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Woody Flora of Poonch District in Pir Panjal Himalaya (Jammu & Kashmir), India

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Abstract

The present paper provides an updated checklist of the woody flora of Poonch district, located in the Pir Panjal Himalaya (Jammu & Kashmir), India. The woody flora of the district comprises 341 species, belonging to 180 genera in 78 families. In all, 190 species are native and 151 exotic. Growth form-wise, the trees, shrubs, sub-shrubs, and woody climbers are represented by 152, 140, 15, and 34 species, respectively. Leguminosae (s.l.) is the largest family with 44 species in 23 genera, followed by Rosaceae with 33 species in 14 genera. *Ficus* is the largest genus with 10 species, followed by *Acacia*, *Clematis*, *Jasminum*, *Prunus* and *Rubus* with 7 species each, *Rosa* with 6 species, and *Citrus* and *Viburnum* with 5 species each. For each species is given its current valid scientific name, family, collector(s) and collection number, common synonym(s) if any, native/exotic nature, and growth-form.

Key words: Woody flora; Checklist; Bioprospection; Poonch district; Pir Panjal Himalaya; Jammu & Kashmir.

INTRODUCTION

An annotated and continuously updated inventory of biota has been recognized as the foundation stone for development of the global biodiversity information infrastructure (Khuroo *et al*. 2007a). This has assumed much significance for achieving the challenging goals of documentation, conservation and sustainable use of biodiversity at the local, regional and global scales (Dar *et al.* 2012, 2014). The global diversity of biota on the planet Earth is, however, so vast that only 1.7 % of it is scientifically known (Dar & Farooq 1997). In such a compelling state of affairs, taxonomic inventory of biodiversity has gained much urgency worldwide. The situation is particularly pronounced in the developing world, which coincidentally harbors the richest but the most threatened biodiversity (Khuroo *et al*. 2008). In keeping with this, renewed research initiatives have been instigated world over to document the biodiversity in different regions.

In the Himalaya, recognized as a global biodiversity hotspot (Mittermeier *et al*. 2005; Zachos & Habel 2011), crucial taxonomic information about many of its regions is still not available. The Indian State of Jammu and Kashmir (J & K) in the Western Himalaya is one such region which has been recognized as floristically under-explored by the Botanical Survey of India (Dar *et al.* 2012), and where the biodiversity documentation assumes immediate priority. The State is gifted with a rich plant diversity of immense scientific curiosity and

huge economic potential (Singh *et al.* 1998; Dar *et al*. 2002; Malik *et al*. 2010, 2012, 2015; Dar & Khuroo 2013).

Of various components of floristic wealth of the State, those plant species which possess a woody habit, also called as arboreal species, represent one of the dominant elements. Historically, it was Lambert's (1933) '*List of trees and shrubs for Kashmir and Jammu forest circles, Jammu and Kashmir State'* wherein arboreal plant species growing in the State were first enumerated. Since then, the newly available taxonomic information and nomenclatural changes have necessitated an updated taxonomic inventory of this important floristic component in the State. Recently, Malik *et al*. (2010) have reported 521 species of woody plants from J & K State. These updated taxonomic data-sets on arboreal flora have gained immediate utility in biodiversity conservation and its sustainable use in the region. This is because, on one hand, expanding human enterprise [due to habitat degradation and other unsustainable developmental activities (Kaul & Handoo 1998; Oza 2003)] has pushed a large number of arboreal species in forests to higher risk of extinction; and, on the other hand, a large number of exotic arboreal species have been introduced for cultivation, many of which are now naturalizing (Khuroo *et al*. 2007b, 2010, 2011).

Within J & K State, Jammu province posses rich floristic diversity after Kashmir. Several taxonomic studies dealing with floristic diversity of this province have been carried out over the last three decades. Sharma & Kachroo published the Flora of Jammu and adjacent areas, providing taxonomic details in volume 1 (1981) and illustrations in volume 2 (1982). Kapur and Sarin (1990) dealt with the Flora of Trikuta hills, presenting a good floristic account of the plants harboring these hills and the surroundings of Shri Vaishno Devi Shrine. Swami and Gupta (1998) published the Flora of Udhampur district, which is a useful treatise on the higher plants of this area. Bhellum & Magotra (2012) catalogued the flowering plants of Doda, Kishtwar and Ramban districts, dealing with floristic richness of these three adjacent districts in the Chenab Valley; while Malik *et al*. (2015) dealt with floristic diversity of Warwan valley. Poonch and Rajouri, however, are floristically the least surveyed districts in the Jammu province, with scanty and scattered information available on their flora (Singh & Kirn 1981; Kirn 1992; Singh 1992; Vir Jee *et al*. 1984; Dar *et al*. 2014). All these publications are preliminary short communications, none having attempted an exclusive inventory of woody plants occurring in these districts.

To bridge this knowledge gap, the results of plant surveys and collections from Poonch district for over one decade are consolidated in the present paper, with a view to facilitate the documentation of its up-to-date woody flora. This will provide baseline scientific data for further studies on floristic diversity in this region and can be used for achieving long-term conservation and sustainable use of plant diversity in this northwest Himalayan State.

Study Area

Poonch is one of the districts of Jammu province, situated in the west of the Indian State of Jammu and Kashmir at a distance of 246 km from Jammu city. Located on the southerly foothills of the Pir Panjal Himalaya, between 33^0 25' - 34^0 02' N latitudes and 73^0 58' - 74^0 41' E longitudes, it is covered by the Survey of India degree sheet no. 43K, and spread over an area of 1,674 km^2, including 951.37 km^2 (56.81 %) under demarcated forests. The altitude varies from 800 – 4,750 m (amsl), with an average of 1,070 m. Bounded by the Pir Panjal Himalayan range (which separates it from the Baramulla, Budgam, and Shopian districts of Kashmir province) in the north and east, Rajouri district in the south, and Pakistan occupied area of Kashmir (PoK) in the west, the district is mostly hilly and mountainous (Figure 1).

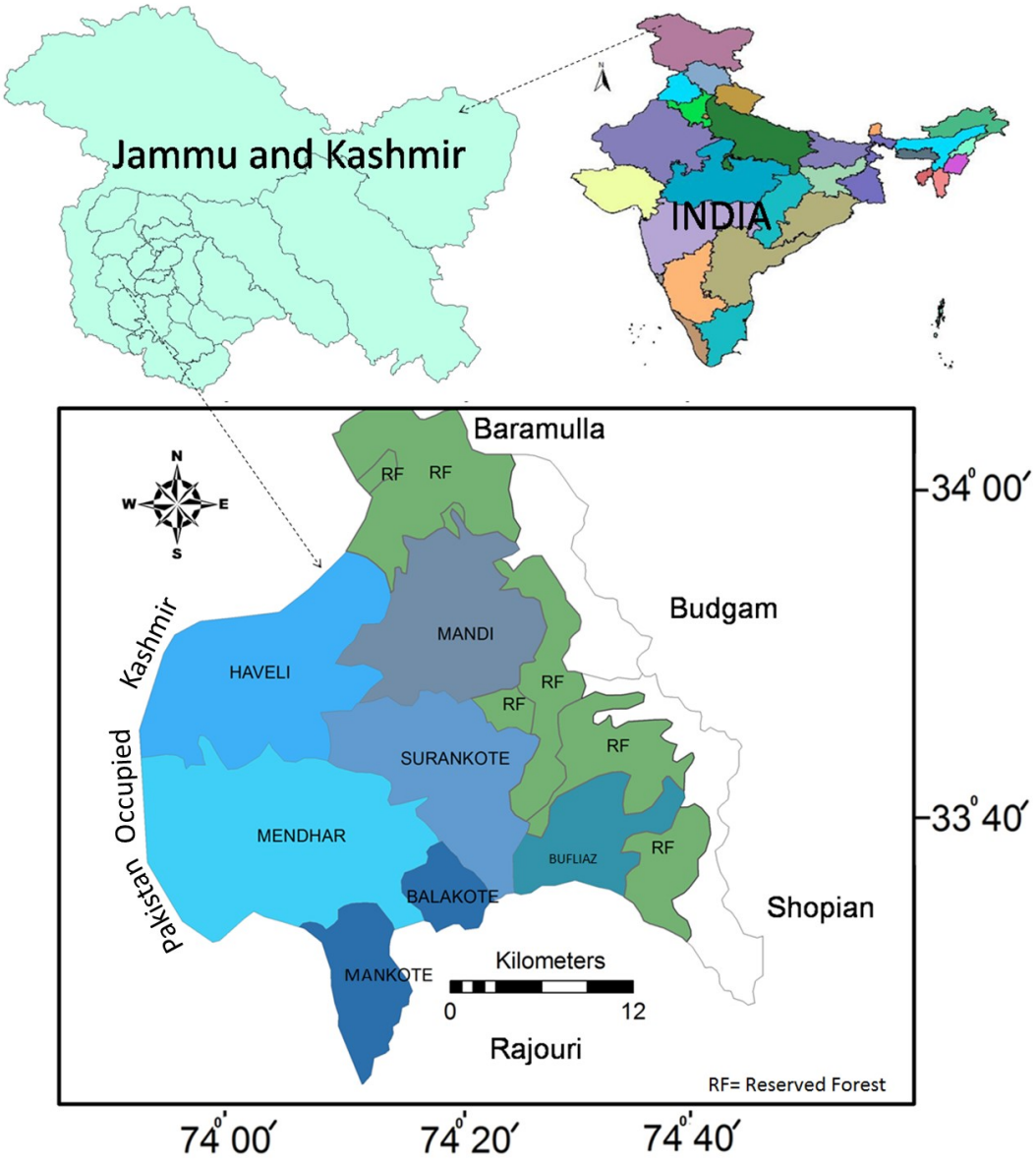

Fig. 1. Map showing location of Poonch district in J & K State and its administrative tehsils.

