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Diversity of tree species in Gadag district,
Karnataka, India

Academic Paper

DIVERSITY OF TREE SPECIES IN GADAG DISTRICT, KARNATAKA, INDIA

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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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Table 1. Checklist of tree wealth of Gadag district, Karnataka

Botanical name	Local name	Category	Uses	Coll. No.
ANACARDIACEAE				
<i>Anacardium occidentale</i> L. ⁺	Godambi gida	C	EF	
<i>Buchanania cochinchinensis</i> (Lour.) Almeida ⁺		W	EF	202
<i>Lannea coromandelica</i> (Houttuyn) Merrill		W	F	389
<i>Mangifera indica</i> L. ⁺⁺	Mavin gida	C	EF, T	
<i>Semecarpus anacardium</i> L.f. ⁺		W	EF,	610
ANNONACEAE				
<i>Annona reticulata</i> L. ⁺		C, A	EF	
<i>Annona muricata</i> L. ⁺		C	EF	
<i>Annona squamosa</i> L. ⁺	Sitaphala	W	EF	353
<i>Artabotrys hexapetalus</i> (L.f.) Bhandari		C, A		
<i>Miliusa tomentosa</i> (Roxb.) Sinclair		W		781
<i>Polyalthia longifolia</i> (Sonnerat) Thwaites		C		
APOCYNACEAE				
<i>Alstonia scholaris</i> L.		C		
<i>Plumeria alba</i> L.		C		
<i>Plumeria rubra</i> L.	Kanigalu gida	C		
<i>Wrightia tinctoria</i> R. Br.	Halgathigida	W	D, M, T	205
ARALIACEAE				
<i>Brassaia actionophylla</i> Endl. var. <i>capitata</i> Clarke		C		
ARECACEAE				
<i>Borassus fiabellifer</i> L.		C		
<i>Caryota urens</i> L.		C		
<i>Cocos nucifera</i> L. ⁺⁺	Tengu	C	EF, M	
<i>Livistona chinensis</i> R. Br.		C		
<i>Phoenix sylvestris</i> (L.) Roxb. ⁺	Ichala mara	W	EF,	289
<i>Roystonea regia</i> (H. B. and K.) O. F. Cook		C		

BIGNONIACEAE

<i>Dolichondrone atrovirens</i> (Heyne ex Roth) Sprague	Ured gida, Ulshin sappu	W	T	254
<i>Jacrandia acutifolia</i> Humb. and Bonp.		C, A		
<i>Kigelia americana</i> (Lam.) Benth.		C, A		
<i>Markhamia lutea</i> (Benth.) K.Schum.		C		
<i>Millingtonia hortensis</i> L.f.	Akash mallige	C		
<i>Spathodea companulata</i> P. Beauv.		C, A		
<i>Stereospermum chelenoides</i> (L.f.) DC.		W		816
<i>Tabebuia argentea</i> (Bur. and Schum.) Britt.		C		
<i>Tabebuia impetiginosa</i> (Mart. ex DC.) Standl.		C		
<i>Tabebuia pentaphylla</i> Hemsl.		C, A		

BIXACEAE

<i>Cochlospermum religiosum</i> (L.) Alston	Bettadavare	W	M	799
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BORAGINACEAE

<i>Cordia dichotoma</i> Forst. f. ⁺	Kirjal gida	W	EF,	787
<i>Cordia wallichii</i> G. Don		W		961
<i>Ehretia laevis</i> Roxb.		W		769

BURSERACEAE

<i>Boswellia serrata</i> Roxb. ex Colebr.	Loban gida	W		775
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CASURINACEAE

<i>Casurina equisetifolia</i> L.		C, A		
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CELASTRACEAE

<i>Cassine glauca</i> (Rottlb.) Kuntz.		W		963
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COMBRETACEAE

<i>Anogeissus latifolia</i> (Roxb. ex DC.) Wall. ex Guill. and Perr.	Dindala	W	T	6
<i>Terminalia alata</i> Heyne ex Roth	Budi balava	W	T	534
<i>Terminalia catapa</i> L.	Badami gida	C		
<i>Terminalia cuneata</i> Roth		W	D	381
<i>Terminalia chebula</i> Retz.	Alalekaigida	W	D, M, T	780

