



## **QUICK PLANTING GUIDE**

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# Grandpa's Planting, Pruning and Training Guide

Follow these tips when planting Grandpa's Orchard® Premium Brand Fruit Trees.

**WHEN YOU RECEIVE YOUR ORDER:** As soon as you receive your order, please check it against the shipping list to make sure everything you ordered is there. Inspect the trees for damage. Make sure the roots are still damp. Let us know of any damage or quality problems you may see. Do not let the roots dry out after delivery or when planting them. Try to plant as soon as possible.

If you cannot plant right away, you can usually hold your order for a few days by re-wrapping the roots and re-closing the box. Re-dampen the moss if required. Store in a COOL and DARK place like a basement or cellar. DO NOT STORE WITH ANY FRUIT AS RIPENING FRUIT GIVES OFF ETHYLENE GAS, A POTENT GROWTH REGULATOR WHICH CAN KILL YOUNG NURSERY STOCK, VOIDING YOUR GUARANTEE.

**SOIL AND SITE PREPARATION:** Grandpa is not a big fan of the idea that you have to dig a huge hole and amend the soil greatly. The idea is to have the roots grow out of the hole and into the garden area. Sometimes amending the soil too much can create a "pot" effect. Millions of trees are planted directly into the natural soil by commercial growers without amending it. Over amending the soil with peat, manure, or other things can just make for unnecessary work and can sometimes backfire!

Hopefully you had your soil tested. The pH should ideally be in the 6.0 to 7.0 range, but it is OK if it is higher or lower. If too acid, lime should be worked into the soil of the orchard before planting, not after if possible.

Most good fruit tree sites should be well drained and elevated above the frost line. If your soil periodically water logs because of flooding or naturally high water table, then you should look for a better site. Almost all fruit trees and their rootstocks like adequately drained soils. It is a waste of time and money to plant your orchard in a really low, frosty site. Look for a site with some elevation and/or slope so that cold air can drain away to lower ground.

Dig a hole big enough to accept all the roots without bending or curling them in. If your soil has a lot of clay, try to make sure that the sides are not "glazed" by the shovel or auger. Glazing of the sides can make it difficult for the roots to grow through, and can also make the hole hold too much water. If your soil is very sandy, then you may want to add a little organic matter to the backfill, but not too much. You want the roots to grow out, not remain in just the richer material.

If you are planting through sod, then it may be advisable to kill the sod for a distance of a couple feet from the tree PRIOR to planting. This dead sod will make a good mulch around the tree and you will not necessarily have to remove it. If you are planting into bare ground, make sure that you can control weed growth through the summer so that the weeds do not compete greatly with the tree. Pulling or cutting off weeds will be much safer than using herbicides to control them for the first year!

**PLANTING:** Different rootstocks require different planting depths. Planting must not be too deep or too shallow. Planting depth is typically measured based on the "bud union" or "graft union". It is usually the "crooked" part about 8-12" up from the roots. Look at the planting diagram for guidance. It is better to plant too shallow, than too deep, because you can always throw a little extra soil around the base of the tree. Planting too deep can cause the roots to suffocate from lack of sufficient oxygen.

**Standard or seedling rootstocks:** Almost all peaches, nectarines, plums, prunes, apricots and many cherries will be on standard or seedling roots. Some pears may be on standard or seedling roots (i.e. Betulafolia). Plant the tree deep enough to cover the bud union with one to two inches of soil--- **LEVEL A.**

**Dwarf, Semi-Dwarf and Semi-Standard "clonal" rootstocks:**

Almost all apples, most pears, and dwarf or semi-dwarf cherries will be on clonal or size controlling rootstocks. For apples, they are usually BUD 9, M9, M 26, M 7, Geneva® 30, M 106, M 111, BUD 118 or other "numbered" rootstocks. For pears, they are often OHxF 333, OHxF 87, or OHxF 97. For cherries, they are Gisela® 5, 6, or 12 or Krymsk. If you are not sure of what the rootstock identification might be, then ask Grandpa.