Administratively, district Poonch comprises six tehsils: Haveli (Poonch), Mandi, Surankote, Mendhar, Balakote, and Mankote (Fig. 1), the last two recently carved out of the Mendhar tehsil. Overall, there are 178 villages (of which 168 are inhabited), and 51 Panchayats, with a total population of 4, 76, 835 (as per 2011 census), which accounts for 3.8% of the total State population. Most of the population (about 96 %) is living in isolated villages (Anonymous 2012). Maize, rice and wheat are grown as the three major cereal crops in the district, maize being the stable food crop.

It is drained by the Poonch River, with Suran, Mandi and Betar as its tributaries. Geologically, most parts of Poonch are made up of shales with traces of Bauxite, Graphite,

Lignite, etc. The rock is of Pleistocene age, comprising slates, shales, schists and quartzite (Wadia 1931). The irregular high hill slopes of various gradients restrict the development of soil profiles, while on gentle slopes mountain soil has been developed. Broadly, two types of soils are present in the district: the sub-mountainous soil towards southern part and the meadow soil in the northern part. Localized wedges of alluvial soil are also present in various valleys of the area. Different types of soils found in the district include brown forest soil, degraded soil, red yellow podzolic soil, lithosoils, and alluvial soils.

Poonch has a humid subtropical climate, being generally cooler due to its moderately high elevation and northerly position. The Pir Panjal mountain range, generally with steep slopes and gradual ascendance in altitude, exhibits a climatic gradient from dry temperate through subalpine to alpine in the uppermost reaches. Winters in the district are cool and characterized by rainfall due to western disturbances, with average daytime temperature of 2.5° C in January, falling below freezing at night. January and February are the coldest months, during which the snowfall is scanty in the lower valley but quite common at higher reaches. Summers are short and usually pleasant. The average minimum and maximum temperatures in the district vary between -20° C to 31° C. Average annual rainfall is 1,225 mm, with 56 to 73 average rainy days. Maximum rains pour in the monsoon during July-August, scanty spring-rains occur in March, while precipitation is in the form of snow during winter months i.e. from the end of November up to the end of March in the upper reaches.

The rich habitat diversity offers vast geographical and climatic conditions congenial for a correspondingly rich flora. The district represents a transition zone between the subtropical Jammu and the temperate Kashmir provinces. The vegetation usually comprises Chir pine (*Pinus roxburghii*) forests, broad-leaved deciduous forests, broad-leaved evergreen forests, and scrub forests, interspersed with frequent patches of grasslands and agricultural croplands.Corresponding to the varied altitude, starting from 800 m at Balnoi to 4,750 m at Pir Panjal mountain peaks, the dominant tree elements range from *Pinus roxburghii* to *Betula utilis*.

MATERIALS AND METHODS

The present paper is the result of detailed field studies made during the floristic surveys conducted in the Poonch district from 2012–2016. During these surveys, plants were collected from diverse habitats in different areas of the district. During collections, detailed field observations were recorded. The collected plant specimens were properly processed following standard herbarium techniques (Jain & Rao 1977), and identified at the Centre for Biodiversity Studies, BGSB University, Rajouri, using relevant Floras and other available taxonomic literature including Hooker (1872–897), Stewart (1972), and Sharma and Kachroo (1981, 1982) and online resources, such as various e-floras, International Plant Name Index (IPNI), Catalogue of Life, The Plant List and GRIN. Authentication of identification was achieved by matching the specimens with the pre-determined relevant specimens from the region deposited in the Kashmir University Herbarium (KASH) and the Janaki Ammal Herbarium (RRLH) located at IIIM, Jammu. The arrangement of genera into families follows largely that of Mabberley (2008). The latest nomenclatural changes (if any) have been incorporated to make out the currently valid scientific names [www.theplantlist.org]. Though cumbersome, this effort has brought clarity to the confusing maze of synonyms which often arbitrarily inflates the number of species. For convenience, the sequence of plant species in the inventory is alphabetical.

RESULTS AND DISCUSSION

Based on present study, the woody flora of district Poonch comprises of 341 species, taxonomically distributed among 180 genera in 78 families (Table 1). Of all the species, 190 are exclusively wild-growing local species; while 151 species are exotic, having been introduced into the region for different purposes. Growth form-wise, the trees, shrubs, sub-shrubs, and woody climbers are represented by 152 (44.5%), 140 (41%), 15 (4.3%), and 34 (10%) species, respectively. Out of the total exotics, 80 species are cultivated, whereas 70 species have naturalized in the region. Leguminosae (s.l.) is the largest family with 44 species in 23 genera, followed by Rosaceae with 33 species in 14 genera. *Ficus* is the largest genus with 10 species, followed by *Acacia*, *Clematis*, *Jasminum*, *Prunus* and *Rubus* with 7 species each, *Rosa* with 6 species, and *Citrus* and *Viburnum* with 5 species each.

Richness of trees and shrubs in the distrct may be attributed to its correspondingly rich habitat diversity with varied climatic conditions ranging from sub-tropical to temperate in the lower areas to subalpine and alpine in the upper mountain reaches. Whereas the entire southern aspect starting from Khorinar Poonch to Pir Panjal along the right bank of Pulasta river/Suran nallah is hotter and is devoid of tree vegetation, but with bushes and scrub forests; the northern aspect along its left bank on the same altitude from Poonch to Chandimarh is cooler, experiences winter snow and bears dense vegetation.

Majority of trees and shrubs growing in the district are evergreen; these include broad-leaved species (e.g. *Buxus wallichiana*, *Ilex dipyrena,* and *Quercus inacana*), as well as narrow-leaved coniferous species (e.g. *Abies pindrow, A. spectabilis, Cedrus deodara, Picea smithiana, Pinus roxburghii, P. wallichiana,* and *Taxus wallichiana*). The deciduous trees and shrubs are also frequent and shed their leaves during the autumn season, e.g. *Aesculus indica, Populus alba, Platanus orientalis*, and *Acer caesium*. Many species are exotic, such as *Cryptomeria japonica, Pinus canariensis, Pinus halepensis, Euonymus japonicus,* and *Eriobotrya japonica*). The invasive species growing in the district are: *Aesculus indica*, *Ailanthus altissima*, *Lantana camara*, *Mimosa pudica*, *Ricinus communis*, *Robinia pseudoacacia*, *Rubus ulmifolius* and *Solanum pseudocapsicum.*

The species list suggests that the woody flora of this region is highly diverse, as expressed by a large number of families and a high species to family ratio. In distribution, only 29 arboreal plant species occurring in the Poonch district are spread across the entire State, while most of the species are shared with those in the Kashmir province. This may be due to wider geographic proximity and relatively comparable climatic conditions between Poonch and Kashmir region. The species indigenous to the region, which form the core of its woody-plant flora, are posed serious threats by the exotic species by way of robust exploitative competition, excessive habitat occupation, huge resource consumption, and tremendous reproductive potential, etc. Thus, based on our field observations, it appears that many alien woody plant species presently naturalized in the region, can become serious plant invaders in the near future. Such species, therefore, need proper study, stringent monitoring and management.

The following eight growth forms have been recognized in this study: Deciduous tree (DT), Evergreen tree (ET), Deciduous shrub (DS), Evergreen shrub (ES), Deciduous subshrub (DSS), Evergreen subshrub (ESS), Deciduous climber (DCL), and Evergreen climber (ECL). For each species is given its currently valid scientific name, family, common synonym(s) if any, native/exotic nature, and growth-forms.

Table 1. Taxonomic inventory of woody plant species in Poonch district of Jammu & Kashmir State

