Spices: Economic importance with special reference to fennel, saffron, clove and black pepper

CC-7
UNIT-2

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SPICES

- Throughout ancient India and China, spices and condiments have been an integral part of culture. Spices add flavour and scent to food, making it more enjoyable to eat, yet they cannot be classified as foods because they are low in nutrients. They are referred to as food adjuncts because they increase hunger. Even though they are used in similar ways, food and condiments differ fundamentally.
- All fragrant vegetables that are used to flavour food and beverages are commonly referred to as spices, and they are only employed in hardened or hardened plant components. Spices and other strong-tasting flavourings are added to food after it has been cooked and are known as condiments. Thus, one of the essential components of food flavour is the spices.

SPICES

- significantly reduced shelf life. Certain spices, like turmeric, are frequently only sold in ground form and are not always accessible whole or in their freshest condition. It is common to utilise small seeds, such fennel and mustard seeds, both whole and ground into a powder.
- Food without spices would be monotonous. Aroma and food flavour work together harmoniously. Dr. Guy Crosby, a food scientist, claims that people can recognise around 10,000 distinct receptors that are located in and around their nostrils and taste buds. In this context, orthodontiasal and retronasal receptors are crucial. Certain food flavours, such as those that are bitter, salty, sour, cooling, earthy, flowery, fruity, herbaceous, hot, nutty, piney, pungent, sulfery, woody, etc., can be made more palatable for humans by sensitising particular receptors.

SPICES AS PER SOURCE

The following list of plant organ parts can be used as a source of spices:

- FROM ROOTS: Lovage - *Levisticum officinale* Koth. (Apiaceae); Horse radish- *Amoracia lapathfolia* Gilib. (Brassicaceae); Angelic- *Angelica archangelica* L. (Apiaceae)
- FROM UNDERGROUND STEMS: Mango zinger- *Curcuma amada* Roxb; Shallot - *Allium ascalonicum* L. (Liliaceae); Garlic - *Allium sativum* L. (Liliaceae); Sweet flag- *Acorus calamus* L. (Araceae).
- BY BARK: Cassia china; *Cinnamomum aromaticum* Nees. (Lauraceae); Cinnamom; *Cinnamomum zeylanicum* Bl. (Lauraceae)

SPICES AS PER SOURCE

- **FROM LEAVES & TWIGS**: Leucas - *Leucas zeylanica* R.Br. (Lamiaceae), Lemon verbena - *Lippia citriodora* (Verbenaceae), Mint - *Mentha longifolia* (Linn.) Huds. (Lamiaceae); Peppermint - *Mentha piperita* L. (Lamiaceae)
- **FROM FLOWER BUDS, FLOWERS**: Saffron - *Crocus sativus* Linn. (Iridaceae);Edible Caper- *Capparis spinosa* L.(Capparidaceae)
- **FROM FRUITS**: Sweet pepper - *Capsicumn annum* L. (Solanaceae); Red Pepper - *Capsicum frutescens* L.(solanaceae); Caraway- *Carum carvi* L.(Apiaceae); Coriander, *Coriandrum sativum* L. (Apiaceae); Cumin- *Cuminum cyminum* L.(Apiaceae); Badrang- *Fagara budrunga* Roxb. (Rutaceae); Allspice - *Pimenta dioica* (Myrtaceae); Indian Long Pepper - *Piper longum* L. (Piperaceae); Vanila - *Vanilla planifolia* (Orchidaceae); Ammi - *Trachyspermum ammi* (Apiaceae)

SPICES AS PER SOURCE

- **FROM SEEDS: Black cumin (*Nigella sativa* L.) (Rananculaceae); Nutmeg (*Myristica fragrans*); Lesser cardamom (*Elettaria cardamomum*) (Zingiberaceae); Pomegranate (*Punica granatum*) (Punicaceae); Sesame (*Sesamum indicum* L.) (Pedaliaceae)**
- **FROM LICHENS: Parmelia- *Parmelia abessinica* (Parmeliaceae)**
- **INGREDIENTS: Carambola (*Averrhoa carambola* L. Oxalidaceae); Sour lime (*Citrus carandas* L. Rutaceae); Red sorrel (*Hibiscus sabdariffa* L. Malvaceae); Almonds (*Prunus amygdalus,* Rosaceae) and Cashew nut (*Ancardium occidentale* L.).**

LIST OF IMPORTANT SPICES

Name of the plant	Family	Parts Used
Ferula foetida	Apiaceae	Root stock
Cinnamomum aromaticum	Lauraceae	Leaves
Levisticum officinale	Apiaceae	Root stocks
Acorus calamus	Araceae	Rhizomes
Alium ascalonicum	Apiaceae	Bulb
Alpinia galanga	Zingiberaceae	Reddish rhizome
Cucuma amada Roxb.	Zingiberaceae	Rhizome
Cucuma domestica	Zingiberaceae	Rhizome
Kaemeferia galanga	Zingiberaceae	Rhizome
Mentha arvensis L.	Lamiaceae	Leaves
Lipia citridora H B & K	Lamiaceae	Leaves