On **ALL** size controlling roots (dwarf, semi-dwarf, or semi-standard) plant the bud union two to three inches above the ground--- **LEVEL B.**

Make sure to firmly pack the soil around the roots. A good way is to hold the tree straight up and walk around it with your feet and let your body weight press the soil down so there are no air pockets left around the roots. Try to leave a small "cup" or depression around the tree so that you can catch water when you irrigate for the first season. After the tree is well established then you can fill it in.

Be careful about not rubbing buds off the branches and trunks of the trees--- especially when handling sweet cherries where buds are usually very much swelled and tender.

**PRUNING:** It is vitally important for newly planted trees to be properly pruned to balance the energy and food stocks stored in the roots with the energy and nutrient needs of the newly growing tops. Almost all trees have too much top, and not enough root, because people like BIG trees and the nurseries try to accommodate them. Under-pruning is more detrimental than over-pruning. Unfortunately most people are afraid to prune after planting ("After all, aren't I cutting off some of this expensive tree?") or are afraid that they will delay fruiting. Neither reason cuts the mustard with Grandpa!

If you had your trees shipped to you, then usually the most important pruning cut has already been made in order to fit the tree into the box. That first cut is the "heading" cut--- it greatly reduces the excess top growth to match the root. It is a benefit because it forces the tree to grow new sprouts and branches at a more reasonable height for the first "swirl" of scaffold branches---about 2-3 feet. If you picked up your trees, then we may not have headed them, and you will need to make that important heading cut.

The second most important pruning cuts to make are cuts to side branches that may be on larger trees like 2 year trees and one-year Extra-large 5/8" up caliper trees. Smaller trees will have less branching, and often Medium grade or smaller will have no branches. Look at the diagram for a general idea of how to initially prune newly planted trees.

**Grandpa recommends using the "two step" process on all types of trees. The first step is done right away after planting. The second step one to three weeks after planting, usually.**

**Apples:** Apples often have many branches. Apples are the easiest fruits to train, since they tend to throw lots of new shoots which can be trained where you want them.

**STEP 1:** Head ALL trees to about 36" above the ground. Completely remove any dead or broken branches close to the trunk. Cut slightly away from the "growth ring" where the branch comes out of the trunk. Cutting into the growth ring reduces the chances of the wound properly healing over. Try to leave a stub about a 1/4" long to allow for good healing. Cut all remaining branches in half.

**STEP 2:** Usually in a week or two when you can see some new leaves and shoots start to grow out of the branches and trunks, then you can re-prune with the goal of producing the first scaffold of branches on the trunk and re-establishing a new central, upright leader at the top. On apples, you usually want to have from 3-5 scaffold branches coming out in a height range of about 2-3 feet that are evenly distributed around the trunk. At the top of the tree, you want to encourage a new upright growing leader. If you have a prevailing wind, try to choose a bud or shoot that will grow into the wind. You may have to train it with a stick or pole for a while in order to make it grow upright. On small caliper trees, you may get lots of new shoots all along the trunk. Remove those that are too low, and encourage 6-8 in the preferred branching area and re-establish a new leader with a strong upright shoot. You can prune out any excess branches next spring.

**Pears:** Pears often have no branches or only a few heavy diameter branches that may not be good ones to keep. Pears are not as easy to "train" as apples, so often you have to let Mother Nature do her thing and work with her, rather than fighting her.

**STEP 1:** Head ALL trees to about 36" above the ground. Completely remove any dead or broken branches close to the trunk. Cut slightly away from the "growth ring" where the branch comes out of the trunk. Cutting into the growth ring reduces the chances of the wound properly healing over. Try to leave a stub about a 1/4" long to encourage good healing. Cut all remaining branches in half if they are small diameter---less than a third the diameter of the trunk. If the branch is large diameter--- half or more the size of the trunk--- then use your judgment as to whether the branch is in a good location and worth keeping.

