

Economic Importance of Brassicaceae:

1. Food:

The plants of this family which are cultivated as vegetable crops are:

Brassica oleracea var. Botrytis, B. oleracea var. capitata, Brassica campestris var. sarson (white mustard), Brassica rapa, Raphanus sativus, are edible and cooked as vegetables.

2. Oil:

The seed of B. campestris (or white mustard) yield mustard oil which is widely used as a cooking medium. B. nigra and B. juncea also produce oil.

After extracting oil the cake is left behind which is highly nutritious as a cattle feed; the oil cake is also used as soil fertilizer. Raphanus seeds also produce a pungent oil which is often used in adulteration of sarson oil; this oil has digestive properties.

3. Medicines:

The leaves and tender shoots of Lepidium sativum are used in liver complaints, asthma, cough and bleeding piles. Rorippa montana is an appetizer and a stimulant. The seeds of Cheiranthus cheiri are used in bronchitis and fever. The flowers are used in paralysis and impotency. Lobularia is used for gonorrhoea. Iberis amara is used in rheumatism and gout.

4. Ornamentals:

Some plants are grown in gardens for their beautiful flowers like Iberis amara (candituft) Lobularia, Hesperis (rocket), Alyssum, Lunaria (honesty) etc.

Economic Importance of Malvaceae:

Economically this family is of much importance because there are a number of fibre yielding plants.

A. Fibre yielding plants:

Cotton is perhaps the most important fibre inspite of many synthetic textile fibres. The seed coat of Gossypium produce epidermal hairs which is cellulosic in nature. This is cotton wool. These hairs are flattened, twisted and form the staple. Cotton seed is further important for it produces an edible oil which is semidrying and used in soap. The oil cake is also a very nourishing cattle feed. The residue is also used in washing powder, in preparation of oil cloth, artificial leather, nitroglycerine etc.

Hibiscus cannabinus produces a very valuable fibre from its stem which is used for making rope, cordage, coarse canvas, sacs, floor matting. It is thus used as a substitute for jute. *Hibiscus sabdariffa*, A strong silky brown fibre is produced from its stem. This is a good substitute for jute in textile and paper industry.

B. Other uses:

Hibiscus esculentus fruits are used as a vegetable. *Hibiscus rosa-sinensis* or shoe flower is widely cultivated as an ornamental plant and also used in the worship of God. *Althea rosea* is also a garden plant with its pinkish flowers. *Abutilon indicum* is a wild plant which is sometimes used medicinally. *Malva sylvestris* is also a garden plant. *Urena repanda* is supposed to be a cure for hydrophobia.

Economic Importance of Tiliaceae:

1. Fibre:

Corchorus capsularis and *C. olitorius* are cultivated for their tenacious bast fibres, which yield jute of commerce. It is used in making gunny bags.

2. Medicinal:

The fruits of *Grewia asiatica* are astringent, cooling and digestive. The root bark is used in rheumatism.

The flowers, leaves and fruits of *Triumfetta bartramia* are used in gonorrhoea. Bark and fresh leaves of this plant are used in diarrhoea and dysentery.

3. Wood:

The species of *Tilia* yield useful timber. *Tilia americana* is one of the best timber plant of America.

4. Ornamental:

Some of the plants viz. *Sparmannia*, *Microcos* are grown in gardens.

Economic Importance of Rutaceae:

1. Fruits:

The genus *Citrus* provides a number of fruits:

Citrus aurantium the ripe fruit is digestive and a tonic, fruit wall gives oil of bergamot. *C. maxima* produces edible fruits. *C. sinensis* (H-Musumbi). The fruit is widely used during illness; it purifies blood, reduces thirst and improves appetite. *C. reticulata* (Narangi) the ripe fruit is highly nutritive and rich in available calcium, the fruit wall also produces citrus oil. *C. limon* The juice of ripe fruits is useful in rheumatism and dysentery. *Aegle marmelos* (Bel). This is normally edible. The fruit is particularly useful in stomach disorders. The plant is considered holy and its leaves used in worshipping the God. *Feronia limonia* the fruits edible; leaf and bark used medicinally.

2. Medicinal:

Citrus is not only edible but produces vitamins particularly vitamin C (ascorbic acid).

