



## Growing Fruits: Pollinating Fruit Crops

Most tree fruits and many berries grown in New Hampshire require cross-pollination, or pollination from a different variety of that same crop, to produce fruit. Even those that do not require pollination will often produce larger crops where cross-pollination occurs. To insure good crops, plan for adequate cross-pollination before you buy trees or plants.

### Is pollination required?

*Self-fruitful* varieties will produce a full crop of high-quality fruit without cross-pollination. *Partially self-fruitful* varieties will produce a partial crop of high-quality fruit when planted alone. Self-fruitful varieties are especially useful in home orchards where space available for growing fruit is often limited.

### Incompatibility

Cross-pollination means pollination between two different varieties of a particular species. For example, a McIntosh tree and a Cortland tree planted together will effectively cross-pollinate each other and both trees will set fruit. Some combinations of varieties are *incompatible*. The actual transfer of pollen may occur but for a number of reasons the pollen from one variety may not effectively fertilize the second.

Most nurseries offer pollination charts that list incompatibilities or suggest compatible pollen sources in individual variety descriptions. Potential tree buyers should pay attention to these suggestions and make purchases accordingly.

### Apples

Nearly all commercial apple varieties require cross-pollination to set good crops of fruit. Most pairs are compatible if their bloom periods overlap sufficiently. For example, Northern Spy and Macoun (late-blooming apples) will not reliably pollinate early-blooming varieties such as Zestar or McIntosh, because the blossoms of the late-flowering varieties may open after the blossoms of the early flowering ones have faded. Certain varieties, such as Mutsu, Baldwin and Jonagold, produce poor pollen and won't fertilize other varieties. Flowering crabapple trees can serve as pollen sources for edible apple varieties. Manchurian crab will effectively pollinate early and

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Figure 1: Apple blossoms turn New Hampshire orchards into a sea of color. Photo: W. Lord

**Nearly all commercial apple varieties require cross-pollination from a different variety in order to produce good crops of fruit. This is also true for many varieties of pear, plum and sweet cherry.**

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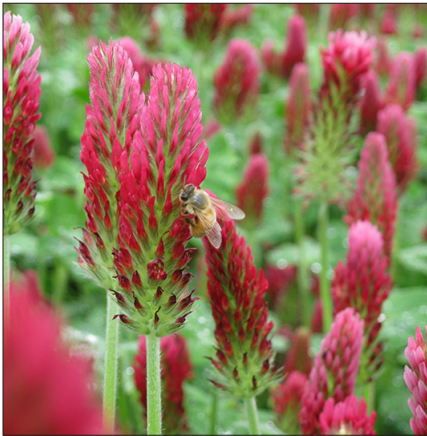
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## ***Did You Know?***

Many berry crops, such as strawberry, raspberry, and blackberry are self-fruitful, and only one variety is needed in order to produce fruit.

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**Figure 3.** Pollinators are essential for pollination to take place. These may be honeybees (as shown), or any of a number of species of native bees. Photo: B. Sideman



**Figure 4:** A honey bee collects nectar and in the process pollinates a blackberry flower. Photo: W. Lord

mid-season varieties and Snowdrift crab will take care of later-blooming ones. Since bees tend to work flowers of like color, only white-flowered crabs should be used to cross-pollinate edible apple varieties.

### ***Apricots***

Most apricots are self-fruitful and can be grown alone. Exceptions to this rule are usually noted in catalog descriptions, for example, Perfection and Rival require cross-pollination. Self-fruitful varieties will generally produce larger crops if cross-pollination occurs.

### ***Grapes***

All grape varieties recommended for New Hampshire are self-fruitful and will produce full crops when planted alone.

### ***Peaches and Nectarines***

Peach and nectarine varieties recommended for New Hampshire are self-fruitful and will produce well alone. The older variety, J.H. Hale, does require cross-pollination by another variety.

### ***Pears***

All pear varieties require cross-pollination to set good crops of fruit, although some varieties including Seckel may set adequate crops when planted alone. With good bee activity, most combinations of varieties are satisfactory for cross-pollination. One combination that doesn't work is Seckel and Bartlett. Pear flowers don't attract bees as some other fruits do, so we recommend planting three or more varieties. The variety Magness doesn't produce good pollen.

### ***Plums***

Both European and Japanese plums, as well as hybrid plums, can be grown in New Hampshire. As a general rule, two different varieties of the same type are required to ensure full crops, although European plums such as Stanley and Green Gage are at least partially self-fruitful. European types and Japanese types generally won't cross-pollinate each other.

### ***Sweet Cherries***

Most sweet cherries require cross-pollination, although Lapins and Black Gold are self-fruitful. Not all combinations of sweet cherry varieties are compatible. Most catalogs list sweet cherry incompatibilities or suggest compatible pollen sources in the individual variety descriptions. Potential tree buyers should pay attention to these suggestions and make purchases accordingly.

### ***Sour Cherries***

Sour cherries (also called pie, or tart, cherries) are generally considered self-fruitful and can be planted as single trees or solid blocks of one variety.

## Raspberries

Most varieties of red, purple, and black raspberries are self-fruitful.

## Strawberries

Most of the modern strawberry varieties grown today are self-fruitful and can be grown in solid plantings.

## Blueberries

While most high-bush varieties are at least partially self-fruitful, cross-pollination results in higher yields of larger fruits that mature earlier.

## Pollinating insects

Honeybees and many native bee species are essential for cross pollinating fruit crops. Gardeners can make their home grounds more inviting to these beneficial insects by planting a wide variety of flowers, flowering shrubs and herbs, and by maintaining natural areas with native flowering shrubs and wildflowers.



**Figure 5. Blueberry blossoms will self-pollinate, but they require insect pollinators. Photo: B. Sideman**

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