**STEP 2:** Pears often take their time in leafing out and sending new shoots out--- sometimes several weeks. You may want to wait several weeks before re-pruning. When you re-prune, then you can decide whether to try to grow the tree "central leader" style like an apple, or "open center" like a peach. If you choose to go open center, then you really only want to allow 3-5 scaffolds to grow out from the trunk. Encourage them to grow out at a 90 degree angle if possible by pinning them down with a clothes pin for a couple weeks. Make sure to remove the clothes pin when the angle has been established. Because pears are usually upright growing the scaffold branches will often start to turn up in short order. If you can re-establish a central leader that's great, but don't feel like a failure if Mother Nature decides otherwise.

**Sweet Cherries:** Sweet cherries will almost never have nice branches to work with, unless it is a 2 year tree. Often they look just like "sticks" with lots of buds on the trunks. Tart cherries often have more branches to work with initially. The easiest system to use on all cherries is open center training.

**STEP 1:** Head the tree to a live bud growing into the wind if possible. Remove any heavy caliper branches completely, but leave about a 1/4" stub near the growth ring, where a dormant bud might grow into a new, flatter branch. Almost all branches on young sweet cherry trees will be too big to keep, unless the tree is a 2 year tree and has some nice branches from last year. Remove any buds that are very low, usually up to 18" from the ground. BE AS CAREFUL AS POSSIBLE TO NOT RUB OR KNOCK OFF ANY BUDS ON THE REMAINDER OF THE TRUNK. The goal is to grow as many new shoots as possible in the area where you would like the first branches to grow up to the terminal tip.

**STEP 2:** Sweet cherries usually take off rapidly and shoot growth should be evident in a week or two. When you can determine

which branches you would like to keep, then you can re-prune to allow 3-5 nice scaffolds coming off the trunk. Try to encourage a new leader to grow if possible, but don't feel bad if you end up with an open center tree.

**Tart Cherries:** Some tart cherry varieties will be well branched when you get them, others may have more similarity to a sweet cherry. Look at your tree and if it is well branched, then treat it like an apple tree. If it is poorly branched, and looks more like a sweet cherry, then treat it like a sweet cherry tree. Still, use the two step method based on those two guides.

**Peaches and Nectarines:** Peaches and nectarines can be the most challenging of fruits to get off to a good start. It is pretty much futile to try to grow a peach or nectarine into a central leader system--- you just have to fight Mother Nature too much. The goal is to produce a nice open center tree, with 2-4 main scaffolds coming out from the trunk at a 45-90 degree angle. Always head a little lower than other trees--- usually 24-30 inch from the ground. Always cut branches back by half or more, but **NEVER** "whip" a large caliper 5/8" up Extra Large grade or 2 year grade! Whipping or removing all the branches down to the trunk can kill it, because there may not be enough dormant buds to re-start the tree. Once peaches and nectarines get going though, you can re-prune in Step 2 more vigorously than most other fruits.

**Peach/Nectarine 2 year grades: STEP 1:** You may not need to prune back as much as you think. There should be lots of dormant buds on the branches waiting to burst forth into growth. Cut the limb back a little to a bud that will start to grow out from the underside of the branch. Usually you can remove any central leader.

**STEP 2:** When the branches are showing 3-6 inches of growth around the older branches and wood, then you may prune quite vigorously with a goal of leaving just 2-4 main scaffolds coming out of the trunk. Choose and train one or two new terminal shoot on the branches to grow outward to extend the main branches. Remove shoots that are growing in the wrong directions (straight up, down, back into the tree). Let other branches grow in order to feed the tree through the summer, with the intent of removing many of them next year when you re-train the tree.

