MATERIAL & METHODS
CHAPTER-III

MATERIAL AND METHODS

The present work is based on the results of three years (2010 – 2012) of comprehensive study in Daund Tahsil, from Pune district of Maharashtra state. Efforts were carried out to visit the study area once in the month and as and when necessary or some times twice in a month in different season to cover all possible area of the Tahsil. In order to achieve the objectives mentioned above, intensive, surveys have been under taken along different topographic and climatic gradient within the Daund Tahsil. During the field study a minimum four specimens of each species have been collected.

The collection of plant material have been carried and to cover all the places of botanical interest and all to their occurrence in diverse habitats. Most of the plant specimens have been collected in their flowering and fruiting stages for the correct botanical identification. During field survey first hand information regarding plant specimen have been recorded in field note book.

The information which has been collected includes the place of collection, altitude of the place; date of collection, habit of plant, color of the flower, abundance, distribution, phenology and any other character of plant which generally not seen in the specimens collected and also brief ecological note, uses if any, vernacular name and association have been recorded.

The collected plant specimen were pressed and dried by using blotting paper and news papers in wooden plant press of size 45 x 30 cm. During this process, drying papers have been replaced by fresh drying papers. The changing of drying paper was repeated everyday till the plant specimens appeared to be perfectly dry.

Treatment of the specimens for herbarium followed the procedure suggested by Jain and Rao, (1966). The dried specimens were then poisoned with the saturated solution of Mercuric Chloride (HgCl₂) in alcohol or rectified spirit. After evaporation of alcohol the dried specimen were mounted on herbarium
sheet of standard size 42 x 28 cm dimension. The glue was applied to the specimens with a brush very gently and with great care. It was then placed over the paper and the extra glue was removed by means of a moistened piece of cotton. The plant specimens have been deposited in the herbarium of Department of Botany, University of Pune, Pune, (M.S.).

The identification of collected plant specimen has been done satisfactorily with the help of regional and national floras and other relevant literature. The laboratory work was mainly in the form of comprised the correct identification of collected specimens. The specimens were identified with the help of published Flora like 'Flora of India', (Hooker, 1872-1897), 'Flora of Presidency of Bombay' Vol-I-III (Cooke, 1958 Repr.ed.), 'The Flora of the Maharashtra State'; Monocotyledones (Sharma et al, 1996); 'Flora of Marathwada' (Naik, 1998); 'Flora of Maharashtra' Vol-I, II, IIIA,IIIB,VIA and VIB, (Almeida, 1996; 1998;2001;2004); 'Flora of Maharashtra state'; Dicotyledons Vol- I (Singh & Karthikeyan, 2000); 'Flora of Maharashtra state'; Dicotyledons Vol –II (Singh et al. 2001); 'Flora of Kolhapur' (Yadav & Saredsai, 2002); 'Flora of Indian Desert' (Bhandari, 1995); 'Flora of Baramati' (Bhagat et al,2008) etc. and consulting some published literature such as research article, revision and Monographs. The identities of some problematic specimens were confirmed by comparing them with authentic specimens at Botanical Survey of India (BSI), Western Circle, Pune-1.

Dichotomous indented keys have been provided for easy identification of families, genera & species. The genera within family, when more than one has been arranged alphabetically. This arrangement has been followed even for species within genera and intraspecies categories.

The nomenclature has been adopted as far as possible based on latest taxonomic literature and in accordance with the recommendations made by International code of Botanical Nomenclature (ICBN). The correct name is followed by citation of relevant literature. This is followed by basionyms and synonyms used in common earlier works. Local name has been given wherever available. The nomenclature has been followed by short diagnostic description,
flowering and fruiting months; representation herbarium specimen is cited under each species. A short note is also provided.

The identification and authentication of collected plant specimens has been done with the help of appropriate authority of Botanical Survey of India (B.S.I.) Western Regional Circle, Pune. In the enumeration, the families of plants are arranged according to Bentham & Hooker's (1862-1883) system of classification. Species under families are arranged alphabetically.

For photographic documentation, photographs were also taken for plant specimens and general vegetation type. The photographs, maps, statistical data, diagrams and graphs are also given.