Sl. No.	Name of plant [Family]; Exsiccatae	Common synonym(s)	Native (N) /Exotic (E)	Growth form
1	***Abies pindrow*** (Royle ex D.Don) Royle [Pinaceae]; *Rani Mughal & Dar 154*.	-	N	ET
2	***Abies spectabilis*** (D.Don) Mirb. [Pinaceae]; *Dar 12001.*	*Abies spectabilis* (D. Don) Spach	N	ET
3	***Abrus precatorius*** L. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 290.*	*Abrus minor* Desv.	E	DCL
4	***Abutilon indicum*** (L.) Sweet [Malvaceae]; Rani *Mughal & Dar 291.*	-	N	DS
5	***Acacia auriculiformis*** Benth. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 291*.	*Acacia moniliformis* Griseb.	N	DT
6	***Acacia catechu*** (L.f.) Willd. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 292*.	*Acacia wallichiana* DC.	N	DT
7	***Acacia farnesiana*** (L.) Willd. [Leguminosae: Mimosoideae]; *Rani Mughul & Dar 105*	*Mimosa farnesiana* L.	N	DS
8	***Acacia jacquemontii*** Benth. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 293*.	-	N	DS
9	***Acacia modesta*** Wall. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 106*.	-	N	DT
10	***Acacia nilotica*** subsp. ***indica*** Brenan [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 294.*	*Acacia arabica* var. *indica* Benth.	N	DT
11	***Acacia seyal*** Delile [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 135*.	*Acacia fistula* Schweinf.	N	DT
12	***Acer caesium*** Wall. ex Brandis [Aceraceae]; *Rani Mughal & Dar 145.*	-	N	DT
13	***Acer oblongum*** Wall. ex DC. [Aceraceae]; *Rani Mughal & Dar 188.*	-	N	DT
14	***Aegle marmelos*** (L.) Corrêa [Rutaceae]; *Rani Mughal & Dar 219.*	-	N	DT
15	***Aesculus indica*** Hook. [Sapindaceae]; *Rani Mughal & Dar 115.*	*Pavia indica* Wall. ex Cambess.	E	DT
16	***Ailanthus altissima*** (Mill.) Swingle [Simaroubaceae]; *Rani Mughal & Dar 196.*	-	E	DT
17	***Alangium chinense*** (Lour.) Harms [Cornaceae]; *Rani Mughal & Dar 068*.	-	E	DT
18	***Albizia julibrissin*** Durazz. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 159.*	*Albizzia julibrissin* Durazz.	E	DT
19	***Albizia julibrissin*** var. ***mollis*** (Wall.) Benth. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 254.*	*Albizia mollis* (Wall.) Boivin	N	DT
20	***Albizia lebbeck*** (L.) Benth. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 253.*	-	N	DT
21	***Albizia odoratissima*** (L.f.) Benth. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 201.*	*Mimosa odoratissima* L.f.	N	DT
22	***Alnus nitida*** (Spach) Endl. [Betulaceae]; *Rani Mughal & Dar 035.*	-	N	DT
23	***Alstonia scholaris*** (L.) R.Br. [Apocynaceae]; *Rani Mughal & Dar 027*.	-	N	ET

Sl. No.	Name of plant [Family]; Exsiccatae	Common synonym(s)	Native (N) /Exotic (E)	Growth form
24	***Antigonon leptopus*** Hook. & Arn. [Polygonaceae]; *Rani Mughal & Dar 295.*	*Antigonon amabie* K.Koch	N	DCL
25	***Araucaria columnaris*** (G.Forst.) Hook. [Araucariaceae]; *Rani Mughal & Dar 238.*	-	E	ET
26	***Aristolochia punjabensis*** Lace [Aristolochiaceae]; *Rani Mughal & Dar 043.*	-	E	DSS
27	***Asclepias curassavica*** L. [Apocynaceae]; *Rani Mughal & Dar 210.*	-	N	ESS
28	***Astragalus chlorostachys*** Lindl. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 191.*	-	N	DSS
29	***Astragalus grahamianus*** Benth. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 270.*	-	N	DSS
30	***Baliospermum solanifolium*** Suresh [Euphorbaceae]; *Rani Mughal & Dar 296*.	*Baliospermum montanum* (Willd.) Müll.Arg.	N	DS
31	***Bambusa bambos*** (L.)Voss [Poaceae]; *Rani Mughal & Dar 205.*	*Bambusa arundinacea* Willd.	E	DT
32	***Barleria prionitis*** L. [Acanthaceae]; *Rani Mughal & Dar 297.*	*Barleria hystrix* L.	E	DS
33	***Bauhinia purpurea*** L. [Leguminosae: Caesalpinioideae]; *Rani Mughal & Dar 298*.	*Bauhinia rosea* Corner	E	DT
34	***Bauhinia variegata*** L. [Leguminosae: Caesalpinioideae]; *Rani Mughal & Dar 061*.	*Bauhinia decora* Uribe	E	DT
35	***Berberis aristata*** DC. [Berberidaceae]; *Rani Mughal & Dar 299.*	*Berberis elegans* K.Koch	N	DS
36	***Berberis jaeschkeana*** C.K.Schneid. [Berberidaceae]; *Rani Mughal & Dar 232.*	-	N	DS
37	***Berberis lycium*** Royle [Berberidaceae]; *Rani Mughal & Dar 021.*	-	N	DS
38	***Berberis pachyacantha*** Bien. ex Koehne [Berberidaceae]; *Rani Mughal & Dar 300*.	-	N	DS
39	***Betula alnoides*** Buch.-Ham. ex D.Don [Betulaceae]; *Rani Mughal & Dar 134*.	*Betula acuminata* var. *argula* Regel	N	DT
40	***Betula utilis*** D.Don [Betulaceae]; *Rani Mughal & Dar 153.*	*Betula bhojpattra* Lindl. ex Wall.	N	DT
41	***Bombax ceiba*** L. [Malvaceae]; *Rani Mughal & Dar 019.*	*Bombax ceiba* Burm.f.	E	DT
42	***Bosea amherstiana*** (Moq.) Hook.f. [Amaranthaceae]; *Rani Mughal & Dar 094*.	*Rodetia amherstiana* Moq.	N	DS
43	***Bougainvillea spectabilis*** Willd. [Nyctaginaceae]; *Rani Mughal & Dar 096*.	*Bougainvillea bracteata* Pers.	E	DCL
44	***Broussonetia papyrifera*** L'Hér. ex Vent. [Moraceae]; *Rani Mughal & Dar 141.*	*Broussonetia billardii* Carruth.	E	DT
45	***Buddleja asiatica*** Lour. [Buddlejaceae]; *Rani Mughal & Dar 172*.	*Buddleja salicina* Lam.	E	DS
46	***Buddleja crispa*** Benth. [Buddlejaceae]; *Rani Mughal & Dar 266.*	*Buddleja crispa* var. *dicipiens* J.A. Schmidt	N	DS
47	***Buddleja paniculata*** Wall. [Buddlejaceae]; *Rani Mughal & Dar 301.*	-	N	DS
48	***Butea monosperma*** (Lam.) Taub. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 287.*	*Butea frondosa* Willd.	N	DT

Sl. No.	Name of plant [Family]; Exsiccatae	Common synonym(s)	Native (N) /Exotic (E)	Growth form
49	***Buxus wallichiana*** Baill. [Buxaceae]; *Rani Mughal & Dar 022.*	-	N	ET
50	***Caesalpinia decapetala***Alston [Leguminosae: Caesalpinioideae]; *Rani Mughal & Dar 257.*	*Caesalpinia sepiaria* Roxb.	N	DS
51	***Callicarpa macrophylla*** Vahl [Lamiaceae]; *Rani Mughal & Dar 302.*	*Callicarpa incana* Roxb.	E	ES
52	***Callistemon citrinus*** (Curtis) Skeels [Myrtaceae]; *Rani Mughal & Dar 014*.	*Callistemon citrinus* var. *splendens* Stapf	E	DT
53	***Calotropis procera*** (Aiton) Dryand. [Apocynaceae]; *Rani Mughal & Dar 212*.	*Calotropis persica* Gand.	E	ES
54	***Campsis grandiflora*** (Thunb.) K.Schum. [Bignoniaceae]; *Rani Mughal & Dar 248.*	*Bignonia grandiflora* Thunb.	E	DCL
55	***Caragana brevispina*** Benth. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 302.*	*Caragana triflora* Lindl.	N	DS
56	***Caragana gerardiana*** Benth. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 303*.	*Caragana spinosissima* Benth.	N	DS
57	***Caragana versicolor*** Benth. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 304.*	*Caragana pygmaea* Baker	N	DS
58	***Carica papaya*** L. [Caricaceae]; *Rani Mughal & Dar 184.*	*Carica citriformis* Jacq.	E	DT
59	***Carissa spinarum*** L. [Apocynaceae]; *Rani Mughal & Dar 030.*	*Carissa opaca* Stapf ex Haines	E	ES
60	***Carya illinoinensis*** (Wangenh.)K. Koch [Juglandaceae]; *Rani Mughal & Dar 166.*	*Carya pecan* (Marshall) Nutt.	E	DT
61	***Cascabela thevetia*** (L.) Lippold [Apocynaceae]; *Rani Mughal & Dar 070.*	*Thevetia peruviana* (Pers.) K.Schum.	E	ET
62	***Casearia tomentosa*** Roxb. [Salicaceae]; *Rani Mughal & Dar 305.*	*Casearia cheela* Royle	N	DT
63	***Cassia fistula*** L. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 306*.	*Cassia fistuloides* Collad.	E	DT
64	***Cassia floribunda*** Collad. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 236*.	-	E	DT
65	***Cassiope fastigiata*** (Wall.) D. Don [Ericaceae]; *Rani Mughal & Dar 284*.	*Andromeda fastigiata* Wall.	N	DSS
66	***Catalpa bignonioides*** Walter [Bignoniaceae]; *Rani Mughal & Dar 114*.	*Bignonia catalpa* L.	E	DT
67	***Cayratia trifolia*** (L.) Domin [Vitaceae]; *Rani Mughal & Dar 249.*	*Vitis trifolia* L.	E	DCL
68	***Cedrus deodara*** G. Don [Pinaceae]; *Rani Mughal & Dar 102.*	*Cedrus indica* Chambray	N	ET
69	***Ceiba speciosa*** (A.St.-Hil.) Ravenna [Malvaceae]; *Rani Mughal & Dar 177.*	*Chorisia speciosa* A.St.-Hil.	N	DT
70	***Celtis australis*** L. [Cannabaceae]; *Rani Mughal & Dar 009.*	*Celtis eriocarpa* Decne.	E	DT
71	***Celtis tetrandra***Roxb. [Cannabaceae]; *Rani Mughal & Dar 017.*	*Celtis wallichii* Steud.	E	DT
72	***Cestrum nocturnum*** L. [Solanaceae]; *Rani Mughal & Dar 018.*	*Cestrum graciliflorum* Dunal	E	ET
73	***Cissampelos pareira*** L. [Menispermaceae]; *Rani Mughal & Dar 178*.	*Cissampelos convolvulacea* Willd.	E	DCL
74	***Citrus aurantiifolia*** Swingle [Rutaceae]; *Rani Mughal & Dar 228.*	*Citrus* × *lima* Macfad.	E	ET

