

Want A Friend? Buy An Apple Tree? It's up To Yinz

Al Steele, U.S. Forest Service, Eastern Region State and Private Forestry

Growing an apple tree provides a myriad of benefits. You can eat more tasty apples, encourage better environmental stewardship, attract critters to your woodlot or backyard, impress your foodie friends, or even have your own pet apple trees in the backyard cloned from trees back at the family farm.

It's Up To "Yinz"

You may recall from an [earlier Forest Matters edition](#) that I wrote an [extensive piece](#) that traced apples through the millennia from their origins in Central Asia, across the Silk Routes on the backs of camels, into Europe, onto America's shores, and then dispersed across our great Nation. I hope it gave you a greater appreciation for the apple's journey to America as well as how little day-to-day decisions can ripple through time.

Now that you know a lot more about how apples got here, the question is, "Now what?" Everyone's circumstances are different, and life offers each of us many choices. Has your newfound knowledge opened you up to the possibility of planting some apple trees out next to the cabin at your woodlot? Are you lucky enough to own some land that has some "old timey" trees on it that you'd like to rejuvenate? Does the idea of planting apple trees to attract wildlife appeal to you? Does a 5-foot apple tree in the backyard of your suburban ranchero sound like utopia? How about taking cuttings from a tree at Grandma's and growing it into something that your grandkids can climb? British folk, long known for their lovely gardens, [groom apple trees into lovely shapes that are truly works of art](#). You can learn to do this espalier thing too!

When I moved to Morgantown, WV, from Maine many years ago, when I'd ask the locals a question, they'd often say, "It's up to yinz." Not being the sharpest tack in the box, at first I wondered who this yinz person was. After a while, I figured out that yinz is kind of a southwestern Pennsylvania, northern West Virginia version of "y'all." If yinz are dying to know the word's origin, [read this piece](#).

Apple Trees Are Like Dogs – Kind Of

I struggled a bit with how to structure this article. As noted, everyone's circumstances are different, and there's more to apple trees than you might think. I decided that I'd lay out the article as a bunch of choices. You can do this or this or nothing. What you choose? It's up to yinz!!

How are apple trees and dogs alike, you say? I love dogs, and when I was younger I never gave much thought to what breed to "target" owning. I bought a beagle because I loved rabbit hunting. Rocky was great, but after I had to go back in the woods and find him at midnight after what was planned as a genteel walk and picnic with my girlfriend, I had a glimmer that attributes of breeds do matter.

A few more learning experiences later, I got a bit wiser. Later in life, I travelled heavily in my job for a few years. Living in very rural West Virginia, I worried about my petite wife at home alone until we bought a champion Rottweiler who trained the UPS man



Winston. (Courtesy photo by [Scott Cromwell](#))

to gently lay packages on the porch and stay away from the windows. Forgetting my lesson that breeds matter, a few years ago we rescued a starving black lab pup from along the roadside. Now that she's big, healthy, and very rambunctious, we have to consciously work to make sure she gets the exercise she needs. We can't afford to buy her a third couch as a chew toy.

Interested in eating or cooking with apples you've never had before, whether you grow them yourselves or not? Want to try growing them yourself? Like with dogs, forearmed with a little knowledge, you can make more informed apple choices and will likely have better results. The remainder of the article will be choices to consider, along with resource info for deeper dives. What you ultimately choose? It's up to yinz.

To Grow or Not to Grow

Growing your own food has an allure for many, but reality can impinge. Living paycheck to paycheck? Have two kids, lots of theatre practice and soccer games to attend, and that tire on the van that keeps going down but you can never get the time to fix? Consider buying a nice bag of apples at the grocery store, wash them well, put one in the kids backpack, and take one to work for you too. There are good reasons to believe the adage that "[an apple a day keeps the doctors away.](#)" Teaching your kids to eat healthy early is a lifetime gift.

Hug A Farmer – Or Not

There are lots of good reasons to go to a farmer's market to buy apples—freshness, potentially lower use of pesticides, keeping money in the local economy, supporting rural businesses, the social aspects of a market, keeping agricultural skills alive, access to foods not necessarily available in grocery stores. My retirement plans are to capitalize on this movement, but buying out of a farmer's market can be expensive and takes time, among other factors. If it's important to you, and you have the resources, [go for it.](#)

Buying Local is more Climate Friendly, Right?

