

Tree flora of Purba and Paschim Medinipur districts of West Bengal with reference to their uses

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Abstract

Present investigation reports 153 species of tree of which 122 genera (111 dicots, 8 monocots and 3 gymnosperms) under 49 families (44 dicots, 2 monocots and 3 gymnosperms) respectively. From present status of the trees species from Midnapore districts it was found that out of 153 species, only 77 species are planted; 50 species are wild; 16 species are both planted and naturalised; 6 species are both wild and planted; 3 species are both wild and naturalised and rest 1 species wild, planted and naturalised. Regarding the uses of economically important tree species of Medinipur districts it was found that timber yielding as well as medicinal plants occupy the first position (22.22%) from uses of these plants and are followed by fruit yielding (20.91%), ornamentals (15.03%), avenue trees (7.18%), oil yielding (3.26%), spice yielding (2.61%), religious plants (1.96%), fibre yielding plants (1.30%) respectively. The rests species one in each are dye yielding (0.65%), food plants (0.65%), fodder (0.65%), gum (0.65%), resin (0.65%), silk moth rearing plants (0.65%) respectively. Local name (s), world distribution, flowering and fruiting periods and economic aspects of these species have been discussed.

Keywords: tree-flora, Purba and Paschim Medinipur districts, economic uses

1. Introduction

Undivided Medinipur district was one of the largest district of West Bengal. Paschim Medinipur and Purba Medinipur are two sister districts which were born in the year 2002. The district is limited by Hooghly and Rupnarayan Rivers, Howrah and South 24-Paraganas districts in the East. The Southern part is demarcated by The Bay of Bengal and Odisha. The West part is bounded by Jharkhand and Bihar; Bankura, Hooghly and Purulia in the North.

The climatic variations of both the districts are not remarkable though the region produces a good number of plant population in which trees occupy a unique position of its own. Previously the floristic works by different investigators have been made at different times including major areas of undivided Midnapore district.

The soil of Paschim Medinipur is mostly lateritic with alluvial ingredients at some places due to occasional floods of Kangsabati River and in Purba Medinipur it is of alluvial type. The normal range of temperature varies from 11°C to 43°C. The average annual rainfall is about 1600 mm.

A group of investigators, researchers (Prain, 1903^[10]; Pal and Jain, 1989^[6], 1998; Pant *et al.*, 1993^[8]; Pakrashi and Mukhopadhyay, 2001^[4]; Paria, 2005^[9]; Samanta and Panda, 2016^[12]; Samanta, 2019^[13]) have made their works both from medicinal as well as floristic point of view. Regarding taxonomic information author has also consulted the pertinent literatures of Sanjappa, 1992^[14]; Pal and Jain,

1989^[5], Mabberly, 2008^[3]; Paul *et al.*, 2015^[7]; Ranjan *et al.*, 2016^[11]. The present works aim at the survey of the tree flora from Purba and Paschim Medinipur districts and their economic uses.

2. Material and Method

The work was started by collecting the specimens at random, available in different areas (forests and localities or open places like river-sides, road sides, etc) of Purba and Paschim Medinipur districts in different seasons. Field and herbarium methods were followed according to Jain and Rao (1977)^[2]. The prepared herbarium sheets with proper identification and other information (as voucher specimens) have been deposited in the herbarium of Ramnagar College. For updating species names the websites: The Plant List (<http://www.theplantlist.org>)^[15] and Tropicos (<http://www.tropicos.org>)^[15] were consulted. The recorded taxa are presented alphabetically with accepted name, local name, status, flowering and fruiting time and their common aspects.

3. Observations and Discussion

Recent investigation reports 153 species of trees under 122 genera (111 dicots, 8 monocots and 3 gymnosperms) and 49 families (44 dicots, 2 monocots and 3 gymnosperms). As these plants are very common in this region, the people are familiar with local name (s) and their identities.

Table 1: List of the tree species collected from different parts of Paschim and Purba Medinipur districts, West Bengal showing local name (s), world distribution, present status, flowering and fruiting periods and economic uses. Abbreviations & symbol used: [Local name (s) / vernacular name (s): Beng. = Bengali; Eng. = English; Hind. = Hindi; Or. = Oriya. Fl.: Flowering & Fr.: Fruiting; Months: 1= January to 12=December; ‘-’= Not recorded].

