## *Expt. No. 2*

# Studies on Silvan Features of Different MPTs

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## White siris (*Albizia procera*)

**Botanical features:**

A tall, sub-deciduous tree; bark nearly smooth, yellowish grey. **Leaves** bipinnate, leaf rachis 25-40 cm long. pinnae 2-6 pairs, 12-22 cm long, often with glands between the upper 1-2 pairs of leaflets; Leaflets 6-16 pairs, 2.5 x 1.6-2.0 cm, oblique, oblong-ovate or rhomboid-oblong. **Flowers** sessile, yellowish-white in heads about 1.5 cm across; heads usually in fascicles of 2-5, sometimes solitary, arranged in large terminal panicles. Fruit a pod, 10-20 x 1.5-2.0 cm, reddish brown, seeds 6-12. **Flowering time:** May to September; **Fruiting time :** October to February.

**Occurrence in Bangladesh:**

Forests of Sylhet, Chittagonj and Dhaka-Mymensingh. Also planted in many districts and a most common tree in villages in mid, eastern and southern parts of the country.

**Propagation and management:**

It can be easily raised from seeds and grows readily from cuttings. It is a fast growing tree, can be lopped every year, and is reported to coppice well.

**Uses:**

Used for house posts, agricultural implements, furniture, construction of bridges and other purposes, Leaves provide a medium fodder.

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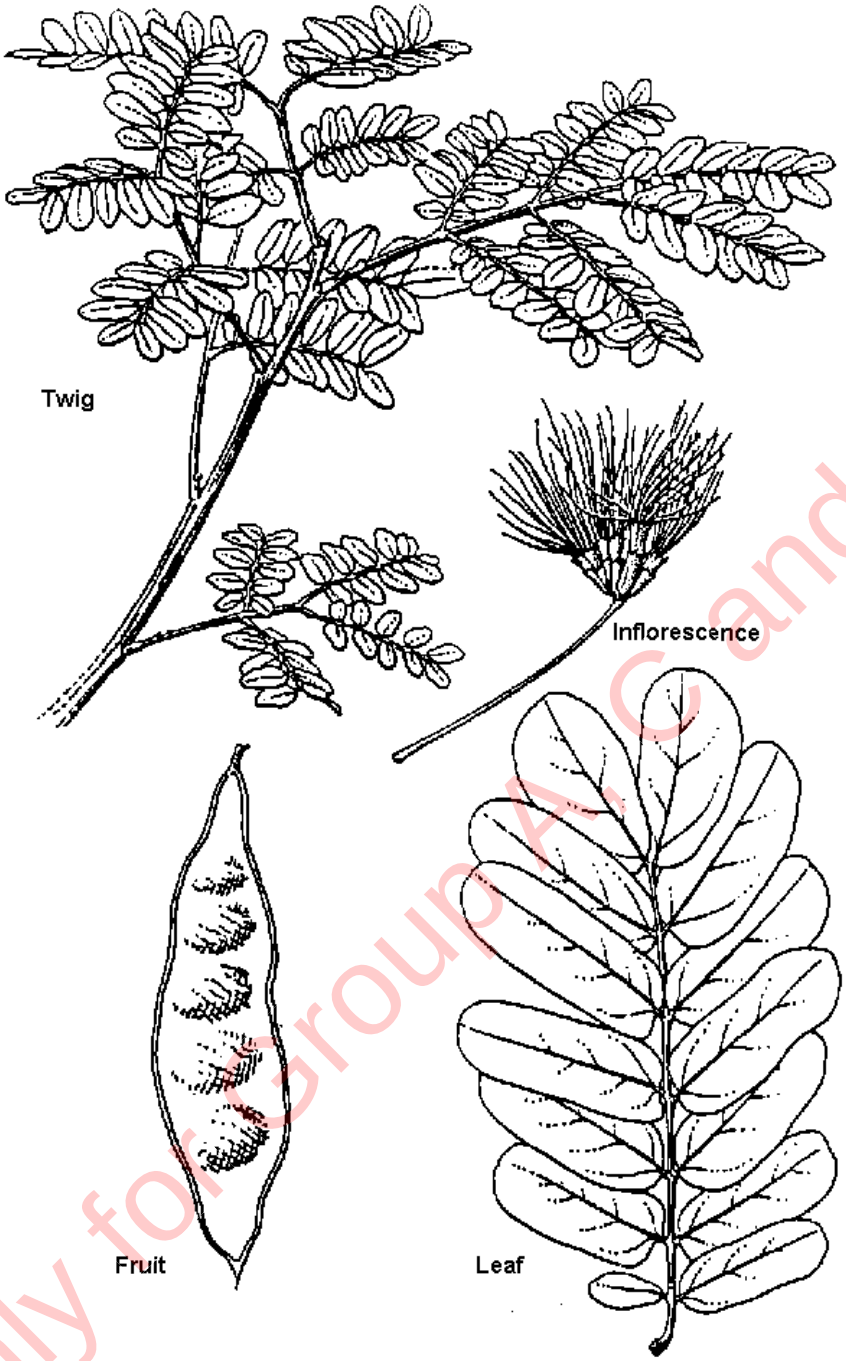


**Fig. Silvan feature of *Albizia procera***

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## Rain tree (*Albizia saman*)

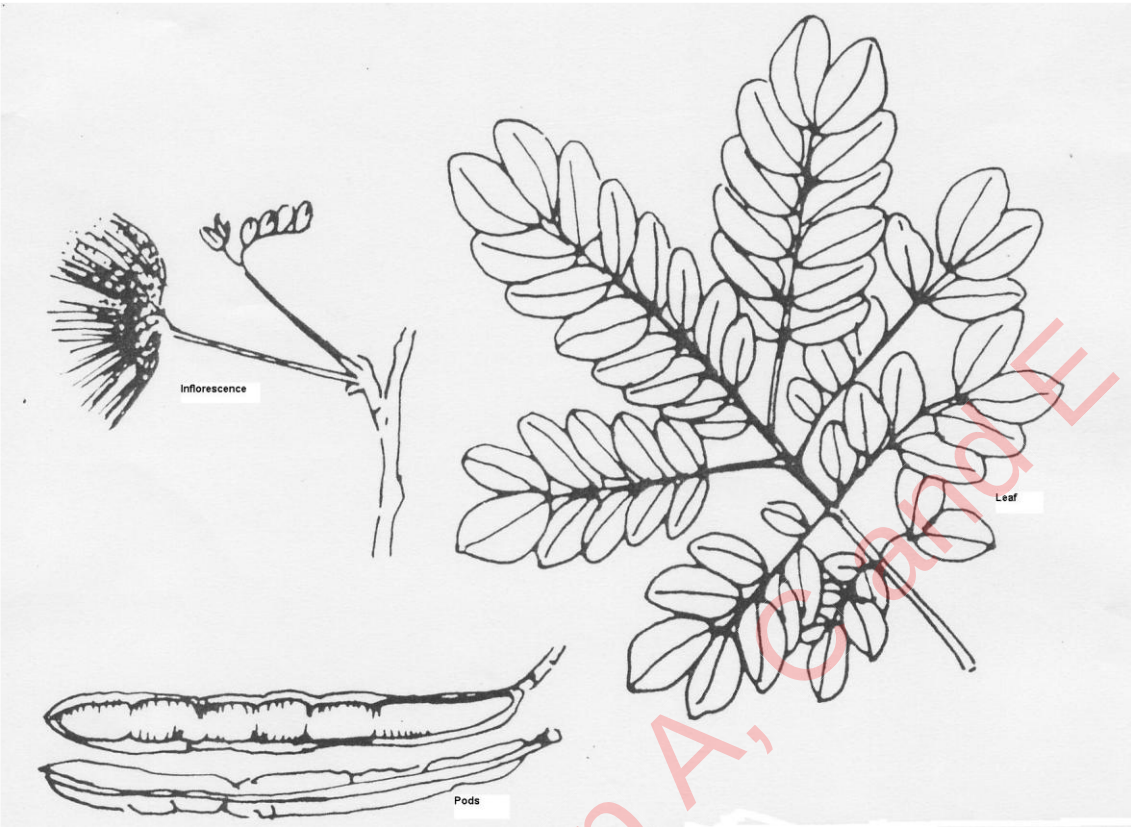


**Fig. Silvan feature of *Albizia saman***

**Botanical features:**

A medium-sized to large tree with a spreading crown. **Leaves** bipinnate upto 45 cm long, pinnae usually 12, upto 20 cm long, the outer the largest, leaflets smaller downwards, 6-10 pairs in the upper pinnae, 2-3 pairs in the lowermost pinnae; leaflets 2.5-5.0 x 1.2-2.5 cm, obliquely rhombiod or ovate-oblong. **Flowers** in dense heads in pubescent peduncles. **Fruit** a pod, 12-22 x 1.5 cm, septate, indehiscent. **Flowering time;** March-October; **Fruiting time:** November-March.

**Occurrence in Bangladesh:**

Planted in all the districts as an avenue tree and in homesteads especilly in southen districts.

**Propagation and management:**

It is easily propagated from both seeds and cuttings. The tree is fast growing. Its branches can be lopped periodically, and coppices fairly.

**Uses:**

Timber is used for making furniture and for other carpentary works. This species can be recommended also as a fuel crop. The young pods are eaten by cattle. The pods when fed to cows are believed to increase the quality of milk.

Only for Group A, Card F

## Yellow Cassia (*Cassia siamea*)

**Fig. Silvan feature of *Cassia siamea***

**Botanical Features:**

A moderate sized evergreen tree. **Leaves** paripinnate, about 30 cm long; leaflets 12-20, 5-8 cm long, elliptic-oblong, glabrous. **Flowers** yellow in large terminal panicles which are often 30 cm long. **Fruit** a flat pod, 15-25 cm long, thickened at both sutures, many seeded. Fairly fast growing. **Flowering time:** January-December; **Fruiting time:** December-March.

