich culture and tradition of indigenous communities. The present work also includes the ethnobotanical and socio-economic importance of Moraceae in the region. Overall uses of 43 species have been presented which are used as fodder, 28 as fuel wood, edible fruit, timber, ethno-medicine value, sacred trees, wild vegetable, 3 in sericulture gum, fishing etc. *Ficus* group is associated with cultural belief of the local tribal people. It is believed that the plant is associated with God and Goddesses and its leaves form integral part of ritual and cultural performances. *Ficus* species particularly the tree with huge hanging prop roots are specially treated as a sacred plants and it is believed that the plants save communities from any unexpected difficulties and from enemies. All such cultural and traditional belief is also presented in the work.

Overall the present study has made an important contribution to understand the exact status of Moraceous species of north east India particularly for the state Arunachal Pradesh. The Thesis work assumed to be helpful in understanding the species diversity and taxonomy of the family Moraceae with exact distribution and population status as well as the uses. The taxonomic key and description with colour plates and illustrations will help in field identification of the species. As the family is ecologically and economically important one, the data of the present research can be used for future R & D works particularly concerned with ecology, phylogeny and reproductive biology. Based on the present findings, strategies and action plans may be formulated for management and conservation of the Moraceous species in the state.