

GROWING NEW FRUIT TREE PLANTS FROM SEED

Many people mistakenly believe that fruit trees come true to name from seeds. In reality if you collect seed from a fruit grown on a plant these seeds will produce plants that will be a hybrid of two plants. The new plant will be the same kind of plant, but its fruit and vegetative portions may not look the same as the parent, because the plant is "heterozygous." Therefore, all fruit trees must be vegetatively propagated by either grafting or budding methods.

Grafting and budding require that you have a compatible rootstock or mother plant onto which you can attach your desired variety. An inexpensive way to obtain a seedling rootstock is to collect seeds from the type of plant you are propagating. This sheet gives a simple method to help germinate seeds to produce grafting rootstocks.

The seeds of all common tree fruits (apple, pear, peach, and cherry) require a chilling period before they will germinate and form new plants. The chilling period occurs after the fruit portion is ripe. This period is known as either dormancy or afterripening. During this period the embryo develops until it is mature. This is accomplished by subjecting the seeds to a cold treatment.

There are two systems whereby the necessary after ripening could be accomplished:

Method 1 - Out of Doors: Prepare a garden-soil plot in the fall as you would for planting any other type of seeds. Make a furrow that is no more than 1-2 times deeper than the longest dimension of the seed. Cover the seeds with a light cover of soil and add an inch or two of sand over the row. The sand will prevent crusting of the soil which inhibits germination.

Next, place wire screen, or hardware cloth, over the row -- be sure all the edges are pushed down into the soil several inches and the ends are closed. This prevents chipmunks and squirrels from digging up the seeds'

The following April watch the seeded area closely for newly germinated seedlings. As they grow, remove the wire-screen to prevent restriction of the new plants. (see Handling in Nursery, below)

Method 2 - Refrigerator: Extract seeds and/or pits from the fruit of which you wish to reproduce new plants. Remove all adhering fruit portions and allow seeds to air dry. Then, place them in a glass jar or other suitable container to which a loosely fitted lid or cover may be added. Set the seeds aside in a cool place until mid-January.

Seeds require a period of cold exposure called "after-ripening" The length of this period varies by type of fruit (see Table below). The temperature the seeds are stored will also impact the success of germination. Seeds should be stored dry in a sealed container at the appropriate temperature. Most seeds can be stored in airtight containers for up to 1 year if temperature is controlled.

If seeds have not been previously received a cold treatment then in mid-January mix the seeds with either moist (not wet) peat moss, sand or shredded paper towels. Return mixture to the container and replace lid. Place container and seeds in the refrigerator until after the last severe spring frosts. The seeds should remain in the refrigerator for at least 60 days. In early April

prepare a garden-soil seedbed, with furrows as described above, and plant the seeds. Keep the soil moist but not wet. No fertilizer should be added.

Handling in the 'Nursery': When the plants are 6 to 8 inches tall, apply 1 to 2 tablespoonful of urea along each 12 inches of row in a band on one side of the seedlings. Keep the fertilizer about 3 inches away from the seedlings. Water thoroughly every 10 to 12 days.

The new seedling has a taproot. To facilitate transplanting we suggest you cut the taproot by pushing a spade under each plant. The spade should be pushed into the soil to cut the taproot about 5-6 inches below the surface.

Peach, nectarine, almond and apricot seedlings may be budded the first summer, usually in late July or early August. Apple, cherries, pear and plum should be allowed to grow through to the July-August period of the second year before budding is done. Apple and pear are the only tree fruit plants which the home gardener may expect to bench graft with success. The peach-cherry plum group are very difficult to propagate by any other means than budding. The budding and grafting procedures are described in Pa. Agr. Extension Special Circular 153, entitled "Methods of Grafting" available through the Agricultural Extension office in your county.

After-ripening requirements for certain fruit tree seeds.

Kind	Effective Temperature (°F)	Best Temperature (°F)	Days Required
Apple	40 - 50	40 - 41	70 - 80
Apricot	40 - 50	45	60 - 70
Cherry	33 - 50	41	90 - 140
Peach	33 - 50	45	120 - 130
Pear	33 - 41	40	60 - 90

Dr. Robert M. Crassweller
Professor of Tree Fruit