Dr. Deer's™ PRESCRIPTION

Deer Orchards

Part 2: Doing It Right!

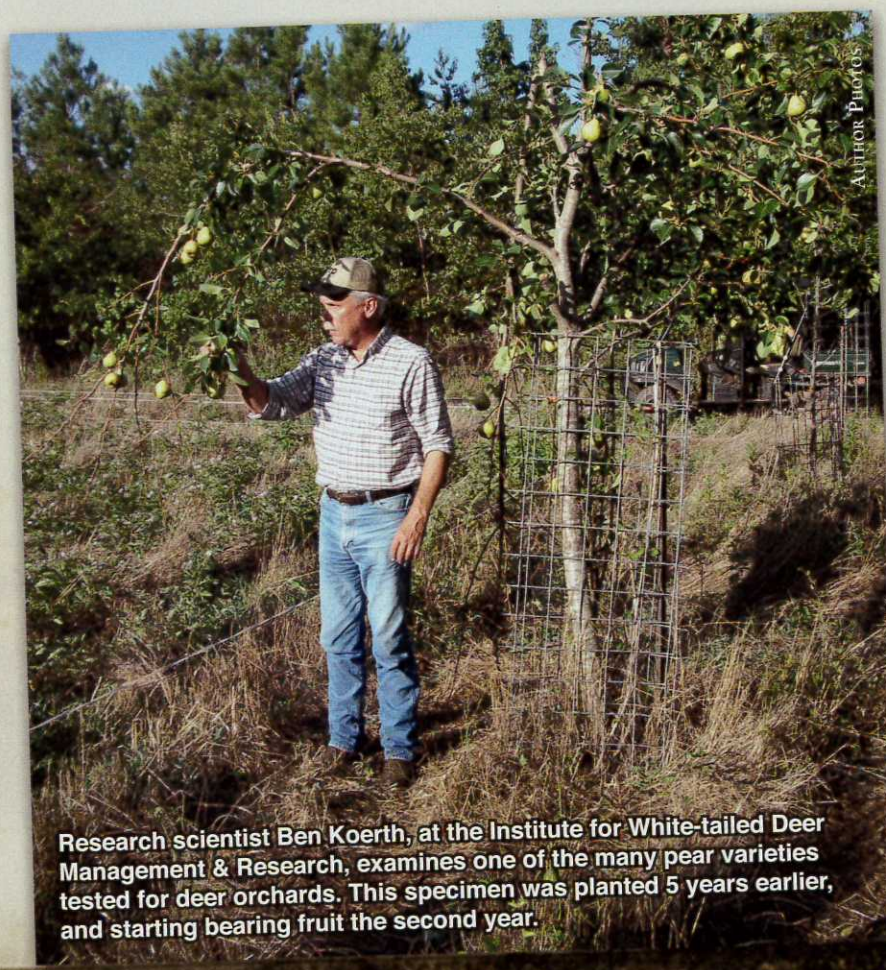
By Dr. James C. Kroll

Last issue, I presented information about improving the nutrition of deer on your property through plantings of fruit and nut trees as "deer orchards." Although a great deal of research and effort has been spent on food plot varieties and planting, only recently have managers turned to more long-term ways to improve deer nutrition at a time when they need it. Money invested in a deer orchard can be money well spent, provided you make the right decisions and use the best methods of establishment. Most orchards fail because the landowner or manager did not pay attention to the basics of tree planting; and that is what this installment is all about—how to do it right.

Selecting a species or variety for your area

I have been conducting research on food plot varieties for almost 40 years, and what we have learned about planting food plots definitely applies to establishing a deer orchard. One parallel between the two is that the average person reads something in a magazine or hears a celebrity hunter brag about a food plot variety and immediately assumes that the guy knows what he is talking about, and the variety will thrive in his or her area. So, the first step in selecting your deer orchard species and varieties is to do some homework on what will grow where you live.

