

Unit E: Fruit and Nut Production

Lesson 4: Growing Pears

Terms

- Double working

- I. Pears are widely grown throughout the world.
 - A. They belong to the family *Rosaceae* and in the same subfamily as apple and quince.
 - B. There are 22 species of the genus *Pyrus* and originated in Asia, Africa and Europe.
 - C. China is the top producer, followed by Italy, the United States, and Spain.
 - D. Common varieties of pear in Afghanistan are *Pyrus communis*, *P. serotina*, and *P. pyrifolia*.
 - 1. Bartlett pear is the most common throughout the world accounting for about 75% of all pear production.

II. Pears are very similar to apples in their growth with only a few differences.

- A. Pears tolerate heavy, poorly drained soils better than most tree fruits.
 - 1. Deep, well-drained loams with a pH of 6-7 provide the best production.
 - a. Pear trees are planted in the same manner as other fruit trees.
 - 2. Pears have very similar climatic requirements to apples, but are much more prone to fire blight and therefore cannot tolerate humid, wet springs.

3. Pears require about 900 to 1000 hours of cold weather to break dormancy.
4. Pears have similar or slightly lower cold hardiness than apples, tolerating -23° C to -28° C
5. Pears bloom 1-3 weeks before apple, and are therefore prone to frost damage in most regions.
6. Pears mature in as little as 90 days, or as long as 200 days.
 - a. Pears that ripen in the summer are called “summer pears” and those that are harvested in autumn are called “winter pears.”

B. Pear orchards are designed very similarly to apple orchards.

1. Standard size trees are planted at about 170 trees per hectare.
2. Pear trees must be cross-pollinated and therefore every other row should be an alternate variety.

C. The most common form for training and pruning pears is the central leader form, like that of apple.

1. Major pruning should be done in the winter.
2. Only necessary pruning should be done in summer.



- D. Pear trees often overproduce on the tree and therefore need to be thinned.
1. If the fruits are not thinned, a lot of very small fruits will be produced and limb damage could occur.
 2. Failure to remove the excess fruit impacts the production of flowers for the following year.
 3. The fruit should be removed by hand.
 - a. Leave one pear per cluster and try to space the clusters about every 15 cm.

- E. Fire blight is the main disease that affects pears.
 - 1. The best method of preventing fire blight is to plan.
 - 2. If fire blight does occur remove the affected plant parts at least 15 cm below the affected area.
 - a. Immediately remove the infected plant parts from the orchard.

- F. Pear trees are usually grafted for better production and disease resistance.
1. The main rootstock used is quince which will produce small to medium sized trees.
 2. Some varieties are not compatible with quince and must be **double worked**.
 - a. Double working involves using an intermediate pear that is compatible with both the quince rootstock and the pear scion.