**Occurrence in Bangladesh:**

Planted in most districts of Bangladesh along roadsides; and sometimes in homesteads.

**Propagation and management:**

Propagated by raising seedlings and planting them when large enough. It can also be Propagated through suckers. It coppices moderately and can be lopped and pollard.

**Uses:**

Planted as ornamental tree. Generally used as fuelwood, and for posts and carpentary work. Leaves and green pods are often used as fodder.

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## Margosa Tree/ Neem (*Azadirachta indica*)

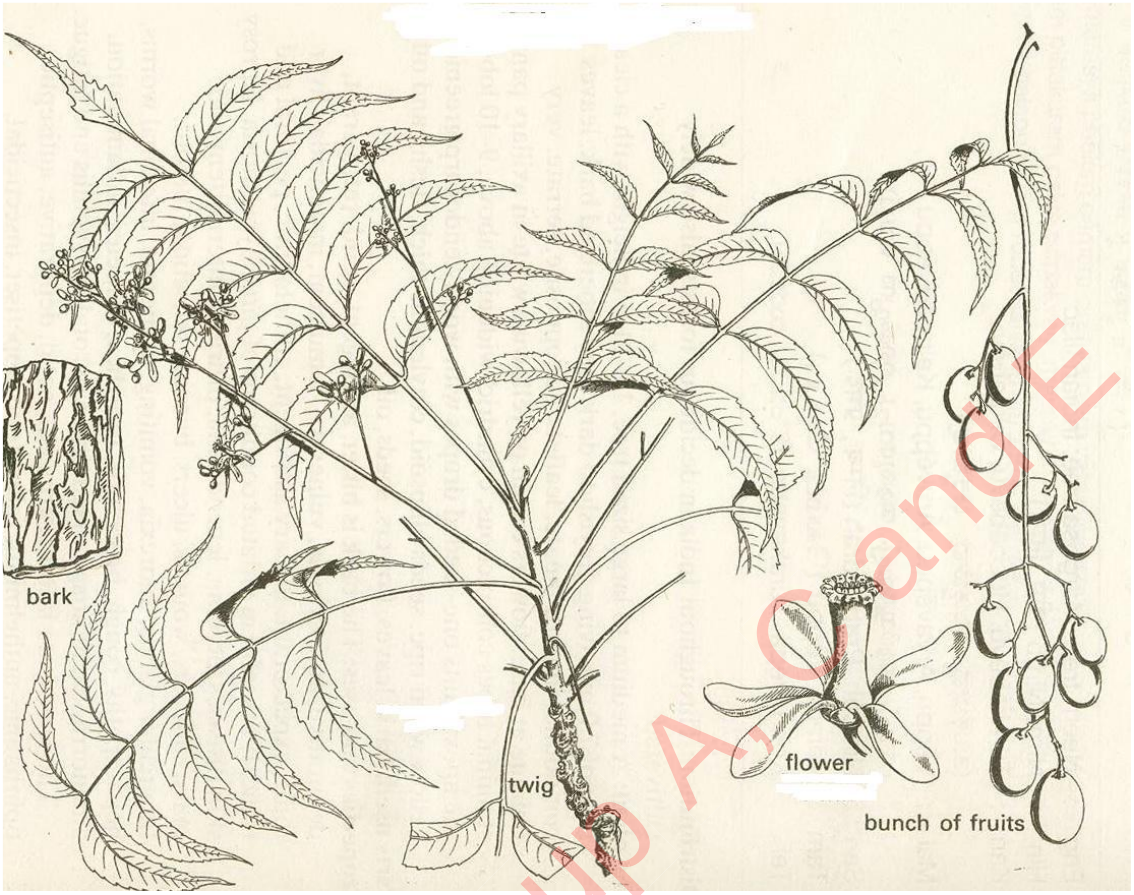


**Fig. Silvan feature of *Azadirachta indica***

**Botanical features:**

A large to middle-sized tree. **Leaves** imparipinnate, 22-40cm long crowded towards the ends of branches; leaflets 9-15, terminal often aborted, subopposite, obliquely lanceolate to ovate-lanceolate or falcate. **Flowers** white in axillary, glabrous panicle. **Fruit** a drupe, ovoid to oblong, 1 seeded, greenish yellow when ripe. **Flowering time:** March-April; **Fruiting time:** July-August.

**Occurrence in Bangladesh:**

Cultivated in homesteads, village groves and institution yards through the country. More common in Rajshahi and neighbouring semi-arid areas.

**Propagation:**

Generally propagated through seeds. Coppicing ability is good and coppice growth is much faster than that of seedlings.

**Uses:**

Wood is used in building as boarding and panels, for toys, carts, troughs, for backing of cupboards, and for sides and bottoms of drawers. Trees more often grown for shade and ornamental purposes. Leaves are used in medicines. Seeds produce insecticides and non-edible margosa oil. Bark has high tannin content (12-14%).

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## Bead Tree (*Melia azedarach*)

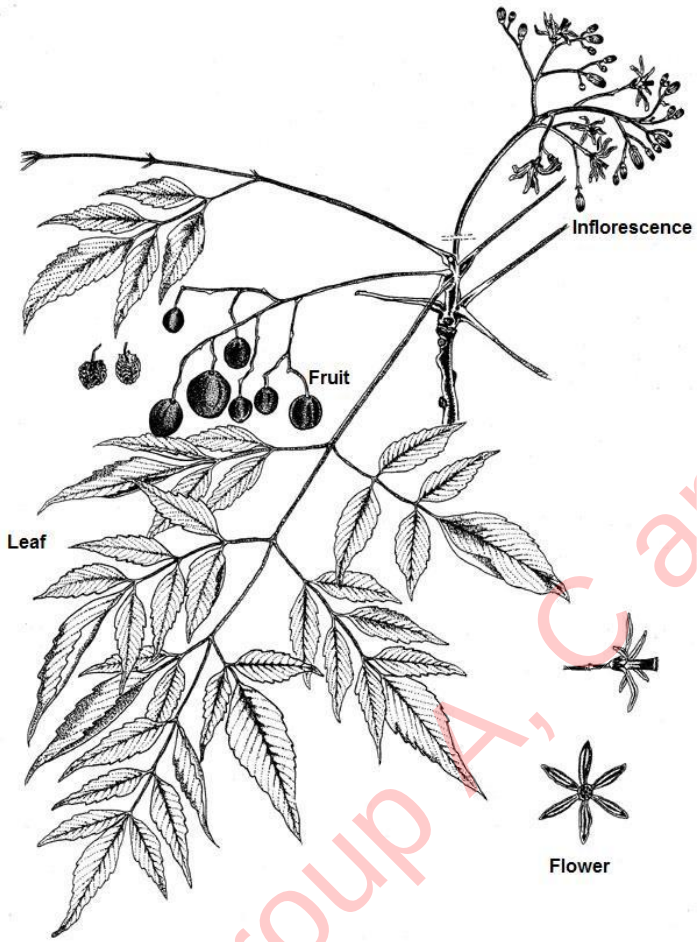


**Fig. Silvan feature of *Melia azedarach***

**Botanical features:**

Usually a small or middle-sized, fast growing, deciduous tree. **Leaves** 2-pinnate, leaflets 25-50 x 0.6-2.5 cm, somewhat obliquely ovate, unequally serrate. **Flowers** lilac-blue, in numerous axillary cymes formed into panicles. **Fruit** a drupe, 1.2-1.6 cm across, globose, yellow when ripe. **Leaves fall** during the cold season and reappear during the months of March and April. **Flowering time:** March-May; **Fruiting time:** December-January.

**Occurrence in Bangladesh:**

Planted in most of the districts.

**Propagation:**

Propagated by seeds, which however do not retain viability for long. It can also be propagated by stumps and by layering. It coppices and pollards well and can be lopped. It also produces root suckers.

**Uses:**

Wood is hard and durable and is used for house building, furniture and many other purposes. The bark, gum, leaves and flowers are all used in medicine. Leaves are used as scarcity fodder.

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## Golden Shower (*Acacia auriculiformis*)

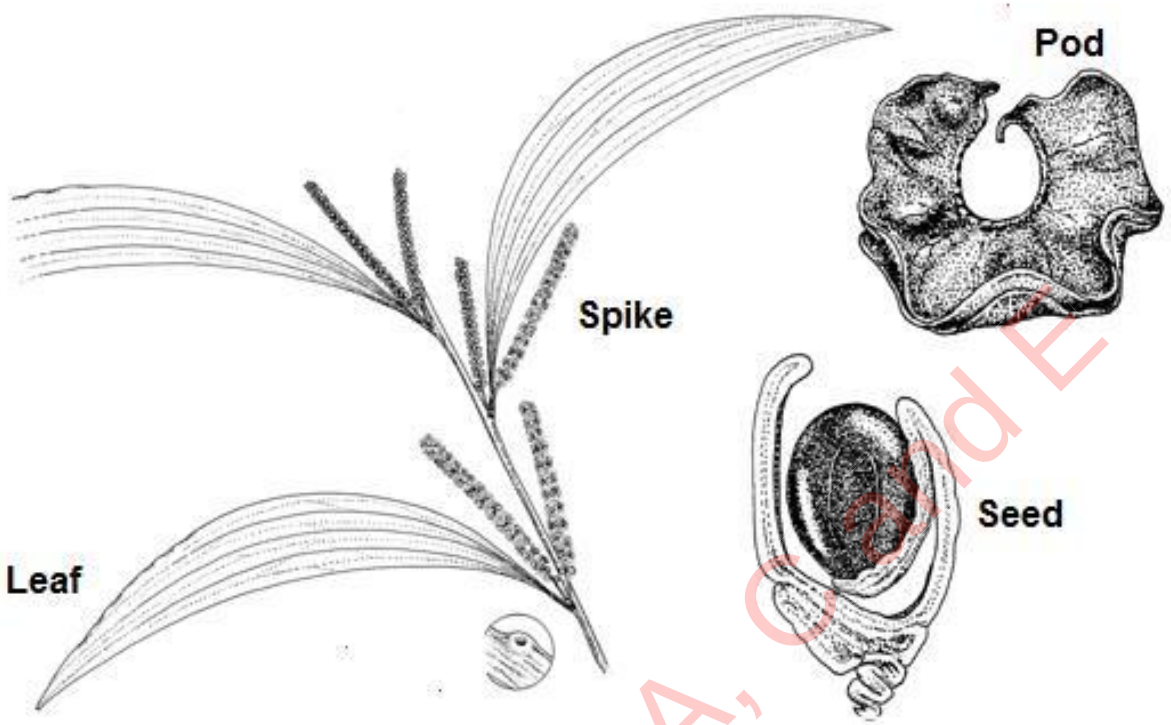


**Fig. Silvan feature of *Acacia auriculiformis***

**Botanical features:**

A fast growing middle sized tree of variable stem form, sometimes straight; bark greyish brown, rough with longitudinal fissures. Phyllodes straight or falcate, 10-16 x 1.5-2.5 cm. entire, 3 prominent longitudinal veins with many fine crowded secondary ones; a distinct gland at the base of petiole. **Flowers** yellow in spike upto 8 cm long. **Fruit** a pod, 8-12 cm long, initially straight but twisted at maturity. **Flowering time:** July-September; **Fruiting time:** December-February.