A number of years ago, our research on food plots for whitetails created an explosion in companies selling seed. Either through ignorance or greed, some of these folks tried to convince landowners and managers their particular varieties would grow anywhere. Ladino and Regal white clover are beautiful examples. These clovers do well in lowland, clay-loam soils, where there is adequate



Author Photos

Research scientist Ben Koerth, at the Institute for White-tailed Deer Management & Research, examines one of the many pear varieties tested for deer orchards. This specimen was planted 5 years earlier, and starting bearing fruit the second year.

rainfall and less extreme temperatures. Yet, we saw thousands of pounds of seed sold to South Texas landowners who were told clovers could be grown in that region. There are countless food plot varieties that have similar stories. Suffice it to say we do not need the same thing in fruit trees.

One fruit tree variety may grow quite well in the northeastern U.S., but not last a single year in another. In general, the farther west you go, the fewer varieties and species to choose from. Chestnuts are an excellent example.

My good friend, Bob Wallace, of Chestnut Hills Nursery, is a third generation chestnut breeder. The chestnut once was one of the most abundant trees in the eastern forest, until blight brought in with Chinese varieties killed off the entire native forest. It was probably the greatest ecological disaster in the last 100 years, but almost no one has even heard about it. Making up as much as 60 percent of the deciduous forests, the American chestnut provided food to a host of species, including Native Americans. Many think that the demise of the chestnut in the early 1900s was greatly responsible for the extinction of the passenger pigeon, rather than commercial hunting. These birds depended heavily on chestnuts for food.



When planting fruit and nut trees for deer, you cannot cut corners. Follow every step outlined by the author.

Bob's grandfather found an apparently resistant chestnut many years ago, and began a breeding program that has spanned three generations, leading to the release of a highly resistant, highly productive chestnut. Deer managers are literally fighting to get their hands on chestnut seedlings to establish mast-producing orchards for deer and other game. Yet, Bob will be the first to remind you there are regions of the whitetail's range that are not suited for this species. The climate just will not allow them to thrive. North of southern Wisconsin, they freeze out, while west of the Post Oak Savanna and Cross Timbers regions of Texas it is too dry to keep them alive. So, what will work in your area?

In the first installment I discussed the merits of several species and varieties of fruit and nut trees. Climate is probably your greatest consideration. In dry climates, unless you have irrigation, you have to select varieties that can tolerate high heat, low rainfall or both. That seriously reduces the list of suitable species. In choosing a fruit tree, your choices are limited to two species of plums, some grapes and pears. Live oak—early fruiting—is the only nut producer I plant. I generally plant plums and pears for deer orchards in dry climates. Remember, pears were some of the first fruit trees cultivated and originated in Persia, now modern day Iran and Iraq. How and where you plant them on your property will significantly determine your success. Most of our readers do not have to concern themselves with excessively cold winters, yet late frosts can be the bane of managers. That immediately eliminates varieties notorious for early flowering, such as peaches and plums. Sawtooth

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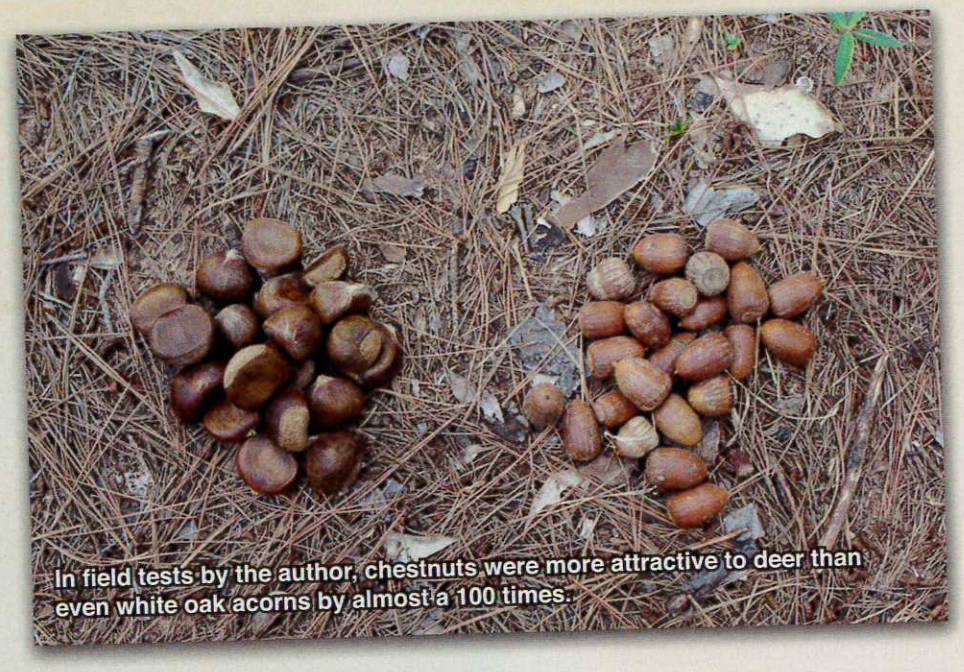
do well in the eastern half of Texas, eastward across the South and North to southern Wisconsin and Michigan.

