

## Cloning Apple Trees

With so much variation in fruit taste, size and quantity many gardeners are eager to reproduce the perfect apple when they find it. Often the first question we receive is how to propagate an apple tree from collected seed. Unfortunately, apples are not that simple.

Apple trees grown from seed are not identical to the parent trees. Approximately 1 in every 80,000 apple trees grown from seed are of the same quality as their parent tree. Typically, apple trees grown from seed have smaller, inferior fruit. To obtain the same quality of fruit as the parent, vegetative propagation is the preferred method.

Apple tree propagations involves a method called grafting. Grafting is the process of taking a base plant (rootstock) and attaching your desired plant (scion) to the top so that the roots are one plant and the top (where the fruit is produced) is a genetically different plant. This is done by cutting the top of the rootstock off and attaching a similarly sized branch from the desired tree so the cut portions touch and eventually grow together. Although this method can seem intimidating, many gardeners find it a fun project that if done correctly can greatly enhance your garden by providing one, or even multiple fruit types.

Grafting does require a bit of legwork ahead of time in the form of selecting and planting a rootstock plant. The rootstock should be planted one year before grafting to allow the plant to establish before the stress of propagation. Rootstock trees for apple are often smaller dwarf or semi-dwarf varieties. A tree that would normally have a height of 30 feet may be grafted to a rootstock that will only reach a mature height of 15 feet. This modification results in a tree that is easier to spray, prune and harvest without impacting the load or size of fruit. Dwarf varieties also produce fruit up to a year earlier reducing the wait time prior to apply harvest.

When selecting a dwarf variety, ensure it is suitable to Kansas, as many dwarf varieties are not. Semi-dwarf trees tend to grow better than dwarf varieties in Kansas. Most nurseries will only sell pre-grafted fruit trees and these shouldn't be overlooked. These pre-grafted trees are often selected for our area and have the work of grafting taken care of. A few online nurseries will sell rootstock but you may also purchase a grafted tree and remove the scion after a year of establishment and replace it with your own. A slight alternative to this method is to graft your clone alongside the nursery grafted scion. If done successfully, this would result in a tree that produces two different types of apples.

With multiple scions, it is extremely important to prune mindfully to avoid pruning out all of one scion. An additional pitfall to multiple scions is disease and insect susceptibility. Carefully monitor the entire tree for issues to avoid losing a portion to a pest or disease.

After a rootstock has been selected and established, this time of year is ideal for selecting and cutting the scion from the desired tree. Small branches that are the same diameter as the rootstock are ideal candidates. Any branches significantly smaller or larger than the rootstock will likely be unsuccessful. Before cutting the exact branch you want to use, use the branches you prune for maintenance to practice cuts. This can also be done during the year your rootstock establishes. Practicing on branches is the best way to hone your craft.