Not necessarily. It's complicated. In comparison to meat and some other crops that can have a significant greenhouse gas footprint, [American-grown apples are relatively low impact.](#) But it's winter, and those Washington State Red Delicious apples sure look beat up. There are some lovely apples in the case from New Zealand. It's not a binary question of local/domestic good, import bad. Lots of complications enter into the picture – where things are produced, how they're produced, how they're stored, how they're transported, and decay/loss rates, among others. Applying some common sense goes a long way if the issue is important to you. For many reasons, it's hard to beat a locally grown apple fresh off the tree.

Ugly Fruit

Enormous volumes of food are thrown away annually because they are misshapen or have bug chews on them or other cosmetic defects. This food is perfectly fine, just not pretty. A significant portion of the pesticides used on all kinds of food are applied simply to prevent cosmetic defects. If you are inclined to be concerned about food hunger issues and/or pesticide use, [this may be a cause for you.](#)



*Late season fruit scarring by plum curculio.
(Courtesy photo by University of Kentucky
Entomology)*

Apples Are Yummy

Large-scale commercial agriculture has winnowed down the choices of apples available from literally thousands at the turn of the 1900s to just a handful now. Coupled with a fast-paced, largely urbanized society, we've lost an appreciation for the idea of different apples for different uses. Apple trees that tend to bear early, like the Yellow Transparent, make fine applesauce but stink in pies. Late varieties, like Northern Spy and Baldwin, make lovely pies. Some are best used as "dessert apples" (eaters), some are best dried (Sheepnose), and some need to be stored for a few months before their flavors mellow out.

While you can make cider, hard or sweet, from any kind of apples, apples with particularly high sugar content or certain acidic qualities often make the best cider. If you want to try your hand at making cider, many online nurseries that sell apples indicate those often used in cider. However, it's important to learn about cider making before selecting which varieties to plant. Some varieties can only be used in cider but are not edible otherwise.

Heritage or Heirloom Varieties

Heritage or heirloom varieties are those apples that have been left behind by commercial agriculture. Commercial agriculture abandoned them for a reason, some better than others. With time, the literally thousands of varieties from the early 1900s have been whittled down to a handful of commercial varieties. While many of these thousands have been lost forever, resurgent interest in "old timey" fruit, issues of biodiversity, and an expanding awareness for the unique flavors and opportunities these apples provide have caused growers to seek out rapidly fading varieties and bring them back. Some varieties, such as the [Harrison](#), were down to one known surviving tree.

A terrific way to discover [heritage varieties](#) is to visit orchards in the fall. The [Apple Journal](#) has identified orchards from around the world in its "[Orchard Trail](#)." There are many other heritage variety resources on the Internet.

Growing Apple Trees

Now is where our dog metaphor really works. Whether you want to buy your apple trees and just plant them or graft your own, if you know a little bit about apple trees, you can buy or graft trees that will "fit" your needs better – just like a dog. Dachshunds are a lovely dog, but not very good for duck hunting.

Dip Your Toe into Growing Apples

If you search the Internet, there's lots of information about growing apples. All of these resources have something that's useful, but they usually only have little bits of info. The best written and illustrated guide I've found for free is from the University of Wisconsin entitled "[Growing Apples in Wisconsin](#)." This document is a great way to get the big picture. A [more in-depth presentation](#) that covers all of the fundamentals of growing apples is from the Oregon State University Extension Service. A backyard growers group in Pennsylvania has also assembled an impressive [list of resources](#) on a wide range of topics.

Do You Want Big Trees, Midsize, or Small? Size and Other Attributes

All cultivated apple trees are "clones" that are produced from grafting. This "clone" is created when the bottom part of the tree (the rootstock) is grafted to the top part of the tree (the scion). (In reality, the scion is just a cutting taken from a whip off an apple tree.)

