PREFACE

This PhD thesis submitted to JNTUA, Anantapuramu entitled, “Pharmacognostical and phytochemical screening of the volatile oil present in the leaves of *Pimenta dioica* (linn.) Merrill, family Myrtaceae” contains a detailed presentation of pharmacognostical investigation of leaves of the shrub, *Pimenta dioica* Linn., Myrtaceae.

The phytochemical evaluation and characterization of essential oil distilled from leaves of *Pimenta dioica* Linn. Family: Myrtaceae has been shown in this thesis. The seasonal variation in the active constituents of the oil collected from leaves of *P. dioica* in two major seasons occurring in South Kanara region of Karnataka state, viz., Summer (January – May) and Monsoon (June - December) are shown in this thesis in a concise manner. The work displays a wide variation in the type of active constituents and their relative percentages in various samples collected in specific months of a specific season.

The essential oil of *Pimenta dioica* leaves were evaluated for its biological activities which now is of utmost importance bearing in mind traditional values of the leaves. The antioxidant activities of the essential oil are described in this PhD thesis. As there was good activity, more biological activities which were in conjunction with the anti-oxidant activities, viz., anti-microbial, anti-inflammatory and anthelmintic activities were explored. All these biological activities were in accordance with the traditional uses of *Pimenta dioica* in the treatment of ailments.
like, toothache, rheumatism pain, antiseptic action, etc. However, a seasonal variation in the activities of essential oils of *Pimenta dioica* are shown in the thesis for all the activities mentioned above. It is shown in this thesis that the monsoon samples fared well than the summer samples when evaluated for biological actions.