



# **SIGNIFICANCE OF HORTICULTURE**

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# D. Classification based on temperature relations

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## Acc. To growing season (Fruits)

- Both tropical and sub-tropical are
  - native to warmer climate
  - frost sensitive
  - needs hardening in late summer.

## According to ability to withstand low winter temperature.

- tender    not resistant
- hardy     resistant



# D. Fruit Classification based on Uses & cultural requirements

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- Soft fruit:
  - Born on low growing plants like shrubs and vines
  - grapes, falsa, strawberry
- Nuts
  - edible seeds
  - almond, walnut, pecans etc.
- Fleshy fruit
  - soft flesh opposite to seed
  - mango



## D. Fruit Classification based on Uses & cultural requirements

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- Pome/False fruits
  - edible part thalamus
  - apple, pear, quince.
- Berries
  - develop from ovary walls
  - grapes, banana, citrus, tomato.
- Stone/drupe fruit
  - fruits have stony endocarp.
  - peach, plum, apricot, mango, cherry.

# Quince





# D. Fruit Classification based on Uses & cultural requirements

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- Multiple fruits

- develop from many separate but closely clustered flowers
- pineapple.

- Aggregate fruits

- derived from a flower with more pistils on a common receptacle
- Individual fruit
  - drupe (blackberry)
  - Achene strawberry
    - Small one seeded indehiscent fruit developed from a single carpel



## **D. Vegetable classification based on uses & cultural requirements**

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- Root crops
  - with underground edible part
  - carrot, radish, turnip, beet, potato.
- Leafy vegetables
  - lettuce, cabbage, celery, spinach
- Vine crops
  - Most of cucurbits



## D. Vegetable classification based on uses & cultural requirements

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- Solanaceous fruits
  - Tomato, eggplant & bell pepper
- Flower crops
  - Cauliflower & broccoli
- Seed
  - Peas & beans





# D. Ornamental plant classification based on uses & cultural requirements

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- Flowering plants
  - Annuals,
  - perennials and
  - bulbs with underground storage organs.
- Landscape plants
  - Foliage plants, ground covers, lawn grasses, hedges, trees and shrubs
  - Indoor plants with persistent evergreen foliage

# D. Hort. plant classification based on uses & cultural requirements



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Others:

- Beverage plants:
  - for flower and aroma
- Industrial plants:
  - e.g jojoba (oilseed), rubber, drugs/medicinal plants.



# B. Botanical classification

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- Scientific plant classification based on phylogenetic relationships of organisms.
- Taxonomy
  - Taxon                      group/category
  - Science of classification
- Class. On the basis of diff. and similarities
- Mid 18<sup>th</sup> Century, Linnaeus used
  - morphology of sexual/reproductive parts as basis for taxonomy b/c
  - these organs are less influenced by env.



# B. Botanical classification

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- Plant Kingdom
  - Includes a dozen major phyla/divisions
  - Tracheophyta is more developed
  - Have vascular/treachery system (common in all higher plants)
  - All hort. Crops except mushrooms
- Several classes
- Hort. Important classes
  - Filicinae (ferns)
  - Angiospermae (flowering plants)
  - Gymnospermae (conifers)



## B. Botanical classification

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- Class > Order > Family >  
Genus > Sp. > Var.
- Identical group of individuals within a sp.  
Variety
- Intermediate subdivision
  - e.g family Rutaceae
  - Subfamily Aurantioideae
- Kingdom-family major taxa
- Family-var. Minor taxa



## B. Botanical classification

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- Genetic diversity
  - Genus > Var.
- Gymnosperms.
  - Naked Seeds
  - Small group (~700 living sp.)
  - mostly evergreen with needle shaped leaves.
  - Belong to temperate zone.
  - Sources of timber, wood pulp, turpentine, resins, edible seeds and high value ornamental plants.



## B. Botanical classification

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- Angiosperms
  - Seed enclosed in fruit
  - Large group of plants (> 25000 sp.)
  - Broad leaves
  - Primary source of food, fiber & shelter
- Sub-classes
  - Dicotyledonae
  - Monocotyledonae



## B. Botanical classification

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- Dicots (200,000 sp.)
  - 2 cotyledon
  - floral parts in 4/5 multiples.
  - Leaf venation reticulate
  - Presence of vascular cambium
- Monocots (50, 000 sp.)
  - single cotyledon
  - Floral parts 3 or multiple
  - Both classes have several orders and families





# B. Botanical classification

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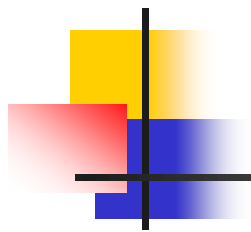
- Identification and description
  - Based on two parts,
  - Generic (capital letter)
  - Specific (small)
  - Genus
    - group of species with common morphological, genetic and cytogenetic features.
  - Specie
    - Plants morphologically same and produce like progeny
    - Normally inter-breeding population.



## B. Botanical classification

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- Varietal name follows the specific name.
  - *Brassica oleracea* botrytis (cauliflower)
  - *Brassica oleracea* capitata (cabbage)
- Cultivar
  - Group of plants within cultivated specie that maintain the identity when propagated sexually or asexually.
- Sexually propagated cultivar categories:
  - Pure line or self-pollinated
  - Open-pollinated (OP's)
  - Hybrids



**THANKS**  
ANY QUESTIONS