Cornaceae

<i>Alangium salvifolium</i> (L.f.) Wangerin ssp. <i>salvifolium</i> ⁺	Ankaligida	W	EF, S	
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EBENACEAE

<i>Diospyros melanoxylon</i> Roxb. var. <i>melanoxylon</i>	Tumari gida	W	T	255
<i>Diospyros montana</i> Roxb.		W		257

EUPHORBIACEAE

<i>Givotia rottleriformis</i> Griffith		W		813
<i>Mallotus philippensis</i> (Lam.) Muell.-Arg.	Kumkum mara	W	D,	776

FABACEAE

<i>Acacia auriculiformis</i> A. Cunn		C	T	
<i>Acacia chundra</i> (Roxb. ex Rottl.) Willd.	Tered	W	M	286
<i>Acacia leucophloea</i> (Roxb.) Willd.	Belvantara, Belladagida	W	M	609
<i>Acacia nilotica</i> (L.) Willd. ex Del. ssp. <i>indica</i> (Benth.) Brenan	Kare jali	W	F, T	212
<i>Adenanthera pavonia</i> L.		C		
<i>Albizia amara</i> (Roxb.) Boivin	Tuggaligida	W	M	200
<i>Bauhinia purpurea</i> L.		C		
<i>Bauhinia racemosa</i> Lam.	Bangara mara	W		483
<i>Butea monosperma</i> (Lam.) Talbert	Muttaga	W		538
<i>Caesalpinia coriaria</i> (Jacq.) Willd.		C		
<i>Cassia fistula</i> L.	Kakkemara	W	D, M	
<i>Cassia grandis</i> L.f.		C		
<i>Cassia javanica</i> L.		C		
<i>Cassia roxburghii</i> DC.		C		
<i>Dalbergia lanceolaria</i> L.f. ssp. <i>lanceolaria</i>	Pachali	W	T	417
<i>Dalbergia latifolia</i> Roxb.		W		571
<i>Dalbergia sissoo</i> Roxb. ex DC.		C	T	
<i>Delonix elata</i> (L.) Gamble		C		
<i>Delonix regia</i> (Boj. ex Hook.f.) Raf.	Kempu	C, A		

	Gulmohar			
<i>Erythrina suberosa</i> Roxb.		W		822
<i>Gliricidia sepium</i> (Jacq.) Kunth ex Steud.	Gobbar gida	C	F	
<i>Hardwickia binata</i> Roxb.		W	F, T	535
<i>Leucaena leucocephala</i> (Lamk.) de Wit		C, A		
<i>Parkia biglandulosa</i> Wight and Arn.		C		
<i>Parkinsonia aculeata</i> L.		C, A		
<i>Peltophorum pterocarpum</i> (DC.) Backer and Heyne		C, A		
<i>Pithecellobium dulce</i> (Roxb.) Benth.		C, A		
<i>Pongamia pinnata</i> (L.) Pierre	Honge mara	W	M	258
<i>Prosopis cineraria</i> (L.) Druce	Bannimara	W	S, M	169
<i>Pterocarpus marsupium</i> Roxb.	Honne	W	T	611
<i>Samanea saman</i> (Jacq.) Merr.		C		
<i>Senna siamea</i> (Lam.) Irwin and Barneby		C		
<i>Senna spectabilis</i> (DC.) Irwin and Barneby		C		
<i>Tamarindus indica</i> L. ⁺⁺	Hunase mara	C, A	EF,	
LAMIACEAE				
<i>Premna serratifolia</i> L.		W		400
<i>Tectona grandis</i> L.f.	Sagvan gida	C	T	
LECYTHIDACEAE				
<i>Barringtonia acutangula</i> (L.) Gaertn.		W		292
<i>Courouptia guianensis</i> Aubl.	Shivling mara	C		
LOGANIACEAE				
<i>Strychnos potatorum</i> L.f.	Chillgida	W	M	721
LYTHRACEAE				
<i>Lagerstromia indica</i> L.		C, A		
<i>Lagerstromia microcarpa</i> Wight		W		808
MAGNOLIACEAE				
<i>Michelia champaca</i> L.	Sampige	C		
MALVACEAE				
<i>Eriolaena quinquelocularis</i> (Wight and		W		416