Botanical names with families	Local name (s)	World distribution	Present status	Fl. & Frt. periods	Economic aspects
<i>Acacia auriculiformis</i> Benth. (Fabaceae)	Akashmoni (Beng.)	Tropical Australia	Planted; Naturalised	9-3	Timber yielding plants
<i>Acacia nilotica</i> (L.) Willd. Ex Delile subsp. <i>indica</i> (Benth.) Brenan (Fabaceae)	Babla (Beng.)	North Africa, Arab & the Indian Sub-continent	Wild	2-1	Gum yielding plants
<i>Adenanthera pavonina</i> L. (Fabaceae)	Rakta Kambal (Beng.)	S.E. Asia to Australia; India & Malaysia	Planted	3-5	Timber yielding plants
<i>Aegle marmelos</i> (L.) Correa (Rutaceae)	Bel (Beng. & Hind.)	Indian Subcontinent & S.E. Asia	Wild; Planted	4-7	Medicinal plants
<i>Ailanthus excelsa</i> Roxb. (Simaroubaceae)	Akash-Neem (Beng.)	Central & Southern India; Srilanka	Naturalised	9-5	Timber yielding plants
<i>Alangium salviifolium</i> (L.f.) Wangerin (Alangiaceae)	Ankar-Kanta (Beng.)	South India & Ceylon	Wild	5-7	Medicinal plants
<i>Albizia amara</i> (Roxb.) B.Boivin (Fabaceae)	Krishna- Sirish (Beng.)	Southern & Eastern Africa	Planted	1-3	Timber yielding plants
<i>A. lebbek</i> (L.) Benth. (Fabaceae)	Siris (Beng.)	South-East Asia	Planted; Naturalised	1-8	Timber yielding plants
<i>A.procera</i> (Roxb.) Benth. (Fabaceae)	Koroi (Beng.)	South-East Asia, Papua New Guinea & Northern Australia	Wild	1-9	Timber yielding plants
<i>A. saman</i> (Jacq.) Merr. (Fabaceae)	Siris (Beng.); Raintree (Eng.)	N & S America	Planted	3-12	Ornamental plants
<i>Alstonia scholaris</i> (L.) R.Br. (Apocynaceae)	Chhatim (Beng.)	Indian subcontinent, Malaysia & Australasia	Wild	11-3	Medicinal plants
<i>Anacardium occidentale</i> L. (Anacardiaceae)	Kaju (Beng. & Hind.)	South America, Brazil	Planted	2-5	Fruit yielding plants
<i>Annona reticulata</i> L. (Annonaceae)	Nona (Beng.)	Tropical America & Africa	Planted; Naturalised	5-1	Fruit yielding plants
<i>A.squamosa</i> L. (Annonaceae)	Ata (Beng.)	Tropical America & West Indies	Planted; Naturalised	5-1	Fruit yielding plants
<i>Anogeissus latifolia</i> (Roxb. ex DC.) Wall. Ex Guillem. & Perr. (Combretaceae)	Dhaoya (Beng.); Dhaora (Hind)	India, Nepal, Myanmar & Srilanka	Wild	3-6	Timber yielding plants
<i>Antidesma acidum</i> Retz. (Phyllanthaceae)	Matha (Beng.)	Indian Sub-continent to South Central China & Indi-china	Wild	2-5	Medicinal plants
<i>Aphanamixis polystachya</i> (Wall.) R. Parker (Meliaceae)	Priyangu (Beng.)	India, Pakistan, Nepal, Bhutan Srilanka	Wild	8-9	Medicinal plants
<i>Araucaria columnaris</i> (G.Forst.) Hook. (Araucariaceae)	Araukaria Christmas tree (Eng.)	Central & Southern Chile	Planted	7-11	Ornamental plants
<i>Areca catechu</i> L. (Arecaceae)	Supuri (Beng.)	Asia, China, India	Planted	3-12	Fruit yielding plants
<i>Artocarpus heterophyllus</i> Lam. (Moraccae)	Kantal (Beng.)	India-Malaya Peninsula	Planted; Naturalised	2-9	Fruit yielding plants
<i>Averrhoa carambola</i> L. (Oxalidaceae)	Kamarak, Kamranga (Beng.)	Indonesia, India, Nepal & Tropical America	Planted	5-8	Fruit yielding plants
<i>Azadirachta indica</i> A. Juss. (Meliaceae)	Neem (Beng. & Hind.)	India; Native of Burma	Wild	3-5	Medicinal plants
<i>Barringtonia acutangula</i> (L.) Gaertn. (Lecythydaceae)	Hijjal (Beng.)	Southern Asia, India; Australia, Singapore Malaysia	Wild	5-9	Timber yielding
<i>Bauhinia purpurea</i> L. (Fabaceae)	Rakta Kanchan (Beng.)	South China & South-East Asia	Planted	9-4	Ornamental plants
<i>B.variegata</i> L. (Fabaceae)	Debkanchan (Beng.)	Asia & S-East Asia	Planted; Naturalised	2-6	Ornamental plants
<i>Bombax ceiba</i> L. (Bombacaceae)	Simul (Beng.); Semal (Hind.)	Western Africa & Indian Subcontinent	Wild	2-5	Fibre yielding plants
<i>Borassus flabellifer</i> L. (Arecaceae)	Tal (Beng.)	Indian Subcontinent & South-East Asia	Wild	1-9	Fruit yielding plants
<i>Buchanania cochinchinensis</i> (Lour.) M.R. Almeida (Anacardiaceae)	Piyal (Beng.)	Borneo-Philippines, Papua New Guinea	Wild	12-4	Fruit yielding plants
<i>Butea monosperma</i> (Lam.) Taub. (Fabaceae)	Palash (Beng.)	Indian Subcontinent & S-East Asia	Wild; Planted	2-7	Dye yielding plants
<i>Callistemon citrinus</i> (Curtis) Skeels	Bottle Brush (Eng.)	Australia	Planted	11-5	Ornamental plants

