

## POLLINATION REQUIREMENTS FOR VARIOUS FRUITS AND NUTS

1. Generally, all fruit plants require pollination in order to produce fruit. Two major exceptions are known. They are apomixes, which occurs in citrus and parthenocarpy which can occur in Bartlett pears in California under certain conditions and in bananas
2. Pollination is the transfer of pollen from the male part (anther) of a flower to the female part (pistil) of the same or another flower of the same sort. The plant that supplies the pollen is called the pollinizer. While the agent, usually a honeybee or other insect, that does the transferring is called a pollinator
3. To be an effective pollinizer a variety must:
  - a. Have a bloom period which overlaps that of the variety to be pollinated.
  - b. Have a diploid chromosome make-up.
  - c. Produce viable pollen.
  - d. Be grown in close proximity to the variety to be pollinated.
4. Several climatic factors effect pollination:
  - a. Temperature below 55-60° F reduces bee activity.
  - b. Temperature above 85-90° F dries stigmatic surface and pollen grain doesn't germinate.
  - c. Windy weather — it slows bee activity.
  - d. Rain during anthesis (time stigmatic surface is receptive).
  - e. Presence of other flowers — the fruit plants generally are poor nectar producers and bees will naturally seek out the best nectar producing flowers.
  - f. Most insecticides will reduce bee activity — therefore do not spray them during bloom.
5. Pollination Situation — General conditions for several fruit crops. Those fruits listed are *self-fertile* and will set fruit with their own pollen.

Apple: Cross pollination always needed to produce adequate fruit crop.

Apricot: All varieties are self-fruitful but cross pollination is helpful.

Blackberry & Dewberry: Most are self-fruitful but a few are not and to get a crop require cross pollination.

Blueberry: Fruit set and crop size are improved by cross pollination.

Cherry: (1) Sweet--most varieties are self-unfruitful. However there are newer varieties that are self fruitful such as Lappins, Stella, Whitegold, Sweetheart and Blackgold.

(2) Red tart--the commercial varieties are self-fruitful.

Currants: Self-fruitful.

Gooseberry: Most varieties are self-fruitful.

Grape: Most are self-fruitful

Nectarine: Most varieties are self-fruitful; however, those having J. H. Hale in the parentage will require cross pollination.

Peach: All commercial varieties, except J. H. Hale are self-fruitful.  
Pear: A few varieties are self-fruitful. But a pollinator will improve crop.  
Plum: A wide diversity occurs in the plums:--about half of the varieties are self-fruitful and half are not. To be on the safe side pollinators should be provided.  
Quince: All varieties are self-fruitful.  
Raspberry: Black--mostly self-fruitful.  
                  Purple--self-fruitful.  
                  Red--mostly self-fruitful. But crop size is improved by cross pollination.  
Strawberry: Varieties are known which produce imperfect flowers but most varieties planted are self-fertile.  
Persimmon: American--Self-fruitful  
                  Japanese--Three types of flowers are produced on the same tree. It is a good idea to plant at least two trees to assure good fruit production.  
Almond: Must be cross pollinated by another variety.  
Beech: Self-fruitful.  
Black Walnut: Self-fertile but often the pollen is not shed when stigma is receptive. Use at least two varieties or seedlings to assure good crops.  
Buartnuts: Hybrids of butternut and heartnut, believed to be self-fruitful.  
Butterjap: A butternut x sieboldii hybrid. Self-fruitful.  
Carpathian Walnut: Self-unfruitful - at least one other seedling tree required to assure a crop.  
Chestnut, Chinese: All are self-sterile. Two or more varieties or seedling trees are necessary to assure adequate cross pollination.  
English Walnut: See Carpathian Walnut.  
Filbert: Best to plant at least two varieties or seedlings to assure pollination.  
Hazel: Same situation as Filbert.  
Heartnut: Best to plant two varieties or seedlings to assure pollination.  
Hican: Many types of hickory x pecan hybrid. Usually considered self-fruitful.  
Hickory: Best to plant at least two seedlings to assure pollination.  
Japanese Walnut: See Heartnut.  
Pecan: Self-fertile. Wind pollinated.  
Persian Walnut: See Carpathian Walnut.  
Pistachio: Must be cross pollinated.  
Siebold Walnut: See Heartnut.