Pilocarpus microphyllus the active principle is pilocarpine which causes contraction of the pupil – it is just opposite to atropine. Jaborandi is prepared from the leaflets of this plant; this is useful in kidney diseases.

Murraya koenigii has several medicinal properties. The green leaf is eaten raw in dysentery while bark and roots are useful in bites of poisonous animals when applied externally. The leaves are also used in curry powder particularly by S. Indians.

3. Ornamental plants:

Plants like *Ruta*, *Luvunga scandens*, *Ptelea*, *Calodendrum*, *Limonia*, *Murraya* are cultivated in gardens for their fragrant flowers.

Economic Importance of Anacardiaceae:

1. Food:

Many plants yield edible fruits such as *Mangifera indica* (mango), *Anacardium occidentale* (Cashew-nut), *Spondias pinnata* (Hog plum). *Pistacia lentiscus* (mastic tree) yields a mastic resin used in chewing gums, alcoholic beverages etc.

2. Varnish:

Many species of *Rhus* and *Semecarpus* yield resins and varnishes.

3. Gum:

Lannea coromandelica bark provide gum. *Schinopsis lorentzii* and bark of *Lannea coromandelica* are used in tanning industry.

4. Ink: Insect galls on the branches and leaves of various species of *Rhus*, *Pistacia* are used in manufacture of ink.

Semecarpus anacardium (Dhobis-nut) fruits provide black ink used for dyeing textiles and marking cotton clothes.

5. Skin irritants: *Rhus toxicodendron*, *R. quercifolia* etc. are skin irritants.

6. Ornamentals: *Continus coggyria*, *Rhus typhina* and *Spondias pinnata* are ornamental plants.

Economic Importance of Caesalpinaceae:

1. Food: The flower buds of *Bauhinia variegata* are used as vegetable. The fruits of *Tamarindus indica* (Imlí) are spicy and used as condiment. The seeds of *Tamarindus indica* yield starch.

2. Medicine: The pulp of the pods of *Cassia fistula* is utilised as a purgative. The bark-decoction of *Saraca indica* (Ashoka) is used as a remedy for menstrual disorders.

3. Fibre: The bark of *Bauhinia vahlii* yields fibres which are used in rope making.

4. Dye: The wood of *Haematoxylon* yields a dye called haematoxylin. This is an anatomical stain.

5. Tanning: The pods of *Caesalpinia coriaria*, *C. sappan* and *C. digyna* are used in tanning leather.

6. Ornamentals: *Delonix regia* (Gulmohar), *Bauhinia* sp., *Caesalpinia pulcherrima*, *Parkinsonia aculeata*, *Saraca indica* etc., are grown in gardens and along the road side. *Delonix* and *Saraca* are liked for their deep shade giving quality.

Economic Importance of Mimosaceae:

The sub-family is not of much economic importance. A few members are however useful.

1. *Acacia auriculiformis* is cultivated for its beautiful phyllodes and flowers. The bark of *Acacia* yields tannin which is used in leather tanning.

2. The wood of *Albizia lebeck* is used for furniture, railway carriages, interior fittings etc. The leaves and twigs are used as fodder.

3. *Prosopis spicigera* is grown as a hedge plant and also as a wind breaker in Rajasthan to check spreading desert, acts as water indicator.
4. Durable timber is obtained from *Acacia melanoxylon*, *Lysistoma sabicu*, *Xylia dolabriformis* (Iron wood).
5. *Mimosa pudica* grown as an ornamental plant.
6. *samanea saman* grown for their wood and beautiful flowers.