**Occurrence in Bangladesh:**

Planted though out the country

**Propagation and management:**

Generally it is propagated by seeds.

**Uses:**

It is an ideal fuel wood tree and is planted in many parts of the world. The timber is used for furniture as well.

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## Mangium (*Acacia mangium*)

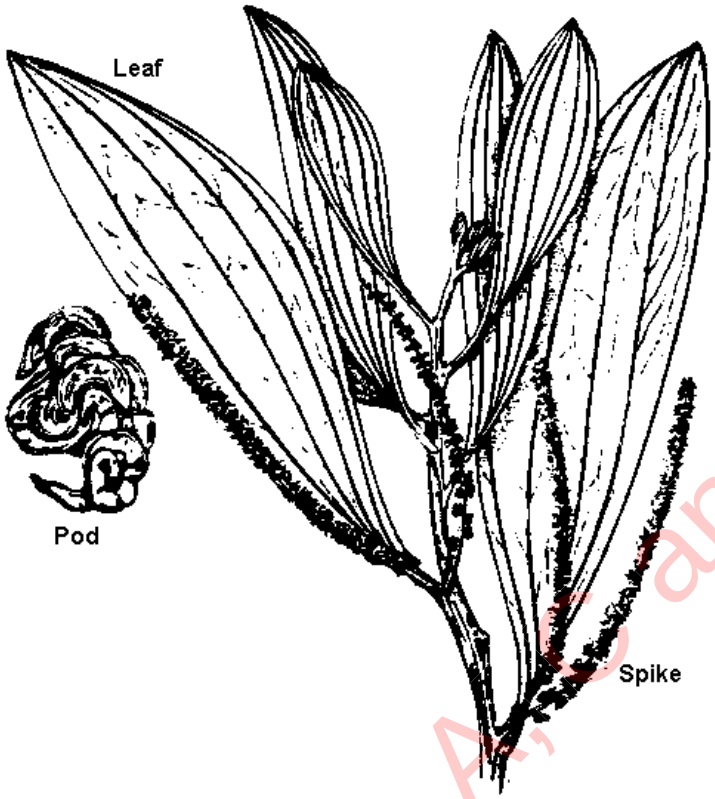


**Fig. Silvan feature of *Acacia mangium***

**Botanical features:**

Acacia mangium is a single-stemmed evergreen tree or shrub that grows to 25-35 m in height. Bark in older trees is rough, hard, fissured near the base, greyish-brown to dark brown, inner bark pale brown. Phyllodes are large and wider than other acacia species. A gland (extra floral nectary) is conspicuous at the base of the phyllode. Inflorescence is composed of many tiny white or cream flowers in spikes. Flowers are quinqeufloral; the calyx is 0.6-0.8 mm long, with obtuse lobes; corolla 1.2-1.5 mm long. Peduncles are canescent and pubescent, about 1 cm long; rachis is also canescent and pubescent. The **flowers appear** from May-June; the **seed** matures from late October to December.Pods are broad, linear and irregularly coiled when ripe. They are membranous or slightly woody, inconspicuously veined. 3-5 mm wide and 7-10 cm long. Ripening pods change from green to brown, stiff and dry. Seeds are black and shiny with shape ranging from longitudinal, elliptical, ovate to oblong, 3-5 mm by 2-3 mm. The seeds are arranged longitudinally and attached to the pods by an orange to red folded funicle.

**Occurrence in Bangladesh:**

In Bangladesh it has been included in both hill and village plantation programme as a fast growing species. Also found in homestead in many districts.

**Propagation and Management:**

It is generally propagated from seed. It coppices fairly.

**Uses:**

It is good fuelwood tree. The wood is also suitable for furniture and cabinet making.

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## Eucalyptus (*Eucalyptus camaldulensis*)

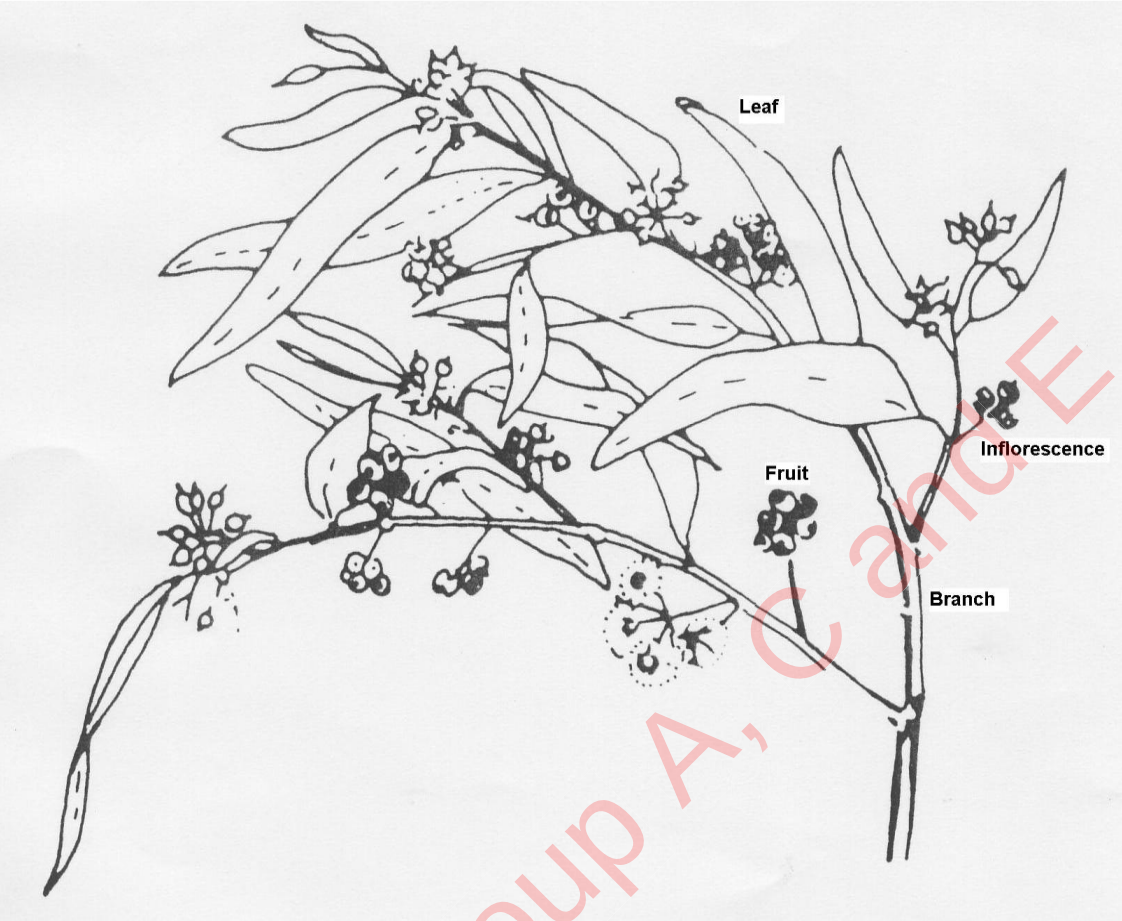


**Fig. Silvan feature of *Eucalyptus camaldulensis***

**Botanical Features:**

A tall evergreen tree with long, straight bole, and gently ascending branches with graceful, drooping leaves; bark ash-gray to white, smooth. peels off in long strips. **Leaves** simple, alternate, 8-25 x 2-4 cm, lanceolate, pendulous. **Flowers** 1 cm in diameter, white in globose heads arranged in lateral or supra-axillary umbels. **Fruit** a capsule, several clustered at the ends of slender stalks, operculum hemispherical and sharply beaked, opening with 4 valves. **Flowering time:** August-October; **Fruiting time:** October-December.

**Occurrence in Bangladesh:**

Recently introduced; planted in forests and social forestry programs and homesteads in many districts.

**Propagation:**

Generally propagated through seeds and can be multiplied also through cuttings. Pollards and coppices well.

**Uses:**

Utilized as fuelwood, poles and houseposts; sawn timber can be used to make furniture. An essential oil can be distilled from fresh leaves.

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## Ipil-Ipil (*Leucaena leucocephala*)

**Fig. Silvan feature of *Leucaena leucocephala***

**Botanical Features:**

A fast growing, low tree upto 5m tall, bark brownish, smooth. **Leaves** feathery, bipinnate, pinnae 4-8 pairs, 5-9 cm long, leaflets 10-26 pairs, linear, oblong to lanceolate, 10 x 3 mm. **Flowers** small, yellowish-creamy in globose heads. Fruits straight, flat pods growing in large bunches. **Flowering time:** March-April and August-October; **Fruiting time:** December-February.

