



Temperate Zone Pomology

Bahram Baninasab

Department of Horticulture

College of Agriculture

Isfahan University of Technology

Species of Deciduous Fruit trees

Rosaceae (Family)

- Pomoideae or Maloideae (Sub-family)
- Prunoideae (Sub-family)

Genus

- *Malus, Pyrus, Cydonia, Crataegus* (Hawthorn)
- *Prunoideae* ($2n=16$) \times *Spiraeoideae* ($2n=18$)
- Spontaneous doubling ($2n=34$)-- Allopolyploid

Pomoideae or Maloideae

- woody
- 2-5 carpels
- ovules 1-2 per carpel
- ovary inferior
- Pome fruit
- Cultivated members: apples, pears, quince, hawthorn, loquat

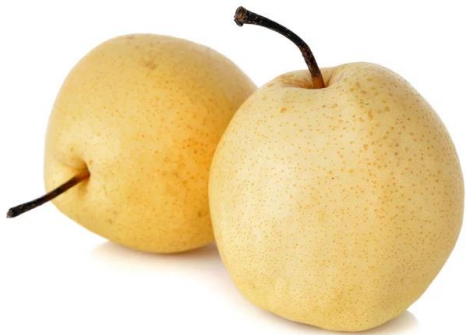
Pomoideae (Maloideae)

- Apple
- *Malus domestica* (*M. sylvestris*; *M. pumila*) $2n=34$



Pear

- *Pyrus communis* (European pear) # *P. nivalis* and *P. caucasica*
- *P. serotina* (Asian pear) # *P. pyrifolia* and *P. ussuriensis*
- $2n=34$



Quince

- *Cydonia oblonga* $2n=34$



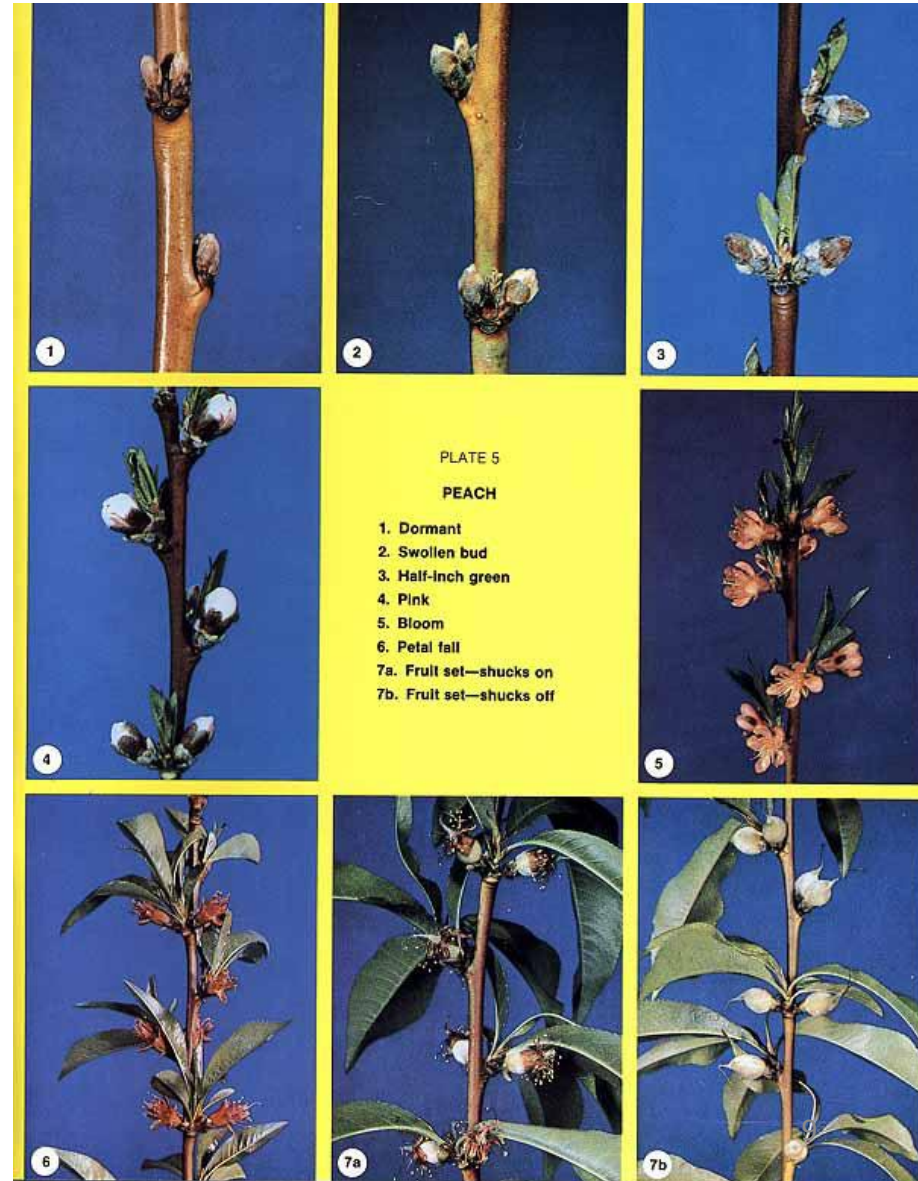
Prunoideae

Prunus

- Sub-genera:
- Amygdalus (Peach and Almond) $2n= 16$
- Prunophora (Apricot and Plum) $2n=16, 48$
- Cerasus (Sweet cherry and Sour cherry or Tart cherry)
 $2n= 16,32$

