

# Economic Botany

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# Introduction

- Economic Botany deals with application of botanical knowledge to the well being of mankind.
- The prime necessities of man are food, clothing, shelter.
- The food primarily comes from plants in forms of cereals(E.g. rice, pulses, vegetables, millets(rye) and fruits)
- The plants that yield fibers are second to the food plants.
- The most familiar and imp. is wood which is used in all types of construction work.

# Timber

- Timber the wood of commercial importance is one of the valuable raw material used by man.
- It has many advantages over the metals.
- It is cheap, light and may easily be worked with tools, very strong for its weight, has strength, toughness and elasticity.
- It is a bad conductor of heat and electricity.

# Sal (*Shorea robusta*)

- Family- Dipterocarpaceae
- Important commercial timber in India.
- Grows in the foot hills of tropical Himalayas from Sutlej to Assam, in the eastern districts of Central India(esp. M.P.) and in the hills of West Bengal.
- Also grows in Sri Lanka, Burma and south east Asian countries.

# Sal Tree



- The regions with temp.(max. 47 C) and an annual rainfall of up to 450 cm are good for their growth.
- Tree flowers in March-April and seeds ripen in June.
- Seeds are sown when the seedlings are 1-3 yrs old at a distance of 3 -4m.
- Good quality timber is obtained from 30-50 yrs old trees.

# Description

- Large resiniferous tree
- Large ovate-oblong, leathery leaves(10-25 cm in length and 5-20 cm in width).
- Flowers- small, yellow.
- Inflorescence- axillary or terminal panicles.
- Fruit is ovoid, indehiscent one seeded nut with wing like persistent sepals.

# Sal Leaf





# Properties of Sal Wood

- The wood is differentiated into sap wood and heart wood which is hard, heavy and extremely tough.
- Wood is immune to white ants and fungi.
- Average weight-855 kg/m at 12 percent moisture content.
- Diffuse porus with indistinct growth rings, solitary and plugged with tylosis.
- When the plant is under stress due to drought or infection, tylosis will fall from the sides of the cell to prevent further damage to the plant.

- Vertical gum ducts appear as white concentric lines at irregular intervals in the wood.
- Medullary rays- few, widely spaced and fine to moderately broad.
- Wood is well known for strength, elasticity and durability.

# Uses of Sal

- Best sleeper wood.
- Great demand in form of poles(used for overhead electric, telegraph and telephone lines)
- Domestic use- Beams, scantlings, rafters and floors.
- For making bridges, boats, carriage and wagon building, hubs of wheels, agricultural implements and tool handles, etc.

- Sal Dammar is used as an incense, preparation of paints and varnishes, for making boats.
- Yields an essential oil(Chula oil)- used as fixative and for flavouring, chewing and smoking tobacco.





# Suggested References

- Economic Botany by Albert F. Hill
- Economic Botany by BP Pandey
- Economic Botany by PC Das
- Economic Botany by SR Mishra
- Economic Botany by Singh, Pandey & Jain