**Occurrence in Bangladesh:**

Recently have been planted in many districts.

**Propagation:**

Propagated through seeds.

**Uses:**

Fuelwood; leaves as fodder; wood is hard, not much used.

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## Mahogani (*Swietenia macrophylla*)

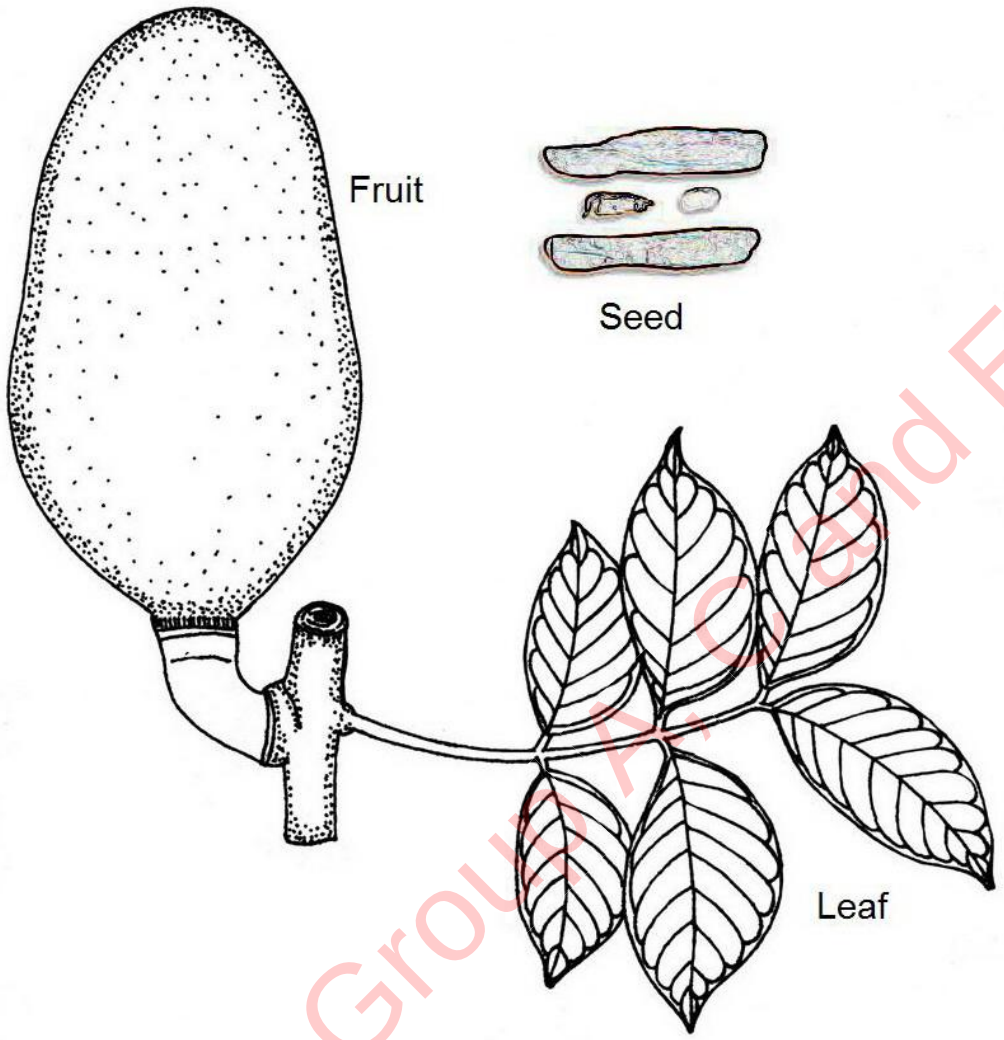


**Fig. Silvan feature of *Swietenia macrophylla***

**Botanical Features:**

A tall evergreen tree with rough bark, which flakes off in small patches. **Leaves** paripinnate, upto 60 cm long; leaflets 6-12, ovate-lanceolate, acuminate, slightly oblique, upto 20.5 cm long; and 1.5-5 cm wide, petiole very short. **Flowers** greenish white, less than 1 cm across in short axillary panicles. **Fruit** a capsule, about 1.5 cm by 7.6 cm, erect. **Flowering time:** March-April; **Fruiting time:** December-February.

**Occurrence in Bangladesh:**

Cultivated as an avenue tree throughout the country. Also planted as a timber tree in homesteads.

**Propagation and management:**

The species is regenerated naturally from seed.

**Uses:**

It is used in jetty piles, furniture making and plywood manufacturing.

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## Jackfruit (*Artocarpus heterophyllus*)

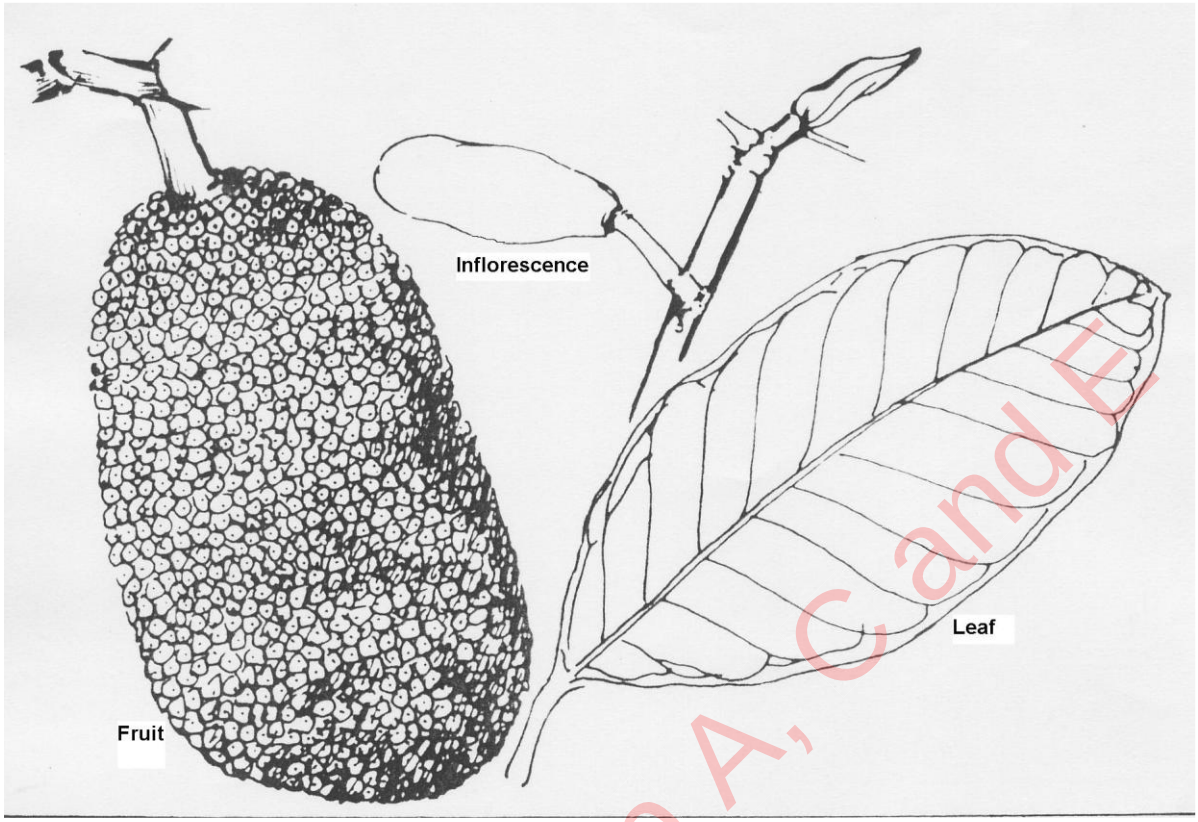


**Fig. Silvan feature of *Artocarpus heterophyllus***

**Botanical features:**

A large evergreen tree with large dense crown; young shoots with stiff hairs. **Leaves** simple, alternate, 7-20 x 4-8 cm , elliptic, obovate, entire, shortly acuminate, coriaceous, glabrous, dark green and glossy above, pale and rough beneath. **Flower** heads in bud enclosed in large, leathery, deciduous, stipulate sheath. **Fruit** a fleshy more or less cylindrical, syncarp, 30-90 cm long, covered with pointed tubercules, hanging on short stalks. **Flowering time:** November-March; **Fruiting time:** April- September.

**Occurrence in Bangladesh:**

Cultivated in all the districts of Bangladesh in homesteads and on roadsides. In Gazipur, Tangail, Chittagong and some other districts it is planted in orchards.

**Propagation and management:**

Propagated by seeds and cuttings. Can be thinly pruned.

**Uses:**

Timber is used for furniture making, planking and panelling. Fruits and seeds are edible. Leaves are used as fodder. It is considered as the best multipurpose tree species in the country.

