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## The Apple Tree

No tree is more iconic than the apple tree. These beautiful shapely trees with their big red fruits are common in backyards and orchards, not only in the U.S., but across the world. Despite their commonality, they are more complex than they seem, and picking the right one for your yard can be a difficult choice. A not so easy as pie.

A brief history of apples. While apple pie might be American, apples as we know them today are not native to the U.S. They originated in Kazakhstan as something similar to our native crabapples. However, ancient farmers cultured and selected the crabapples into the modern big sweet fruits as they were transported throughout the world. Our modern apples got to the U.S. when the Spaniards brought them in the 1500s – 1600s. Oddly enough, crabapples and modern apples are all in the same family, *Malus*, despite that there are types of native crabapples spread throughout North America, Asia, and Eastern Europe. This includes our native Prairie Crabapple (*Malus ioensis*) and Sweet Crabapple (*Malus coronaria*). As a complete side note, *Malus* being similar to *Malum* means ‘evil’ in Latin and is likely why the tree in the Garden of Eden is often now depicted as an apple tree.

Apple genetics. Every Fuji apple in every grocery store came from a tree that was genetically identical to the original Fuji apple tree. All of them, every one, came from grafting cuttings from other Fuji apple trees. You cannot plant an apple seed and expect the same kind of apple the seed came from. Their genetics are...wonky, and you might end up with a crabapple tree instead. This means that when you purchase an apple tree, you need to pay attention to two different parts that are grafted together; the rootstock below and the variety on top.

Rootstocks. The rootstock is where you make the decision on the size of the tree, no matter the variety. Commercially there are a couple dozen different rootstock types with code names like G.11 or EMLA7. The letter is more of a brand name and the number has nothing to do with the size of the tree. The backyard grower might only see the three different rootstock groupings of dwarf, semi-dwarf, and standard (or seedling).

The standard rootstock can grow up to 40 feet in size, live for 70 years or more, but takes 7 to 8 years to start fruiting. The smallest dwarf rootstock only gets 3 to 5 feet in size, lives only 20 years at most, but will fruit after 3 to 4 years. Semi-dwarfs are logically somewhere between those two. Very generally, the smaller rootstocks won't live as long, more likely to require branch supports, less tolerant of environmental stresses, and less winter hardy. However, the importance of having a smaller and more manageable tree is paramount in selection. In your backyard you don't need something incredibly hardy, you need something that will fit. Technically, you need

two trees that will fit unless there are other apple trees around (crabapples count). The majority of orchards use one of the semi-dwarf rootstocks and most homeowners do, too. From experience, any part of the tree above 15 feet is a lost cause.

Variety. This is the fun part where you get to pick what kind of apples you want. The K-State Fruit Tree Selection Guide gives some of the varieties that grow well here in Kansas, along with a chart of when the apples are ready to harvest. Lodi is first in mid-June to July and last is Granny Smith and Winesap that aren't ready until mid-October. (Personally, was not impressed with Lodi in my parent's orchard as they never produced well, and the trees died.) Most cultivars are not self-fruitful, so you'll need two trees, ideally of different cultivars. There are a lot of differences in fungal disease resistance among the varieties as well.

My suggestions. I only have two suggestions when it comes to planning and planting an apple tree, or any fruit tree really, give them lots of space and less is more. Most publications will say to plant semi-dwarf trees that get 15' tall with a 12 to 15' crown at spacing of 15' apart and 20' between rows. This is not enough. You need room to prune and spray and crowding them causes them to grow up rather than out. Adding 5' to 10' feet in spacing will sure make them easier to work with. Just a few trees will make more apples than you will ever use. One mature dwarf tree can produce 4 to 5 bushels of fruit, that's over 200 lbs. of apples. A mature semi-dwarf can produce 8 to 10 bushels. However, a dozen crowded and uncared for trees will not make but a few bushels of bug-eaten, tiny rotten apples. It takes a lot of time to prune even a few trees and to spray them every couple weeks all summer.

There are lots of publications on picking your rootstocks and varieties, how to plant, fertilize and care for your young fruit trees. Please give your local extension office a call if you've got big plans for little trees and want some advice. In the Wildcat Extension District, you'll want to talk to Jesse, our horticulture agent. As the crop agent, I actually wrote this article because I knew nothing about apple trees before I started down a rabbit hole researching for my own little orchard.

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