**Peach/Nectarine 1 year Extra Large and Large grades: STEP 1:** Head the tree to 24-30". If you do not remove this excess top, then all new growth will be on the top with nothing much lower. Remove any dead or dried up branches close to the trunk, but leave about a 1/4" stub so that a possible dormant bud might break out from the base. Cut back any other branches by half or to about 6-10 inches long. Remove any branches that are too low--- usually between the ground and about 18 inches up. **WALK AWAY! DO NOT WHIP OR TRY TO FINAL PRUNE AT THIS STAGE!**

**STEP 2:** In a couple weeks, you should see some new growth coming from the cut back branches and from dormant buds left on the trunk. At this time, you can start to pick and choose nice, vigorous scaffold branches. You may want to leave 4-8 around the trunk at this time and come back a while later and reduce it further to 3-4 permanent ones. If there is a new leader starting to grow, it is OK to leave it in at this time. It will help shade the center and force the new shoots to grow outward rather than upright. You can remove this central leader next spring.

**Peach/Nectarine 1 year Medium and Small grades: STEP 1:** Head the tree to 24-30". Remove dead or dried up branches if there are any branches at all. **WALK AWAY!**

**STEP 2:** In a couple weeks, there should be lots of new shoots coming off the trunk, since on small caliper trees there usually are lots of dormant buds on the trunks. Rub off too low shoots or branches. Choose several potential scaffold branches and clothes pin them to a flat angle coming off the trunk. Remove the pins after a couple weeks. At this time, you can often choose 2-4 nice permanent scaffolds and remove the unwanted ones and any growth above the top scaffold branch.

**Apricots, Plums and Prunes:** These stone fruits can be deceiving. Every variety is somewhat different. Some varieties are well feathered with fine branches, some have just heavy branches, some have few if any branches what-so-ever. Grandpa has a hard time giving specific guidelines because of this, but he has found over the years, that no matter the level of branching on the tree when you get it, there are often lots of dormant buds that will grow if you head the tree enough and cut the remaining branches back by half. Then usually let Mother Nature have her way and in one to three weeks you should start to see new buds and leaves growing from the remaining branches, or if no branches, dormant buds growing out of the trunk.

**STEP 1:** Head the tree slightly--- usually higher than a peach or nectarine tree. Cut off any dead or dried up branches, leaving about a 1/4" stub at the growth ring. Do not cut into a growth ring as this is where dormant buds are hiding unseen! Cut remaining branches in half or to about 6-10" long.

**STEP 2:** Wait at least a week or more, checking periodically to see where new growth is coming from. Be patient on plums and apricots as they can take their time in forcing dormant buds. When you have lots of new shoots and branches to choose from, then you may re-prune your tree to open center (most typically) or to a central leader system if it appears the variety is prone to that nature.

**TREE GUARDS and TREE PAINTING:** Grandpa provides spiral tree guards with every tree for a reason--- rabbit, mouse and other "critter" control. The spiral tree wraps are easy to put on and should be put on shortly after planting. It is often advisable to bury the bottom end an inch or two into the soil so that it protects from mice and voles that may burrow just under the surface. Sometimes a new sprout will grow between the spirals, so periodically check and remove those shoots. In a couple years when the tree is filling out the wrap, then it can be removed. If you are concerned about further damage in later years, then you can replace the spiral

wrap with a larger piece of corrugated plastic pipe, split up the side. However, after a few years, the bark of the tree is usually thick enough and not as tasty to chewing rabbits and mice. **Tree guards will not protect from deer!**

Spiral guards can also help protect the young trunk from some winter damage. The bright winter sun can reflect off the snow onto the trunk at the snow line or shine directly onto the trunk from its lower angle in the winter sky. This warming up can lead to winter damage when the trunks heat up during the day and then refreeze at night, particularly on the southwest side of the tree. A better way to protect from this "southwest damage" is to paint the trunks with white latex (**do not use oil base**) paint. Paint from the ground level all the way up into the first branches. This is particularly helpful on tender stone fruits, like peaches, nectarines, apricots, plums and cherries, but it doesn't hurt to paint apples or pears either. The white paint will reflect much of the winter sun. You can thin the paint down with water somewhat to make it easier to apply. A quick way is to use a glove or sponge to put it on.