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## Sissoo (*Dalbergia sissoo*)

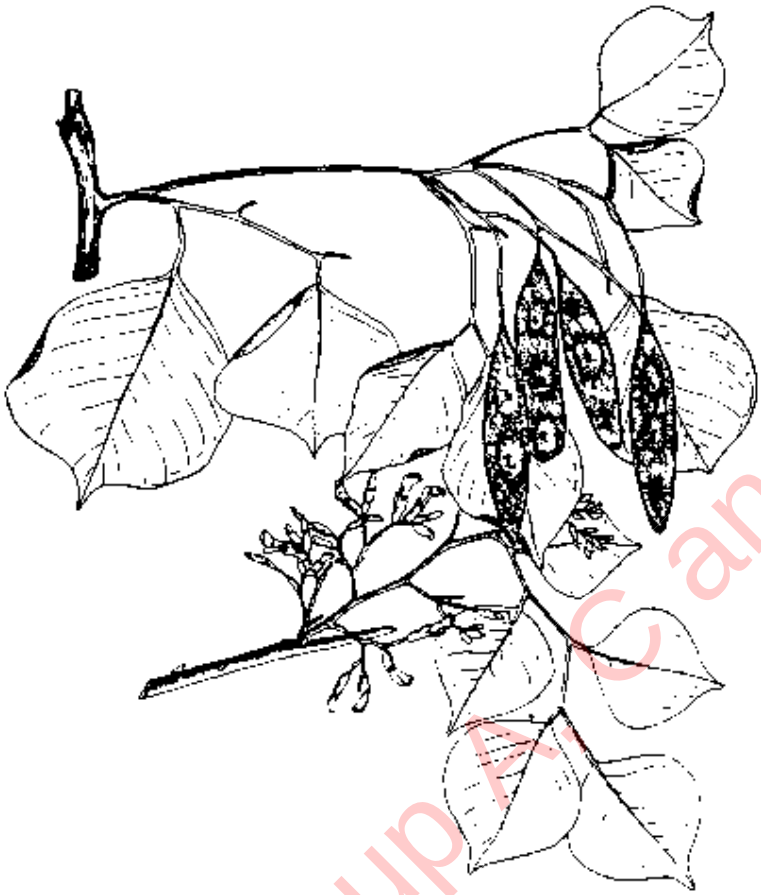

**Fig. Silvan feature of *Dalbergia sissoo***

**Botanical Features:**

A middle sized deciduous tree but in favourable conditions grows into a quite large tree. **Leaves** imparipinnate, 10-25 cm long, common petiole zig-zag; leaflets 3-5, distinctly alternate, 2.5-7.5 x 2.0-6.5 cm, ovate ovate-orbicular or rhomboid. **Flowers** yellowish white in short axillary panicles. **Fruit** a pod, 5-7 x 0.8-1.2 cm, strap-shaped, pale brown, mostly 1-seeded, less often 2-3 seeded. Leaves fall in cold season and are replaced in January to February by new foliage. Flowering time: February-March; **Fruiting time:** October- January.

**Occurrence in Bangladesh:**

Introduced and planted all over the country, presently more widely in the districts of Jessore, Pabna and Kushtia.

**Propagation:**

Propagated by seeds and stumps. It coppices readily and reproduces vigorously by root suckers, making it useful for checking erosion.

**Uses:**

It gives excellent fuelwood. The heartwood is brown with dark streaks, very hard, strong and durable. It is used for making furniture, carts and carriages, musical drums, wheels and for a large number of other purposes. The twig and leaves are lopped for fodder.

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## Arjun (*Terminalia arjuna*)

**Fig. Silvan feature of *Terminalia arjuna***

**Botanical features:**

A medium to large deciduous tree, almost glabrous, **Bark** thick, smooth, pinkish gray or whitish, peeling off in thin flakes. **Leaves** simple, usually subopposite, 8-11 x 4-6 cm, oblong or elliptic, obtuse or very shortly acute, hard, coriaceous, and often crenulate. **Flowers** yellowish in erect terminal panicles, petals wanting. **Fruits** 2.5-3.5 cm long, ovoid, oblong or obovoid with 5 thick narrow wings. **Flowering time:** April-May; **Fruiting time:** February-May.

**Occurrence in Bangladesh:**

It is cultivated in many districts of Bangladesh as a road side tree and in homesteads.

**Propagation:**

It propagates easily through seed and can also be successfully raised by means of stumps. Root suckers can also propagate it. The tree coppices well.

**Uses:**

Wood is used for carts, making agricultural implements, water troughs, boats, plywood, tea chests, house building, electric poles, tool handles and jetty piles. The bark is employed for tanning and is used for medicinal purposes as tonic, febrifuge and in dysentery. The leaves are fed to tasar silkworm.

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## Guava (*Psidium guajava*)

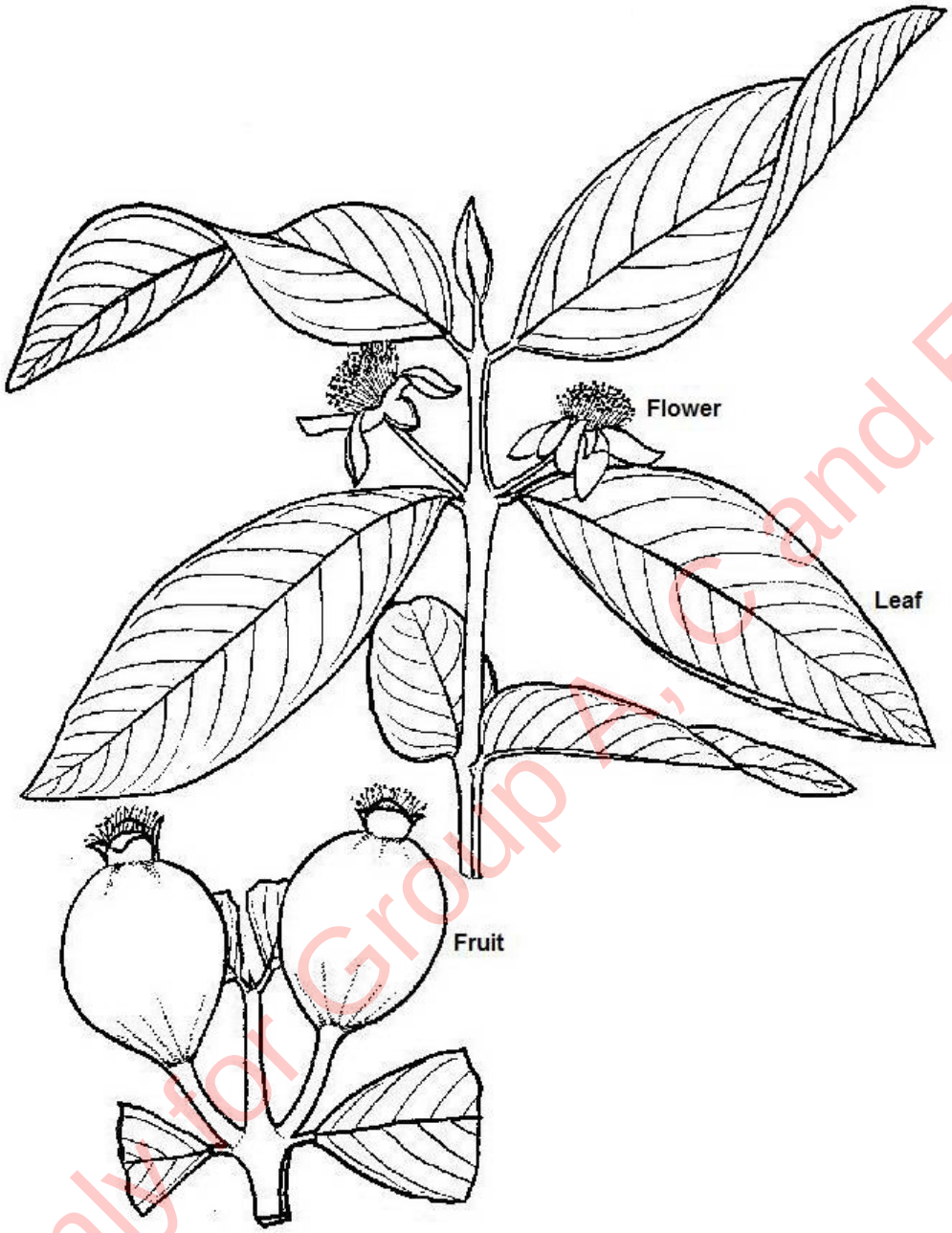


**Fig. Silvan feature of *Psidium guajava***

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**Botanical features:**

*Psidium guajava* is a large dicotyledonous shrub, or small evergreen tree, generally 3-10 m high, many branches; **stems** crooked, bark light to reddish brown, thin, smooth, continuously flaking. **Leaves** opposite, simple; stipules absent, petiole short, 3-10 mm long; blade oblong to elliptic, 5-15 x 4-6 cm, apex obtuse to bluntly acuminate, base rounded to subcuneate. **Inflorescence** axillary, 1- to 3-flowered, pedicles about 2 cm long, bracts 2, linear. Calyx splitting irregularly into 2-4 lobes, whitish and sparsely hairy within; petals 4-5, white, linear-ovate c. 2 cm long, delicate; stamens numerous, filaments pale white, about 12 mm long, erect or spreading, anther straw coloured; ovary inferior, ovules numerous, style

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about 10 cm long, stigma green, capitate. **Fruit** an ovoid or pear-shaped berry, 4-12 cm long, weighing up to 500 g. The exterior of the fruit is fleshy, and the centre consists of a seedy pulp.

**Propagation:**

Guavas grown for processing may be propagated by seed. Germination occurs within 15-20 days. They should be planted out when about 25 cm high. The seedling grows very rapidly, producing fruit in 2-3 years on good soils. When grown for their fresh fruit they are clonally propagated. In south-east Asia this is usually done through air-layering, but for larger numbers, shield or patch budding onto seedling rootstocks is recommended. Success depends on vigorous growth of both mother tree and rootstock.

**Occurrence in Bangladesh:**

It is cultivated in many districts of Bangladesh as a road side tree and in homesteads. Barisal, Patuakhali, Jhalakathi, Mymensingh, Narayanganj, Rajshahi are famous for guava.

**Uses:**

The whole fruit is edible; flavour varies from very acid to sweet with the best fruit being both sweet and mildly acid. White fragrant flowers secrete nectar in excess all day attracting bees, which also collect juice from the damaged fruits. Wood makes excellent firewood and charcoal because of its abundance, natural propagation, and classification as an undesirable weed.Sapwood light brown, heartwood brown or reddish; hard, moderately strong and durable. It is used for tool handle, fence posts and in carpentry and turnery. All parts of the young fruit are astringent. Guava exhibits antibacterial action against intestinal pathogens such as Staphyloccocus.

