

2. The extract has a bitter taste and characteristic aroma and a stimulating effect.
3. The refreshing and stimulating property of coffee is due to the presence of an alkaloid called 'caffeine'.
4. It is used in medicine as diuretic, and as beverage to convalesce people. The disturbances in digestion by use of coffee are due to volatile toxic substance present, called 'cafeotoxin'.
5. The leaves of coffee are also used as a beverage in certain parts of Malaya.
6. Coffee pulp, a by-product in the manufacture of parchment or plantain, coffee is used as cattle feed.
7. Coffee beans are used in the manufacture of a plastic called 'caffetin'.
8. The wood of coffee tree is hard and can be used as a box wood and the branches of the coffee plant are used as walking sticks, hammer handles and some decorative furniture.

✓Cocoa



Fig. 3.3 : Cocoa plantation

Botanical name—*Theobroma cacao* Linn.

Family—Sterculiaceae

Local names—Koko-goch (Assamese), Cacao (Hindi).

Parts used—Fruit.

Uses :

1. **Cacao shell** : Cacao shell is the most considerable by product of the cacao and chocolate industry. Cacao shell is used as a filler for thermosetting resins in the plastics industry. It is used also as a fertilizer and even as a fuel. Its fuel value is 4000 calories per kg. Tannins and related substances can be extracted from cacao shell for use in compositions for preventing the formation of boiler scale and also as flocculating agents. Cacao shell, shell-nib cacao germ are used for the extraction of 'theobromine'.
2. **Cacao butter** : Cacao butter is pale yellow and brittle solid. The seeds contain 50-57 percent of the oil and consist in solid state at 30 C. When exposed to air and bright sunlight it becomes lighter in colour and rancid. It is composed of many glycerides of palmitic (24%) stearic (34%) and oleic (38%) acids. It is produced as a by product in the manufacture of cacao. Cacao butter is used in the production of chocolate, confectionery cosmetics and the some medicinal preparations.
3. **Chocolate** : Chocolate which is moulded into bars for eating or used as a covering for sweet meats and biscuits is an intimate mixture of finely ground roasted cacao-nibs and sugar in which it is usual to incorporate additional cacao butter and flavouring, with or without the addition of milk solids and emulsifying agents.
4. **Milk chocolate** : Sweet milk chocolate or milk chocolate coating is the solid or semi-solid food prepared from chocolate liquor, with or without added cacao fat, and one or more optional dairy ingredients like milk, cream, etc.

Chocolate flavoured coatings prepared with lower melting vegetable fats other than cacao butter marketed for use in the ice-cream industry.

Spices & Condiments : The spices and condiments are used by human beings since antiquity. Spices and condiments have a characteristic taste and aroma and they are widely used to flavouring various food preparations, and in medicine, cosmetics and several other industries.

Although spices are consumed by men, but they can not be grouped as food as they contain less nutritive value. However, they give a good flavour and aroma to food, and add greatly to the pleasure of eating. They stimulate appetite and increase the secretion and flow of gastric juices. For this reason, spices are commonly known as 'food adjuncts'. The aromatic value of the spices is due to the presence of essential oils.

Spices can be defined as the vegetable products (eg. leaves, seeds, fruits, barks, etc.) which are used either as such or dried or powdered from for flavouring foods and drinks. Condiments are spices or rather flavouring substances which possess a sharp taste and are commonly added to food after it has been cooked.

✓ Black-pepper

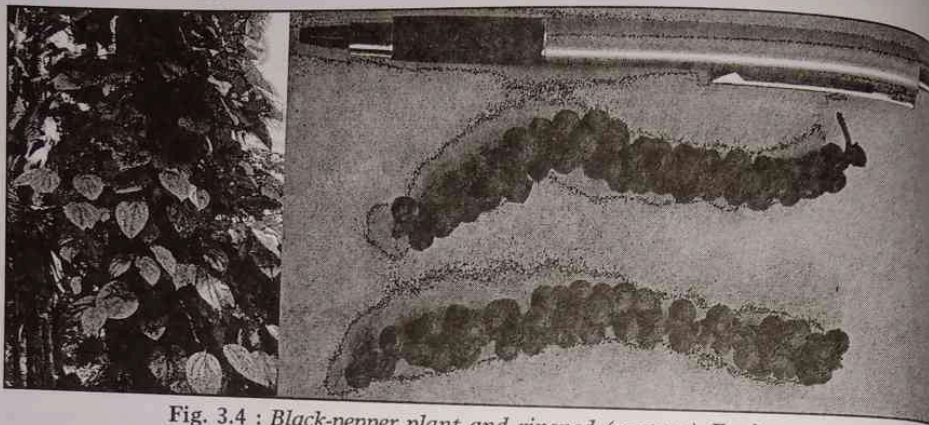


Fig. 3.4 : Black-pepper plant and ripened (mature) Fruits

Botanical name—*Piper nigrum* Linn.

