Introduction
I. INTRODUCTION

Jasmines are one of the most important ornamental flowering plants widely cultivated in the Southern and Eastern parts of India and esteemed for their attractive and fragrant flowers. They are grown for garden decoration, landscaping, for making garland, hair decoration and for extraction of essential oil which is a highly lucrative business of late. About 15000 kgs of loose flowers are sold every day in big cities viz., Calcutta, Bombay, Delhi, Madras and Bangalore. The most unique type of fragrance is derived from *Jasminum grandiflorum* which is highly appreciated all over the world. The oils are used in the manufacture of high grade perfumes, cosmetics, soaps, confectionery, perfumes, perfumed tobacco, syrups, aerated water, ointments, disinfectants, detergents, in medicinal and pharmaceutical beverages, for curing various ailments and as a source of yellow pigment and seeds are edible in some species.

Jasmine belongs to the family ‘Oleaceae’ and is native of Indo-Malayan region (Anonymous, 1959). They are climbing or spreading and perennial in nature. The genus jasmine is comprised of diploids (*Jasminum sambac* 2n=26), triploids (*Jasminum primulatum* 2n=39), tetraploids (*Jasminum angustifolium* 2n=52) with basic chromosome number of x=13 (Taylor, 1945; Krishnaswamy and Raman, 1948). The earlier reports on jasmine (Rendle, 1925; Bailey, 1958) suggest that the total number of species in this genus is about 200. Reports generated later (Cooke, 1905; Veluswamy *et al.*, 1975) have revealed that the number of species in jasmine is less than 89. As many as 40 species are reported to have originated from Indian subcontinent and comprise commercially cultivated species like *Jasminum grandiflorum, Jasminum sambac* and *Jasminum auriculatum*. Considerable work has been done in these species. Varieties which are high yielding, high in oil content and yield have been released through selection and hybridization. Besides, there are many ecotypes under commercial cultivation viz., Udupi Mallige, Mangalore Mallige, Mysore Mallige, Amboor Mallige, Elusuttina Mallige etc., which remain enigmatic to which species they belong to and these are exported to gulf countries for fresh flowers and oil extraction purposes to a very great extent throughout the year. Even though this crop is under cultivation from antiquity, lot of confusion exists in the identification of plants, because of the existence of large number of species, varieties and cultivars and
their synonyms. Morphological traits like size and shape of leaf, internodal length (Raman, 1955), shape of flower bud, petal shape and number of whorls (Bhatnagar, 1956), length of style and stigma (Khan et al., 1970, Indiresh et al., 1989) have been documented in some species. Variations in concrete recovery, benzyl acetate per cent have also been reported by Singh and More (1982) among different varieties even within a species. Different seedling characters, plant characters and floral characters have been correlated with economic traits such as yield of flowers, essential oil content and recovery. Studies on cytological variations have helped in knowing the ploidy levels. These efforts have helped in grouping the plants based on morphological traits.

The range of morphological characters currently available for evaluation are extremely useful but most often the desired phenotypic characters are phylogenetically inherited and highly influenced by environmental conditions and hence the estimation of genetic diversity based on phenotypic characters is inadequate, inaccurate, expensive, unreliable and time consuming. In this regard, the recently developed DNA based markers namely RFLP - Restriction Fragment Length Polymorphism (Grodziker et al., 1974), RAPD - Randomly amplified polymorphism DNA (Williams et al., 1990) and AFLP - Amplified fragment length polymorphism (Vos et al., 1995) assume importance. Despite the recent discovery, marker technologies have already been used to study genetic diversity, genetic relationships, phylogeny in several crops.

The variation detected by the DNA based markers is far more compared with morphological markers and is seldom influenced by the environment and geographical location. This also helps in identifying suitable accessions and hybrids at seedling stage itself for further crop improvement program (Tanksley, 1983). Biochemical and genetic markers for identification of varieties and finger printing a vast number of species and varieties to avoid confusion and for Plant Varietal Rights (PVR) is essential. Detailed plant variety profiling methodologies are instrumental to strengthen Intellectual Property Protection (IPP) and patenting through their abilities to provide positive identification of germplasm. Keeping these in view, the present investigation was proposed with the objectives of collection, evaluation, classification
and maintenance of germplasm of Jasmine species, varieties and commercial types from different sources

1) Standardizing the protocols for extraction of DNA and RAPD amplification of jasmine genotypes and
2) Estimating the genetic diversity and genetic relatedness among jasmine species/ genotypes.