



Spring Planting and Growing Guidelines for Plantings of American Chestnut Seedlings

Seedling Care

1. Store seed in cold storage, 28°F - 33°F is ideal. **Do not freeze.**
2. Seed begins to sprout and grow in late February, producing roots (radical). If seeds are moved, maintain constant storage position so that radical does not alter growing direction and become twisted. Radicals always grow downward.
3. Handle nuts carefully. Sprouted nuts are fragile and the sprout (radical) will easily break off. If the radical breaks, the seedling may grow and survive, but growth will be suppressed.
4. Plant as early in spring as possible, as soon as frost is out of the ground and soil can be worked - preferably in late March and no later than April 20, depending on latitude and elevation.

Selection of Planting Site

1. **Soil** - loamy, well drained and somewhat acid (pH 5.5 - 6.5). Heavy clay soils should be avoided. Chestnut trees will not tolerate wet feet. Gently sloping fertile land is best.
2. **Exposure** - full sun is best for growth, vigor and nut production. A sheltered north-facing slope protected from drying winds and low sun of winter may be better for cold windy sites.
3. **Spacing** - Backcross orchards - Rows 20' apart and trees 7' apart within the row, isolated from other chestnut trees.
American orchards - plant in blocks of 10 trees of same genotype, 2 rows 10' apart, trees 5' apart within the rows and blocks 20' apart.
Plot Borders - provide 30' borders from adjacent woodlands or other sources of shade.

Protection

1. Varmints - rabbits, deer, chipmunks, mice, squirrels, ground hogs, blue jays, bears.... and more love chestnut seed and trees. Japanese beetles are also a nuisance. All plantings, including seed, seedlings and trees must be protected.
2. Weeds - Sod and weeds will significantly retard the growth of trees. Keep an area two feet in diameter, out to drip line as trees grow larger, free of grass and weeds around each tree. Use hoe and mulch or treat with herbicide Roundup. If using Roundup, protect bark of trunk as well as leaves from spray. The thin green bark is very susceptible to Roundup. Simazine (one application / year) plus Roundup may be used in the third and subsequent years. Check with State recommendation on use of all pesticides.
3. Types of protection –
 - a. Tree shelters can provide good protection from rodents, herbicide sprays, and deer in areas where deer pressure is not great. They conserve moisture and encourage rapid vertical growth. In addition, tree tubes result in a trunk clear of lower limbs, which makes inoculations for screening easier. Tree shelters can also protect young chestnut bark from herbicide damage when spraying to reduce weed and grass competition. Shorter tubes produce a sturdier tree. Trunks may be spindly in the tall five and six foot shelters, resulting in trees that may require staking. Taller shelters have also been observed to contribute significantly to winter dieback in colder regions of the state. PA-TACF no longer recommends the use of tree tubes taller than three feet.
 - b. Wire cages made from 6' lengths, hog rings, and electric fence rods may be more effective against deer.
 - c. Two strand electrified polytape with peanut butter baits deter deer in some areas.

Deer seem to be the worst enemy of the tree grower in Pennsylvania. The most proven method to protect your trees from deer is to erect an eight foot, woven wire fence. With a fence up, two foot tree shelters will protect your trees from most other large varmints and from herbicide damage.

The pros and cons of various methods of planting, maintaining and protecting plantings are frequent topics of discussion at annual growers' meeting held in March each year when seeds are distributed for spring planting. As we become more experienced, our methods only improve.

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Site Preparation

Most growers plant seed directly in the field as opposed to planting seedlings. Once the layout is decided by the grower showing the available space, the borders, the number of rows, the length of rows, and the orientation of the orchard, a planting plan will be provided by PA-TACF for each orchard, according to its purpose. Site preparation will depend on condition of site. If site is uncultivated, trees and brush should be removed, the field mowed, and re-growth controlled.

After laying out planting hole positions, prepare the holes. When planting seed, a simple bulb planter works very well. Prior to planting, each hole should be numbered and/or coded on tree shelter or with colored flag as to pedigree of seed to be planted in each position, according to the planting plan.

Planting

1. Mix 1.5 gal. water into 15 gal. dried peat moss until dampened all the way through.
2. Pull loosened soil (no sod) back into hole or fill planting hole with top soil.
3. If using tree shelters, set support stakes off center into the hole on windward side.
4. Use bulb planter or hand to make hole 3" to 4" deep on leeward side of stake. Set soil aside.
5. Fill holes with dampened peat - not too loose - should not sink very much to touch, but not packed so tightly you can't easily make a hole with one finger.
6. **Carefully sift each separate package of seed and count seed. If a nut is rotten, select one of the planting positions in the plan for that genotype at random and do not plant that position. Discard the nut away from the planting site.** Before you plant first nut, make sure you identify where your control nuts are to be placed. Plant those first, one kind at a time. Plant in teams of two. Stay alert! Check, recheck plan and hole position number.
7. Make a path for germinated root with finger. If a radical has already emerged from the nut, be sure to plant the nut with the radicle pointing down. If no radical has emerged, plant the nut flat side down. The nut should be planted no more than one inch in the ground; chestnuts tend to prefer a shallow planting. Cover the nut with peat patted firmly to ground level.
8. Place planting tube over nut, pressing 2" into ground and secure to stake. **Make sure nut is inside the tube.**
9. Place a little of set aside soil around base of tube. Cover tube top with bird netting (blue birds like to go down inside tree shelters and then cannot get out).
10. Record everything you did! Especially note any changes made to planting plan. Recheck entire planting to see that every tree position has been planted properly.

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Clean up, and congratulate yourself on a job well done!

A maintenance schedule will provide fertilization, watering, and weed control recommendations; reporting forms will be provided - both at the time of seed distribution. Seeds will germinate for a couple of months. Some come up as late as August. Record germination rate about July 15 when you check for Japanese beetles. At the end of the first growing season, record number dead, alive, or not germinated for each genotype.

Planting Supplies and Tools

1. Chestnut seed
2. Planting plan
3. Plant stakes or surveyors flags to mark positions
4. Baled, dried peat moss (about 14 cu ft per 500 nuts)
5. Tree shelters suited to your needs
6. 6"x 6" board & mallet for driving tubes and/or stakes
7. 300' surveyors tape, pencils, permanent markers
8. Clip board, pencil & paper (always record what you did!)
9. 6" bulb planters, shovels, hoe, wheelbarrow color coded or numbered
10. 1 gallon jug and several 5 gallon buckets
11. Water for mixing with peat moss
12. First aid kit, work gloves, poison ivy prohibition
13. Snacks and drinking water

Thanks to;

The Pennsylvania Chapter of The American Chestnut Foundation
Cooperative Efforts - Restoration of the American Chestnut