(Myrtaceae)					
<i>Calophyllum inophyllum</i> L. (Clusiaceae)	Sultanchamp (Beng.)	Coastal India, East Africa, Australia	Planted	-	Timber yielding plants
<i>Caryota urens</i> L. (Arecaceae)	Fishtail Palm (Eng.)	Indian Subcontinent, South-East Asia	Planted	4-9	Ornamental plants
<i>Cassia fistula</i> L. (Fabaceae)	Bandar lathi/Sundali (Beng.)	Indian Subcontinent & South-East Asia	Wild	3-10	Ornamental plants
<i>Casuarina equisetifolia</i> L. (Casuarinaceae)	Jhau (Beng.)	Australia, South East Asia	Planted	4-6	Ornamental plants
<i>Ceiba pentandra</i> (L.) Gaertn. (Bombacaceae)	Swet Simul (Beng.)	Mexico & Central America	Planted	12-4	Fibre yielding plants
<i>Cinnamomum camphora</i> (L.) J. Presl (Lauraceae)	Karpur (Beng.)	Eastern Asia & China	Planted	3-6	Medicinal plants
<i>C. tamala</i> (Buch.-Ham.) T. Nees & Eberm. (Lauraceae)	Tejpata (Beng.)	India, Bangladesh & Nepal	Planted	3-9	Spice yielding plants
<i>C. verum</i> J. Presl. (Lauraceae)	Daruchini (Beng.)	India, Bangladesh, Nepal & Srilanka	Planted	3-9	Spice yielding plants
<i>Coccoloba uvifera</i> (L.) L. (Polygonaceae)	Sea grape (Eng.)	Tropical & subtropical Central America	Planted	7-9	Medicinal plants
<i>Cochlospermum religiosum</i> (L.) Alston (Cochlospermaceae)	Galgali (Beng.)	South –East Asia, Indian Subcontinent	Wild	2-7	Oil yielding plants
<i>Cocos nucifera</i> L. (Arecaceae)	Narikel (Beng.)	Malaysia, India & South-East Asia	Planted; Naturalised	4-12	Fruit yielding plants
<i>Commiphora mukul</i> (Hook. ex Stocks) Engl. (Bursaraceae)	Guggal (Beng.)	India, Bangladesh, Pakistan	Planted	3-8	Resin yielding plants
<i>Corymbia citriodora</i> (Hook.) K.D.Hill & L.A.S.Johnson. (Myrtaceae)	Eucalyptus (Eng.)	Australia & Queensland	Planted	12-4	Oil yielding plants
<i>Couroupita guianensis</i> Aubl. (Lecythidaceae)	Naglingam (Beng.)	Tropical America	Planted	1-12	Ornamental plants
<i>Cycas revoluta</i> Thunb. (Cycadaceae)	-	India, China & Japan	Planted	-	Ornamental plants
<i>Dalbergia lanceolaria</i> L.f. (Fabaceae)	Chakmedia (Beng.)	India, Srilanka, Nepal, Burma & Indo-China	Planted	3-12	Timber yielding plants
<i>D. sissoo</i> DC. (Fabaceae)	Sisu (Beng.)	Indian Subcontinent, Southern Iran	Planted	3-2	Timber yielding plants
<i>Delonix regia</i> (Hook.) Raf. (Fabaceae)	Gulmohar (Beng.)	Mauritius, Malaysia	Planted	4-7	Ornamental plants
<i>Desmodium oojeinense</i> (Roxb.) H. Ohashi (Fabaceae)	Panjan (Beng.)	India	Planted	2-6	Timber yielding plants
<i>Dillenia aurea</i> Sm. (Dilleniaceae)	Chamaggai (Beng.)	South Eastern Asia	Wild	4-11	Fruit yielding plants
<i>D. indica</i> L. (Dilleniaceae)	Chalta (Beng.)	South-East Asia	Wild; Planted	5-2	Fruit yielding plants
<i>D.pentagyna</i> Roxb. (Dilleniaceae)	Bonchalta, Karkotta (Beng.)	India, Southern Asia & Australasia	Wild	3-11	Fruit yielding plants
<i>Dimocarpus longan</i> Lour. (Sapindaceae)	Ashphal (Beng.)	Southern Asia & India	Planted	3-9	Timber yielding plants
<i>Diospyros malabarica</i> (Desr.) Kostel. (Ebenaceae)	Gab or Makarkend (Beng.)	India & Indian Subcontinent	Wild	4-5	Medicinal plants
<i>D. melanoxylon</i> Roxb. (Ebenaceae)	Kend (Beng.)	India & Srilanka	Wild	3-4	Timber yielding plants
<i>D. montana</i> Roxb. (Ebenaceae)	Kend (Beng.)	India, Indian Subcontinent	Wild	4-2	Medicinal plants
<i>Elaeocarpus angustifolius</i> Blume (Elaeocarpaceae)	Rudrakshya (Beng. & Hind.)	Hawaiian Island	Planted	4-10	Medicinal plants
<i>Erythrina suberosa</i> Roxb. (Fabaceae)	Parijat/ Madar (Beng.)	Africa, India, Australia & Indian Subcontinent	Planted	2-7	Fruit yielding plants
<i>E. variegata</i> L. (Fabaceae)	Chorpalta (Beng.); Coral tree (Eng.)	Eastern Africa, Indian Subcontinent & Northern Australia	Planted	2-7	Ornamental plants
<i>Eucalyptus globulus</i> Labill. (Myrtaceae)	Eucalyptus (Eng.)	Australia, Victoria, Tasmania	Planted	12-4	Oil yielding plants
<i>Ficus benghalensis</i> L. (Moraceae)	Bat (Beng.)	Indian Sub-continent	Wild	11-2	Avenue tree
<i>F. elastica</i> Roxb. Ex Hornem. (Moraceae)	Rubber (Eng.)	E.India, Nepal, Bhutan, Burma, China, Malaysia, Indonesia & South-East Asia	Wild	4-9	Ornamental plants
<i>F. hispida</i> L.f.	Kak Dumur,	Eastern Asia, Indian	Wild	3-7	Fruit yielding