Economic Importance of Fabaceae-Papilionaceae:

- 1. Food:** The fruits and seeds of *Pisum sativum*, *Cicer arietinum*, *Cajanus cajan*, *Dolichos lablab*, *Vigna aconitifolius*, *Phaseolus radiatus*, *Glycine max* (Soyabean) are used as vegetable and pulse. Soya-bean is supposed to contain very high percentage of proteins comparable to meat.
- 2. Oil:** The seeds of *Arachis hypogea* are pressed to obtain an oil. It is converted into vegetable ghee after hydrogenation and largely used as substitute for pure ghee. The oil cake is used for cattle feeding.
- 3. Fibre:** *Crotalaria juncea* yields fibres, which are used for making rope, mat, coarse canvas, sacks, nets etc. It is a blast fibre.
- 4. Timber:** *Dalbergia sissoo*, *D. latifolia* (Indian rose wood) yield timber.
- 5. Dye:** *Indigofera tinctoria* yields a dye – the indigo.
- 6. Ornamental and other uses:** Many plants viz., *Lathyrus odoratus*, *Clitoria*, *Sesbania*, *Lupinus*, *Genista*, *Robinia*, etc. are used as ornamental plants in gardens. *Erythrina* – (Indian Coral tree) is bird pollinated and produces beautiful red flowers. Gum is obtained from *Butea monosperma* and *Pterocarpus*. Because of root nodules many plants of this family can enrich the soil with fixed nitrogen. Hence they are often used in crop rotation.

Economic Importance of Myrtaceae:

- 1. Fruits:** Some members of the family produce edible fruits e.g. *Syzygium cumini*, *S. Caryophyllata*, *Psidium guajava* with edible fruits.
- 2. Oil:** The essential oils are obtained by the steam distillation of leaves and branches of *Eucalyptus* species.
- 3. Spice:** *Syzygium aromaticum* yields the cloves of commerce. Clove oil is extracted out of them.
- 4. Medicine:** *Eucalyptus* oil is used in influenza. It is mixed with clove oil and used in rheumatism. The roots of *Eucalyptus* are purgative. Clove oil is antipyretic and largely used in gum troubles. The leaves of *S. cumini* are used in indigenous medicine for dysentery. The fruits of *Myrtus communis* are carminative and given in dysentery, diarrhoea, and rheumatism.

5. Wood: The wood of *Eucalyptus* and *Psidium* is used in engraving and making handles. In Australia the wood of Eucalyptus is used for railway sleepers, bridges and plywood industries.

6. Ornamental: Many plants viz., *Callistemon*, *Myrtus*, *Melaleuca leucadendron*, *Tristania*, *Eucalyptus* are cultivated for their showy nature in the gardens.

Economic Importance of Cucurbitaceae:

This family is particularly important economically because its fruits are edible.

I. Vegetables and fruits:

1. Cucumis melo:

The fruits are edible and a number of varieties are known.

2. Citrullus vulgaris:

The fruits are large and ripen during summers; it is cultivated on the sandy beds of rivers.

3. Cucurbita maxima is Kaddu:

Cucurbita maxima and C. pepo both are used as vegetable.

4. Lagenaria vulgaris:

Lagenaria vulgaris is the fruit is commonly used as a vegetable. From ripe fruit-shells sitar is made.

5. Momordica charantia:

The fruits are bitter but used in vegetable preparations. It is said to be useful in gout and rheumatism.

II. Medicine:

There are a few plants also important medicinally.

9. *Citrullus colocynthis* – produces the alkaloid colocynthin from its fruits. The fruits and roots are used against snake bite. The alkaloid is also used in other diseases.

10. *Ecballium elatarium* fruits produce elaterium of medicine which has narcotic effect and useful in hydrophobia.

III. Ornamental:

Some plants viz., *Ecballium*, *Sechium*, *Sicyos* are grown in gardens.

Economic Importance of Apiaceae:

Food: Carrot (*Daucus carota*), *Apium graveolens* (Celery), *Coriandrum sativum* are used as food.

Condiments: Hing (*Ferula foetida*), Zira (*Cuminum cyminum*), Dhania (*Coriandrum sativum*), are used as condiments or carminatives.

Fodder: Several members as carrot, *Angelica* provide fodder for cattle and horses.

Medicinal: *Centella* (H. Brahmi) is a very good tonic for brain. Hing used in digestive disorders. *Conium maculatum* is the Hemlock plant. Its poison was given to Socrates; medicinally it is important for cholera, epilepsy, whooping cough, mania etc. *Conium* yields the alkaloid coniine. *Apium graveolens* produces apiin and used medicinally as cardiac tonic, or in asthma etc.

Ornamental: *Trachymene*, *Angelica*, *Eryngium*, *Heracleum* are cultivated in gardens for their beautiful flowers.