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## Mango (*Mangifera indica*)

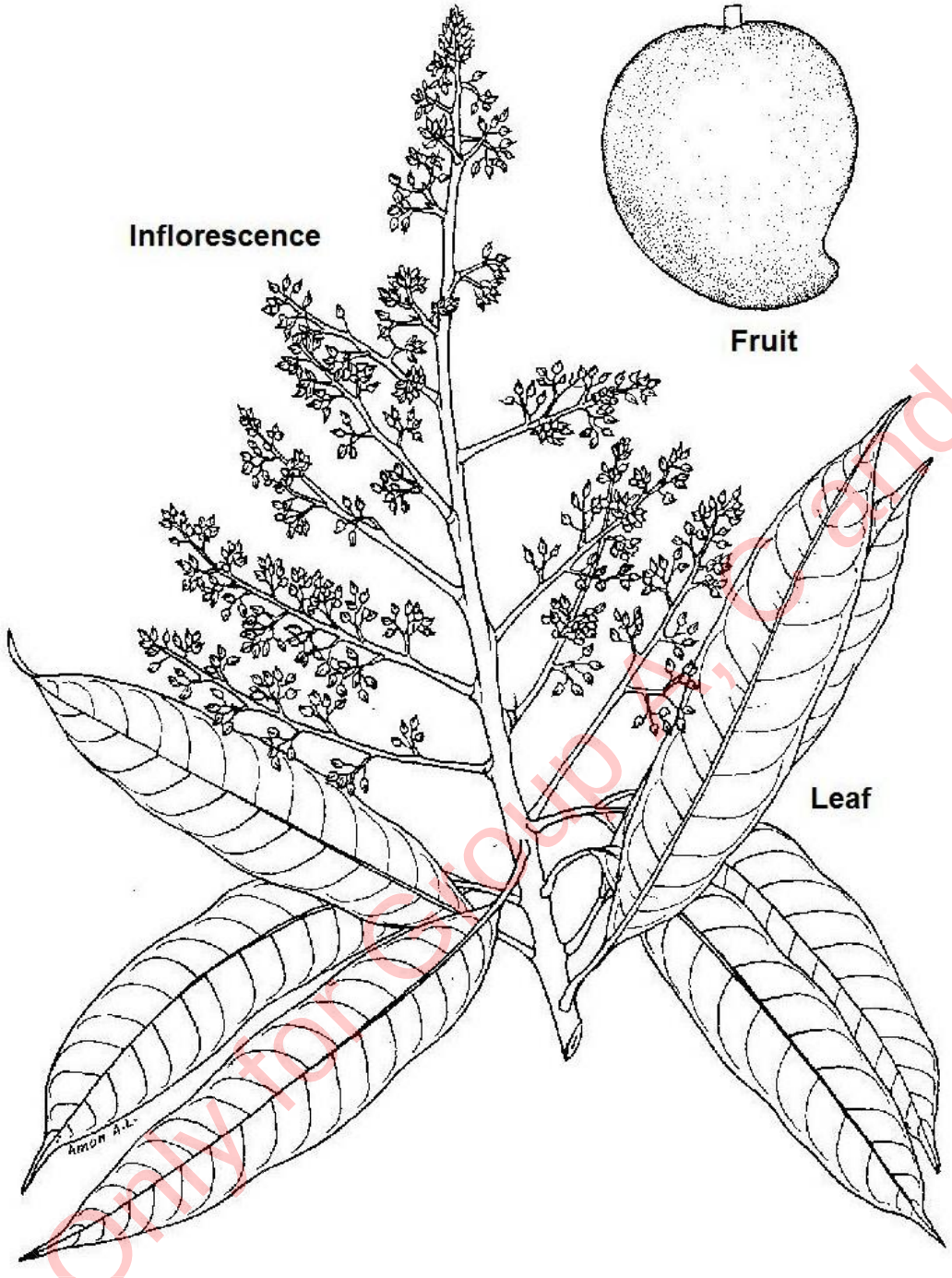


**Fig. Silvan feature of *Mangifera indica***

**Botanical features:**

*Mangifera indica* is a large evergreen tree to 20 m tall with a dark green, umbrella-shaped crown. A whitish latex exudes from cut twigs and a resin from cuts in the trunk. **Leaves** alternate, simple, leathery, oblong-lanceolate, 16-30 x 3-7 cm, on flowering branches, up to 50 cm on sterile branches, curved upward from the midrib and sometimes with edges a little wavy. **Inflorescence** 16 cm or more in length, a much-branched panicle bearing many very small (4 mm) greenish-white or pinkish flowers. **Fruit** an irregularly egg-

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shaped and slightly compressed fleshy drupe, 8-12 (max. 30) cm long, attached at the broadest end on a pendulous stalk

**Occurrence in Bangladesh:**

Mango is cultivated in all the districts of Bangladesh. But it is widely and commercially culyivated in Rajshahi, Kushtia and Dinajpur region.

**Propagation and management:**

Worldwide, most mangos are propagated from seed. However, this method is not feasible for commercial production of planting stock. Stones should be sown under shade, and seedlings also require a certain amount of shade. Those that are raised in nursery beds can be transplanted without much difficulty before the taproot has developed to any great extent.

**Uses:**

Mango is cultivated for the fruit, which can be eaten in 3 distinct ways, depending largely on the cultivar: unripe (mature green), ripe (the common way to enjoy mango throughout the world), and processed (at various stages of maturity, in the form of pickles or chutneys, dried slices, canned slices in syrup, juice and puree or paste). Mango leaves are occasionally fed to cattle, but large quantities can cause death. With a calorific value of 4200 kcal/kg, the wood makes excellent charcoal and firewood. Heartwood is used for many purposes, including indoor construction, meat-chopping blocks, furniture, carpentry, flooring, boxes, crates and boat building (canoes and dugouts). Its umbrella-shaped crown makes the mango tree a suitable shade for people and their livestock; it also acts as a firebreak.

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## Amloki/Anola (*Phyllanthus embelica*)

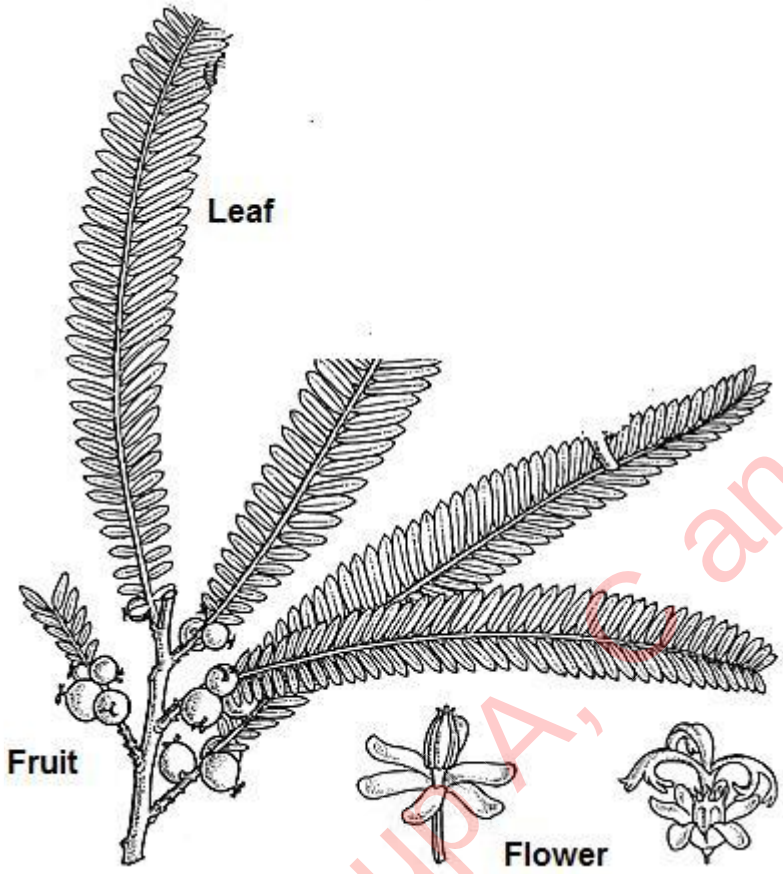


**Fig. Silvan feature of *Phyllanthus embelica***

**Botanical features:**

A medium sized, deciduous tree; branchlets feathery with distichous leaves, resembling a pinnate leaf. **Leaves** simple, opposite, 0.5-1.5 x 0.2-0.3 cm, sub-sessile, paler beneath, glabrous. **Flowers** yellowish, in axillary clusters, usually crowded towords the lower naked position of the branchlets, the plants being monoecious. **Fruit** a drupe, 1-1.5 cm across, larger in some cultivated varieties, globose, obscurely 6-lobed. **Flowering time;** March-May; **Fruiting time;** October-December.

**Occurrence in Bangladesh:**

Common in mixed deciduous forests of Dhaka-Mymensingh and hill forests of Chittagong. It is also cultivated in homesteads, road sides and in community forests.

**Propagation and management:**

The plant is propagated by seed, and by budding, cutting and inarching. Percentage of fertility is low and seed does not retain its viability long. It coppices well and pollards moderately well.

**Uses:**

The fruit is edible and one of the constituents of myrobolans. The leaves and fruits are good fodder for cattle. The fruit is much esteemed as a liver tonic. Wood is used for cheap furniture, and the fruits, leaves and bark for tanning.