Family—Piperaceae

Local names—Jalook (Assamese), Golmarich (Hindi).

Parts used—Fruit.

Uses :

1. The berries contain an alkaloid known as 'piperine'.
2. The fruits are aromatic, stimulant, carminative, stomachic, digestive, nerve tonic, diuretic and antiperiodic.
3. It is given either in powder or decoction form in dyspepsia, diarrhoea, flatulence, cholera, piles, urinary troubles, cough and gonorrhoea.
4. White pepper is less pungent and more aromatic than black pepper.

Garlic

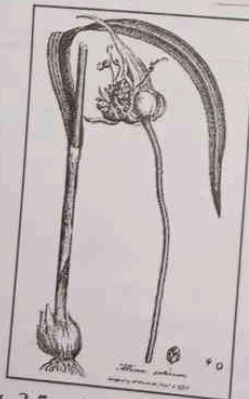


Fig. 3.5 : Garlic plant parts

Botanical name—*Allium sativum* Linn.

Family—Alliaceae/Liliaceae

Local names—Nohoru (Assamese), Lasun/Rasun (Hindi).

Parts used—Bulb (modified stem)

Uses :

1. It is given in fever, flatulence and nervous disorders.
2. Decoction of garlic mixed with milk and water is given in hysteria, flatulence and sciatica.
3. Garlic is anthelmintic.
4. Massaging of mustard oil boiled with garlic is an effective cure for rheumatism and nervous disorders.
5. Garlic paste mixed with honey in small doses is a valuable remedy for asthma, cough and other disorders of chest.

Ginger

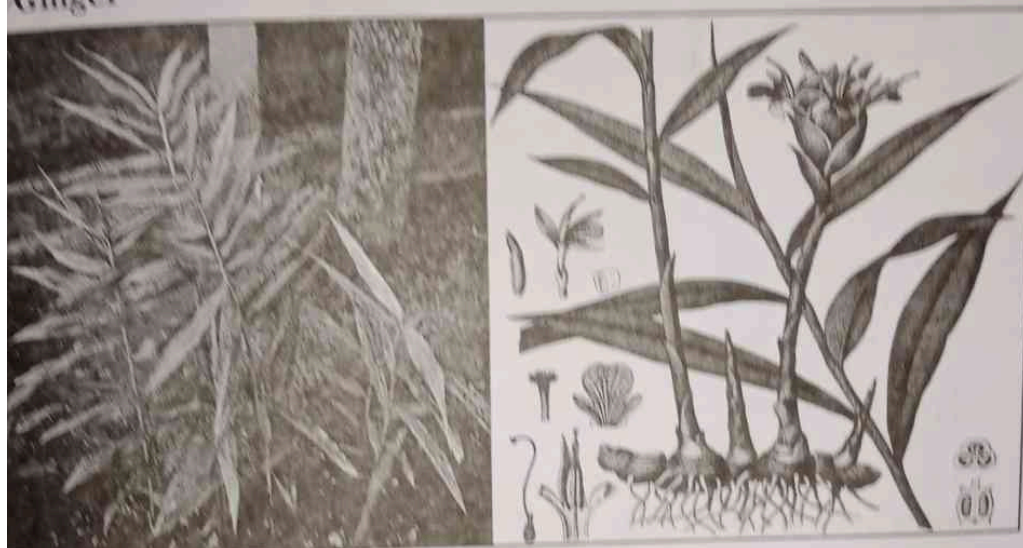


Fig. 3.6 : Ginger plant with its different parts

Botanical name—*Zingiber officinale* Rosc.

Family—Zingiberaceae

Local names—Ada (Assamese), Ada/Adrak (Hindi).

