MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #136

Plant Structures: Fruit

Outline:

Thought question:

- Why are fading flowers removed from spring flowering bulbs and other flowering ornamental plants?

Fruit evolves from the maturing ovary following pollination and fertilization. Fruits can be either fleshy or dry. They contain one or more seeds**.**

Function

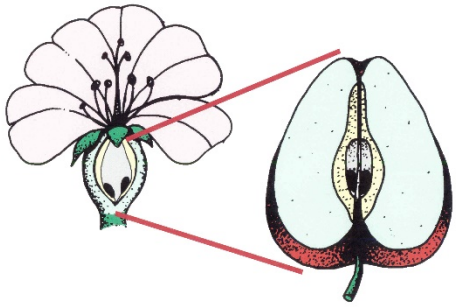
- Reproduction
- Horticulture uses
  - Feed, food, and oils
  - Aesthetic qualities
  - Plant identification

Structure

Fruit consists of carpels where the ovules (seeds) develop and the ovary wall or **pericarp**, which may be fleshy (as in apples) or dry and hard (as in an acorn). Some fruits have seeds (mature ovules) enclosed within the ovary (apples, peaches, oranges, squash and cucumbers). The peel of an orange, the pea pod, the sunflower shell, and the skin flesh and pit of a peach are all derived from the pericarp.

Other fruit have seeds that are situated on the periphery of the pericarp (corncob, strawberry flesh).

Figure 1. In apples, the ovary wall becomes the fleshy part of the fruit. Notice the small fruit structure in the blossom.



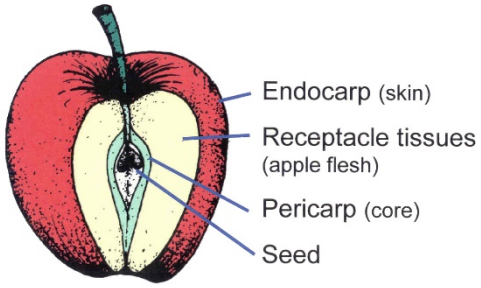
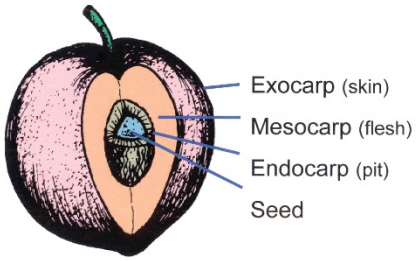


Figure 2. Pome fruit (apple)

Figure 3. Stone fruit (peach)

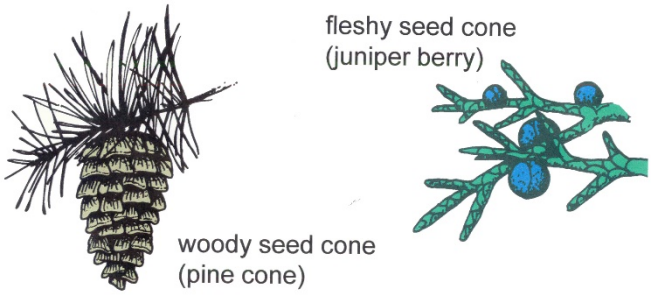


Fruit Types

Conifers

Conifers are best known for their woody cones, pinecones. Junipers are an example of a conifer with a fleshy cone (juniper berry). Upon close examination, the overlapping scales can be observed.

Figure 4. Fruit of conifers – Left: Woody seed cone (pinecone). Right: Fleshy seed cone (Juniper berry).



Flowering Plants

Depending on flower structure and inflorescence type, fruits may be either simple, aggregate**,** or multiple.

Accessory- fruit having some flesh derived from tissue exterior to the carpel.
Simple – Fruit formed from one ovary.
Aggregate – Fruit formed from a single flower with many ovaries. If not all ovaries are pollinated and fertilized, fruit will be misshapen (raspberry, magnolia).
Multiple – Fruit developed from a fusion of separate, independent flowers borne on a single structure (mulberry, pineapple, beet seed).

Fruit Growth Terms

Pollination – Transfer of pollen from the male flower to the stigma of the female flower.

Fertilization – Union of the pollen grain from the male flower with the egg cell in the female flower.

Drop – Fruit drops when not pollinated or fertilized and when too much fruit sets on a tree.

Growth –Primarily cell enlargement as the cells fill with water.

Climacteric – Point when a fruit will continue to ripen if removed from a plant; for example, pumpkins turning orange after being harvested.

Additional Information – *CMG GardenNotes* on Botany:

#121	Horticulture Classification Terms	#136	Plant Structures: Fruit
#122	Taxonomic Classification	#137	Plant Structures: Seeds
#131	Plant Structures: Cells, Tissues, and Structures	#141	Plant Growth Factors: Photosynthesis, Respiration and Transpiration
#132	Plant Structures: Roots	#142	Plant Growth Factors: Light
#133	Plant Structures: Stems	#143	Plant Growth Factors: Temperature
#134	Plant Structures: Leaves	#144	Plant Growth Factors: Water
#135	Plant Structures: Flowers	#145	Plant Growth Factors: Hormones

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