M.Sc. Botany (Semester II)
Course Title : Systematics and Evolution

Unit II: Cucurbitaceae

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Cucurbitaceae (Gourd Family)

- The family Cucurbitaceae also called as ‘’Cucurbits’’ popularly known as ‘’Gourd family’’.
- Utilized mainly as vegetables
- The most importants are squash, pumpkin, gourds, watermelons & cucumber

Scientific classification:

- Kingdom : Plantae
- Phylum : Angiosperms
- Class : Dicotyledons
- Order : Passiflorales
- Family : Cucurbitaceae

- Genera : 100
- Species : 850

Morphological characters

Habit: Mostly annual or perennial herbs, rarely shrubs

Root: Tap-root system, may be thickened due to storage of food and water

Stem: Herbaceous, climbing, angular, fistular, branched

Leaves: Alternate, petiolate- petiole long and hollow; simple, lobed, exstipulate, reticulate venation; palmately veined; tendrils present in the axil of leaf or opposite to the leaf.

Inflorescence: Racemose or Cymose panicles

Reproductive characters

Flower: Regular, mostly unisexual, incomplete, epigynous, pentamerous

Male Flower: Produced in large numbers.

Calyx: Sepals 5, Gamosepalous, aestivation imbricate

Corolla: Petals 5, Gamopetalous, rotate, imbricate or valvate aestivation

Androecium: Stamens 5, anthers dithecous extrorse, dehiscence longitudinal or in curves

Gynoecium: Reduced or rudimentary or absent.

Reproductive characters

Female Flower: Less number than male flowers

Calyx: Sepals 5, gamosepalous, calyx tube adnate to the ovary wall; imbricate aestivation, superior

Corolla: Petals 5, gamopetalous, inserted on calyx tube; imbricate aestivation, superior

Androecium: Staminodes 0, 3, 5

Gynoecium: Tricarpellary, syncarpous, ovary inferior, unilocular with parietal placentation, the intruding placentae make the ovary to appear trilocular

Fruits: Soft, fleshy, indehiscent and either a berry or Pepo

Seed: Dicotyledonous and exalbuminous

Pollination: Entomophilous.

Male flower – Br ⊕ ♂ K (5) C (5) A (2) + (2) + 1 G0

Female flower – Br ⊕ ♀ K (5) C (5) A 3std G (3).

Economic Importance

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

- **Vegetables and fruits**:
- *Cucumis melo* (Kharbuza)
- *Citrullus vulgaris* (Tarbuz)
- *Cucurbita maxima* (Kaddu)
- *Lagenaria vulgaris* (Lauki)
- *Trichosanthes dioca* (Parwal)

- **Ornamental plants**:

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

- **Medicines:**

- ***Citrullus colocynthis-*** obtained the alkaloid colocynthin from its fruits. The fruits and roots are used against snake bite.
- ***Ecballium elatarium*** fruits produce elaterium of medicine which has narcotic effect and useful in hydrophobia.
- Fruits of ***Momordica charantia (Karela)*** are used for stomach ache, gout, rheumatism, liver, spleen problems.

Acknowledgements

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- I apologize to all authors whose findings could not be substantiated or cited in our presentation due to reasons of brevity

Thank you for your attention