It's all about planting technique

The success of your deer orchard, once you select varieties, falls squarely on the when, where, and how of tree planting. We will start with the when. In the past, big box stores with garden centers, and even some nurseries, began selling their fruit and nut trees in the spring; however, the spring is the second-best time to plant. I prefer to plant all my trees in fall for two reasons. First, fall and winter in the South tends to be mild and wetter than other times. This gives your trees time to develop a root system long before it turns hot and dry in the summer. Of course, in the North the spring is the best time.

Where is the next consideration. Planting a tree on a harsh ridge or rocky upland is not recommended. We like to plant both our food plots and our orchards in the lower land, where the soils tend to be better and there is more soil moisture. Of course, planting a tree—other than a cypress—in an area susceptible to flooding never is a good idea. Trees thrive under full sun conditions, but partial shade will work, so pay attention to both the current sunlight condition and the future availability of light. That is, if you are planting next to young native trees, think about where their crowns will be 10 years from now.

We also recommend you plant a mixture of trees, representing a range of fruit production dates so you can spread mast/fruit production out over a longer period of time. For example, in our deer orchards here at the Institute in East Texas, we plant pears July-December; Japanese persimmon and native persimmon late summer and October, respectively; sawtooth oak August-September; chestnut September-October; and live oak October-November. The number of each you plant will depend on the size of the area you have to plant and the number of varieties you plant. It always is good to plant trees adjacent to or alongside your food plots.



In field tests by the author, chestnuts were more attractive to deer than even white oak acorns by almost a 100 times.

For small plots 0.25 to half acre, plant 5-6 trees. For larger plots plant that number per half acre. Spacing between trees should always be 20-25 feet to allow for crown expansion. At the Institute and other places we manage, we plant deer orchards near our food plots, some as large as 2 acres. Again spacing between trees should be 20-25 feet. Always keep in mind that some varieties need a pollinator, so plant your varieties in groups.

The how of planting probably determines success more than any other factor. If you do not plant your trees correctly, you are wasting your money and effort! So, I will walk you through the entire process. DO NOT miss a single step. First, you will need the following equipment:

- Sharpshooter and regular shovels
- Landscape cloth in 4 ft. x 4 ft. pieces
- T-posts, one for each tree
- Tree tubes, 4-5 feet long
- 16-feet long, 54-inch wide utility panels, 3 feet per tree
- Bolt cutters
- Zip ties
- 3-5 gal. plastic bucket
- Pocket knife
- Landscape pins



For the first time, researchers are developing fruit trees designed specifically for deer. These are persimmon fruits from a common persimmon (left) and a newly developed improved deer variety (right).

Before you ever begin to plant, lay out your orchard on paper to assure proper spacing and groupings. Next, mark the location of each tree with a pin flag, being sure to have the right spacing. Place each tree in its pot next to each flag, along with the materials listed above.