Sl. No.	Name of plant [Family]; Exsiccatae	Common synonym(s)	Native (N) /Exotic (E)	Growth form
75	***Citrus maxima*** (Burm.) Merr. [Rutaceae]; *Rani Mughal & Dar 234.*	*Citrus grandis* (L.) Osbeck	E	ET
76	***Citrus medica*** L. [Rutaceae]; *Rani Mughal & Dar 097.*	*Citrus limetta* Risso	E	ES
77	***Citrus reticulata*** Blanco [Rutaceae]; *Rani Mughal & Dar 197.*	*Citrus crenatifolia* Lush.	E	ET
78	***Citrus sinensis*** (L.) Osbeck [Rutaceae]; *Rani Mughal & Dar 033.*	-	E	ET
79	***Clematis buchananiana*** DC. [Ranunculaceae]; *Rani Mughal & Dar 226.*	*Clematis bucamara* Buch.-Ham. ex DC.	N	DCL
80	***Clematis connata*** DC. [Ranunculaceae]; *Rani Mughal & Dar 208.*	*Clematis venosa* Royle	N	DCL
81	***Clematis gouriana*** Roxb. ex DC. [Ranunculaceae]; *Rani Mughal & Dar 252.*	*Clematis martini* H.Lév.	N	DCL
82	***Clematis grata*** Wall. [Ranunculaceae]; *Rani Mughal & Dar 225.*	*Clematis taiwaniana* Hayata	N	DCL
83	***Clematis graveolens*** Lindl. [Ranunculaceae]; *Rani Mughal & Dar 306.*	*Clematis orientalis* var. *aitchisonii* Kuntze	N	DCL
84	***Clematis orientalis*** L. [Ranunculaceae]; *Rani Mughal & Dar 307.*	*Clematis globosa* Royle	N	DCL
85	***Clematis puberula*** Hook. f. & Thomson [Ranunculaceae]; *Rani Mughal & Dar 255.*	*Clematis puberula* var. *puberula*	N	DCL
86	***Clerodendrum chinense*** Mabb. [Lamiaceae]; *Rani Mughal & Dar 235.*	*Clerodendrum philippinum* Schauer	N	DS
87	***Colebrookea oppositifolia*** Sm. [Lamiaceae]; *Rani Mughal & Dar 002.*	*Colebrookea ternifolia* Roxb.	E	DS
88	***Cordia dichotoma*** G.Forst. [Boraginaceae]; *Rani Mughal & Dar 071.*	*Cordia latifolia* Roxb.	E	DT
89	***Cordia myxa*** L. [Boraginaceae]; *Rani Mughal & Dar 276.*	*Cordia officinalis* Lam.	E	DS
90	***Coriaria nepalensis*** Wall. [Coriariaceae]; *Rani Mughal & Dar 082.*	*Coriaria sinica* Maxim.	N	DS
91	***Cornus macrophylla*** Wall. [Cornaceae]; *Rani Mughal & Dar 116.*	*Cornus crispula* Hance	N	ET
92	***Cornus oblonga*** Wall. [Cornaceae]; *Rani Mughal & Dar 214.*	*Swida oblonga* (Wall.) Soják	N	ES
93	***Corymbia citriodora*** Hill & Johnson [Myrtaceae]; *Rani Mughal & Dar 185.*	*Eucalyptus citriodora* Hook.	E	DT
94	***Cotinus coggygria*** Scop. [Anacardiaceae]; *Rani Mughal & Dar 167.*	*Cotinus arenarius* F.A.Barkley	E	DT
95	***Cotoneaster affinis*** Lindl. [Rosaceae]; *Rani Mughal & Dar 308.*	*Cotoneaster affinis* var. *typicus* C.K.Schneid.	N	DS
96	***Cotoneaster microphyllus*** Wall. ex Lindl. [Rosaceae]; *Rani Mughal & Dar 155.*	*Cotoneaster elatus* G.Klotz	N	ES
97	***Corylus jacquemontii*** Decne. [Betulaceae]; *Rani Mughal & Dar 309.*	-	N	DT
98	***Cryptolepis dubia*** (Burm.f.) Almeida [Apocynaceae]; *Rani Mughal & Dar 310.*	*Cryptolepis buchananii* Roem. & Schult.	E	DCL
99	***Cupressus sempervirens*** L. [Cupressaceae]; *Rani Mughal & Dar 274.*	*Cupressus fastigiata* DC.	E	ET
100	***Cupressus torulosa*** D.Don [Cupressaceae]; *Rani Mughal & Dar 001.*	*Cupressus pakistanensis* Silba	E	ET
101	***Cycas revoluta*** Thunb. [Cycadaceae]; *Rani Mughal & Dar 079.*	*Cycas miquelii* Warb.	E	ES

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102	***Cydonia oblonga*** Mill. [Rosaceae]; *Rani Mughal & Dar 213.*	*Pyrus cydonia* L.	E	DT
103	***Dalbergia sissoo*** DC. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 008.*	*Amerimnon sissoo* (Roxb.) Kuntze	N	DS
104	***Daphne oleoides*** Schreb. [Thymelaeaceae]; *Rani Mughal & Dar 259.*	*Daphne buxifolia* Vahl	N	ES
105	***Daphne papyracea*** Wall. ex G.Don [Thymelaeaceae]; *Rani Mughal & Dar 311.*	*Daphne cannabina* Wall.	N	DS
106	***Debregeasia saeneb*** (Forssk.) Hepper & JRI Wood [Urticaceae]; *Rani Mughal & Dar 039.*	*Debregeasia salicifolia* (D.Don) Rendle	E	ES
107	***Dendrocalamus strictus*** Nees [Poaceae]; *Rani Mughal & Dar 006.*	*Bambos stricta* Roxb.	N	DT
108	***Dendrophthoe falcata*** Ettingsh. [Loranthaceae]; *Rani Mughal & Dar 312.*	*Dendrophthoe discolor* Barlow	E	DS
109	***Desmodium elegans*** DC. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 265.*	*Desmodium nutans* Wall.	N	DS
110	***Desmodium laxiflorum*** DC.[Leguminosae: Papilionoideae]; *Rani Mughal & Dar 277.*	*Desmodium diffusum* DC.	N	DSS
111	***Desmodium multiflorum*** DC. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 278.*	*Desmodium angulatum* DC.	N	DSS
112	***Deutzia corymbosa*** R.Br. ex G.Don [Hydrangeaceae]; *Rani Mughal & Dar 313.*	NA	N	DS
113	***Deutzia staminea*** R.Br. ex Wall. [Hydrangeaceae]; *Rani Mughal & Dar 075.*	*Philadelphus stamineus* Wall.	N	DS
114	***Diospyros kaki*** L.f. [Ebenaceae]; *Rani Mughal & Dar 176.*	*Diospyros sinensis* Naudin	E	DT
115	***Diospyros lotus*** L. [Ebenaceae]; *Rani Mughal & Dar 074.*	*Diospyros microcarpa* Siebold	E	DT
116	***Dodonaea viscosa*** (L.) Jacq. [Sapindaceae]; *Rani Mughal & Dar 130.*	*Dodonaea eriocarpa* Sm.	E	ES
117	***Dolichandra unguis-cati*** (L.) L.G.Lohmann [Sapindaceae]; *Rani Mughal & Dar 314*.	*Bignonia exoleta* Vell.	E	DCL
118	***Duranta erecta*** L. [Verbenaceae]; *Rani Mughal & Dar 216.*	*Duranta repens* L.	E	DSS
119	***Elaeagnus umbellata*** Thunb. [Elaeagnaceae]; *Rani Mughal & Dar 013.*	*Elaeagnus crispa* Thunb.	N	DT
120	***Eranthemum pulchellum*** Andrews [Acanthaceae]; *Rani Mughal & Dar 315.*	*Justicia nervosa* Vahl	E	ES
121	***Eriobotrya japonica*** (Thunb.) Lindl. [Rosaceae]; *Rani Mughal & Dar 099.*	*Mespilus japonica* Thunb.	E	ET
122	***Euonymus europaeus*** L. [Celastraceae]; *Rani Mughal & Dar 203.*	*Euonymus vulgaris* Mill.	E	ET
123	***Euonymus hamiltonianus*** Wall. [Celastraceae]; *Rani Mughal & Dar 138.*	*Euonymus lanceifolius* Loes.	E	ET
124	***Ficus auriculata*** Lour. [Moraceae]; *Rani Mughal & Dar 181.*	*Ficus roxburghii* Steud.	N	DT
125	***Ficus benghalensis*** L. [Moraceae]; *Rani Mughal & Dar 316.*	*Ficus banyana* Oken	E	ET