Arn.) Wight				
<i>Grewia orbiculata</i> Rottl.	Uljeni gida	W		208
<i>Grewia tillifolia</i> Vahl ⁺		W	EF	421
<i>Guazuma ulmifolia</i> Lam.		C		
<i>Helicteres isora</i> L.	Edumuri	W	M	39
<i>Thespesia populnea</i> (L.) Soland. ex Corr.	Bugari gida	C		
MELIACEAE				
<i>Azadirachta indica</i> A. Juss.	Bevinamara	C	M, S, T	
<i>Melia azedarach</i> L.		C, A	T	
<i>Soyimida febrifuga</i> (Roxb.) A. Juss.	Sovi	W	D, T	692
MORACEAE				
<i>Ficus benghalensis</i> L.	Aladamara	C		
<i>Ficus hispida</i> L.f.		W		306
<i>Ficus microcarpa</i> L.f.		W		363
<i>Ficus racemosa</i> L. ⁺	Atthimara	C	EF	
<i>Ficus religiosa</i> L.		C		
<i>Streblus asper</i> Lour.		W		791
MORINGACEAE				
<i>Moringa oleiferu</i> Lamk. ⁺⁺	Nuggi gida	C	EF	
MUNTINGIACEAE				
<i>Muntingia calabura</i> L. ⁺	Sakare hannu	C, A	EF	
MYRTACEAE				
<i>Callistemon speciosus</i> (Sims) DC.		C		
<i>Eucalyptus globulus</i> Labill.	Neelgiri mara	C	M	
<i>Psidium guajava</i> L. ⁺⁺	Peral hannu	C	EF	
<i>Syzygium cumini</i> (L.) Skeels ⁺	Kadu neral hannu	W	EF, T	431
<i>Syzygium jambos</i> (L.) Alston ⁺⁺	Niral hannu	C	EF	
OLEACEAE				
<i>Schrebera swietenoides</i> Roxb.		W		840
PANDANACEAE				
<i>Pandanus fascicularis</i> L.		W		987
PHYLLANTHACEAE				

<i>Bridelia crenulata</i> Roxb.		W		413
<i>Phyllanthus emblica</i> L. ⁺	Kadu nelli	W	EF, T	717
POACEAE				
<i>Bambusa arundinacea</i> (Retz.) Willd.		W		805
PROTEACEAE				
<i>Grevillea robusta</i> A. Cunn. ex R. Br.		C		
RUBIACEAE				
<i>Gardenia latifolia</i> Ait.	Adavi bikki	W		964
<i>Mitragyna parvifolia</i> (Roxb.) Korth.		W	T	247
<i>Morinda pubescens</i> J. E. Sm.	Malaga	W	D, M	388
RUTACEAE				
<i>Aegle marmelos</i> (L.) Corr.	Bilpatri, patri	W	M, S	282
<i>Chloroxylon swietenia</i> DC.	Masval gida	W	T	157
SALICACEAE				
<i>Flacourtia indica</i> (N. Burman) Merr.		W		693
SANTALACEAE				
<i>Santalum album</i> L.	Srigandha, Chandan gida	W		367
SAPINDACEAE				
<i>Sapindus emarginatus</i> Vahl		W		944
SAPOTACEAE				
<i>Madhuca longifolia</i> (Koen.) Macbride var. <i>latifolia</i> (Roxb.) Chevalier ⁺	Hippali mara	W	EF	827
<i>Manikara zapota</i> (L.) Van Rayen ⁺⁺	Chiku gida	C	EF	
SIMAROUBACEAE				
<i>Ailanthus excelsa</i> Roxb.		W		523
STRELITZIACEAE				
<i>Ravenala madagascariensis</i> J.F. Garel.		C		
ULMACEAE				
<i>Holoptelea integrifolia</i> (Roxb.) Planch.		W		955
ZYGOPHYLLACEAE				
<i>Balanites aegyptica</i> (L.) Del.	Ingalarada gida	W	S	484

Category: C= Cultivated, W= Wild, A= Alien; **Uses:** EF= Edible Fruits, D= Dye Yielding, F= Fodder, M= Medicinal, S= Sacred plants, T= Timber, + = Minor edible fruits, ++ = Major edible fruits

Quote paper;

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