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## Jujubee (*Ziziphus jujuba*)

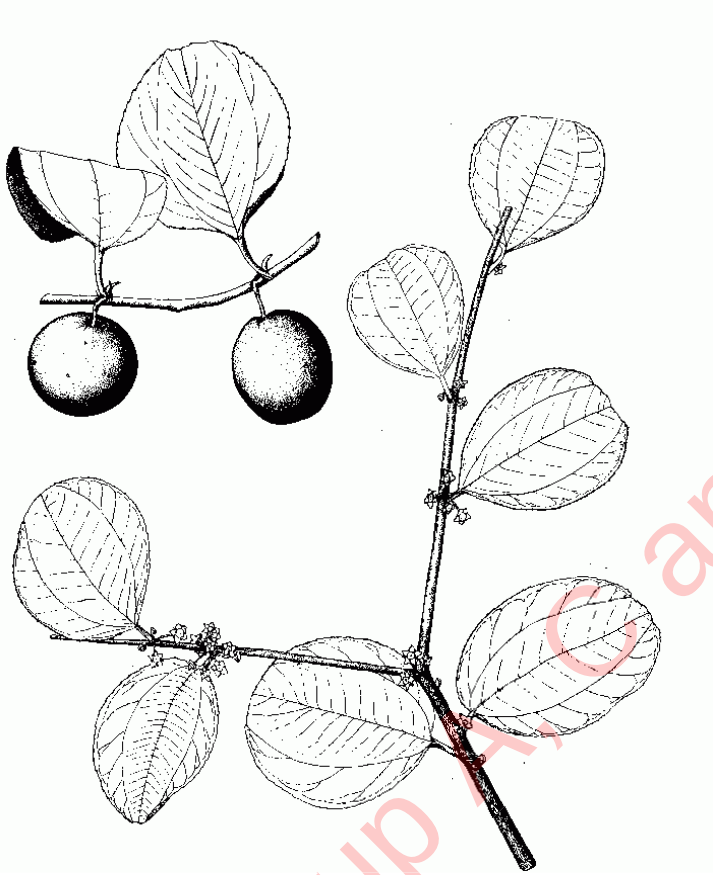

**Fig. Silvan feature of *Ziziphus jujuba***

**Botanical features:**

*Ziziphus* is a spiny, evergreen shrub or small tree up to 15 m high. **Leaves** variable, alternate, in 2 rows, oblong-elliptic, 2.5-6 x 1.5-5 cm, with tip rounded or slightly notched base; finely wavy-toothed on edges. **Inflorescence** axillary cymes, 1-2 cm long, with 7-20 flowers. **Fruit** a drupe, **Seed** a tuberculate and irregularly furrowed stone, containing 1-2 elliptic brown kernels each 6 mm long.

**Occurrence in Bangladesh:**

It is widely grown in Dhaka, Gazipur and Comilla region.

**Propagation and management:**

It is easily propagated by seeds. When propagating selected varieties for fruit, budding or ring-grafting is used. Inarching and root-suckers are also possible methods of vegetative propagation.

**Uses:**

Fruit is eaten fresh or dried and can be made into a floury meal, butter, or a cheeselike paste, used as a condiment. In parts of India and North Africa, the leaves are used as nutritious fodder for sheep and goats. It produces excellent firewood (sapwood has 4900 kcals/kg) and good charcoal. When in bloom it is ocassionally a source of pollen, at best a minor one. Jujube yields a medium-weight to heavy hardwood with a density of 535-1080 kg/m$^3$.

Only for Group A, C and E

Compiled by: **Mirza Hasanuzzaman**, Assistant Professor, Dept. of Agronomy, SAU

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## Coral Tree (*Erythrina orientalis*)

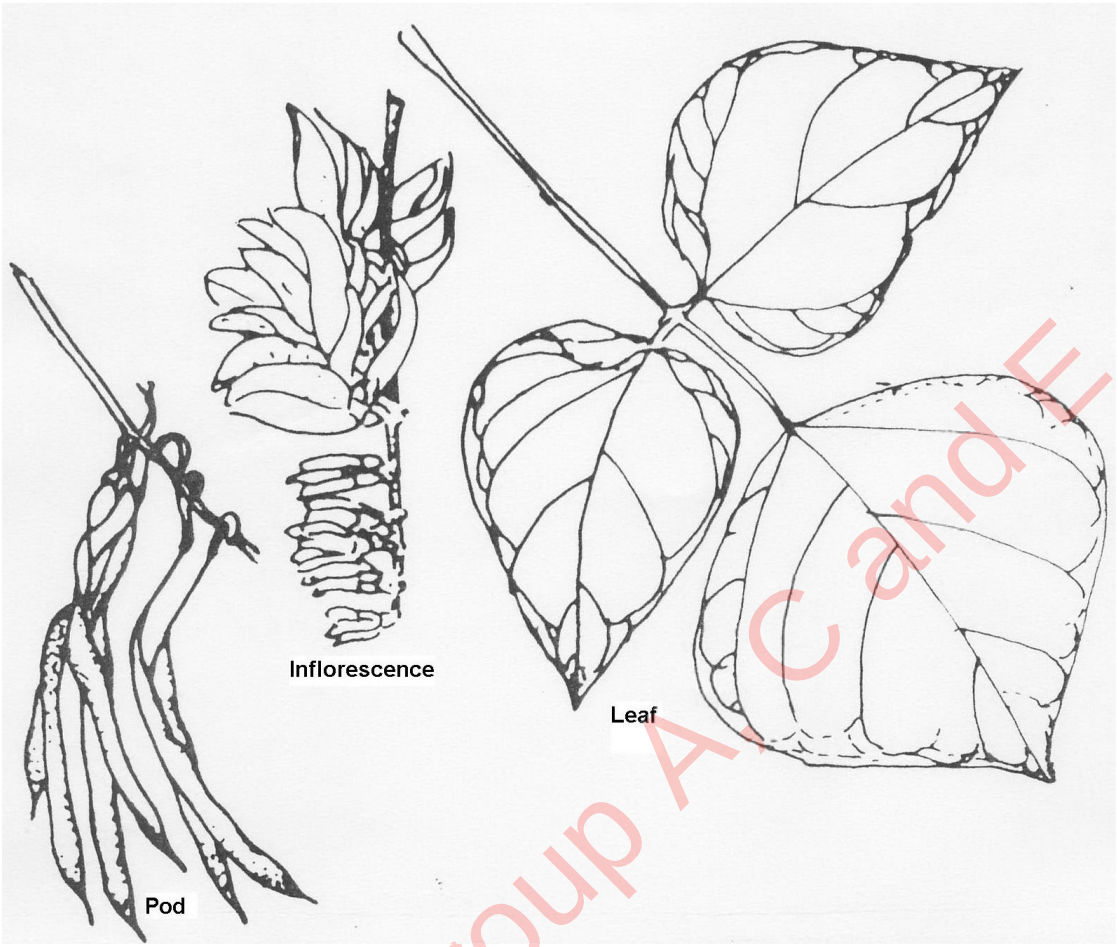


**Fig. Silvan feature of *Erythrina orientalis***

**Botanical features:**

A fast growing deciduous tree of moderate size, armed with blackish prickes**. Leaves** trifoliate, leaflets generally broader than long, broad- rhomboid, about 10-15 cm, suddenly cut off to a very broad base. **Flowers** scarlet in dense racemes upto 40 cm long. **Fruit** a pod, 15-30 cm long, 1-8 seeds, torulose or jointed between the seeds. Flowering time: February –March; Fruiting time: August-September.

**Occurrence in Bangladesh:**

Commonly planted in the villages in all the districts, sometimes planted as living prickly fence.

**Propagation:**

The tree is easily propagated by cuttings and grows very quickly. It can also be raised from seeds. It pollards well and can be lopped. It also coppices well.

**Uses:**

Branches are planted as live fence in the hedges. Leaves are as cattle fodder. The bark yields a fibre suitable for cordage. different parts of plants have medicinal uses. The bark is used to cure dysentery and the leaves are used to lessen pain in the joints. The light wood has demand for frames of sieves, slates etc.

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## Drum Stick (*Moringa oleifera*)

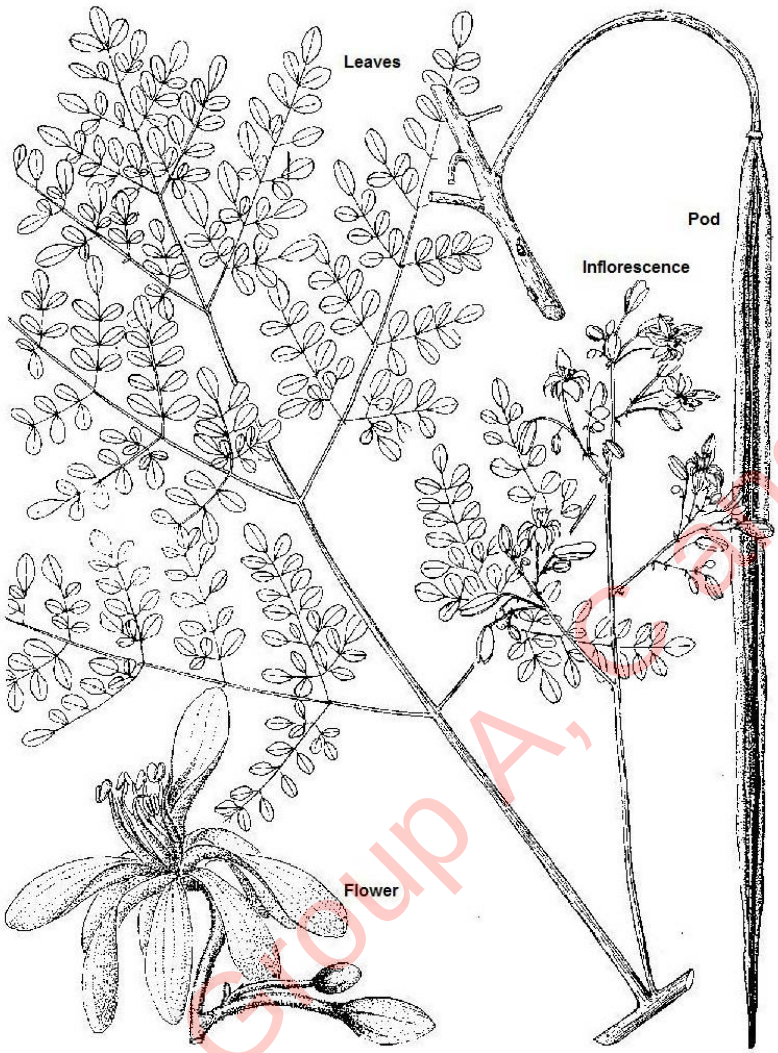


**Fig. Silvan feature of *Moringa oleifera***

**Botanical features:**

A small to medium tree; bark corky. **Leaves** tripinnate, 30-75 cm long; leaflets 1.0-1.5 cm long, pale beneath, elliptic to obovate. **Flowers** white, c. 12.5 in diameter, scanted, in large puberulous panicles. **Fruits** long slender flexible pods, 20-40 cm long in hanging clusters, having 9 distinct ribs and rather wavy edges. Flowering time: November-January; Fruiting time: April-May.

