

# Planting Tips

The best way to ensure the survival of your new plants is to plant them in good soil. Good soil helps plants survive by mitigating drought and flooding allowing roots to expand. Missouri typically has dense clay soil which can pose some challenges to work with. Because clay is so dense, it absorbs water less quickly, holds it longer, and makes it more difficult for oxygen to pass into roots. Encouraging drainage is particularly important with clay soil. Raised beds are a wonderful option to foster better drainage. Raising the level of the soil even just a few inches above the ground brings better oxygen flow into the soil by allowing the water to disperse sideways as well as downward far more efficiently than level, packed ground. In the case of large planting areas where it might not be practical for raised beds, tilling the soil before planting will allow for better drainage and root extension.



Whether transplanting a balled and burlapped (B&B) or container plant into the ground, a widely dug hole is always best. The width of the hole should be at least twice, ideally more, than the width of the plants root system. The expansive dug out width will allow much greater freedom for roots to expand. Hard, compact soil is difficult for roots to move through. By digging up a wide space around the plant you have loosened the soil creating better airflow, better drainage and ease of movement for roots. Roots have difficulty breaking through the often shear, smooth face of a hole left by a shovel. Roughing up the edges of the hole will help roots break through into the soil surrounding the hole.

Something to avoid is replacing the soil from the hole with an entirely different substance like pre-packaged soil. The common thought is by improving the quality of the soil with high nutrient, porous soil around the plant you will foster better root development. When you fill a hole with porous soil that drains well where previously only dense clay soil existed something happens called the “bathtub effect.” The “bathtub effect” occurs when well draining soil is surrounded by poorly draining soil. Water will rush right through the finer soil and stop almost as if there was a wall at the denser soil leaving the roots sitting in water almost assuring rot. A better way to improve

the soil is to integrate a little bit of organic matter into the soil that will fill in the hole so the rate of drainage remains similar to the soil surrounding the hole.

When transplanting from container into the ground loosen the root ball by removing some soil from the base of the plant. If when the plant is removed the roots are coiling tightly a root bound condition has developed in the pot. Try to unwind the roots and if necessary score the roots at three to four places and pull apart. The depth at which to plant either a container or B&B plant into the ground varies depending on the type of soil it is being placed and size of the plant. For the dense poorly draining soil commonly found around Columbia, MO it is desirable to leave the base of a larger B&B tree four to five inches above ground. For smaller plants and shrubs keeping the base slightly elevated above the surface in proportion to the plant will help with drainage. There is no need to loosen the soil below the root ball as roots will generally expand horizontally and loose soil below the root ball will encourage water to settle there which may increase rot. For planting B&B material cut and remove all twine and rope used to hold the root ball together. It is not necessary to remove the burlap and possible wire basket that surrounds the root ball but it is important to fold down the burlap so it is buried below the surface to negate a potential wicking effect created by dry exposed burlap sucking moisture from the soil. After placing the tree or shrub in the hole backfill the soil into the hole while taking care to keep the plant vertical. Pack down the soil firmly but not so forcefully it may suffocate the roots. A 2-3 inch layer of mulch over the ground surface will help keep moisture in the soil. Make sure not to mulch directly up to the trunk to prevent rot. Fertilizing a couple of times a year will help provide your new tree or shrub with the nutrients it needs to grow. You may fertilize as much as 4-5 times a year if you really want to push growth. A slow release plant food such as Osmocote, is recommended. It is best not to fertilize between July and late October as it will encourage new growth which will minimize the plants ability to acclimate to the cold. Once dormant, usually after late October, it is fine to fertilize the plant again. If your tree or shrub doesn't seem happy in its new home don't be afraid to make changes. Sometimes a different watering schedule, a little fertilizer, or transplanting to a better locale can help a plant flourish. Don't be afraid to ask question, there are plenty of resources available from books, to nursery professionals and the internet.