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126	***Ficus benjamina*** L. [Moraceae]; *Rani Mughal & Dar 053.*	*Ficus comosa* Roxb.	E	ET
127	***Ficus elastica*** Roxb. ex Hornem. [Moraceae]; *Rani Mughal & Dar 044.*	-	E	ET
128	***Ficus neriifolia*** Sm. [Moraceae]; *Rani Mughal & Dar 316.*	*Ficus neriifolia* var. *nemoralis* (Wall. ex Miq.) Corner	N	ET
129	***Ficus palmata*** Forssk. [Moraceae]; *Rani Mughal & Dar 165.*	*Ficus forskalaei* Vahl	E	DT
130	***Ficus pumila*** L. [Moraceae]; *Rani Mughal & Dar 317.*	*Ficus scandens* Lam.	E	DT
131	***Ficus religiosa*** L. [Moraceae]; *Rani Mughal & Dar 042.*	*Ficus caudata* Stokes	E	ET
132	***Ficus sarmentosa*** Buch.-Ham. ex Sm. [Moraceae]; *Rani Mughal & Dar 242.*	*Ficus oblongifolia* D.Don	E	DT
133	***Ficus virens*** Aiton [Moraceae]; *Rani Mughal & Dar 194.*	*Ficus glabella* Blume	E	DT
134	***Flacourtia indica*** (Burm.f.) Merr. [Salicaceae]; *Rani Mughal & Dar 318*.	*Flacourtia gambecola* Clos	N	DT
135	***Flemingia semialata*** Roxb. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 189.*	-	N	DS
136	***Fraxinus floribunda*** Wall. [Oleaceae]; *Rani Mughal & Dar 152.*	*Fraxinus urophylla* (G.Don) Wall. ex A.DC.	N	DT
137	***Fraxinus hookeri*** Wenz. [Oleaceae]; *Rani Mughal & Dar 319.*	*Fraxinus excelsior* auct. non Linn.: C.B. Clarke	N	DT
138	***Gardenia jasminoides*** J.Ellis [Rubiaceae]; *Rani Mughal & Dar 174.*	*Gardenia grandiflora* Lour.	E	ES
139	***Gaultheria trichophylla*** Royle [Ericaceae]; *Rani Mughal & Dar 320.*	-	N	ESS
140	***Gleditsia triacanthos*** L. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 139.*	*Gleditsia inermis* L.	E	DT
141	***Glochidion heyneanum*** Wight [Phyllanthaceae]; *Rani Mughal & Dar 161.*	*Glochidion velutinum* Wight	E	DT
142	***Grevillea robusta*** A.Cunn. ex R.Br. [Proteaceae]; *Rani Mughal & Dar 064.*	*Grevillea robusta* var. *compacta* auct.	E	DT
143	***Grewia asiatica*** L. [Malvaceae]; *Rani Mughal & Dar 321.*	*Grewia hainesiana* Hole	E	DT
144	***Grewia optiva*** J.R.Drumm. ex Burret [Malvaceae]; *Rani Mughal & Dar 183.*	*Grewia oppositifolia* Buch.-Ham. ex Roxb.	E	ES
145	***Gymnosporia royleana*** Wall. ex M.A. Lawson [Celastraceae]; *Rani Mughal & Dar 085*.	*Celastrus royleanus* Wall. ex M.A.Lawson	N	ES
146	***Hedera nepalensis*** K.Koch [Araliaceae]; Rani Mughal & Dar 162.	*Hedera himalaica* (Hibberd) Carrière	E	ECL
147	***Helinus lanceolatus*** Brandis [Rhamnaceae]; *Rani Mughal & Dar 279.*	*Gouania lanceolata* Wall.	E	DS
148	***Hibiscus mutabilis*** L. [Malvaceae]; *Rani Mughal & Dar 322.*	*Hibiscus javanicus* Weinm.	E	DS
149	***Hibiscus rosa-sinensis*** L. [Malvaceae]; *Rani Mughal & Dar 025.*	*Hibiscus storckii* Seem.	E	DS
150	***Hibiscus schizopetalus*** Hook.f. [Malvaceae]; *Rani Mughal & Dar 024.*	*Hibiscus rosa-sinensis* var. *schizopetalus* Dyer	E	DS

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151	***Hibiscus syriacus*** L. [Malvaceae]; *Rani Mughal & Dar 026.*	*Hibiscus chinensis* DC.	E	DS
152	***Himalrandia tetrasperma*** (Wall. ex Roxb.) T.Yamaz. [Rubiaceae]; *Rani Mughal & Dar 180.*	*Randia tetrasperma* (Wall. ex Roxb.)	N	DS
153	***Hiptage bengalensis*** Kuntze [Malpighiaceae]; *Rani Mughal & Dar 193.*	*Hiptage madablota* Gaertn.	E	ECL
154	***Holboellia latifolia*** Wall. [Lardizabalaceae]; *Rani Mughal & Dar 323.*	*Holboellia ovatifoliolata* Y.C.Wu & T.Chen	N	ECL
155	***Hypericum dyeri*** Rehder [Hypericaceae]; *Rani Mughal & Dar 324.*	*Hypericum govanianum* Wall.	E	DS
156	***Hypericum oblongifolium*** Choisy [Hypericaceae]; *Rani Mughal & Dar 126.*	*Hypericum cernuum* Roxb.	N	ES
157	***Hypericum uralum*** Buch.-Ham. ex D.Don [Hypericaceae]; *Rani Mughal & Dar 324.*	*Hypericum nepalense* K.Koch	N	DS
158	***Ilex dipyrena*** Wall. [Aquifoliaceae]; *Rani Mughal & Dar 101.*	*Ilex cunninghamii* Loudon	N	ET
159	***Indigofera atropurpurea*** Hornem. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 325.*	*Indigofera atropurpurea* Roxb.	N	DS
160	***Indigofera cassioides*** DC. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 326.*	*Indigofera pulchella* Roxb.	N	DS
161	***Indigofera hebepetala*** Baker [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 327.*	*Indigofera hebepetala* var. *hebepetala*	N	DS
162	***Indigofera heterantha*** Brandis [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 264.*	*ndigofera gerardiana* Baker	N	DS
163	***Ipomoea cairica*** (L.)Sweet [Convolvulaceae]; *Rani Mughal & Dar 328.*	*Ipomoea cairica* (L.) Sweet	E	DCL
164	***Isodon rugosus*** (Wall. ex Benth.) Codd [Lamiaceae]; *Rani Mughal & Dar 107.*	*Plectranthus rugosus* Wall. ex Benth.	N	DS
165	***Itea nutans*** Royle [Iteaceae]; Rani Mughal & Dar 329.	-	N	DT
166	***Jacaranda mimosifolia*** D.Don [Bignoniaceae]; *Rani Mughal & Dar 062.*	*Jacaranda ovalifolia* R.Br.	N	DT
167	***Jasminum dispermum*** Wall. [Oleaceae]; *Rani Mughal & Dar 330.*	*Jasminum quinquenerve* Lamb. ex D.Don	N	DCL
168	***Jasminum grandiflorum*** L. [Oleaceae]; *Rani Mughal & Dar 267.*	*Jasminum aureum* D.Don	E	DCL
169	***Jasminum humile*** L. [Oleaceae]; *Rani Mughal & Dar 182.*	*Jasminum farreri* Gilmour	E	DS
170	***Jasminum mesnyi*** Hance [Oleaceae]; *Rani Mughal & Dar 050.*	*Jasminum primulinum* Hemsl. ex Baker	E	DS
171	***Jasminum multiflorum*** (Burm.f.) Andrews [Oleaceae]; *Rani Mughal & Dar 331.*	*Jasminum pubescens* (Retz.) Willd.	E	DS
172	***Jasminum officinale*** L. [Oleaceae]; *Rani Mughal & Dar 059.*	*Jasminum affine* Royle ex Lindl.	E	DS
173	***Jasminum sambac*** (L.) Aiton [Oleaceae]; *Rani Mughal & Dar 222.*	*Jasminum odoratum* Noronha	E	DS
174	***Jatropha curcas*** L. [Euphorbiaceae]; *Rani Mughal & Dar 268.*	*Jatropha edulis* Sessé	E	DS
175	***Juglans regia*** L. [Juglandaceae]; *Rani Mughal & Dar 157.*	*Juglans regia* var. *kamaonia* C. DC.	E	DT