Forest Matters Stewardship Newsletter Spring 2019

U.S. Forest Service, Eastern Region State and Private Forestry

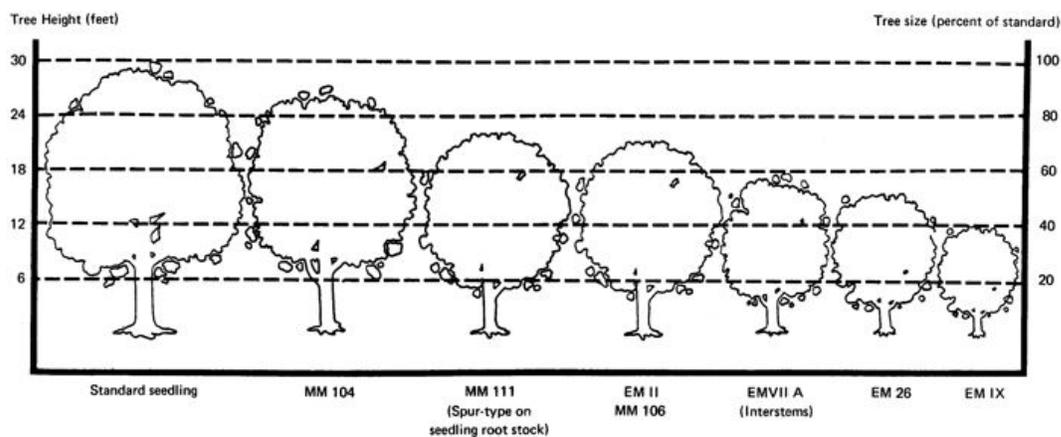
Why go to all this trouble? Most apple trees don't produce "true." If you plant a seed from a McIntosh apple, you don't get a McIntosh tree. All McIntosh apple trees in an orchard are produced by this cloning technique called *grafting*. Grafting is how you can take cuttings (scions) from any apple tree (or buy them) and produce any variety of apple tree you wish. It takes practice, but you can do it. View information from [University of New Hampshire Cooperative Extension](#) or [Penn State Extension](#).

Rootstocks have several different functions, but one of the most important is that they determine the size of the tree. Ever notice a 5-foot tree covered in apples? There are special dwarfing rootstocks that won't allow the tree to grow any larger. Semi-dwarfing rootstocks are also available, which will produce mid-size trees. Finally, there are standard rootstocks that allow the tree to grow to full, "normal" size. Think of grandma's backyard tree. Depending on type, various rootstocks also have differing amounts of cold tolerance.

Rootstocks also affect robustness of the trees. Standard trees tend to grow big, heavy root systems, which are quite windfirm and enable the tree to get water, even during dry periods. As a result of their robustness, they can deal better with grass competition and some defoliation from pests, among other stresses. On the other end of the scale are dwarf trees. Their root systems are smaller, and thus they often require watering or irrigation. They don't handle competition well and are generally a bit more "delicate." Dwarfs can often have windfirmness problems, and in windy areas, they may require some sort of staking or trellising. Semi-dwarfs, as you might imagine, are in between in these characteristics.

Finally, different types of rootstocks provide different levels of disease resistance. There are three general rootstock categories: Merton Malling (MM), Geneva (G), and Budagovsky (Bud). Merton Malling rootstocks were developed in England in the mid-1900s and were the major rootstock type in commercial orchards in the U.S. for many years. However, Merton Mallings can be challenged by a particularly nasty bacterial disease called fireblight that affects orchards. Cornell University developed Geneva rootstocks that have resistance to the bacteria. Budagovskys are rootstocks of Russian origin. Genevas are becoming more common, but many orchardists still rely on Merton Mallings.

Penn State Extension has developed a [very good list of various rootstocks](#), and the folks at Cornell have developed a [table and graphic of Geneva apple rootstock data](#).



A few rootstocks and their influence on size. (Graphic courtesy of [New Mexico State University](#))

Forest Matters Stewardship Newsletter Spring 2019

U.S. Forest Service, Eastern Region State and Private Forestry

Why does all this matter? As you can see, rootstocks have a major influence on what the apple tree becomes. If you go to your local hardware store and buy an apple tree, the tag may only indicate the variety, or perhaps variety and whether it's dwarf or semi-dwarf (it would be rare for them to sell a standard size tree). However, most nurseries (and all fruit tree nurseries) will list both the variety AND what rootstock it's on. If you order early enough in the year, you can often have your pick from a wide range of rootstock types. Likewise, if you decide to try grafting, there are a number of places where you can buy a variety of rootstocks.

In What Region Are You Going to Try and Grow Your Tree?

As we've learned, some rootstocks handle cold better than others. Apple trees are remarkably adaptable. Varieties you might associate with northern New York can grow in the South. They grow from the arid foothills in Colorado to the near-desert conditions of eastern Washington. Not all varieties grow well in different regions, though. A McIntosh grown in New England has a very different taste than one grown in Virginia, for instance.

Nurseries will often put plant hardiness zones to indicate where they grow well. Most states have some sort of an apple association, too. Go on their websites and see what sorts of apples commercial orchardists grow if you want to play it safe.

Disease and Pest Resistance

Some varieties of apples are quite resistant to many diseases and pests while others may be somewhat resistant to some and vulnerable to others. Many areas in the Eastern U.S. are considered to be quite challenging due to the higher humidity and pest and disease complexes. Skilled orchardists, with many years of experience and a large array of chemical controls at their disposal, can successfully grow very high-quality fruit in very difficult conditions. While homeowners have less knowledge and access to fewer chemicals, very good fruit can still be grown, even with challenging varieties. But, it's harder and will likely require more interventions and time. Unless you have a specific reason for growing a specific variety, try going with a variety that is more pest and disease tolerant at first.