(Moraceae)	Dumur (Beng.)	Subcontinent			plants
<i>F. racemosa</i> L. (Moraceae)	Jagnya Dumur (Beng.)	Australia, Indian Sub-continent	Wild	4-7	Religious plants
<i>F. religiosa</i> L. (Moraceae)	Aswathha (Beng.)	Indian Sub-continent & Indochina	Wild	6-8	Religious plants
<i>F. virens</i> Aiton (Moraceae)	Pakur (Beng.)	India & S-East Asia	Wild	9-3	Religious plants
<i>Garcinia xanthochymus</i> Hook. f. ex T. Anderson (Clusiaceae)	Tomal (Beng.)	Northern India, Burma	Planted	3-7	Medicinal plants
<i>Gardenia gummifera</i> L.f. (Rubiaceae)	Bonanjir (Beng.)	Endemic to India	Wild	3-8	Medicinal plants
<i>G. latifolia</i> Aiton (Rubiaceae)	Jojan gandha (Beng.)	India to Bangladesh	Wild	4-11	Medicinal plants
<i>Gliricidia sepium</i> (Jacq.) Walp. (Fabaceae)	Manikanchan (Beng.); Madre Tree (Eng.)	Mexico, South & Central America	Planted	2-5	Avenue tree
<i>Gmelina arborea</i> Roxb. (Verbenaceae)	Gamar (Beng.)	Pakistan, Srilanka, Myanmar, Thailand	Planted	2-6	Timber yielding plants
<i>Grewa asiatica</i> L. (Tiliaceae)	Pharsa (Beng.)	India, Thailand, Vietnam	Wild	3-6	Medicinal plants
<i>Guazuma ulmifolia</i> Lam. (Steculiaceae)	Niapl-tunth (Beng.)	Mexico, South America	Planted; Naturalised	3-7	Medicinal plants
<i>Haldina cordifolia</i> (Roxb.) Ridsdale (Rubiaceae)	Keli Kadam (Beng.)	India, Srilanka, Vietnam, Malaysia	Wild	2-11	Timber yielding plants
<i>Holarrhena pubescens</i> (Buch. - Ham.) Wall. ex G.Don (Apocynaceae)	Kurchi (Beng. & Hind.)	Central & Southern Africa, Indian Subcontinent	Wild	2-6	Medicinal plants
<i>Kigelia africana</i> (Lam.) Benth. (Bignoniaceae)	-	Sub-Saharan Tropical Africa to S. Africa	Planted	3-5	Timber yielding plants
<i>Lagerstroemia parviflora</i> Roxb. (Lythraceae)	Sida (Beng.)	Tropical South Asia	Wild	9-2	Timber yielding plants
<i>L. speciosa</i> (L.) Pers. (Lythraceae)	Jarual (Beng.)	Tropical Southern Asia	Planted	5-12	Avenue tree
<i>Lannea coromandelica</i> (Houtt.) Merr, (Anacardiaceae)	Jiol, Tiwal (Beng.)	India, Bangladesh, Burma & Srilanka	Wild	12-5	Medicinal plants
<i>Litchi chinensis</i> Sonn. (Sapindaceae)	Lichu (Beng.)	East Asia, China	Planted	1-8	Fruit yielding plants
<i>Litsea glutinosa</i> (Lour.) C.B.Rob. (Lauraceae)	Ledachhal (Beng.)	India, S. China, Malaysia, Australia,	Wild	5-9	Timber yielding plants
<i>Livistona chinensis</i> (Jacq.) R.Br. ex Mart. (Arecaceae)	Palm (Eng.)	Bonin Island, Volcano Japan Island	Planted	11-3	Ornamental plants
<i>Lysiloma latisiliquum</i> (L.) Benth. (Fabaceae)	Subabul (Beng.)	Tropical America (Mexico)	Planted; Naturalised	9-11	Fodder plants
<i>Madhuca hexandra</i> Roxb. (Sapotaceae)	Kshirni	South-East Asia & Australia	Planted	1-8	Medicinal plants
<i>M. longifolia</i> (J. Koen. ex L.) J.F.Macbr. (Sapotaceae)	Mahua (Beng. & Hind.)	Tropical India	Wild	1-6	Oil yielding plants
<i>Magnolia champaca</i> (L.) Baill. ex Pierre (Magnoliaceae)	Swarnachampa (Beng.); Champak (Eng.)	Indomalaya including China	Planted	3-10	Ornamental plants
<i>Mallotus nudiflorus</i> (L.) Kulju & Welzen (Euphorbiaceae)	Pituli (Beng.)	Indian	Wild	12-6	Medicinal plants
<i>Mangifera indica</i> L. (Anacardiaceae)	Aam (Beng.)	Indian Sub-continent	Planted	2-7	Fruit yielding plants
<i>Manilkara zapota</i> (L.) P. Royen (Sapotaceae)	Sabeda (Beng.)	Southern Mexico	Planted	4-11	Fruit yielding plants
<i>Melaleuca leucodendra</i> (L.) L. (Myrtaceae)	-	Western Australia, Malaysia	Wild	-	Medicinal plants
<i>Melia azedarach</i> L. (Meliaceae)	Mahanim (Beng.)	Indomalaya & Australasia	Planted	4-5	Medicinal plants
<i>Mesua ferrea</i> L. (Clusiaceae)	Nageswar (Beng. & Or.)	India, Nepal, Myanmar, Thailand & Malaysia	Planted	4-11	Avenue tree
<i>Millingtonia hortensis</i> L. f. (Bignoniaceae)	Akash Neem (Beng.)	South Asia & S-East Asia	Planted	10-4	Avenue tree
<i>Mimusops elengi</i> L. (Sapotaceae)	Bakul (Beng.)	India, Srilanka	Planted	1-9	Avenue tree
<i>Morinda citrifolia</i> L.	Ach	South-East Asia, Polynesia to	Wild	8-3	Medicinal