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176	***Juniperus communis*** L. [Cupressaceae]; *Rani Mughal & Dar 332.*	-	N	ES
177	***Juniperus squamata*** Buch.-Ham. ex D.Don [Cupressaceae]; *Rani Mughal & Dar 150*.	-	N	ES
178	***Justicia adhatoda*** L. [Acanthaceae]; *Rani Mughal & Dar 029.*	*Adhatoda vasica* Nees	E	ES
179	***Kigelia africana*** (Lam.) Benth. [Bignoniaceae]; *Rani Mughal & Dar 333.*	*Kigelia pinnata* (Jacq.) DC.	E	DT
180	***Kydia calycina*** Roxb. [Malvaceae]; *Rani Mughal & Dar 334.*	*Kydia fraterna* Roxb.	N	DT
181	***Lagerstroemia indica*** L. [Lythraceae]; *Rani Mughal & Dar 163.*	*Lagerstroemia chinensis* Lam.	E	DT
182	***Lannea coromandelica*** (Houtt.) Merr. [Anacardiaceae]; *Rani Mughal & Dar 286*.	*Lannea grandis* Engl.	E	DT
183	***Lantana camara*** L. [Verbenaceae]; *Rani Mughal & Dar 186.*	*Lantana antillana* Raf.	E	ES
184	***Leptodermis lanceolata*** Wall. [Rubiaceae]; *Rani Mughal & Dar 023.*	*Hamiltonia fruticosa* D.Don	N	DS
185	***Leptopus cordifolius*** Decne. [Phyllanthaceae]; *Rani Mughal & Dar 067.*	*Andrachne cordifolia* (Decne.) Müll.Arg.	N	ES
186	***Lespedeza gerardiana*** Maxim [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 335*.	-	N	DS
187	***Lespedeza juncea*** var. ***sericea*** (Thunb.) Lace & Hauech [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 336.*	*Lespedeza cuneata* (Dum.Cours.) G.Don	N	DS
188	***Leucaena leucocephala*** (Lam.) deWit [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 131.*	*Acacia frondosa* Willd.	E	DS
189	***Leycesteria formosa*** Wall. [Caprifoliaceae]; *Rani Mughal & Dar 339.*	*Hamelia connata* Wall. ex DC.	E	DS
190	***Ligustrum ovalifolium*** Hassk. [Oleaceae]; *Rani Mughal & Dar 337.*	*Ligustrum foliosum* Nakai	E	ET
191	***Litchi chinensis*** Sonn. [Sapindaceae]; *Rani Mughal & Dar 088.*	*Litchi chinensis* var. *euspontanea* H.H.Hsue	E	ET
192	***Lonicera acuminata*** Wall. [Caprifoliaceae]; *Rani Mughal & Dar 017..*	*Lonicera henryi* Hemsl.	N	DS
193	***Lonicera japonica*** Thunb. [Caprifoliaceae]; *Rani Mughal & Dar 338.*	*Lonicera brachypoda* Siebold	E	DS
194	***Lonicera quinquelocularis*** Hard. [Caprifoliaceae]; *Rani Mughal & Dar 084*.	-	N	DS
195	***Lonicera webbiana*** Wall. ex DC. [Caprifoliaceae]; *Rani Mughal & Dar 340.*	*Lonicera heterophylla* Decne.	N	DS
196	***Loranthus cordifolius*** Wall. [Loranthaceae]; *Rani Mughal & Dar 341.*	*Scurrula cordifolia* G.Don	E	DT
197	***Lyonia ovalifolia*** (Wall.) Drude [Ericaceae]; *Rani Mughal & Dar 258.*	*Lyonia ovalifolia* var. *rubrovenia* (Merr.) Judd	E	DT
198	***Machilus duthiei*** King [Lauraceae]; *Rani Mughal & Dar 111.*	*Persea duthiei* (King) Kosterm.	N	ET
199	***Magnolia champaca*** Baill. ex Pierre [Magnoliaceae]; *Rani Mughal & Dar 147.*	*Michelia champaca* L.	N	DT
200	***Magnolia grandiflora*** L. [Magnoliaceae]; *Rani Mughal & Dar 036.*	*Magnolia foetida* (L.) Sarg.	E	ET

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201	***Mallotus philippensis*** (Lam.) Müll.Arg. [Euphorbiaceae]; *Rani Mughal & Dar 037.*	*Mallotus reticulatus* Dunn	E	DT
202	***Malus baccata*** (L.) Borkh. [Rosaceae]; *Rani Mughal & Dar 342.*	*Pyrus baccata* L.	E	DT
203	***Malus pumila*** Mill. [Rosaceae]; *Rani Mughal & Dar 081.*	*Pyrus pumila* (Mill.) Steud.	E	DT
204	***Malvaviscus arboreus*** Cav. [Malvaceae]; *Rani Mughal & Dar 032.*	*Malvaviscus acapulcensis* Kunth	E	ES
205	***Mangifera indica*** L. [Anacardiaceae]; *Rani Mughal & Dar 087.*	*Mangifera austroyunnanensis* Hu	E	ET
206	***Melia azedarach*** L. [Meliaceae]; *Rani Mughal & Dar 063.*	*Azedarach deleteria* Medik.	N	DT
207	***Mimosa himalayana*** Gamble [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 343.*	*Mimosa rubricaulis* subsp. *himalayana* (Gamble) H.Ohashi	N	DS
208	***Mimosa rubicaulis*** Lam. [Leguminosae: Mimosoideae]; *Rani Mughal & Dar 124.*	*Mimosa mutabilis* Roxb.	N	DS
209	***Morus alba*** L. [Moraceae]; *Rani Mughal & Dar 046.*	*Morus atropurpurea* Roxb.	E	DT
210	***Morus nigra*** L. [Moraceae]; *Rani Mughal & Dar 171.*	-	N	DT
211	***Morus serrata*** Roxb. [Moraceae]; *Rani Mughal & Dar 133.*	*Morus alba* var. *serrata* Bureau	E	DT
212	***Mucuna pruriens*** (L.) DC. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 344.*	*Mucuna minima* Haines	E	DCL
213	***Murraya koenigii*** (L.) Spreng. [Rutaceae]; *Rani Mughal & Dar 217.*	*Bergera koenigii* L.	N	DS
214	***Murraya paniculata*** (L.) Jack [Rutaceae]; *Rani Mughal & Dar 345.*	*Murraya exotica* L.	N	DS
215	***Myrsine africana*** L. [Myrsinaceae]; *Rani Mughal & Dar 034.*	*Myrsine bifaria* Wall.	E	ES
216	***Neolitsea pallens*** Momiy & H. Hara [Lauraceae]; *Rani Mughal & Dar 117.*	*Litsea consimilis* (Nees) Nees	N	ET
217	***Nerium oleander*** L. [Apocynaceae]; *Rani Mughal & Dar 020.*	*Nerium indicum* Mill.	E	ES
218	***Nyctanthes arbor-tristis*** L. [Oleaceae]; *Rani Mughal & Dar 175.*	*Nyctanthes dentata* Blume	N	DT
219	***Olea europaea*** L. [Oleaceae]; *Rani Mughal & Dar 170.*	*Olea europaea* var. *sativa* (Weston) Lehr	E	DT
220	***Olea ferruginea*** Wall. ex Aitch. [Oleaceae]; *Rani Mughal & Dar 038.*	-	N	DT
221	***Opuntia dillenii*** (Ker Gawl.) Haw. [Cactaceae]; *Rani Mughal & Dar 237.*	*Cactus chinensis* Roxb.	E	DSS
222	***Oreocnide frutescens*** (Thunb.) Miq. [Urticaceae]; *Rani Mughal & Dar 251.*	*Urtica frutescens* Thunb.	E	DSS
223	***Parrotiopsis jacquemontiana*** (Decne.) Rehder [Hamamelidaceae]; *Rani Mughal & Dar 104.*	*Parrotia jacquemontiana* Decne.	N	DS
224	***Parthenocissus semicordata***Planch. [Vitaceae]; *Rani Mughal & Dar 086.*	*Parthenocissus himalayana* (Royle) Planch.	E	ECL
225	***Pelargonium capitatum*** (L.) L'Hér. [Geraniaceae]; *Rani Mughal & Dar 346.*	*Geranium capitatum* L.	E	DSS

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226	***Persea odoratissima*** (Nees) Kosterm. [Lauraceae]; *Rani Mughal & Dar 347.*	*Machilus odoratissimus* Nees	N	ET
227	***Phoenix sylvestris*** (L.) Roxb. [Arecaceae]; *Rani Mughal & Dar 003.*	*Elate sylvestris* L.	E	ET
228	***Phyllanthus emblica*** L. [Phyllanthaceae]; *Rani Mughal & Dar 078.*	*Phyllanthus taxifolius* D.Don	N	DT
229	***Picea smithiana*** (Wall.) Boiss. [Pinaceae]; *Rani Mughal & Dar 224.*	*Picea morinda* Link	N	ET
230	***Pinus roxburghii*** Sarg. [Pinaceae]; *Rani Mughal & Dar 005.*	*Pinus longifolia* Roxb. ex Lamb.	N	ET
231	***Pinus wallichiana*** A.B.Jacks. [Pinaceae]; *Rani Mughal & Dar 148.*	*Pinus chylla* Lodd.	N	ET
232	***Pistacia chinensis*** subsp. ***integerrima*** (J. L. Stewart ex Brandis) Rech. f. [Anacardiaceae]; *Rani Mughal & Dar 215.*	*Pistacia integerrima* J. L. Stewart ex Brandis	E	DT
233	***Pistacia khinjuk*** Stocks [Anacardiaceae]; *Rani Mughal & Dar 060.*	*Rhus integerrima* Wall.	E	DT
234	***Platanus orientalis*** L. [Platanaceae]; *Rani Mughal & Dar 007.*	*Platanus orientalior* Dode	E	DT
235	***Platycladus orientalis*** (L.) Franco [Cupressaceae]; *Rani Mughal & Dar 207.*	*Thuja orientalis* L.	E	ET
236	***Plumeria rubra*** L. [Apocynaceae]; *Rani Mughal & Dar 348.*	*Plumeria incarnata* Mill.	E	DS
237	***Populus alba*** L. [Salicaceae]; *Rani Mughal & Dar 103.*	*Populus alba* var. *alba*	E	DT
238	***Populus ciliata*** Wall. ex Royle [Salicaceae]; *Rani Mughal & Dar 231.*	*Populus ciliata* var. *ciliata*	N	DT
239	***Populus nigra*** L. [Salicaceae]; Rani Mughal & Dar 229.	*Populus nigra* var. *nigra*	E	DT
240	***Prinsepia utilis*** Royle [Rosaceae]; *Rani Mughal & Dar 198.*	-	N	DS
241	***Prunus armeniaca*** L. [Rosaceae]; *Rani Mughal & Dar 056.*	*Armeniaca vulgaris* Lam.	E	DT
242	***Prunus avium*** (L.) L. [Rosaceae]; *Rani Mughal & Dar 209.*	*Prunus cerasus* var. *avium* L.	E	DT
243	***Prunus bokhariensis*** Royle ex C.K.Schneid. [Rosaceae]; *Rani Mughal & Dar 054.*	-	E	DT
244	***Prunus cornuta*** (Wall. ex Royle) Steud. [Rosaceae]; *Rani Mughal & Dar 098.*	*Padus cornuta* (Wall. ex Royle) CarriŠre	N	DT
245	***Prunus domestica*** L. [Rosaceae]; *Rani Mughal & Dar 055.*	*Prunus communis* Huds.	E	DT
246	***Prunus dulcis*** (Mill.) D.A.Webb [Rosaceae]; *Rani Mughal & Dar 349.*	*Prunus amygdalus* Batsch	E	DT
247	***Prunus persica*** (L.) Batsch [Rosaceae]; *Rani Mughal & Dar 049.*	*Amygdalus persica* L.	N	DT
248	***Pseudocaryopteris bicolor*** (Roxb. ex Hardw.) P.D.Cantino [Lamiaceae]; *Rani Mughal & Dar 350.*	*Caryopteris bicolor* (Roxb. ex Hardw.) Mabb.	E	DS
249	***Psidium guajava*** L. [Mrytaceae]; *Rani Mughal & Dar 187.*	*Psidium fragrans* Macfad.	E	ES
250	***Pueraria tuberosa*** (Willd.) DC. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 351.*	*Hedysarum tuberosum* Willd.	E	DCL

