

Choose the Best Tree for Your Golf Course

Tree Shopping Facts and Myths

When choosing trees for your golf course or its environs, there are a number of things to consider. Before you buy a tree, inspect its health, size, trunk condition, leaf color and the condition of the root ball. Many problems that trees develop on site began at the place of purchase or, in some cases, at the nursery. This is not to say that growers and sellers cause all the problems that trees develop. Buyers also must be diligent in their care. For example, a tree that dies from lack of water is not the fault of anyone except the individual responsible for watering it.

Here are some guidelines on how to choose trees, with reference to their parts and things to consider, both good and bad. These should not be considered hard and fast rules, but rather a helping hand in determining either if a tree has a potential problem or if it is truly a "stinker."

The Root Ball

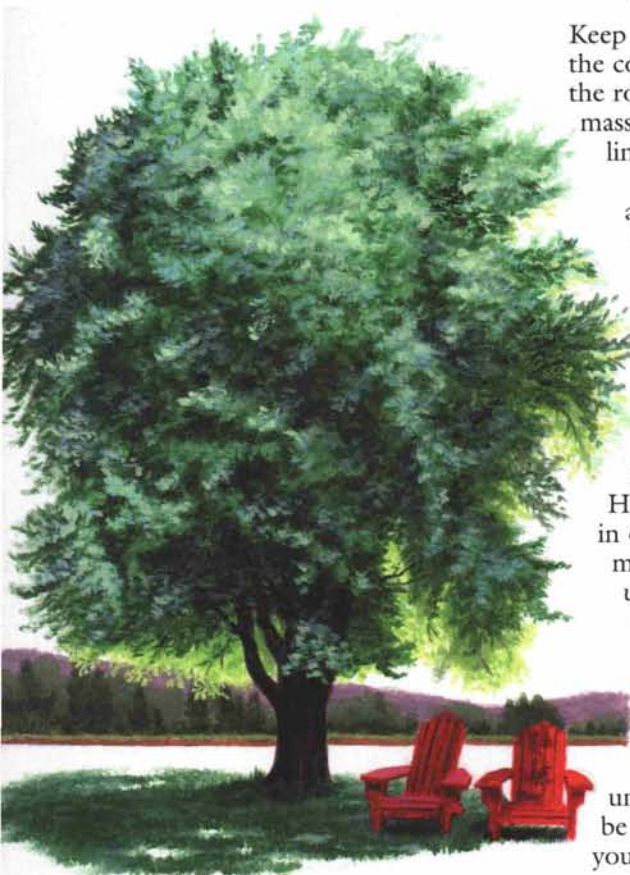
The root ball is just what it says, the ball containing the roots of the tree. Keep in mind that the root ball is just as important as the shape of the trunk, the color of the leaves or the condition of the crown. In fact, the condition of the root ball may be the most important of all, because without a decent root mass the tree, no matter how it looks on top, will have problems down the line.

First, here is a little background on the importance of roots. Roots are a tree's anchor and also play a big role in gathering and storing nutrients from the soil. The root system itself is largely composed of two kinds of roots: feeder roots, which are responsible for the uptake of food, and structure and support roots that not only anchor the tree but also store food reserves. (Feeder roots make up more than 70% of the total roots a tree produces, but their average life is only a month.)

Look closely at the ball itself. There are few things that tell you how long a tree has been sitting in a holding yard or at a garden center. If the ball looks old, it is old. The burlap around the ball should be in good condition, not rotted, and the ball should be firm to the touch. Hold the trunk and give it a good tug: the tree should not move in the ball; in other words the tree and ball should move as one. A loose root ball can mean a poor root system. Inspect the soil of the ball as well, paying particular attention to how wet or dry it is. An overly dry root ball can resemble concrete and be next to impossible to re-hydrate particularly after the tree is in the ground. Look for moist soil that has been watered evenly and that when lifted is slightly heavy for its size.

The depth of the root crown or root flare (where the roots and the trunk come together) in the ball may be the most overlooked clue to a healthy root ball. In some trees and shrubs there will be a graft union; make sure not to mistake it for the root flare. Having the root flare be too deep in the ball is not good (see **Figure 1**). Think of it as sticking your head under water and trying to breath! Trees with a buried root flare

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look as if they were stuck in the ground like a spear, rather than growing naturally from the soil.

Figure 1



An example of the root crown being to deep in the ball.

When examining the tree look for a bulge or slanting away from the trunk into the soil. If there is no bulge or flare, stick a finger if you can into the ball to find out how far down the root flare is. If you truly want or need the tree for your site, then the soil covering the flare will have to be removed before planting.