(Rubiaceae)	(Beng.)	Australia			plants
<i>Moringa oleifera</i> Lam. (Moringaceae)	Sajina (Beng.); Drumstick (Eng.)	India	Planted	1-4	Fruit yielding plants
<i>Morus alba</i> L. (Moraceae)	Tunt /Toot phal (Beng.)	China	Planted; Naturalised	7-9	Silk Math rearing plants
<i>Muntingia calabura</i> L. (Muntingiaceae)	Sujiphal (Beng.)	Central & Tropical South America	Planted	-	Avenue Tree
<i>Myristica fragrans</i> Hoult. (Myristicaceae)	Jaiphal (Beng.)	Moluccas of Indonesia	Planted	1-12	Spice yielding plants
<i>Neolamarckia cadamba</i> (Roxb.) Bosser (Rubiaceae)	Kadam (Beng.)	South & South-East Asia	Planted	5-8	Avenue tree
<i>Oroxylum indicum</i> (L.) Kurz (Bignoniaceae)	Shona (Beng.)	Indian Sub-continent	Wild	7-3	Ornamental plants
<i>Pamburus missionis</i> (Wight) Swingle (Rutaceae)	Kayat bel (Beng.)	North America	Planted	12-5	Fruit yielding plants
<i>Peltophorum pterocarpum</i> (DC.) K. Heyne (Fabaceae)	Radhachura (Beng.)	Tropical South & Southeast Asia	Planted	11-3	Timber yielding plants
<i>Phoenix sylvestris</i> (L.) Roxb. (Arecaceae)	Khejur (Beng.)	India & Southern part of Pakistan	Wild	3-6	Fruit yielding plants
<i>Phyllanthus acidus</i> (L.) Skeels (Phyllanthaceae)	Shilamra, Noari (Beng.)	Malay Island & Madagascar	Planted	6-7	Ornamental plants
<i>Pinus roxburghii</i> Sarg. (Pinaceae)	Pine (Beng.)	Himalayas	Planted	3-4	Ornamental plants
<i>Pithecellobium dulce</i> (Roxb.) Benth. (Fabaceae)	Jilipi babla/Sain babla (Beng.)	Tropical America (Mexico)	Planted	2-8	Fruit yielding plants
<i>Plumeria rubra</i> L. (Apocynaceae)	Gorur champa (Beng.)	Mexico-Panama	Planted	10-6	Ornamental plants
<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)	Karanja (Beng.)	Tropical & Temperate Asia	Wild; Naturalised	2-5	Timber yielding plants
<i>Protium serratum</i> (Wall. ex Colebr.) Engl. (Burseraceae)	Chitrika (Beng.)	America	Naturalised	3-9	Timber yielding plants
<i>Psidium guajava</i> L. (Myrtaceae)	Peyara (Beng.)	Tropical America	Planted	3-10	Fruit yielding plants
<i>Pterocarpus marsupium</i> Roxb. (Fabaceae)	Piasal (Beng.)	Hilly region of India	Wild; Planted; Naturalised	10-1	Timber yielding plants
<i>P. santalinus</i> L.f. (Fabaceae)	Raktachandan (Beng.)	Penninsular India & Srilanka	Planted	-	Timber yielding plants
<i>Pterospermum acerifolium</i> (L.) Wild. (Sterculiaceae)	Kanak –champa (Beng.)	South-East Asia, India & Burma	Planted	3-1	Ornamental plant
<i>Pterygota alata</i> (Roxb.) R.Br. (Sterculiaceae)	Budha-Narikel (Beng); Mad tree (Eng.)	India (Pantropic)	Planted	11-6	Ornamental plants
<i>Punica granatum</i> L. (Lythraceae)	Bedana (Beng.)	Central Asia	Planted	3-10	Fruit yielding
<i>Putranjiva roxburghii</i> Wall. (Putranjivaceae)	Putranjiva (Beng.)	S-East Asia, Japan, China	Wild; Naturalised	6-3	Avenue tree
<i>Pyhllanthus emblica</i> L. (Euphorbiaceae)	Amlaki (Beng.)	Tropical South Eastern Asia	Wild, Planted	2-5	Medicinal plants
<i>Ravenala madagascariensis</i> Sonn. (Strelitziaceae)	Panthapadapa	Madagascar	Planted	3-4	Ornamental plants
<i>Roystonea regia</i> (Kunth) O.F.Cook. (Arecaceae)	Raj palm (Eng.)	Cuba, Florida, Mexico	Planted	3-8	Ornamental plants
<i>Santalum album</i> L. (Santalaceae)	Swet Chandan (Beng.)	India, Indonesia, Malay Archipelago	Planted	4-7	Timber yielding plants
<i>Sapindus emarginatus</i> Vahl (Sapindaceae)	Bara-ritha (Beng.)	S. India	Planted	9-3	Medicinal plants
<i>Saraca asoca</i> (Roxb.) Willd. (Fabaceae)	Ashok (Beng.)	S. Asia & W. Myanmar	Planted; Naturalised	3-10	Medicinal plants
<i>Schleichera oleosa</i> (Lour.) Merr. (Sapindaceae)	Kusum (Beng. & Hind.)	India	Wild	2-8	Oil yielding plants
<i>Semecarpus anacardium</i> L. f. (Anacardiaceae)	Vela (Beng.)	India	Wild	6-2	Medicinal plants
<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby (Fabaceae)	Minjari (Beng.)	South & South-East Asia, Myanmar	Planted	9-1	Timber yielding plants
<i>Sesbania grandiflora</i> (L.) Pers. (Fabaceae)	Bakphool (Beng.)	Asia	Planted	12-3	Flower yielding plants
<i>Shorea robusta</i> Gaertn. (Dipterocarpaceae)	Sal (Beng.)	India, Myanmar	Wild	3-6	Timber yielding plants
<i>Soymida febrifuga</i> (Roxb.) A. Juss. (Fabaceae)	Redwood (Eng.)	Endemic to India	Wild	3-5	Timber