There are very fine apples for a variety of applications that are quite grower friendly. While I'm equipped to spray my apple trees, I prefer not to as much as I can. For my cider operations, for instance, I'm growing a lot of Goldrush. It is a late-maturing apple that has a nice tart taste and blends well in cider. [Ohio State University Extension](#) and [University of New Hampshire Cooperative Extension](#) offer some resources that include apple varieties to consider for the home gardener. The [most comprehensive rating of pest and disease resistance for apple varieties](#) comes from the National Sustainable Agriculture Information Service. It also does a commendable job of covering the major pests and diseases of apple varieties.

If you are reluctant to do a lot of spraying, but going full organic sounds like too much for you, pick disease- and pest-resistant cultivars. You may have some troubles, but if you can tolerate some wormholes (cut them out?), you can still grow fruit and trees will survive.

Organic vs. Integrated Pest Management

Commercial orchardists from when I was a kid relied heavily upon some very "robust" chemicals in order to produce high-quality fruit. Fruit growers could see the writing on the wall, however. As the environmental movement took hold, more and more of the chemicals they relied upon were removed by the EPA for use due to a variety of concerns. In response, University research programs, fruit grower associations, and government worked together and developed a new approach: integrated pest

management, or IPM. According to the [Statewide IPM Program of the University of California Agriculture and Natural Resources](#), IPM is defined as “an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.” IPM doesn’t eliminate the use of chemicals, but reduces their application significantly. Information and resources are available for homeowners to apply IPM approaches in their growing.

Growing apples organically is attractive to many, including me. I have been critical, however, of many advocates of organic apple production. Many tend to understate the very real challenges associated with organic apple production in the Eastern U.S. The [National Sustainable Agriculture Information Service publication](#) mentioned earlier does about the best I’ve seen of acknowledging the real challenges of organic production while not dismissing it as an option. For those who want to really dig into organic apple growing, “[A Growers Guide to Organic Apples](#)” by Peck and Merwin from Cornell University Cooperative Extension is a very nicely done document.

Organic orchard production does have proponents, even in the East. Michael Phillips has [written extensively on this topic](#) and is a frequent speaker at apple events I attend around the U.S. I recently attended a national convention for commercial cider makers and learned of another organic consultant that I was unaware of named Mike Biltonen. There is a market for apples and other products produced using organic principles, biodynamic principles, and permaculture.

Universities, extension services, and others have developed “how to” spray information for home growers. If going full organic feels a bit ambitious for you at first, buying or grafting disease- and pest-resistant varieties and using recommendations provided by these institutions as prescribed for those pests most troublesome to you can result in safe and effective production of lovely fruit. Check out this University of Kentucky Cooperative Extension Service [publication](#) or this [guide](#) from University of New Hampshire Cooperative Extension.

Wildlife. Many Paths to Follow.

Depending on the grower’s objectives, wildlife can be a blessing or a curse. Voles can chew the bark off your trees, effectively girdling them. If you are trying to grow and eat apples, the most persistent wildlife pest is deer. Lots of tricks can work some of the time — sprays, cheap bars of perfumed soap, and aluminum pans tied to fences. All of these options can work, perhaps, IF deer pressure is low and you’re lucky. Keeping weed pressure down around the trees can be problematic, so an upgrade to electric fencing can sometimes work. The University of Maryland lays out a number of options for dealing with deer in their excellent online publication [Managing Deer Damage in Maryland](#). Note that they don't say eliminating deer damage in Maryland. I'm not sure anything short of nuclear weapons would achieve that lofty goal. While [woven wire deer fence](#) that is 8, 10, or even 12 feet high will pretty much control deer, they are very expensive and beyond what small landowners are willing to invest in. For my cider orchards, I use a system described in a [Minnesota Dept. of Natural Resources publication](#). It is an electrified fencing system with wires run at prescribed intervals. Instead of wooden posts, I modified the system to use 10-foot T posts to reduce costs and the hassle of wooden post installation. It's not for the ordinary homeowner, but is much less expensive than woven wire and works well as long as the intervals between wires is followed exactly. While you can try the kinder and gentler methods, if your desire is to eat apples at some point, I recommend using T posts and 4-foot woven wire encircling each tree or harvesting deer as the best options.

