

PLANT ANATOMY Lecture 27 - Fruits (and Vegetables)

- I. What is the difference between a fruit and a vegetable?
  - A. Definition of a fruit: a ripened ovary of a flower
  - B. Definition of a vegetable: edible portion of a plant which does not include the ovary; of, or pertaining to the vegetative portion of the plant
  - C. Examples of fruits and vegetables
    - 1. Fruits: apple, cherry, grape, string beans, eggplant, cucumbers, corn, and wheat
    - 2. Vegetables: Celery, broccoli, cabbage, onion
- II. Fruit morphology (some terms also in seed morphology)
  - A. Sepal - outer modified whorl of leaves
  - B. Calyx - collective term for sepals
  - C. Fruit coat (wall) - outer portion of DRY "fruit"
  - D. Pericarp - fruit wall of FLESHY "fruit"
    - 1. Ectocarp - outermost layer
    - 2. Mesocarp - middle layer
    - 2. Endocarp - innermost layer
  - E. Achene - a simple, small, dry, one-seeded fruit with a thin pericarp - in strawberry
  - F. Locule - cavity where ovules are found (also used to define location of microspores in the anther)
  - G. Seed - matured ovule (contains egg and other stuff)
  - H. Placenta - tissue within the ovary to which the ovules are attached
  - I. Embryo - a young sporophytic plant
  - J. Ovule - immature seed consisting of the female gametophyte, nucellus (tissue around the gametophyte), and integuments
  - K. Ovary - female organ that produces the egg (it contains the ovules)
- III. Kinds of fruits
  - A. Simple fruits - derived from a single ovary
    - 1. Fleshy fruits - all or most of the pericarp is soft and fleshy at maturity (grape, peach, olive, cherry)
    - 2. Dry fruits - pericarp becomes dry and often hard at maturity (pea, bean, milkweed, lily, corn, wheat, oats)
  - B. Compound fruits - formed from numerous carpels of one flower
    - 1. Aggregate fruits - separate carpels of one flower stay together; a cluster of several ripened ovaries produced by ONE flower (strawberry, raspberry)
    - 2. Multiple fruits - all the fruits from a flower stay together; a cluster of several ripened ovaries produced by SEVERAL flowers (mulberry, pineapple)
    - 3. Accessory fruits - one or more ripened ovaries with tissues from some other floral part; tissue in which the "true fruit" is embedded (stem and calyx [sepals] of strawberries, apples, and pears)