

Expt. No. 1

Identification of Multipurpose Trees (MPTs) and their Benefits in Agroforestry

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Multipurpose tree

Multipurpose trees (MPTs) are the tree species that are grown to provide more than one significant crop of function or form. These may include soil conservation, shade, fuelwood, timber, fibre, fodder, food or medicine.

Tree species can be multipurpose in two ways:

- **A single tree can yield more than one crop.** For example, *Gliricidia sepium* as living fences that provide fuel, fodder, and green manure for agricultural crops — all at the same time.
- **Trees of the same species, when managed differently, can yield different crops.** for example, *Leucaena leucocephala* is managed so that some trees will principally yield wood while others principally produce leaf meal.

Benefits/services from MPTs

The benefits from MPTs can be summarized as follows:

A. Food:

1. Human food from trees (fruits, nuts, leaves etc.)
2. Livestock feed from trees.
3. Improved nutritional status of food and feed crops through:
 - i. Nitrogen fixation.
 - ii. Access to greater volume of soil nutrients through deep rooting trees.
 - iii. Improve availability of nutrient associated with higher cation exchange capacity and organic matter levels.
4. Increased crop production through soil and water conservation.

B. Energy:

1. Firewood for direct combustion
2. Pyrolytic conversion products (charcoal, oil, gas etc.).
3. Produces gas from wood or charcoal feed stocks.
4. Ethanol from fermentation of high-carbohydrate fruits.
5. Methanol from destructive distillation or catalytic synthesis processes using woody feedstock.
6. Oils, latex, other combustible saps and resins.

C. Shelter:

1. Building materials for shelter construction.
2. Shade trees for humans, livestock's and shade loving crops.
3. Windbreaks and shelterbelts for protection of settlements, cropland and pastures.
4. Living fences.

D. Raw materials for processing:

1. Wood for a variety of craft purpose.
2. Fiber for weaving industries.
3. Fruits, nuts etc. for drying and other food-processing industries.
4. Tannins, essentials oil, medicinal ingredients etc.

E. Cash income

1. Direct cash benefits from sale of above-listed productions.
2. Indirect cash benefits from increased production of crops or livestock.

F. Long term benefits:

1. Increased crop productivity.
2. Sustain crop productivity.
3. Improve environmental condition.
4. Improve socio-economic condition.