**DEER CONTROL:** If you live in an area with **ANY** deer, then you are running the risk of deer nibbling on the new, tasty, tender shoots on your newly planted fruit trees. Believe ole Grandpa--- "Bambi" will "hit and run" during the night! Before you realize it, they will nibble enough growth to set back your trees. Use any trick you can to deter deer:

1. Spray on deer deterrents periodically--- some really work well.
2. Tie small bars of soap to the tree--- although some other critters may eat it because of the fat content.
3. Pin or staple the most fragrant fabric softener sheets to the tree--- the "human-like" smell deters the deer. Be sure to replace them after a couple weeks of exposure to the weather.
4. Scare crows hanging from ropes or chains and which can twist and swing in the wind have been used by commercial growers with pretty good success. Apparently they fool the deer into thinking people are around.
5. Set Fido, your dog, loose at night and maybe he can earn his keep! However, I have heard that soon the deer just learn to ignore dogs too.
6. Caging individual trees with at least a 6 foot tall wire cages made from woven fencing can be really effective when dealing with a small number of trees. Make sure the cage is about 3 foot in diameter and secure it and support it with a couple poles so that the deer cannot move it to start browsing on the tender shoots. In a couple years it can be removed and used on newer trees.
7. Permanent Fencing--- It is expensive but can be worthwhile in areas where there is severe deer pressure and you have a large planting you need to protect. There are many different types of fencing that can be used. If using a single fence, it should likely be at least 6-8 foot tall or higher as a deer can jump less than that easily. Some people have had good luck with double electrified fences about 4 feet tall and separated by 3-5 feet. Apparently the distance between the fences fools the deer and they refuse to try to jump it. Also a touch of the nose to the electric fence will "educate" them pretty fast!

**WATERING AND FERTILIZING:** After planting be sure to properly water (not too much and not too little!) and carefully place proper amounts of fertilizer

**Watering**--- Make sure after you plant to give the newly planted tree a good drink of water. A few gallons around each tree in the cup you left at planting will soak down to the roots, helping to fill in any remaining air pockets and letting the soil make good contact with the roots. Thereafter, a weekly watering may be needed depending on your climate and weather. Grab a handful of soil from around the base of the tree. If moisture squishes out freely, then you don't need to water. If it retains its shape and feels damp, then it is almost ideal. If it doesn't hold its shape and crumbles, then watering may be necessary. It is important to NOT OVERWATER too. Too much water around the roots is as bad as too dry. Use common sense and test using the clumping conditions of the soil.

**Fertilizing**--- Young trees usually do not require any fertilizer at planting. They have yet to re-establish a root system capable of taking up fertilizer. That can take a few weeks. Some people swear by fertilizer stakes or packets at planting. They are OK if they do not break down right away. Then they can possibly overdose the tree and burn the roots. Mixing a little soluble fertilizer in with the irrigation water is a good way of gently fertilizing the tree. (About ½-3/4 ounce per gallon of water) You can continue to use it through most of the summer, but be sure to stop fertilizing by August so that the tree can start to harden off for the fall. If you use granular fertilizer, then make sure you place it a foot or more away from the trunk and in a place where rain can't suddenly wash it into the hole. If that happens, you can possibly burn the roots and kill the tree when all that fertilizer suddenly dissolves and washes around the roots. The idea is for it to slowly dissolve and leach straight down into the soil where new roots can grow into the fertilizer. Complete fertilizers like 12-12-12 would require only a two to three handfuls scattered around the tree through the first season --- ending before August 1<sup>st</sup>. Many soils may have sufficient levels of phosphorus and potassium, but not enough nitrogen, so fertilizers that contain just nitrogen like calcium nitrate, ammonium nitrate, or potassium nitrate are good choices too. If you are planning to grow organically, then probably most sources of nutrients in organic fertilizers will not be of such high level that you have to worry as much about burning the roots. NEVER FERTILIZE IN THE LATE IN THE SUMMER OR EARLY FALL AS THE TREES ARE STARTING TO HARDEN OFF AND GO DORMANT. IT IS POSSIBLE TO "RESTART" THEM GROWING, WHICH WILL LIKELY LEAD TO WINTER DAMAGE OR DEATH DURING THE WINTER.

