THE AMERICAN CHESTNUT FOUNDATION®

TACF Fact Sheet

2.0, 2/6/12

Growing Chestnuts:

A Guide to the Basics

What Makes a Good Planting Location?

Well drained soil is VERY important. Dry, sandy or gravelly soils are best and loamy soils are good. Avoid clay soils or those that retain water.

SOIL TEST RESULTS

Avail. Phosphate	(ppm P)	1.1
Potash	(ppm K)	78
Magnesium	(ppm Mg)	41
pH		5.2
Calcium	(ppm Ca)	405

Soil test results from a soil testing lab will include soil pH, as well as analysis of other important nutrients. Soil tests are highly recommended for larger plantings.

A generous amount of top soil will result in better growth; however chestnut will tolerate relatively poor sites. Avoid planting over ledge or compacted soils – the root system needs room to grow.

The pH of the soil should be slightly acidic: between 4.5 and 6.5. You can find the pH of your soil by using a pH test kit (sold at most garden centers) or by submitting a soil sample to a soil testing lab (most land-grant Universities have soil testing labs).

Chestnuts are shade tolerant but shade isn't optimal; for good growth plant in full sunlight (minimum 6-8 hours of sun). Chestnuts will only flower in full sun.

Storing Chestnuts:

Keep chestnuts cold but don't freeze them; between 33°F and 40°F is optimal. The vegetable crisper drawer in the refrigerator usually is a good option. The radicle (young root) will likely emerge during cold storage.

Chestnuts need to be kept moist and should be stored in damp peat moss inside a plastic bag or container. Peat moss has anti-fungal properties that will prevent the growth of mold. Moist peat moss should be wet enough that it can be squeezed into a ball without any water dripping out.

Move the nuts as little as possible; the radicle is fragile. The radicle will also try to grow "down" and repositioning the nut can cause the radicle to curl or twist as it continues to emerge.

The radicle, or young root, has emerged from the pointed end of this chestnut. Chestnuts typically sprout after a couple of months of stratification, or cold storage.

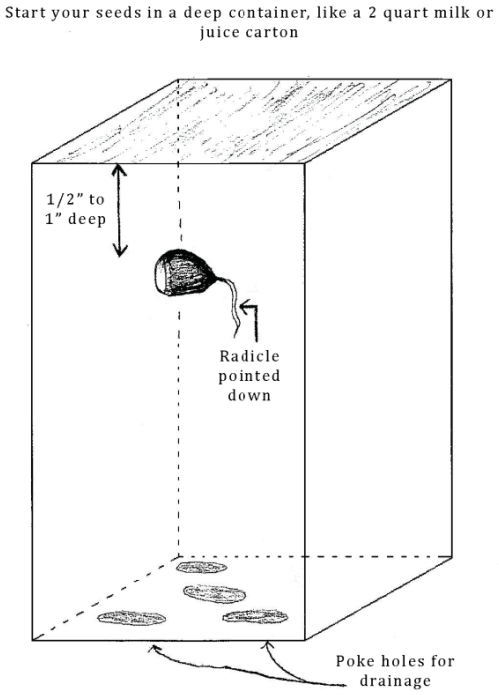
Starting Chestnuts in Pots:

Use a tall (12" deep), narrow pot, or a 2-quart milk or juice carton with large holes in the bottom for drainage.

Fill the planting container with soilless potting mix or composted bark. Our scientists use a blend of 1/3 each peat, perlitle and vermiculite. A well-aerated potting mixture is the key, as chestnuts will rot before they sprout if they are kept too wet.

Plant chestnuts **no more than ½ - 1" deep** and be careful with the radicle. Remember it is the root and should point down. Plant ungerminated nuts on their side.

Chestnuts should be watered about the same as any woody plant; allow the potting mix to dry out a little between waterings. If the medium is kept too wet the nut may not germinate or the seedling may die.



Plant chestnuts with the emerged radicle pointing down or sideways and **no more than ½ - 1" deep**.

Hardening Off Seedlings:

Leafed out seedlings, especially those started indoors, need to acclimate to the natural environment. This is called "hardening off" and will help make transplanting more successful. Ease new seedling into full exposure to sun and wind by placing them on a covered porch, under a shade tree or in a protected area outside for a week or two, gradually moving them to full sunlight. Newly transplanted seedlings can be further protected from sunscald by lightly sprinkling them with straw.

Remove any remnant nut from the base of the seedling so as not to attract wildlife.

Planting Chestnuts Outside:

A wire cage can provide good protection from wildlife. The cage shown here was constructed out of welded wire garden fencing, zip ties and a hardwood stake.

Chestnuts may be direct-seeded outside with good success. The same general planting rules apply: plant chestnuts on their side or with root pointing down **no more than ½ - 1" deep**.