(Meliaceae)					yielding plants
<i>Spathodea campanulata</i> P. Beauv. (Bignoniaceae)	Tulip tree	Tropical Africa	Planted	3-7	Avenue tree
<i>Spondias dulcis</i> Parkinson (Anacardiaceae)	Bilati Amrah (Beng.)	India, China, Srilanka, Myanmar, Mexico, Brazil	Planted	3-10	Fruit yielding
<i>S.pinnata</i> (L.f.) Kurz (Anacardiaceae)	Arura (Beng.)	India, Indonesia	Wild; Planted	2-6	Fruit yielding
<i>Sterculia foetida</i> L. (Sterculiaceae)	Jungli badam, (Beng.)	India	Planted	2-3	Fruit yielding plants
<i>Stereospermum chelonoides</i> (L.f.) DC. (Bignoniaceae)	Parul (Beng.)	India	Planted	1-8	Timber yielding plants
<i>Streblus asper</i> Lour. (Moraceae)	Sheora (Beng.); Daheya (Hind.)	Cambodia, Thailand, India, Srilanka	Wild	1-6	Medicinal plants
<i>Strychnos nux - vomica</i> L. (Strychnaceae)	Kuchila (Beng.)	India & S. East Asia	Wild	11-4	Medicinal plants
<i>Swietenia macrophylla</i> King (Meliaceae)	Bara Mehagani (Beng.)	Tropical America	Planted	3-5	Timber yielding plants
<i>Swietenia mahagoni</i> (L.) Jacq. (Meliaceae)	Mehagani (Beng.)	Tropical America	Planted	3-5	Timber yielding plants
<i>Syzygium fruticosum</i> Roxb. ex DC. (Myrtaceae)	Banjam (Beng.)	S-East Asia, China & Queensland	Wild	3-7	Fruit yielding plants
<i>S. samarangense</i> (Bl.) Merr. & L.M.Perry (Myrtaceae)	Jamrool (Beng.)	Malay	Planted	3-6	Fruit yielding plants
<i>S. aromaticum</i> (L.) Merr. & L.M. Perry (Myrtaceae)	Labanga (Beng.)	Indonesia	Planted	2-7	Spice yielding plants
<i>S. cumini</i> (L.) Skeels (Myrtaceae)	Kalla-jam (Beng.)	S, E Asia, China, Queensland	Wild	2-8	Fruit yielding plants
<i>S. jambos</i> (L.) Alston (Myrtaceae)	Gulab-jam (Beng.)	E. Asia	Planted	2-11	Fruit yielding plants
<i>Tamarindus indica</i> L. (Fabaceae)	Tetul (Beng.)	Tropical Africa	Wild; Planted	4-12	Fruit yielding plants
<i>Tectona grandis</i> L.f. (Verbenaceae)	Segun (Beng.)	India, Burma & Thailand	Planted	2-12	Timber yielding plants
<i>Terminalia arjuna</i> (Roxb.ex DC.) Wight & Arn. (Combretaceae)	Arjun (Beng.)	India, Srilanka	Naturalised	6-2	Medicinal plants
<i>Terminalia bellirica</i> (Gaertn.) Roxb. (Combretaceae)	Bahera (Beng. & Hind.)	S.Asia	Wild	4-12	Medicinal plants
<i>T.catappa</i> L. (Combretaceae)	Katha badam (Beng.)	Asia, Africa & Australia	Planted; Naturalised	4-12	Timber yielding plants
<i>T.chebula</i> Retz. (Combretaceae)	Haritaki (Beng.)	S. Asia	Wild	3-11	Medicinal plants
<i>T. tomentosa</i> Wight & Arn. (Combretaceae)	Piasal (Beng.)	India, Srilanka	Wild	4-12	Timber yielding plants
<i>Thespesia populnea</i> (L.) Sol. ex Correa (Malvaceae)	Pares Pipal (Beng.)	Australia	Wild; Naturalised	8-1	Medicinal plants
<i>Toona ciliata</i> Roem. (Meliaceae)	Tun (Beng. & Hind)	Native of India distributed in Burma, Malaysia & Australia	Planted	2-5	Avenue tree
<i>Trema orientalis</i> (L.) Blume (Ulmaceae)	Jivan /Chikun (Beng.)	Indian	Wild	3-6	Medicinal plants
<i>Ulmus integrifolia</i> Roxb. (Ulmaceae)	Chhalla, Tickly badam (Beng.)	Tropical Asia	Wild	1-6	Timber yielding plants
<i>Ziziphus jujuba</i> Mill. (Rhamnaceae)	Kul (Beng.)	South-East Asia, Africa & Australia	Planted	10-1	Fruit yielding plants

Out of recorded 153 trees (Table-1), only 46 species are considered as marker plants from this area, namely: *Ailanthus excelsa*, *Alangium salviifolium*, *Albizia saman*, *Anacardium occidentale*, *Alstonia scholaris*, *Azadirachta indica*, *Bombax ceiba*, *Borassus flabellifer*, *Buchanania cochinchinensis*, *Butea monosperma*, *Cassia fistula*, *Casuarina equisetifolia*, *Ceiba pentandra*, *Dalbergia sissoo*, *Dillenia indica*, *Diosopyros melanoxylo*, *D. montana*, *Ficus benghalensis*, *Garcinia xanthochymus*, *Gmelina arborea*, *Guazuma ulmifolia*, *Holarrhena pubescens*, *Litsea glutinosa*, *Lysiloma latisiliquum*, *Madhuca longifolia*, *Morinda citrifolia*, *Pamburus missionis*, *Phoenix sylvestris*, *Phyllanthus acidus*, *Pongamia pinnata*,

Pterocarpous marsupium, *Putrangiva roxburghii*, *Sapindus emarginatus*, *Schleichera oleosa*, *Shorea robusta*, *Streblus asper*, *Swietenia mahagoni*, *Syzygium fruticosum*, *Tamarindus indica*, *Tectona grandis*, *Terminalia arjuna*, *T. bellerica*, *T. chebula*, *Ulmus integrifolia*.