Sl. No.	Name of plant [Family]; Exsiccatae	Common synonym(s)	Native (N) /Exotic (E)	Growth form
251	***Punica granatum*** L. [Lythraceae]; *Rani Mughal & Dar 012.*	*Punica nana* L.	E	DT
252	***Pyrostegia venusta***Miers [Bignoniaceae]; *Rani Mughal & Dar 142.*	*Pyrostegia ornata* Miers	N	ECL
253	***Pyrus communis*** L. [Rosaceae]; *Rani Mughal & Dar 100.*	*Pyrus communis* var. *sativa* (DC.) DC.	E	DT
254	***Pyrus pashia*** Buch.-Ham. ex D.Don [Rosaceae]; *Rani Mughal & Dar 179.*	*Malus pashia* (Buch.-Ham. ex Don) Wenz.	N	DT
255	***Quercus floribunda*** Lindl. ex A.Camus [Fagaceae]; *Rani Mughal & Dar 119.*	*Quercus himalayana* Bahadur	N	ET
256	***Quercus glauca*** Thunb. [Fagaceae]; *Rani Mughal & Dar 239.*	*Quercus lacera* Blume	N	DT
257	***Quercus oblongata*** D.Don [Fagaceae]; *Rani Mughal & Dar 041.*	*Quercus leucotrichophora* A.Camus	N	ET
258	***Quercus semecarpifolia*** Sm. [Fagaceae]; *Rani Mughal & Dar 195.*	*Quercus cassura* Buch.-Ham. ex D.Don	N	DT
259	***Reinwardtia indica*** Dumort. [Linaceae]; *Rani Mughal & Dar 123.*	*Reinwardtia trigyna* Planch.	N	DS
260	***Rhamnus triquetra*** (Wall.) Brandis [Rhamnaceae]; *Rani Mughal & Dar 072.*	*Ceanothus triquetrus* Wall.	N	DS
261	***Rhamnus virgatus*** Roxb. [Rhamnaceae]; *Rani Mughal & Dar 091.*	-	N	DS
262	***Rhododendron anthopogon*** D.Don [Ericaceae]; *Rani Mughal & Dar 280.*	*Rhododendron anthopogon* var. *album* Davidian	N	ES
263	***Rhododendron arboreum*** Sm. [Ericaceae]; *Rani Mughal & Dar 058.*	*Rhododendron arboreum* var. *roseum* Lindl.	N	ES
264	***Rhododendron campanulatum*** D.Don [Ericaceae]; *Rani Mughal & Dar 144.*	*Rhododendron campanulatum* subsp. *campanulatum*	N	ES
265	***Rhododendron lepidotum*** Wall. ex G.Don [Ericaceae]; *Rani Mughal & Dar 149.*	*Rhododendron sinolepidotum* Balf. f.	N	ES
266	***Rhus chinensis*** Mill. [Anacardaceae]; *Rani Mughal & Dar 261.*	*Rhus semialata* Murray	E	DT
267	***Rhus punjabensis*** J. L. Stewart ex Brandis [Anacardiaceae]; *Rani Mughal & Dar 352.*	*Rhus punjabensis* var. *sinica* (Diels) Rehder & E.H. Wilson	N	DT
268	***Rhus succedanea*** L. [Anacardiaceae]; *Rani Mughal & Dar 202.*	-	N	DT
269	***Rhynchosia pseudo-cajan*** Cambess. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 093.*	-	E	DS
270	***Robinia pseudo-acacia*** L. [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 004.*	*Robinia pseudacacia* L.	E	DT
271	***Rosa chinensis*** Jacq. [Rosaceae]; *Rani Mughal & Dar 031.*	*Rosa indica* Lour.	E	DS
272	***Rosa macrophylla*** Lindl. [Rosaceae]; *Rani Mughal & Dar 223.*	*Rosa alpina* var. *macrophylla* (Lindl.) Boulenger	E	DS
273	***Rosa moschata*** Herrm. [Rosaceae]; *Rani Mughal & Dar 015.*	*Rosa brunonii* Lindl.	N	DS

Sl. No.	Name of plant [Family]; Exsiccatae	Common synonym(s)	Native (N) /Exotic (E)	Growth form
274	***Rosa webbiana*** Wall. ex Royle [Rosaceae]; *Rani Mughal & Dar 353.*	-	E	DS
275	***Rosa multiflora*** Thunb. [Rosaceae]; *Rani Mughal & Dar 108.*	*Rosa polyantha* Siebold & Zucc.	E	DS
276	***Rosa rubiginosa*** L. [Rosaceae]; *Rani Mughal & Dar 204.*	*Rosa eglanteria* L.	N	DS
277	***Rubus biflorus*** Buch.-Ham. ex Sm. [Rosaceae]; *Rani Mughal & Dar 354.*	*Rubus biflorus* var. *quinqueflorus* Focke	N	DS
278	***Rubus ellipticus*** Sm. [Rosaceae]; *Rani Mughal & Dar 066.*	*Rubus ellipticus* var. *ellipticus*	N	DS
279	***Rubus lasiococcus*** A.Gray [Rosaceae]; *Rani Mughal & Dar 355.*	*Comarobatia lasiococca* (A.Gray) Greene	N	DS
280	***Rubus macilentus*** Jacquem. ex Cambess. [Rosaceae]; *Rani Mughal & Dar 356.*	*Rubus minensis* Pax & K.Hoffm.	N	DS
281	***Rubus niveus*** Thunb. [Rosaceae]; *Rani Mughal & Dar 241.*	*Rubus foliolosus* D.Don	N	DS
282	***Rubus paniculatus*** Sm. [Rosaceae]; *Rani Mughal & Dar 357.*	*Rubus panniculatus* Focke	N	DS
283	***Rubus ulmifolius*** Schott [Rosaceae]; *Rani Mughal & Dar 246.*	*Rubus abruptus* Lindl.	N	DS
284	***Sabia paniculata*** Edgew. ex Hook.f. & Thomson [Sabiaceae]; *Rani Mughal & Dar 281.*	-	N	DCL
285	***Sageretia filiformis*** (Roth) G.Don [Rhamnaceae]; *Rani Mughal & Dar 390.*	*Sageretia oppositifolia* Brongn.	N	DS
286	***Sageretia thea*** (Osbeck) M.C.Johnst. [Rhamnaceae]; *Rani Mughal & Dar 077.*	*Sageretia theezans* Brongn.	N	DS
287	***Salix alba*** L. [Salicaceae]; *Rani Mughal & Dar 010.*	*Salix pameachiana* Barratt	E	DT
288	***Salix babylonica*** L. [Salicaceae]; *Rani Mughal & Dar 110.*	*Salix chinensis* Burm.f.	E	DT
289	***Salix disperma*** Roxb. ex D.Don [Salicaceae]; *Rani Mughal & Dar 211.*	*Salix wallichiana* Andersson	N	DT
290	***Sambucus wightiana*** Wall. ex Wight & Arn. [Adoxaceae]; *Rani Mughal & Dar 059.*	*Sambucus ebulus* auct. non Linn.: C.B. Clarke	N	DSS
291	***Sapindus mukorossi*** Gaertn. [Sapindaceae]; *Rani Mughal & Dar 220.*	-	E	DT
292	***Sarcococca pruniformis*** Lindl. [Buxaceae]; *Rani Mughal & Dar 120.*	*Buxus cariacea* Spreng.	E	ET
293	***Senna sulfurea*** (Collad.) H.S.Irwin & Barneby [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 358.*	*Cassia glauca* Lam.	N	ET
294	***Skimmia anquetilia*** N.P.Taylor & Airy Shaw [Rutaceae]; *Rani Mughal & Dar 359.*	-	N	ES
295	***Smilax aspera*** L. [Smilacaceae]; *Rani Mughal & Dar 137.*	*Smilax catalonica* Poir.	N	DCL
296	***Smilax domingensis*** Willd. [Smilacaceae]; *Rani Mughal & Dar 360.*	*Smilax parvifolia* Sessé & Moc.	N	DCL
297	***Smilax lanceifolia*** Roxb. [Smilacaceae]; *Rani Mughal & Dar 361.*	*Smilax micropoda* A.DC.	N	DCL
298	***Smilax vaginata*** Decne. [Smilacaceae]; *Rani Mughal & Dar 362.*	-	N	DCL