Chestnuts are tasty and it is very important to protect the nut from predation, especially before it sprouts. A tree shelter, cage or some such protective device should be used. Tree shelters are also beneficial for transplanted seedlings (see Wildlife Protection, below).

Direct-seeded chestnuts are usually planted in early spring, but may be planted in the fall with good protection in place. For fall planting, especially in colder climates, some manner of insulation should also be used – sawdust, leaf litter, etc. For spring planting, wait until the soil can be worked and the major risk of a hard frost has passed.

Many growers plant chestnuts into a mixture of soilless potting mix (similar to recommendations for planting in pots) and a small amount of native forest soils. The soilless

planting mix provides a weed-free germinating environment for direct-seeding and helps regulate moisture for transplanted seedlings. Adding a handful or two of forest soil, collected from under a pine or oak tree, to the planting mix may also be beneficial. Forest soils often contain beneficial mycorrhizae that can help make the chestnut's root system more efficient. Mycorrhizae are fungi that are typically found in forest soils but may be deficient in field soils.

Chestnuts should be planted at least 8-10' apart, though 20' x 20' or even 40' x 40' spacing may be used, depending on the goal of the planting. Remember, trees need room to grow!

Fertilizers are not necessary but can be beneficial to chestnuts. If fertilizing, a fertilizer for acidic-loving plants, high in nitrogen, is recommended, but read labels well and be sure to follow directions closely.

Make sure to water chestnuts regularly for the first year. Once well-established there isn't much need to water unless there is a severe drought. Over-watering can be a problem when growing chestnuts.

This small, slightly cone-shaped shelter is made from aluminum flashing and sunk 1-2" into the soil to protect the base of the seedling.

Wildlife Protection:

Chestnut nuts, shoots and roots can all be attractive food sources for wildlife species and tree protection is very important. As mentioned above, direct-seeded nuts are the most vulnerable and should always be protected from predation.

In this planting, plastic shelters are used to protect the base of the trees while a deer fence protects from browsing species. Herbicide is used to maintain a vegetation-free area around each tree.

At our Research Farms in Meadowview, VA we use aluminum flashing to create a 10" high, 3" wide cylinder around planted nuts and seedlings, which is sunk 2-3" into the soil to keep it secure. This cylinder, which is slightly narrower at the top, protects the seedling from root and basal damage by small animals and tunneling rodents, like voles.

Tree shelters, cylinders made of hardware cloth, and even wire cages are also options.

Remember: chestnut trees need protection from a wide range of species, including most rodents, turkeys and deer. Most tube or cylinder shelters can be sunk into the ground to protect against voles as well. The height of the shelter should correspond with the wildlife threats present. If deer browse is a concern, use a taller shelter, if not, go smaller. It is best to pick the shortest shelter appropriate for the site. A combination of a small tube shelter for vole protection and a wire cage to keep larger animals away may also be used.

In situations where deer browse is a major concern and the planting area is large, 8' deer fencing is a good option. In

this situation, smaller shelters to protect against rodents and other smaller species are also recommended.

Vegetation Control:

Remove competing vegetation from the planting area so that planted chestnuts have full access to available resources. A vegetation-free space about 3-feet in diameter is good for young trees. As the tree grows larger it should shade out competing vegetation.

One of the major killers of chestnut saplings is WEEDS. Vegetation control for at least **5 years** after establishment is often the key to the long-term success of a planting.

A competition mat, like the one used here, helps to keep the area around planted chestnuts vegetation-free.

Regular hand-weeding is a good option, but sometimes it isn't practical or effective. Landscape fabric, competition mats, and/or mulch work well for additional vegetation suppression. If using mulch, vole protection is also necessary.

Herbicides, such as a glyphosate may be used but should only be attempted by someone with experience using chemicals. ALWAYS follow the directions on the label.

What Should I Watch Out For?

There are many insects and fungi that may be found on chestnut, including Japanese beetles, cicadas and gypsy moths. The best way to identify and understand the pathogens, pests and other problems that may arise in your area is to talk to your local extension agent (http://www.csrees.usda.gov/Extension). They have offices on the regional or local level; they will know your area and can provide most of the detailed information you should need.

If a problem should arise, your best bet is to contact your local extension agent for input on proper control methods. You may also take photos of any unknown damage and contact TACF for suggestions.

In Conclusion...

Ask lots of questions and keep track of how you care for your trees. Chestnuts are not always an easy species to grow but armed with education and a support network you should be on the path to becoming a successful grower!

For More Information:

If you have additional questions about caring for your new chestnut seeds or seedlings, don't hesitate to contact us! Contact information for all of our offices can be found at www.acf.org/Staff.php