A root ball is not always "balled and burlapped" (B&B) in the sense that we know it. A tree in a five-gallon container or in a root bag that is not covered in burlap would still be considered 'balled' in the trade. Check trees in five-gallon containers

for how deep they are planted in the pot and how firmly they are rooted into the pot. Also check if the trees are root-bound. Either avoid the root-bound ones or scar (cut) the roots to encourage new growth prior to planting (see Figure 2). Consider the condition of the container as well. If the roots have burst through it or if it is very brittle when handled, the trees might be old.

Figure 2



Extreme example of 5-gallon, root bound plant.

The root bag (see Figure 3) should be checked as well. Non-burlap bag material will have characteristics that may be unfamiliar to those who commonly use traditional B & B material. Just think of the root bag as an in-ground container (which it is) that must be

removed before planting. Container-grown trees and those in non-burlap root bags will have many more roots than those that are B&B. In many cases they will be much lighter in weight, depending on their size. In any case the 'rules' for root ball inspection should remain the same.

Figure 3





Root system common to bag material.

The Crown


The branched portion of the tree above the trunk is referred to as the crown. Think of the crown as the hat the tree wears to show off its colors. A healthy crown is another key in choosing top performing trees. However, the crown is the hardest of the keys to read because a good-looking crown does not always indicate a healthy tree. So, when looking at the crown of a tree to gauge its health, keep a sharp eye on the following characteristics.

When sizing up the crown first check the tree's growth rate, by

Dirt~n~Turf

Consulting, Inc.



David Marquardt - Consulting Agronomist
630-251-1511 Dave@dirty-n-turf.com

www.dirt-n-turf.com

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roughly measuring the distance between the nodes, or the distance from the end of the branch back to the first scar that circles the branch.

By gauging the rate of growth you can get a rough idea of the tree's vigor. Short or no growth on the ends of branches that appear weak (i.e. wilting, brittle or deformed), may indicate the tree is under stress and may not transplant well. Look for trees with moderate to long growth on the ends of its branches, and branches that are firm to the touch and show no sign of wilting.

Next, examine the leaf size, which together with its condition, is a good indicator of the tree's health. The leaf should be at or near full size and firm to the touch with no deformities. Leaves that are undersized, thin, papery to the touch, or curled/deformed are signs that the tree may be suffering from stress or another malady.

Certain leaf characteristics are not worrisome. The first of these are galls. Leaf galls may look like little nipples, orbs, vein enlargements or upright growths, and their color can vary like the rainbow (see **Figure 4**). If it helps, think of galls as decorations.

Figure 4



An orb leaf gall.

Look for them on the leaf stem and on the leaf itself, but remember: their presence does not indicate that the plant is sick or under stress. There are other types of galls found on the branches and trunk of trees that vary in description, but generally they look like little globes or domes that are attached to the plant in areas where growth is still a little soft.

Tree genera that are commonly found with these types of galls include *Acer* (Maple) and *Celtis* (Hackberry).

Very few species of gall will harm trees, and those that do will be apparent even to a casual inspection. Contact a tree professional if you think that the galls on your tree are harmful.

Next, check if the leaves are wilting, discolored, or deformed. One of the first places a tree shows stress is in its leaves. However, that stress may have more than one cause. So judging the leaves should be only one of several steps in checking for stress.

That said, the leaves should be a healthy green (or the expected color of the cultivar or hybrid depending on the tree) and have no major deformities.

A deformity in a leaf or stem is usually seen as a curling of the leaf or incomplete growth of part or all of the leaves and/or stems. Stems will suffer from similar defects that also may include wavy or curled ends. There also may be a problem with the tree's genetics, causing bizarre growth patterns or the total suppression of the tree's ability to grow in any recognizable form at all (see **Figure 5**). If the leaves or stems show these kinds of growth patterns, the tree may have been exposed to a number of toxins, may have insect infestation, or may simply have a gap in its genetic make-up. There is a good chance that the tree will grow out of its deformity but it's a risky bet. The only deformation that does not seem to bother trees at all is incomplete leaf growth.

Figure 5



A limb with a severe genetic deformity, the cause of which may have been direct application of an herbicide.

There are many reasons for leaves to wilt or be discolored, and in many cases they are related. Under watering or over watering a tree is the number one cause of wilting and discoloration. Always check the root ball if the tree shows these two signs.

Mineral deficiencies also cause leaf discoloration. The color can indicate which mineral is lacking. Always check with a tree professional if you think that a plant is mineral-deficient to confirm which mineral it is and how to solve the problem.