**Manure**--- Many gardeners swear by manure! If you use it make sure that it has been well composted and is not fresh. Too fresh manure can have high salt and nutrient content and can possibly burn the roots. In any case, if you can work it into the planting site

WELL before planting, then you will have improved the organic level of your soil tremendously. Most sandy and clayey soils will benefit by some manure or compost. Adjust other fertilizer accordingly.

**HARDENING GROWTH OFF FOR FALL AND WINTER:** Depending on your climate, you want your new trees to make nice growth before the fall. There is no specific general rule of thumb to go by on how much is too much or too little growth for a tree, because it can depend on the variety, rootstock and other factors. However, Grandpa feels that a nice target is at least one foot of new growth on a scaffold branch as a minimum. Less than that and you likely have not provided enough fertilizer and/or irrigation. Some trees might make 2 to 3 feet. Usually anything more than 2 ½ to 3 feet might be considered excessive growth. For the newbie backyard orchardist, it may take a couple years of planting trees and gauging growth to know how much fertilizer will give you the growth you want. In any case, it is probably better to have a little too much growth than to have too little--- 6 inches or less. By August, you should stop fertilizing if you have had adequate growth. If you have inadequate growth, you may want to fertilize just a little more in early August, but by September all fertilizing should be stopped. By late August you should start to see terminal buds setting and little or no additional growth. Through September, the green new growth should be slowly changing to darker wood. By October, you should have no active growing points and all the new growth from the summer should be mature.

Trees that are too lush and have not hardened off properly for the fall are susceptible to winter injury from cold snaps and cold temperatures through the winter. Trees that have inadequate growth are susceptible as well, and have a harder time surviving the winter because they have less root bound nutrient reserves after they go dormant in the fall.

**ADJUST THE ABOVE GUIDELINES FOR YOUR PARTICULAR CLIMATE AND ZONES!** More northerly areas in Zone 4 or colder have shorter growing seasons so care must be made to not fertilize too long into the summer. More southerly, warmer zones such as 6 or warmer will have longer seasons, so growth can go longer into the summer and early fall.

**PRUNING SECOND YEAR AND OLDER TREES:** Check [www.GrandpasOrchard.com](http://www.GrandpasOrchard.com) website for further growing tips for how to prune and train older trees.

**INSECTS AND DISEASES:** No matter the varieties or types of fruit you have planted, you will have to protect your trees and orchard from insects and diseases. Heavy infestations of both will reduce growth on your trees and make it hard for you to succeed. It pays to have a good resource to refer to for insect and disease control. The book "Backyard Fruit Production" that sells on Grandpa's Orchard is an excellent resource for the beginner and covers insect and diseases and their control for a wide range of fruits and small fruits. There are many other resources out there you can use for both conventional (with chemicals) or organic growers, such as the local Agricultural Extension Service and University. Check on Grandpa's Orchard for Growing Tips. We plan to add articles regarding identifying common insect and disease problems.

**PROBLEMS AND POSSIBLE CLAIMS:** Sometimes trees just don't start and grow properly. If you have pruned properly at planting and watered and fertilized properly, you should start to see new growth within a few weeks. If it's a month or more, contact Grandpa and he can talk to you about what possibly may be wrong. Sometimes trees just don't start properly. Grandpa stands behind his trees. We will usually replace them the next season, but not if you are negligent or if you have planted a variety in a location or climate zone where they just will not survive. In any case, if you have problems, please let us know as soon as possible the first growing season. Because of the vagaries of winter weather and Mother Nature, we cannot guarantee that a tree will always survive the winter, even if it grows well through the first season.

