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Cloning ... Not Just Science Fiction

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Thanksgiving Point Office

Science fiction novels and scientific journals frequently publish articles on cloning. Cloning has been a subject of fascination for writers, movies and the general public. Cloning plants is a very old process that predates the Greeks and Romans back into biblical times. Cloning is essentially vegetative propagation. This has obvious advantage because the offspring is identical to the parent.

Plants reproduce by one of two methods. Sexual propagation is propagation by seed. It is the process of male and female parts of the plant coming together and producing offspring.

Seed propagation is preferred in plants that come true from seed, but most fruiting plants will not produce identical offspring from seed. Some geneticists speculate that the chance of getting a genetically identical red delicious apple by planting apple seeds from red delicious fruits is about 1 million to one.

Vegetative propagation produces exact duplicates of the parent plant, and most ornamental and fruiting trees are propagated by cuttings, budding or grafting. They are propagated this way for many reasons. The first is to have identical varieties in an orchard.

Imagine the frustration of a commercial fruit grower trying to deal with spraying and different harvest maturities. While this is not a major concern to homeowners, there are still many compelling reasons to produce trees from clones. One of the most common reasons is to preserve old varieties.

As mentioned, fruit trees don't come true from seed, but there are still unique varieties from trees planted from seed. These may include an old tree down on Grandpa's farm that had the best apples ever grown! Seedling trees are one of a kind and cannot be purchased from the nursery. To start new tree buds from those, trees are transferred to other root stocks in a different location.

Trees are also propagated on dwarfing root stalks. This gives trees that are more manageable in small, urban yards as the trees have genetic size-control built in. It is possible to give insect and disease resistance to certain varieties by carefully selecting the combination of root stock and top growth.

Pollination is another reason why different varieties may be grafted onto a tree. Most fruit trees benefit from cross pollination. If your orchard lacks enough room to plant two trees of a large variety, graft on a branch of a pollinating variety so the problem is solved with a single tree.

Multiple-variety trees are not always the best way to produce fruit. Within a short period of time, most of the four-in-one or five-in-one apple or other fruit trees are dominated by the most vigorous variety and the other varieties die out. Additionally, since some varieties require different spray programs, it is frustrating to try to spray branches of one variety while keeping sprays off a ripening variety.

Techniques of budding and grafting are not difficult but do require a great deal of skill. I liken it to playing the piano. The theory of playing the piano, that is striking the keys, is not difficult. The skill of doing it in the right way is only acquired after considerable practice. Propagating plants vegetatively requires such skill and practice.

Budding and grafting need only simple equipment. The most important piece of equipment is a good sharp knife. The other product that is needed is grafting wax. Grafting wax is available at some nurseries, but a search is required to find it. A reasonable substitute is wax rings used to seal toilet bowls.

Budding and grafting is always done with the root stock actively growing and the bud wood in a dormant condition. Bud wood must be collected now and stored inside a plastic bag in the refrigerator.

The best time to do budding and grafting is about the time the fruit trees blossom. Budding is much easier than grafting. The technique of T-budding involves cutting a "T" shape in the bark where you would like to establish the new variety. Gently peel the bark back and cut a small shield-shaped piece of bark with a plump vegetative bud in the center.

Quickly slip it inside the T-shape cut made in the bark and then secure the bark by wrapping it with masking tape or with a rubber band. After the bud has healed for about 2 weeks, cut the limb off right about that point. The bud should start to grow this spring and produce a new tree connected to the old tree.