Sidanand Kambhar

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DIVERSITY OF TREE SPECIES IN GADAG DISTRICT, KARNATAKA, INDIA

SIDANAND V. KAMBHAR*1,2 & K. KOTRESHA1

1Floristic and Taxonomic Laboratory, Department of Botany, Karnatak University’s, Karnataka Science College, Dharwad, Karnataka- 580 001, India.

2Post Graduate Department of Studies in Botany, Karnataka State Women’s University, Jnanashakti, Torvi campus, Bijapur-586 109, Karnataka

ABSTRACT

The present work aimed to study the tree species diversity in Gadag district, Karnataka. A total of 133 tree species belonging to 105 genera and 42 families were encountered. Fabaceae was represented by the highest number of species (34), followed by Bignoniaceae (10). Among total number of the species 16 plants recorded as alien and medicinal plants respectively, beside this edible fruit 22 (including minor 16 and major edible fruit 6), dye yielding 7, fodder 4, sacred plants 5, timber 21 also been documented. It is essential to document tree species diversity, in order to gain more knowledge on species richness as well as their geographical distribution.

KEYWORDS: Gadag, Karnataka, Tree diversity
INTRODUCTION

Trees are the most important constituent of forests. It plays a major role in elucidating the patterns of distribution of biodiversity. These distributions are governed by biotic and abiotic factors (Ghate et al., 1998; Upadhyay & Upadhyay, 2012). According to forester's and ecologist's a tree is defined as a woody plant that reaches diameter of 10cm (30cm girth) or more at the breast height (130cm above ground) (Chuyong et al., 2011).

Trees provide basic requirements of human beings in the form of air, food, timber, plywood, paper, fuel wood, medicine and also give aesthetic value. The trees populations are disappearing at alarming rate due to deforestation, urbanization (Kishor et al., 2011) and other various human needs (Ihenyen et al., 2009). In view of this fact, the present study is meant to prepare the checklist of tree species of Gadag district, the first exploration of the kind in this area.

MATERIAL AND METHODS

Study area:

Gadag district is geographically situated between latitudes 15° 16' and 16° 15' North and longitudes 75° 10' and 75° 55' East and it covers an area of about 4657 km². The district is divided into five taluka namely, Gadag, Mundargi, Nargund, Ron and Shirhatti. The distribution of the forests in the district is generally scattered and found in patches. These forests are comparable to Southern Thorn Forests of Champion and Seth's classification (1968). The main geographical feature of the district is the Kappat hills, a range of hills, with an elevation ranging between 300 and 1000m. The mean minimum temperature is 19°C during December to January and the mean maximum temperature is 42°C in May. The annual rainfall is generally less than 750 mm. The soil of Gadag district passes through every grade from bare rock to fairly deep loam with a thin covering of humus.

Floristic survey:

An extensive floristic survey was conducted during the year 2007-2011. The collected specimens were identified taxonomically with the aid of floras (Hooker, 1872-97; Cooke, 1958; Talbot, 1909 &1911, Saldanha, 1984 & 1996; Singh, 1988). and also Flora of India series(Sharma et al., 1993; Sharma & Sanjappa, 1993; Hajra et al., 1995a, b; Hajra et al., 1997; Singh et al., 2000). In the present study, arrangement of families was followed by APG III system of classification. The collected specimens were pressed and prepared herbarium
followed by dry method of Jain and Rao (1977). The specimens were deposited in the Herbarium of Botany department, Karnatak Science College, Dharwad.

RESULTS AND DISCUSSION

The present article records 133 trees, which pertain to 105 genera of 42 families of flowering plants. Checklist of tree wealth is shown along with local name, category (cultivated, wild and alien), uses (edible fruits (minor and major), dye yielding, medicinal, fodder, sacred plants and timber) and collector number in Table 1.

Of the 42 families, 20 families are represented by single species and 8 families with 2 species each; 3 families are represented by 3 species each. Fabaceae is the dominant family with 34 species, followed by Bignoniaceae (10), Annonaceae (6), Arecaceae (6), Malvaceae (6), Moraceae (6), Anacardiaceae (5), Combretaceae (5), Myrtaceae (5), Apocynaceae (4). Of the total 132 species, 64 trees were recorded as cultivated form and remaining 69 species found in wild. Consequently, 16 species were documented as alien species for the district (Kambhar & Kotresha, 2011). Furthermore, 16 trees were recorded as medicinal plant species (Kotresha & Kambhar, 2010; Harihar & Kotresha, 2010; Kotresha & Harihar, 2011; Harihar & Kotresha, 2012). In addition to this, edible fruit 22 (including minor 16 and major edible fruit 6), dye yielding 7, fodder 4, sacred plants 5, timber 21 also been documented.

CONCLUSION

There are 133 trees species belongs to 105 genera and 42 families recorded for the Gadag District, Karnataka. Among total, 16 tree species were found as alien species, which have acclimatized in the district, while the rest 117 species are indigenous. Some indigenous species are becoming vanished due to anthropogenic pressure and urbanization. The old trees of the town as well as forest need to be protected as they provide glimpse of indigenous flora and a good habitat to several animals, bird species and many other associated species on them.

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