

Root Systems

Giving your new tree or shrub the best chance at survival, judging by the many different products marketed to today's gardener, may appear overwhelming. Should I use this, should I use that, it sounds so good in the ad. There are so many products pushed and promoted to a gardener it makes it seem down right neglectful to not be caring for your plants with the latest greatest chemical concoction. Some people swear by root stimulators like Superthrive, which claims it can bring plants back from the dead. The Prevailing question is how to best ensure you plants grow up big and strong. Specifically, how can we promote a strong and healthy root system? Ultimately the success of any root stimulator is based on its ability to fill a need not readily filled by the plants environment. For example, many root stimulators provide a big bump in phosphorous which is an essential nutrient for root growth. If your soil is generally phosphorous deficient the product might be worthwhile. The soil around Columbia, MO doesn't lack for phosphorous, so do you need a root stimulator, probably not.

Another product people wonder about is mycorrhizal fungi. Mycorrhizal fungus forms a symbiotic relationship with roots encouraging root expansion and nutrient absorption. Mycorrhizae thrive when roots thrive, so the fungi does its best to help roots become strong. 95% of plants form a mycorrhizal relationship. Mycorrhizae occurs naturally in the soil and still remains at high levels in undisturbed areas. Natural levels of mycorrhizae are depleted by many common agricultural and construction practices. So, should you add mycorrhizae to your soil? There does appear to be scientific evidence suggesting the fungi helps roots improve nutrient and water uptake and improve plant growth. The addition of mycorrhizal fungi into sand, silt, and loam soil seems to be effective. When added to soil high in organic matter, soil high in

phosphorous, or clay soil, the effects appear mitigated. The dense clay and phosphorous sufficient soil generally found in the area does not seem to greatly benefit from the addition of mycorrhizal fungi. Unlike root stimulators which can burn and harm plants no harm will come from adding mycorrhizae to the soil if it is something you would like to try.

The proper amount of water, proper plant location and planting, proper care of the soil and some fertilizer should be all you need to produce healthy root systems. Amending clay soil with peat moss and pine bark will loosen the soil allowing better drainage and root expansion. Loosening the root system before planting, especially if the plant has become pot bound, will help roots expand. A pot bound root condition



usually comes from a plant outgrowing its container leading to the roots circling the edge of the pot because there is nowhere else to go. Pulling the encircled roots apart is very important when transplanting or the roots will continue to grow in a circular fashion never properly rooting in, killing the plant. If you have given the roots some good rough tugs and they still won't come apart you can cut several slats into the encircled roots and try to pull apart again. Scoring the roots should encourage a new growth pattern although there is a chance too many nutrient providing pathways will be harmed for the plant to survive. A slow release fertilizer such as, osmocote, should be enough to provide any nutrients the soil may be lacking. The truth is every product in the world can make a claim, most of them are unnecessary. If you really must try something conduct your own test by growing similar plants, one with the product, one without, then you can draw your own conclusion.