From present status of the trees species from Purba and Paschim Medinipur districts it was found that out of 153 species, only 77 species are planted; 50 species are wild; 16 species are both planted and naturalised; 6 species are both wild and planted; 3 species are both wild and naturalised and rest 1 species wild, planted and naturalised (Table-2d and 3).

Table 2a: Enumerations [Dicotyledons]

SI No	Family	Genus	Species
1.	Alangiaceae	1	1
2.	Anacardiaceae	5	5
3.	Annonaceae	1	2
4.	Apocynaceae	3	3
5.	Bignoniaceae	5	5
6.	Bombacaceae	2	2
7.	Bursaraceae	2	2
8.	Casuarinaceae	1	1
9.	Clusiaceae	3	3
10.	Cochlospermaceae	1	1
11.	Combretaceae	3	6
12.	Dilleniaceae	1	3
13.	Dipterocarpaceae	1	1
14.	Ebenaceae	1	3
15.	Elaeocarpaceae	1	1
16.	Euphorbiaceae	2	2
17.	Fabaceae	20	28
18.	Lauraceae	2	4
19.	Lecythidaceae	1	1
20.	Lythraceae	2	3
21.	Magnoliaceae	1	1
22.	Malvaceae	1	1
23.	Meliaceae	6	7
24.	Moraceae	4	9
25.	Moringinaceae	1	1
26.	Muntingiaceae	1	1
27.	Myristicaceae	1	1
28.	Myrtaceae	6	10
29.	Oxalidaceae	1	1
30.	Phyllanthaceae	2	2
31.	Polygonaceae	1	1
32.	Putrangivaceae	1	1
33.	Rhamnaceae	1	1
34.	Rubiaceae	4	5
35.	Rutaceae	2	2
36.	Santalaceae	1	1
37.	Sapindaceae	5	5
38.	Sapotaceae	3	4
39.	Simarubaceae	1	1
40.	Sterculiaceae	4	4
41.	Strychnaceae	1	1
42.	Tiliaceae	1	1
43.	Ulmaceae	2	2
44.	Verbenaceae	2	2
Total		111	142

Table 2b: Enumerations [Monocotyledons]

SI No	Family	Genus	Species
1.	Arecaceae	7	7
2.	Strelitziaceae	1	1
Total		08	08

Table 2c: Enumerations [Gymnosperms]

SI No	Family	Genus	Species
1.	Auracariaceae	1	1
2.	Pinaceae	1	1
3.	Cycadaceae	1	1
Total		03	03

Table 2d: Taxonomic Breakup

SI No	Type	Family	Genus	Species
1.	Dicotyledons	44	111	142
2.	Monocotyledons	02	08	08
3.	Gymnosperms	03	03	03
Total		49	122	153

Table 3: Present status of the tree species of Purba and Paschim Midinipur districts

Total tree species	Planted	Wild	Planted & Naturalised	Wild & Naturalised	Wild & Planted	Wild, Planted & Naturalised
153	77	50	16	3	6	1

Table 4: Economically important trees of undivided Medinipur district showing their percentage distribution

Sl. No.	Plants used for	Total no. of species	% distribution
1.	Avenue tree	11	7.189
2.	Dye yielding	01	0.653
3.	Fibre yielding	02	1.21
4.	Fodder yielding	01	0.653
5.	Fruit yielding	32	20.915
6.	Gum yielding	01	0.653
7.	Medicinal	34	22.22
8.	Oil yielding	05	3.267
9.	Ornamental	23	15.032
10.	Religious purposes	03	1.960
11.	Resin yielding	01	0.653
12.	Silk moth rearing	01	0.653
13.	Spice yielding	04	2.614
14.	Timber yielding	34	22.22
Total		153	100

Regarding the uses of economically important tree species of Purba and Paschim Medinipur districts (Table-4) it is found that timber yielding as well as medicinal plants occupy the first position (22.22%) from uses of these plants and are followed by fruit yielding (20.91%), ornamentals (15.03%), avenue trees (7.18%), oil yielding (3.26%), spice yielding (2.61%), religious plants (1.96%), fibre yielding plants (1.30%) respectively. The rests species one in each are dye yielding, (0.65%), food plants (0.65%), fodder (0.65%), gum (0.65%), resin (0.65%), silk moth rearing plants (0.65%) respectively.

Regarding the use of the timber yielding plants, following 34 species are recorded. They are *Acacia auriculiformis*, *Adenanthra pavonina*, *Ailanthus excelsa*, *Albizia amara*, *A. lebeck*, *A. procera*, *Anogeissus latifolia*, *Calophyllum inophyllum*, *Dalbergia lanceolaria*, *D. sissoo*, *Desmodium oojeinense*, *Dimocarpus longan*, *Diospyros melanoxylon*, *Gmelina arborea*, *Haldina cordifolia*, *Kigelia africana*, *Lagerstroemia parviflora*, *Litsea glutinosa*, *Peltophorum pterocarpum*, *Pongamia pinnata*, *Protium serratum*, *Pterocarpus marsupium*, *P. santalinus*, *Santalum album*, *Senna siamea*, *Shorea robusta*, *Soymida febrifuga*, *Stereospermum chelonoides*, *Swietenia macrophylla*, *S. mahagoni*, *Tectona grandis*, *Terminalia catappa*, *T. tomentosa* and *Ulmus integrifolia*.