Identification of Trees and Benefits/Services from MPTS

Lists of some MPTS and their common uses

Sl. No	Local name	English name	Scientific name	Family	Uses
1	Sissoo	Indian red wood	<i>Dalbergia sissoo</i>	Papilionaceae	Fuelwood, Timber
2	Mander (lal)	Coral tree	<i>Erythrina indica</i>	Papilionaceae	Wood, fuelwood
3	Tentul	Tamarind	<i>Tamarindus indica</i>	Papilionaceae	Fruit, medicine, fuelwood
4	Gliricidia	Gliricidia	<i>Gliricidia sepium</i>	Papilionaceae	Wood, medicine, fuelwood
5	Bakphul	Swamp pea	<i>Sesbania grandiflora</i>	Papilionaceae	Wood, fodder, gum, tannin
6	Ipil-Ipil	Ipil-Ipil	<i>Leucaena leucocephala</i>	Mimosaceae	Fuel, fodder, medicine
7	Kalo koro	Black siris	<i>Albizia lebbek</i>	Mimosaceae	Timber, fodder
8	Sada koro	White siris	<i>Albizia procera</i>	Mimosaceae	Timber, fodder
9	Randi koro	Raintree	<i>Samanea saman</i>	Mimosaceae	Timber, fodder
10	Akashmoni/ sarnajhuri	Golden shower	<i>Acacia auriculiformis</i>	Mimosaceae	Wood, Fuelwood
11	Babla	Indian gum tree	<i>Acacia arabica</i>	Mimosaceae	Timber, fodder, medicine, gum
12	Minjiri	Yellow cassia	<i>Cassia siamea</i>	Caesalpinaceae	Fodder, medicine, tannin
13	Sonalu	Indian laburnum	<i>Cassia fistula</i>	Caesalpinaceae	Wood, fodder, medicine, tannin
14	Krishnachura	Peacock flower	<i>Delonix regia</i>	Caesalpinaceae	Timber, fuelwood
15	Ashok	Asoka tree	<i>Saraca asoca/indica</i>	Caesalpinaceae	
16	Katbadam	Indian almond	<i>Terminalia catappa</i>	Combretaceae	Timber, medicine, gum
17	Arjun	Arjun	<i>Terminalia arjuna</i>	Combretaceae	Timber, medicine, fuelwood
18	Bahera	Bahera	<i>Terminalia bellerica</i>	Combretaceae	Timber, medicine, tannin
19	Amloki	Aonla	<i>Phyllanthus emblica</i>	Euphorbiaceae	Fruit, fuelwood, fodder
20	Eucalyptus	Eucalyptus	<i>Eucalyptus camaldulensis</i>	Myrtaceae	Fodder, medicine
21	Tut	Mulberry	<i>Morus alba</i>	Moraceae	Wood, fodder, fuelwood, medicine, silkworm
22	Bot	Bengal fig	<i>Ficus benghalensis</i>	Moraceae	Timber, fuelwood
23	Kathal	Jackfruit	<i>Artocarpus heterophyllus</i>	Moraceae	Fruit, timber fuelwood, fodder
24	Deshi Rubber	Rubber tree	<i>Ficus elastica</i>	Moraceae	Timber fuelwood, gum
25	Dewa	Monkey jack	<i>Artocarpus lakoocha</i>	Moraceae	Timber fuelwood
26	Simul(lal)	Silk cotton tree	<i>Bombax ceiba</i>	Bombacaceae	Cotton, timber fuelwood
27	Bash	Bamboo	<i>Bambusa sp</i>	Gramineae	Building material, fuelwood, pulp
28	Tal	Palmyra palm	<i>Borassus flabellifer</i>	Palmaceae	Fruit, fuelwood
29	Khejur(Deshi)	Date palm(local)	<i>Phoenix sylvestris</i>	Palmaceae	Juice, fuelwood
30	Narikel	Coconut	<i>Cocos nucifera</i>	Palmaceae	Fruit, fuelwood
31	Supari	Betel nut	<i>Areca catechu</i>	Palmaceae	Fruit, fuelwood
32	Jalpai	Olive	<i>Olea europaea</i>	Oleaceae	Timber, fruit, fuelwood
33	Jarul	Pride of India	<i>Lagerstroemia speciosa</i>	Lythraceae	Timber, medicine, tannin

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34	Sajna	Drum stick	<i>Moringa oleifera</i>	Moringaceae	Fodder, medicine, Vegetable
35	Garjan	Garjan	<i>Dipterocarpus turbinatus</i>	Dipterocarpaceae	Timber, fuelwood, medicine
36	Sal	Sal	<i>Shorea robusta</i>	Dipterocarpaceae	Timber, fuelwood
37	Gab (Deshi)	River ebony	<i>Diospyros peregrina</i>	Ebenaceae	Fruit, fuelwood
38	Gab (Bilati)	Velvet apple	<i>Diospyros discolor</i>	Ebenaceae	Fruit, fuelwood
39	Chalta	Indian dillenia	<i>Dillenia indica</i>	Dilleniaceae	Fruit, fodder fuelwood
40	Jhau	Australian Oak	<i>Casuarina equisetifolia</i>	Casuarinaceae	Wood, tanin, pulp
41	Shegun	Teak	<i>Tecktona grandis</i>	Verbenaceae	Timber, fuelwood
42	Kadam	Cadamba	<i>Anthocephalus cadamba</i>	Rubiaceae	Timber, fuelwood
43	Bara mahogani	Bastard mahogany	<i>Swietenia macrophylla</i>	Meliaceae	Timber, fuelwood
44	Mahogani	Mahogani	<i>Swietenia mahogani</i>	Meliaceae	Timber, fuelwood
45	Neem	Neem/margosa tree	<i>Azadirachta indica</i>	Meliaceae	Timber, fuelwood, fodder, medicine, oil, tanin
46	Gora neem	Bead tree	<i>Melia azedarach</i>	Meliaceae	Timber, fuelwood, medicine
47	Debdaru	Mast tree	<i>Polyalthia longifolia</i>	Annonaceae	Timber, fuelwood
48	Am	Mango	<i>Mangifera indica</i>	Anacardiaceae	Fruit, timber fuelwood, fodder
49	Kajubadam	Cashew nut	<i>Anacardium occidentale</i>	Anacardiaceae	Fruit, fuelwood
50	Cherry	Cherry	<i>Prunus avium</i>	Rosaceae	Fruit, timber, fuelwood, medicine.