Forget what you may have seen about planting trees on one of the garden channels. Dig a hole that is exactly the depth of the soil in your pot. Remove your tree from its pot and use your knife to cut the roots that probably have circled the

inside of the pot. Fluff the roots with your fingers. This will encourage the cut roots to sprout into the surrounding soil of the hole. Place your tree into the hole, making sure not to place it with the top of the root ball beneath the surface of the surrounding soil. If you plant too deep, I guarantee you by the second year, your tree will falter from having its roots smothered. Then using a shovel and your hands, work the soil around the hole to assure firm contact with the root ball. Last step, pour 3 gallons of water around the tree to assure the air trapped around the root ball is purged.

One of the greatest competitors of young trees is grass. The easiest way to reduce grass competition is to place the 4 ft. x 4 ft. ground cloth around the base of the tree, securing it to the ground with landscape pins or some dirt deposited on its corners, and not close to the trunk. Prune the bottom third of the branches from the tree, then slide the tree tube down over it to the ground level. The tree tube is made of plastic and ventilated to provide a protective environment for the young tree. It also protects the base from rabbit or rat damage. If it is taller than your tree, do not worry. Most will grow out of the tube the first year.

Now we have protected your tree from small mammals and grass competition, the next step is to consider what a whitetail buck can do to a small sapling. That is where the utility panel comes into play. Cut each 16 feet long panel into one foot wide pieces. Then position three of them next to your tree, and connect them using zip ties, leaving one side open. Wrap the assembly around the tree and close them as a triangle with additional zip ties. The last step is to drive a T-post next to the panels and secure your protective cage to it again with zip ties. You can use light wire, but zip ties are the easiest. IF you plant your tree as I have described, I promise you will be happy with your deer orchard. If you omit a single step, I promise you that it will not be successful. The next step comes under the heading of Intermediate Treatments.

Intermediate Treatments

The first few months of your orchard are critical to success. You should check on your trees after a few days and again weekly to see how they are doing. If weather turns dry, you may want to bring water to each tree. We use one of those square plastic containers you see for sale almost everywhere. We place it in the back of a UTV and connect a water hose.

Never fertilize your trees when you plant them. They come with enough nutrients to do well the first fall and winter. You can begin fertilizing your trees the next growing season. It took me many years to determine how much fertilizer to apply at one time. It seems like no one could tell me. We settled on one pound of 13-13-13 per inch of basal diameter, spread within the drip line (crown projected to the ground) of the tree.

Next to grass, brush is a major competitor to your orchard, so it's a good idea to mow between the trees periodically to control brush in your orchard. You can use a herbicide such as glyphosate around the trees; however, be sure never to let any herbicide touch the trunk of the young trees. The bark is thin and you will certainly kill them.

Pruning is not necessary for most of the species and varieties I have recommended. The exception is sawtooth oak, which must be pruned for the first five years or it will turn into a bush. Live oaks also should be pruned the same way to encourage vertical growth. Pears, persimmons, and chestnuts do not need much pruning after planting.

Production Age

Most of the trees I have discussed in this column will begin fruit production much earlier than you would think. Chestnuts and sawtooth oak begin producing fruit in 3-5 years; while live oaks will have acorns in as little as 10 years, depending on size at planting. The soft fruit trees can begin production their third season, again depending on size at planting.

Economics

Quality trees, depending on size, will cost you from $20-30 for 5-6 feet tall specimens. Chestnuts, especially the large specimens, are more expensive. The materials I discussed will add another $25-30 to the cost, making your total investment, minus labor, of about $50 per tree, which may seem like a hefty investment. However, a food plot costs about $300 per acre to establish and plant each year. Once planted and properly cared for, a fruit or nut tree will reward you with valuable deer food for two to three decades. Fruit yields are in the 50 to 100 pounds range for larger trees, shrinking your investment each year of a tree's life. An acre of chestnuts at maturity will produce about 7,000 pounds of nuts each year. That's pretty good economics in my mind!

During my four-decade career, I have seen deer management go from dumping out a few sacks of corn to food plots, feeders, brush management, and now deer orchards. These are exciting times for managing deer, and it is not just for rich folks. It is more about "sweat equity" than money, well within the reach of the average person. I hope you have received some good ideas for your own situation. Good planting.



Improperly secured ground cloth will not keep competing grass growth at bay.