**Occurrence in Bangladesh:**

Planted in all districts in the homesteads for its fruits consumed as vegetables.

**Propagation and management:**

This tree can be easily propagated by branch cuttings and can also be raised from seeds. It coppices and pollards vigorously.

**Uses:**

Fruits and eaves are used as vegetables. Leaves and branches are much lopped for fodder. Wood is of no use.

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## Australian Oak *(Casuarina equisetifolia)*

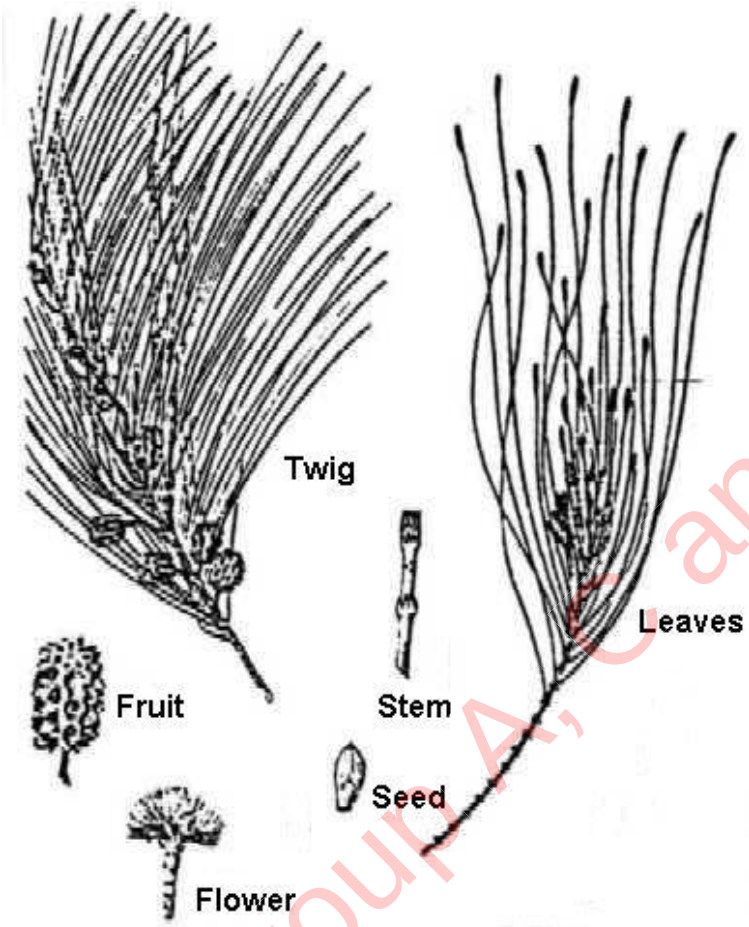


**Fig. Silvan feature of *Casuarina equisetifolia***

**Botanical features:**

A large tree upto 50 m tall or more, branches drooping; branchlets 15-20.5 cm long. green, every slender, sulcate, drooping in cluster. **Leaves** small scale-like, 6 to 8 at the nodal region. **Flowers** naked in spikes, plants being monoecious. Male flowers in spikes at the ends of branchlets at the base of which the female heads are borne; branchlets and male spikes 2.5-5 cm diameter, female head about 1.5 cm long and wide. **Fruits** one seeded samaroid nuts crowded into a cone; cone 2 cm diameter, globose. Trees can fix nitrogen. **Flowering time:** November-March; **Fruiting time:** December-March.

**Occurrence in Bangladesh:**

Along the beach of Chittagong and Cox' Bazar. Also planted elsewhere in institute compounds, roadsides and homesteads

**Propagation on management:**

Generally propagated through seeds. It pollards well and can be lopped. Regular lopping and pruning help to make good bole.

**Uses:**

It is a very popular fuel wood as it burns even in green condition. It is also employed for legging galleries, preparing sledge hammer shafts, oars, yokes, and felloes of wheels.

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## Date palm (*Phoenix dactylifera*)

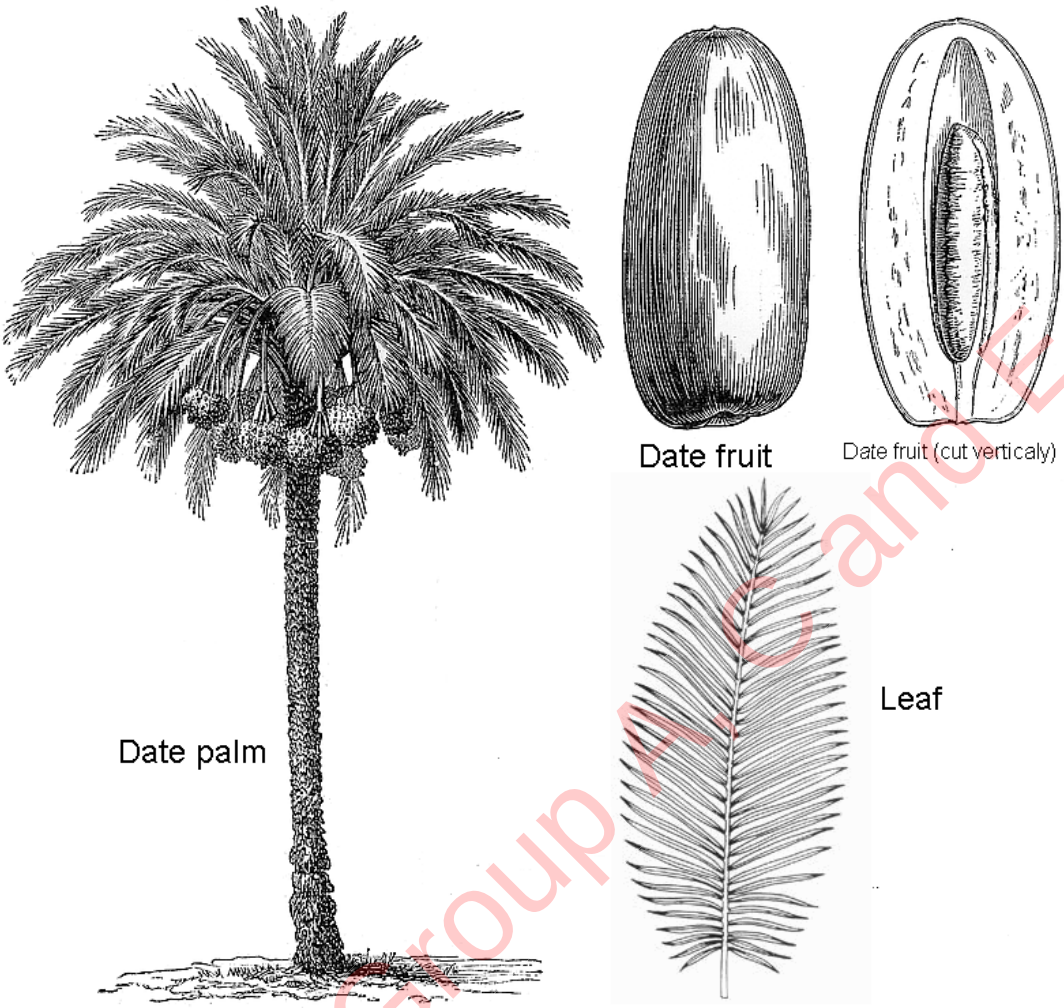


**Fig. Silvan feature of *Phoenix dactylifera***

**Botanical features:**

*Phoenix dactylifera* grows to a height of over 30 m; the stem and new leaves grow from the single terminal bud at the stem apex; **roots** grow from the base of the trunk, sometimes 50 cm above the ground; main roots about 1.5 cm thick. **Leaves** enormous, up to 7 m long with a relatively short (50 cm) rachis base or petiole; pinnate, the 50-60 pairs of leaflets long and narrow, attached to a stout central midrib or rachis. They have a normal life of 3-7 years. **Inflorescence** is produced in the axil of a 1-year-old leaf; a branched spadix enclosed in a tough spathe that bursts open when the flowers are mature. **Fruits** are yellow to reddish-brown, each with a single seed up to 2.5 cm long, deeply grooved, with a very hard endosperm.

**Occurrence in Bangladesh:**

It is found all over the country.

**Propagation on management:**

Propagation is usually done by trunk suckers, which may be carefully removed from the mother tree. Propagation from seed is done when there are no mature mother trees in the locality; this poses no particular problems but takes longer.

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**Uses:**

The most important use of *P. dactylifera* is for its fruit, which forms the staple diet of many people in Africa and the Middle East and is as well a cash crop for export. The seeds are roasted and kernels ground as a coffee substitute. The seeds (stones) when ground and softened by soaking in water are used for feeding camels, goats and horses and have successfully been substituted as a poultry feed. The wood can be used as fuelwood. The leaves are used in mats, ropes, fans and baskets; the petiole yields a fibre, which together with other suitable material is used for insulating boards. The trunks are strong and resistant to termites, providing much valued construction timber. The tree yields a gum used in treating diarrhoea.

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