The medicinally important 34 species are *Aegle marmelos*, *Alangium salvifolium*, *Alstonia scholaris*, *Antidesma acidum*, *Aphanamixis polystachya*, *Azadirachta indica*, *Cinnamomum camphora*, *Coccoloba uvifera*, *Diospyros malabarica*, *D. montana*, *Elaeocarpus angustifolius*, *Garcinia xanthochymus*, *Gardenia gummifera*, *G. latifolia*, *Grewa asiatica*, *Guazuma ulmifolia*, *Holarrhena pubescens*, *Lannea coromandelica*, *Madhuca hexandra*, *Mallotus nudiflorus*, *Melaleuca leucodendra*, *Melia azedarach*, *Morinda citrifolia*, *Phyllanthus emblica*, *Sapindus emarginatus*, *Saraca asoca*, *Semecarpus anacardium*, *Streblus asper*, *Strychnos nux- vomica*, *Terminalia arjuna*, *T. bellirica*, *T. chebula*, *Thespesia populnea*, *Trema orientalis*.

Regarding the fruit yielding plants, there are 32 species are recorded. They are *Anacardium occidentale*, *Annona reticulata*, *A. squamosa*, *Areca catechu*, *Artocarpus heterophyllus*, *Averrhoa carambola*, *Borassus flabellifer*, *Buchanania cochinchinensis*, *Cocos nucifera*, *Dillenia aurea*, *D.indica*, *D. pentagyna*, *Erythrina suberosa*, *Ficus hispida*, *Litchi chinensis*, *Mangifera indica*, *Manilkara*

zapota, *Moringa oleifera*, *Phoenix sylvestris*, *Pamburus missionis*, *Pithecellobium dulce*, *Psidium guajava*, *Punica granatum*, *Sesbania grandiflora*, *Spondias pinnata*, *Sterculia foetida*, *Syzygium cumini*, *S. fruticosum*, *S. jambos*, *S. samarangense*, *Tamarindus indica*, *Ziziphus jujuba*.

The following 23 species are ornamental plants: *Albizia saman*, *Araucaria columnaris*, *Bauhinia purpurea*, *B. variegata*, *Callistemon citrinus*, *Caryota urens*, *Cassia fistula*, *Casuarina equisetifolia*, *Couroupita guanensis*, *Cycas revoluta*, *Delonix regia*, *Erythrina variegata*, *Ficus elastica*, *Livistonia chinensis*, *Magnolia champaca*, *Oroxylum indicum*, *Phyllanthus acidus*, *Pinus roxburghii*, *Plumeria rubra*, *Pterospermum acerifolium*, *Pterygota alata*, *Ravenala madagascariensis*, *Roystonea regia*.

There are 11 avenue tree species are recorded. They are *Ficus benghalensis*, *Gliricidia sepium*, *Lagerstroemia speciosa*, *Mesua ferrea*, *Millingtonia hortensis*, *Mimusops elengi*, *Muntingia calabura*, *Neolamarekia cadamba*, *Putranjiva roxburghii*, *Spathodea campanulata* and *Toona ciliata*.

There 5 species are oil yielding plants. They are *Cochlospermum religiosum*, *Corymbia citriodora*, *Eucalyptus globulus*, *Madhuca longifolia*, *Scheleichera oleosa*. There are 4 species are spice yielding plant. They are *Cinnamomum tamala*, *C. verum*, *Myristica fragrans*, *Syzygium aromaticum*. There are 3 species are recorded as religious plants. They are *Ficus racemosa*, *F. religiosa*, *F. virens*. Regarding fibre yielding plants, 2 species are recorded. They are *Bombax ceiba*, *Ceiba pentandra*. The rests species one in each is dye yielding (*Butea monosperma*), fodder yielding (*Lysiloma latisiliquum*), gum yielding (*Acacia nilotica*), resin yielding (*Commiphora mukul*), silk moth rearing plant (*Morus Alba*) respectively. The only one species *Soymida febrifuga* (Roxb.) A. Juss. Is recorded from India and Srilanka (FWB, 1997) [1]. The species *Gardenia gummifera* is endemic to India (Table-1).

In addition to the economic importance shown above on the basis of percentage, some other importance may be mentioned. Some trees may produce cork, others jiggery, fan, mats, etc. While most of the plants shed old leaves and branches to enrich the soil fertility. The trees make small and large shelters for small or large animals to dwell in or on making nests, homes or hives etc. The human beings also take shelter under the trees when the sun rises above the heads.

Socio-economic status of most of tribes and the poor people of Purba and Paschim Medinipur districts are mostly controlled by forest tree products. The valuable woods of Sal, Segun, Piasal, Sissoo, Gamar etc. are supplied to different districts of West Bengal to meet their needs improving economic status of the district. The tribal people and poor in general living in the vicinity of forests and jungles use the trees and their by-products for their livelihood. They collect fuel wood, green leaves of sal, fruits and flowers of trees as and when available. They use these for their need and sell the rest in the market. They also use these plants as medicinal plants.

4. Conservation and Strategies

Trees are used and exploited indiscriminately without proper conservation resulting in different stages of rare, vulnerable, endangered and extinct conditions. Special care should be taken to maintain biodiversity and ecological balance by implying *ex-situ* and *in-situ* conservation strategies.

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