Sl. No.	Name of plant [Family]; Exsiccatae	Common synonym(s)	Native (N) /Exotic (E)	Growth form
299	***Solanum erianthum*** D.Don [Solanaceae]; *Rani Mughal & Dar 156.*	*Solanum adulterinum* Buch.-Ham. ex Wall.	N	DS
300	***Solanum pseudocapsicum*** L. [Solanaceae]; *Rani Mughal & Dar 158.*	*Solanum diflorum* Vell.	E	DSS
301	***Solanum viarum*** Dunal [Solanaceae]; *Rani Mughal & Dar 260.*	*Solanum chloranthum* DC.	E	DS
302	***Sophora mollis*** (Royle) Baker [Leguminosae: Papilionoideae]; *Rani Mughal & Dar 263*.	*Sophora buxbaumii* (Bunge) B.Fedtsch.	E	DS
303	***Sorbaria tomentosa*** (Lindl.) Rehder [Rosaceae]; *Rani Mughal & Dar 113.*	*Spiraea lindleyana* Wall. ex Lindl.	N	DS
304	***Spermadictyon suaveolens*** Roxb. [Rubiaceae]; *Rani Mughal & Dar 250.*	*Spermadictyon azureum* Wall.	N	DS
305	***Spiraea canescens*** D.Don [Rosaceae]; *Rani Mughal & Dar 151.*	*Spiraea vaccinifolia* hort.	E	DS
306	***Spiraea cantoniensis*** Lour. [Rosaceae]; *Rani Mughal & Dar 127.*	*Spiraea reevesiana* Lindl.	E	DS
307	***Staphylea emodi*** Wall. [Staphyleaceae]; *Rani Mughal & Dar 140.*	-	N	DS
308	***Strobilanthes wallichii*** Nees [Acanthaceae]; *Rani Mughal & Dar 363.*	*Pteracanthus alatus* (Nees) Bremek.	N	DSS
309	***Symplocos paniculata*** (Thunb.) Miq. [Symplocaceae]; *Rani Mughal & Dar 364.*	*Symplocos chinensis* (Lour.) Druce	E	DT
310	***Syzygium cumini*** (L.) Skeels [Myrtaceae]; *Rani Mughal & Dar 065.*	*Eugenia jambolana* Lam.	E	ET
311	***Tabernaemontana divaricata*** (L.) R.Br. ex Roem. & Schult. [Apocynaceae]; *Rani Mughal & Dar 011.*	*Ervatamia coronaria* (Jacq.) Stapf	E	ES
312	***Taxus wallichiana*** Zucc. [Taxaceae]; *Rani Mughal & Dar 016.*	*Taxus baccata* subsp. *wallichiana* (Zucc.) Pilg.	N	ET
313	***Tecoma stans*** (L.) Juss. ex Kunth [Bignoniaceae]; *Rani Mughal & Dar 365.*	*Bignonia stans* L.	E	DS
314	***Terminalia chebula*** Retz. [Combretaceae]; *Rani Mughal & Dar 218.*	-	E	DT
315	***Thuja occidentalis*** L. [Cupressaceae]; *Rani Mughal & Dar 275.*	*Thuja canadensis* K.Koch	E	ES
316	***Tinospora sinensis*** (Lour.) Merr. [Menispermaceae]; *Rani Mughal & Dar 262.*	*Tinospora cordifolia* (Willd.) Miers	N	DCL
317	***Toona ciliata*** M.Roem. [Meliaceae]; *Rani Mughal & Dar 132.*	*Cedrela toona* Roxb. ex Rottler	N	DT
318	***Toona sinensis*** (Juss.) M.Roem. [Meliaceae]; *Rani Mughal & Dar 272.*	*Cedrela serrata* Royle	N	DT
319	***Toxicodendron wallichii*** (Hook. f.) Kuntze [Anacardiaceae]; *Rani Mughal & Dar 271.*	*Rhus wallichii* Hook. f.	N	DT
320	***Trachelospermum lucidum*** (D.Don) K.Schum. [Apocynaceae]; *Rani Mughul & Dar 095.*	*Trachelospermum fragrans* (Wall. ex G.Don) Hook.f.	E	DCL
321	***Ulmus villosa*** Brandis ex Gamble [Ulmaceae]; *Rani Mughul & Dar 045.*	-	E	DT
322	***Ulmus wallichiana*** Planch. [Ulmaceae]; *Rani Mughul & Dar 112.*	-	N	DT
323	***Vallaris solanacea*** (Roth) Kuntze [Apocynaceae]; *Rani Mughal & Dar 366.*	*Peltanthera solanacea* Roth	N	ES

Sl. No.	Name of plant [Family]; Exsiccatae	Common synonym(s)	Native (N) /Exotic (E)	Growth form
324	***Viburnum cotinifolium*** D.Don [Adoxaceae]; *Rani Mughul & Dar 283.*	*Viburnum multratum* K. Koch	E	DS
325	***Viburnum cylindricum*** Buch.-Ham. ex D.Don [Adoxaceae]; *Rani Mughal & Dar 367.*	*Viburnum crassifolium* Rehder	E	DS
326	***Viburnum grandiflorum*** Wall. ex DC. [Adoxaceae]; *Rani Mughul & Dar 199.*	*Viburnum foetens* Decne.	N	DS
327	***Viburnum mullaha*** Buch.-Ham. ex D.Don [Adoxaceae]; *Rani Mughal & Dar 368.*	*Viburnum stellulatum* Wall. ex DC.	N	DS
328	***Viburnum opulus*** L. [Adoxaceae]; *Rani Mughul & Dar 173.*	*Viburnum opulus* var. *opulus*	E	DS
329	***Viscum album*** L. [Loranthaceae]; *Rani Mughul & Dar 160.*	*Viscum album* var. *album*	E	DS
330	***Vitex negundo*** L. [Lamiaceae]; *Rani Mughul & Dar 240.*	*Vitex chinensis* Mill.	E	DCL
331	***Vitis flexuosa*** Thunb. [Vitaceae]; *Rani Mughal & Dar 369.*	*Vitis parvifolia* Roxb.	E	DCL
332	***Vitis vinifera*** L. [Vitaceae]; *Rani Mughul & Dar 206.*	*Cissus vinifera* (L.) Kuntze	E	DCL
333	***Wendlandia heynei*** (Schult.) Santapau & Merchant [Rubiaceae]; *Rani Mughal & Dar 370.*	*Wendlandia exserta* (Roxb.) DC.	N	DT
334	***Withania somnifera*** (L.) Dunal [Solanaceae]; Rani Mughal & Dar 371.	*Physalis somnifera* L.	E	ES
335	***Woodfordia fruticosa*** (L.) Kurz [Lythraceae]; *Rani Mughul & Dar 057.*	*Woodfordia tomentosa* Bedd.	N	ES
336	***Yucca aloifolia*** L. [Asparagaceae]; *Rani Mughul & Dar 227.*	*Yucca arcuata* Haw.	E	ES
337	***Zanthoxylum armatum*** DC. [Rutaceae]; *Rani Mughul & Dar 273.*	*Zanthoxylum alatum* Roxb.	N	DS
338	***Ziziphus jujuba*** Mill. [Rhamnaceae]; *Rani Mughul & Dar 047.*	*Ziziphus mauritiana* Lam.	N	DS
339	***Ziziphus jujuba*** var. ***spinosa*** (Bunge) Hu ex H.F.Chow [Rhamnaceae]; *Rani Mughal & Dar 372.*	*Ziziphus vulgaris* var. *spinosa Bunge*	N	DS
340	***Ziziphus oxyphylla*** Edgew. [Rhamnaceae]; *Rani Mughul & Dar 048.*	*Ziziphus acuminata* Royle	N	DS
341	***Zizyphus xylopyrus*** (Retz.) Willd. [Rhamnaceae]; *Rani Mughal & Dar 373.*	*Zizyphus caracutta* Roxb.	N	DS

Conclusions

Taxonomic documentation is the first step in achieving conservation and sustainable use of biodiversity at the local, regional and global scales. Also, the woody species such as trees determine the type, richness and abundance of other biota through the regulation of limiting resources (Abbate *et al.* 2012). In keeping with this, the present paper provides the first annotated taxonomic inventory of the woody flora of Poonch district in J&K State. This checklist will act as baseline data for use by the researchers, policy makers, land managers, and common people interested in documentation, conservation, and sustainable use of plant diversity of this region. Many arboreal species growing here are used as sources of food, fodder, fuel wood, timber, dye, essential oils, and medicines.

Nonetheless, forests of this district are badly affected due to exploitative anthropogenic activities, including non-ecofriendly tourism. As an immediate step, comprehensive study of the flora of this region is warranted. This is because, with the construction of the historical Mughal road, there has been considerable increase in landslides/snow avalanches and avalanches all through this area. This has resulted in a large number of trees and shrubs having been uprooted; the germinating seeds and young seedlings are also eroded. Land sliding has been augmented due to fragmentation/ loss of original patches of grasses and *Juniperus squamata*, making the slopy terrain all along this road prone to erosion.

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