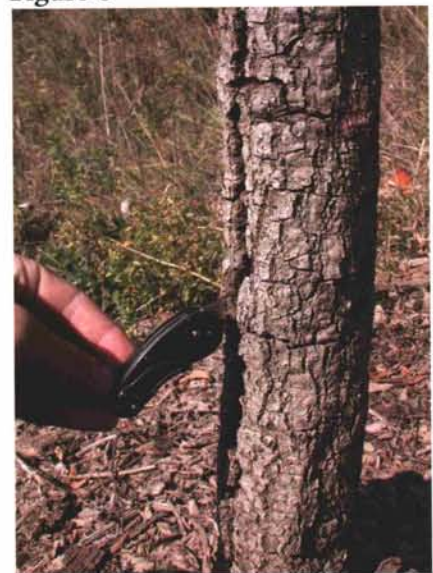
A disease such as anthracnose or *Verticillium* wilt also might cause wilt. Again, always check with a professional.

The Trunk

The trunk is the tree's pillar of strength. You only need to check a few things to insure the tree is healthy.

One, the trunk should be free of open wounds, cracks or evidence of insect infestation (such as holes in the trunk) (**Figure 6**). These conditions are easy to spot and are big warning signs if the tree shows no signs of healing. If the tree does appear to be healing, then most likely it is healthy. Note: if the tree has holes from insects boring into it, stay away from it. Bringing an infested tree back to your site is not a good idea.

Figure 6



A deep trunk crack.

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Two, avoid the tree if there is any sap seeping that cannot be explained.

Three, the trunk should support the weight of the tree without bending over or needing the assistance of a pole.

Four, avoid trees and shrubs that have tape or wire imbedded into their wood (see Figure 7) where the wire or tape can't be removed without cutting it out from the tree or removing the limb in which it is imbedded.

Figure 7



Embedded marking tape.

Five, the bark of the trunk should not be falling off or be withered, either of which conditions can indicate damaged vascular tissue, from which trees rarely recover fully.

Growth and Vigor

Growth and vigor are two rather vague words used to describe a tree's intangible aspects. For example, you see a tree has a deep trunk wound, but is showing no outward signs of stress, is growing well and has some new tissue forming around the wound. So, despite the fact that a wound exists, the plant is healthy and would likely be a great tree for purchase. These intangibles are hard to assess and require a judgment call.

Another example would be if a tree is wilting but in all other aspects is excellent. Is the tree wilting from lack of water, and only needs a good soak before it goes in the ground, or is there something else wrong? The

decision to buy the tree or not is up to you. Keep this in mind: Is the tree in the kind of condition after your inspection that you are willing to accept?

Zones and Habitats

Keep in mind that you must choose trees that are of the highest quality for your particular site. A word of warning here is necessary: No tree, no matter how healthy, can survive for long in areas that do not suit it. So, planting a southern magnolia in Chicago and expecting it to live through a cold winter is not always reasonable.

This warning also applies to trees that initially are close to hardy in that same Chicago location, but die after a cold winter down the road. Saying a tree is hardy means that it can survive in a certain range of temperatures or zones. Trees planted outside their home zones are prone to an assortment of maladies such as frost cracking or tip die back. Conversely, a tree that loves conditions usual to Chicago will be unlikely to like conditions in Phoenix! These problems can't be seen while picking out the plant at the nursery, but must be researched before purchase, to insure that the tree is hardy in your area.

Also match your choice of tree to your site's conditions. Match the soil where a tree is found in nature to the soil at your site for best results. You don't want to plant a tree that prefers sandy soil and a tree that prefers wetland soil in the same location. Make your mantra, "Match the plant to the site not the site to the plant." If you don't know the tree's natural growing conditions, or its native range is half a world away, it can be difficult to match its soil conditions, so look to the genus of the tree and come as close as you can to ideal conditions.

Most of the things covered here range in importance, and it is usually either a combination of issues or one serious thing that affect the tree's health. However, smaller trees (with trunks smaller than 3" in diameter) have a better chance of surviving a wound, insect attack or other problem simply because most of the tree is still actively growing and it should

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grow out of the problem. Larger trees, when dug out and transferred first to a nursery and then to the intended site, are under more stress and are more likely to suffer long term consequences when wounded or under stress. This result is similar to how we've all seen that a child who gets cut heals faster than someone over 30. The younger, the easier the healing, for both trees and people!

Picking healthy trees from nurseries or garden centers usually is easy because quality trees of all types are offered in good quantities. All trees have their place and it is up to us, as gardeners and growers, to put the best trees in our landscapes. It is also our responsibility to reject plants that are of poor health or quality. Far too many buyers accept trees that should never have left the nursery because they did not perform an adequate inspection.