LIST OF IMPORTANT SPICES

COMMON NAME	BOTANICAL NAME	FAMILY	PARTS USED
Pepper mint	*Mentha piperita*	Lamiaceae	Leaves
Curry leaf tree	*Murraya koenigii*	Rutaceae	Leaves
Rumex	*Rumex hastatus*	Asteraceae	Leaves
Thyme	*Thymus vulgaris*	Lamiaceae	Dried leaves
Edible caper	*Capparis spinosa*	Capparidaceae	Capers
Saffron	*Crocus sativus*	Tridaceae	Dried stigma
Clove	*Syzygium aromaticum*	Myrtaceae	Unopened flower
Cardamom	*Eletteria cardamomum*	Zingiberaceae	Seeds
Garden sage	*Salvia officinalis*	Lamiaceae	Leaves

CHEMISTRY OF SPICES

The majority of spices are culinary ingredients that enhance the flavour and scent of food. Spices have nutritional and therapeutic qualities that have a significant impact on lipid metabolism and have anti-inflammatory potential. Although there are many chemicals in spices, the following are the most significant ones: ascorbic acid, bete-carotene, Camphene, Carvacol, Eugnol, methyl eugenol, myrcene, myristic acid, myristicin, Acetophenone, Nerol, Hexonol, Nerolidol, Citrol, Pipierine, Pepper phenol amides, Lauric acid, and various other antioxidants like superoxide dismutase, catalase, glutathione peroxides and other compounds with potent anticancer agent, to reduce stress, and to regulate various metabolic activities for the dynamic equilibrium of the entire body of the consumers in general and humans in particular.

FENNEL(MAURI)

Scientific Name: *Foeniculum vulgare* Mill
Family: Apiaceae.
Strong, glabrous, aromatic herb that grows to a height of 5–6 feet; grown at an elevation of 6000 feet; grows in any good soil, but does best in black sandy soil that has enough lime in it; propagated by broadcasting seeds; harvested before fruits are fully ripe; cleaned and threshed out by winnowing.
Uses for plant parts: Seed and dried, mature fruit.
Uses:
1. Fruits with a pleasant scent and perfume that are used to flavour food
2. Fruits are also consumed in paan or as masticatory after lunch or dinner.
3. Essential oils extracted from fruits are used to flavour food. An oil's primary component is a nethole.

FENNEL OIL

4. Fruits have therapeutic potential and are stimulating, carminative, and fragrant.

- **Beneficial for conditions affecting the kidney, spleen, and chest.**
- **hot infusion used for lacteal secretion.**
- **Fennel oil: contains 370 calories per 100 g and is composed of moisture (3.6%), protein (9.5%), fat (1%), crude fibres (18.5%), carbohydrates (42.3%), and mineral matter (13.4%), in addition to potassium, sodium, iron, vitamin B1, vitamin B2, and niacin.**
- **The volatile oil obtained from steam distillation is colourless or pale yellow, with a distinct flavour and scent. It is an anetholic flavouring agent used in confections, liqueurs, cooking, and cordials.**
- **It is also a good aromatic and works well as a vomicide against hookworms.**

SAFFRON (KESHAR)

Scientific Name: *Crocus sativas* Linn. Mill
Family: Iridaceae
The dried stigmas, style tips, and rhizomatous herb combine to form the commercial saffron. The product is made from flower stigmas; 4000 stigmas are needed to make just 25 grammes of saffron.

- **Used portion**: Dried *Crocus sativus* stigma

Uses:

1. In addition to its amazing therapeutic benefits, it possesses flavouring and colouring characteristics.
2. Mostly used in Asian cuisine, such as desserts and biryani.
3. It is a good medication with ghee for diabetes.
4. Applied as an odor-pleasing dye,
5. It is a component of many meals that use both cooked and sweet rice.

CLOVE

Scientific Name: *Syzygium aromaticum*

Family: Myrtaceae..

The most important plant that produces spices was originally brought to the East India Company in 1800. throughout India. The plant typically reaches a height of 12 metres, and the clove is harvested from unopened dried flower buds. a medium-sized cone-shaped evergreen tree that has green buds when harvested but turns dark brown when exposed to the light. It is reproduced via seeds, which appear four to five weeks after the seedlings have grown.

- **Plant portion utilized**:

1. Desiccated buds Warming qualities are imparted by a fine-flavored, very aromatic spice.
2. The use of culinary spice in both savoury and sweet recipes.
3. Pickles, gravy, baked goods, cakes, puddings, syrups, and other recipes call for it.
4. Clove oil is utilised in confections, pickles, sausages, and other foods.

BLACK PEPPER

Scientific Name: *Piper nigrum L*
Family: Piperaceae.
Common name: Bengali: Golmorich
A bisexual, climbing perennial herb with grown nodes rooted in it that bears bitter fruit; requires warm, humid conditions to grow
Utilised Parts: Piper nigrum, which is utilised in both black paper and white pepper. Rounded berries are dried and turned into black pepper, whereas fully ripe berries are dried and turned into white pepper (sheetal mirchi).
Uses:

1. Tender green spikes of unripe fruits are called green peppers.as a pickle substitute.
2. Medically in cases of dyspepsia, haemorrhoids, malaria, etc.
3. A necessary meat or perishable food preservative.
4. Agents of Flavour.
5. Pepper oil is used to season sausages.


THANK YOU