Forest Matters Stewardship Newsletter Spring 2019

U.S. Forest Service, Eastern Region State and Private Forestry

There are folks who want to attract deer or other wildlife to their homes. A Connecticut Department of Environmental Protection employee wrote a rather nice [document on managing abandoned orchards for wildlife](#). A number of public sector agencies and natural resource-oriented magazines provide lots of information on using apples to attract wildlife as well as more comprehensive approaches to planning for wildlife on your property. These include [New Hampshire Fish and Game](#), [University of Maine Cooperative Extension](#), and [Northern Woodlands magazine](#).

If you're a deer hunter, want a low-maintenance tree, and have the time to wait several years until the tree really kicks into production, buy or graft a disease/pest resistant variety on standard rootstocks.

Renovating Old Fruit Trees

You may be fortunate to own some land where fruit trees were once grown. At one time, all small farms had at least a few apple trees around for cider, fresh eating, cooking, and drying. Before the days of dwarf and semi-dwarf rootstocks (which shorten the length of time apple trees live), standard sized trees (sometimes called seedlings too) could live 150 years or more. Some pretty sorry looking trees can be renovated quite nicely. If properly done, they can produce quality fruit again and new "sprouts." It is these sprouts that can be the scionwood for you to graft new trees of the same variety. I first got into apple trees because I wanted to have varieties that grew on my grandmother's place in Maine. There's a helpful factsheet about renovating old, abandoned apple trees from [Michigan State University Cooperative Extension Service](#) and [Penn State Extension](#).

When I began renovating trees, everyone told me not to be afraid to cut too much. There is a natural inclination to treat the old timers gingerly. No one ever follows that advice, and everyone usually under prunes. While you have to leave enough live wood and limbs equally distributed over the tree to enable it to come back, you are actually being kind to the tree by lopping off dead limbs and those just hanging on. It takes a little practice, but it's a wonderful thing to do on a cold winter's day (not a summertime activity). YouTube videos are available too. And in Vermont, the USDA Natural Resource Conservation Service provides [cost share for landowners to renovate old fruit trees](#).

Spacing

A rule of thumb for apples is that they need at least 8 hours of direct sunlight in the summer, preferably more. The dwarfing varieties usually need irrigation of some sort. Spacing recommendations are available for a number of different rootstocks from places such as [North Carolina State Extension](#).

Maturity

Apples mature at different times. Some summer varieties in the warmer parts of the U.S. can be picked in late July and early August. Yellow transparent and Virginia Gold are a few examples. Early apples tend to be okay for eating and better for applesauce. While it's a generalization, apples that mature later in the season tend to be the more flavorful ones to eat and use in pies. Another consideration can be when you prefer to be outside picking apples. If you are a heat lover, earlier varieties may be good for you. Others will be ripening as the leaves begin to fall and there is an early frost in the air. Cider and pie makers often pick apples when the weather is brisk. Many nurseries list when a particular apple ripens, but the best way is to talk to a local orchardist or University Extension person in your region about when a particular variety is likely to ripen.

Forest Matters Stewardship Newsletter Spring 2019

U.S. Forest Service, Eastern Region State and Private Forestry

Pollination

Apple trees usually need another variety of apple for pollination to be successful. Apple trees bloom at different times, too, and an early blooming variety may be done blooming too soon, for instance, to pollinate a late-blooming variety. Some nurseries provide tables for a number of varieties that show suitable pollination timing “matches.” Crab trees, such as Wickson crab, can be reliable pollinators (they also are great for wildlife and for cider/jams). Adams County Nursery has a [nice chart of compatible trees for pollination](#).

There are, of course, lots of good reasons to promote pollinators in orchards and to protect them. A good resource is this guide to [Wild Pollinators of Eastern Apple Orchards and How to Conserve Them](#) produced by the USDA Northeastern Integrated Pest Management Center located at Cornell University.

Soils/Site Preparation

There are plenty of Internet resources on preparing soils for planting apple trees. Don't forget to mulch, use herbicides if you like, or otherwise hold down grass competition. Some dwarf varieties are particularly affected by weed competition, and grass growing around trees attracts bad bugs like apple borers and mice that will girdle your trees.

So will it be Häagen-Dazs, Breyers, or Dream Whip on your apple pie? It's up to yinz.

Additional Resources

[The Grandpa of Heritage Fruit Growing in America: Tom Burford's Twenty Top Dessert Apples](#)

[Diagnostic Guide to Common Home Orchard Diseases \(University of Georgia Extension\)](#)

[Apple Cultivars \(Penn State Extension\)](#)

[Growing Apples in the Home Garden \(University of Minnesota Extension\)](#)

[Apple Production and Variety Recommendations for the Utah Home Garden \(Utah State University Cooperative Extension\)](#)

[Maine Heritage Orchard \(Maine Organic Farmers and Gardeners Association\)](#)