III. Afghanistan has three common pear varieties.

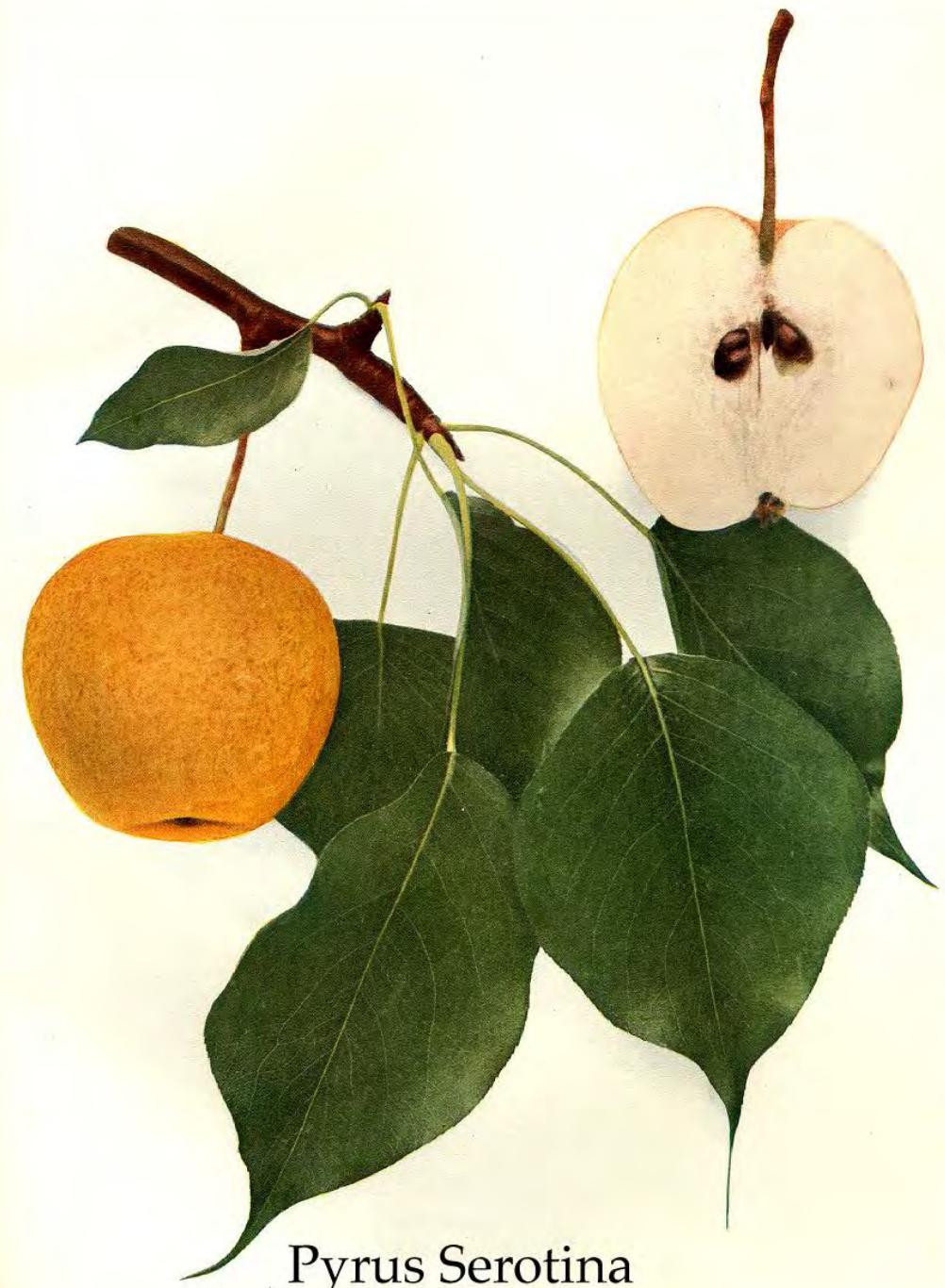
A. *Pyrus communis*

1. This pear tree is the most common pear tree.
2. It ranges in height from 6 to 9 meters.
 - a. Older mature trees can reach heights of 12 meters.
3. The bark is grayish brown and scaly.
4. The fruit is 7.6 to 10 cm in diameter
5. Blooming begins in early spring and fruiting generally ends by the end of summer.



B. *Pyrus serotina*

1. This pear tree is 8 to 10 meters in height with rough dark brown to black bark.
2. Thorns can be found at the leaf axils and are about 5 cm long.
3. The fruit is rusty brown with white spots on the outer surface and are about 5 cm in diameter.
4. Flowering takes place in March and ripening begins in November and continues until the end of December.
 - a. Fruits become fairly large by the end of September and can be eaten at this point.



Pyrus Serotina

C. *Pyrus pyrifolia*

1. This tree reaches 9 to 12 meters in height.
2. The fruit is brown to reddish brown or yellow in color and can be up to 15 cm in diameter for cultivated varieties or 2 to 3 cm in diameter for wild types.
3. The fruits ripen 4 to 5 months after blooming.
4. These trees generally need 250-1000 hours under 7°C to overcome the dormancy period.



Review/Summary

- Where did pears originate?
- What factors should be considered when planting a pear tree?
- What are some common pear trees of Afghanistan?