Parts used—Rhizome (modified stem)

Uses :

1. Ginger adds good aroma to food items like confectionary, curry, drinks, etc.
2. Ginger rhizomes are carminative, stimulant and aromatic.

Cinnamon



Fig. 3.8 : A cinnamon plant

Botanical name—*Cinnamomum verum* Presl.

Family—Lauraceae

Local names—Dalchini (Assamese), Dalchini (Hindi).

Parts used—Dried Bark (inner)

Uses :

1. Cinnamon is a good flavouring material and is used as spice or condiment in curries and other food preparations.
2. The particular hot taste, favour and pungency of cinnamon bark are due to the present of an aromatic compound known as 'cinnamaldehyde'.
3. In medicine, it is used as heart stimulant. It is a good remedy for diarrhoea and dysentery, vomiting and dyspepsia.
4. The bark contains oil of which the chief constituent is cinnamic aldehyde.

Cloves



Fig. 3.9 : Clove plant parts

Botanical name—*Syzygium aromaticum* (L.) Merr. & Perry.

Family—Myrtaceae

Local names—Long (Assamese), Lavang/Laung (Hindi).

Parts used—Un-open flower bud (immature ovary with calyx).

Uses :

1. Clove (un-opened flower bud) is very aromatic substance and it imparts warming quality. It is used as a culinary spice in all Indian homes. It is used for flavouring curries, ketchup sauces and pickles.
2. The particular taste, flavour and pungency of clove are due to the presence of an aromatic compound known as 'eugenol'.
3. Because of its stimulatory property it is used as ingredient of chewing betel.
4. It is highly valued in medicine as carminative, aromatic and stimulant.
5. Special brand of cigarette is made by using clove.
6. The oil obtained by distilling clove along with water has got several important uses in medicines.
7. The chief constituent of oil is eugenol which is used as an emittion carnation in perfumes.
8. Clove oil is used as clearing agent in histological preparations.

Fenu-greek

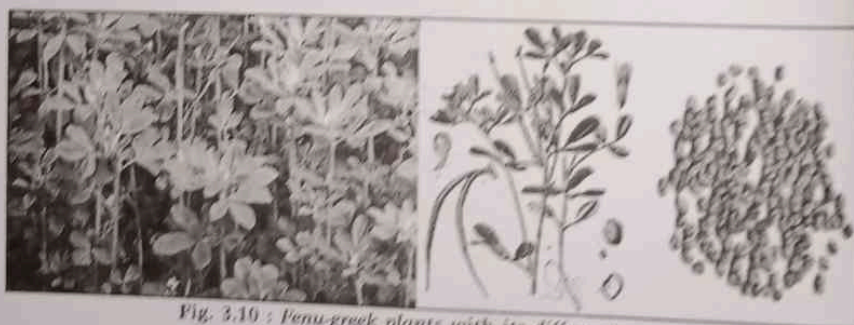


Fig. 3.10 : Fenu-greek plants with its different parts

Botanical name—*Trigonella foenum-graecum* Linn.

Family—Fabaceae

Local names—Methi (Assamese), Methi (Hindi).

Parts used—Latex.

Uses :

1. Young leafy shoots are used as green vegetables.

2. Seeds are used as spice in preparation of pickles.
3. It increases nutritive value of the food and adds pleasant flavour to food items. In Egypt and Ethiopia fenugreek is popular ingredient of bread.
4. Seeds are eaten boiled or raw with honey as tonic.
5. Fenugreek has been used to reduce fever since early days.
6. Fenugreek is employed today in preparation of several medicines for diabetes and gastric troubles.
7. Seeds promote lactation in ladies.
8. Fine powder of fenugreek mixed with cotton seeds is given to cattle to increase the flow of milk.
9. Recent studies have indicated that fenugreek seeds contain steroidal substance - 'diosgenin' which is used in the synthesis of sex hormones and oral contraceptives.

✓ Turmeric



Fig. 3.11 : Turmeric plant parts

Botanical name—*Curcuma longa* Linn.

Family—Zingiberaceae

Local names—Halodhi (Assamese), Haldi (Hindi).

Parts used—Rhizome (modified stem).

Uses :

1. The rhizomes are aromatic, stimulant and carminative.
2. The particular taste and flavour of curcuma is due to the presence of an aromatic compound known as 'curcumin'.
3. It is given in diarrhoea, intermittent fever, dropsy, jaundice, liver ailments and urinary troubles.