Amygdalus ($2n=16$)

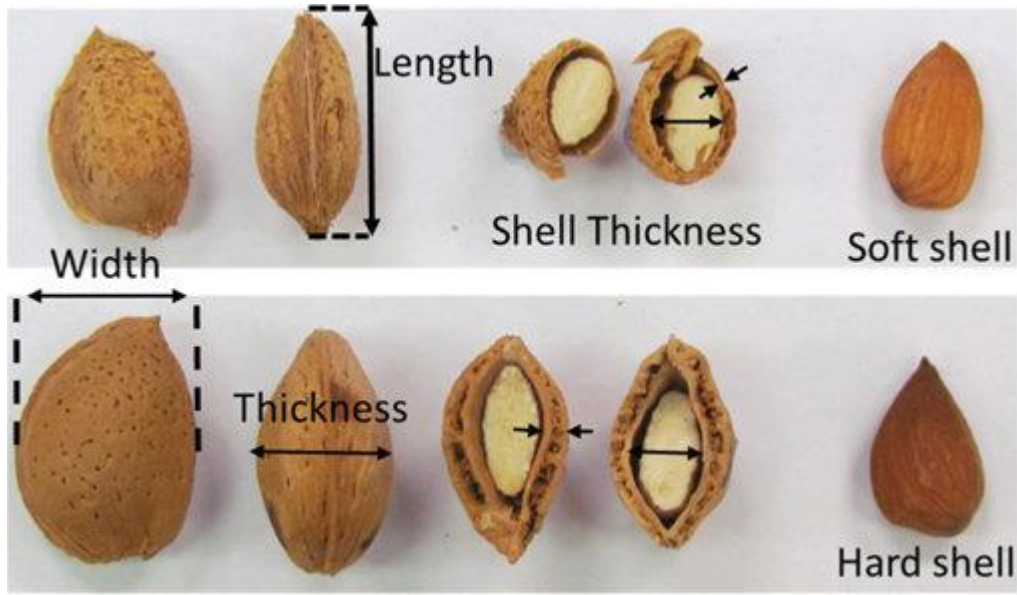
- *Prunus persica* (Peach)
- *P. amygdalus* (Almond)





- The flat peach (*Prunus persica* var. *platycarpa*), also known as the doughnut peach or Saturn peach
- Nectarine (*Prunus persica*) is a fuzzless variety of peach.





بادام محب (کاغذی)



بادام مامایی (سنگی)

Prunophora

- Plum
- *Euprunus* (European plum and Japanese plum)
 - *P. domestica* (European plum are hexaploid ($2n = 48$))

P.spinose $2n=32$ × *P.cerasifera* $2n=16$

24-----Doubling-----48



P. salicina (Japanese plum are diploid $2n=16$)



- *Prunocerasus* (American plum)
- *P. americana* $2n=16$



- *Apricot (Prunus armeniaca)* $2n=16$



- A plumcot (apriplum) is a cross between a Japanese plum and an apricot.



Cerasus

- *Prunus avium* $2n=16$
(Sweet Cherry)



- *Prunus cerasus* $2n=32$
(Sour Cherry, Tart Cherry)



- *(P. avium 2n=16) × P. fruticosa (2n=32)*

- *Duke cherry (Prunus avium × Prunus cerasus)*

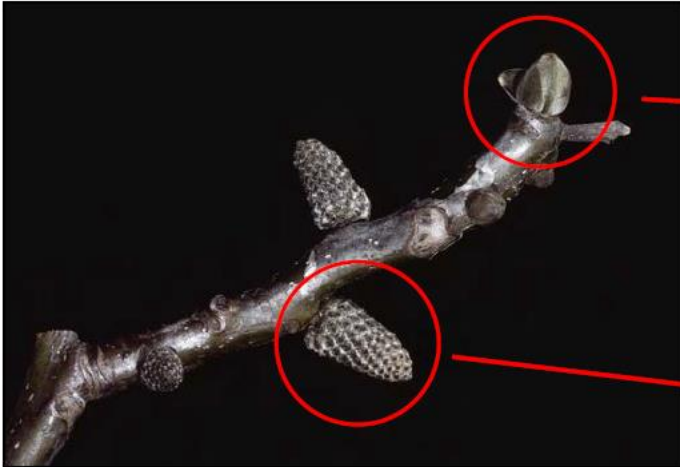


Juglandaceae

- *Juglans regia* $2n=32$
- *J. nigra*
- *Carya illinoensis* (Pecan)



Juglans regia (Walnut)



- Homogamy: The stamens and pistil mature simultaneously
- Cleistogamy (Peach): Pollination before anthesis



- Chasmogamy: pollination after anthesis



- Dichogamy: The stamens and pistil maturing at different times so that these plants can never fertilize themselves

- Protogyny: The pistil matured first

- Protandry: Pollen shed before the ovules are mature



Betulaceae

- *Corylus avellana* $2n= 24$ (Filbert, Hazelnut)

