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The Myth of Fragile Roots

“You shouldn’t disturb the rootball when transplanting trees and shrubs”

The Myth

“When you transplant, try not to disturb the roots, just take the whole pot-shaped lump of soil/roots and pop it into its new home.” This and similar advice can be found on web sites and in gardening books, all which warn us of the fragile nature of roots. When we upend a container and slide out the root ball, it’s an innate response to handle those tiny white and brown strands gingerly so as not to break them. Since the survival success of a newly installed tree or shrub is dependent upon healthy, functioning roots, it seems obvious that the more intact the root system the better the chances of establishment. Anything that damages this intricate web would seem to add to transplant shock.

The Reality

Though gentle handling of roots is good advice when transplanting seedlings, especially annual flowers and vegetables, woody perennials, shrubs, and trees all benefit from a more vigorous approach. There are several reasons for this, and surprisingly some of the harshest techniques result in the healthiest plants.

Containerized materials, especially those in gallon sized pots, often have serious root problems as a result of poor potting-up techniques. Potbound plants exhibit circling root systems, which if not corrected become woodier and more troublesome the older they get. Eventually these circling root systems become girdling roots, which can lead to the early death of otherwise healthy trees and shrubs. At transplant time, a more aggressive approach to root preparation can discover potentially fatal root flaws. Circling roots, J-hooked roots, knotted roots, and other misshapen roots can often be corrected by careful pruning. In this manner it’s possible to remove those root problems before they threaten the survival of your shrub or tree.

It’s important to realize that roots respond to pruning in much the same way as the crown: pruning induces new growth. Roots that are pruned at transplant time, especially those that are excessively long or misshapen, will respond by generating new, flexible roots that help them establish in the landscape. It is vital that these new transplants are kept well-watered during this time.

A second problem with containerized materials can also be avoided during your root inspection. In general, the media in the container is a soilless mix with a large proportion of organic matter and pumice. If transplanted with the plant as part of the root ball, this material will inhibit root development outside the planting hole. Furthermore, the porous texture of this planting media will often lose water more rapidly than the surrounding native soil, resulting in increased water stress to your new transplant. It is much better for root establishment to remove as much of the container material as possible before the plant is installed. The best use for the discarded container mix is as a topdressing over the disturbed soil. When covered with wood chips or another mulch that will reduce weed colonization, the container media serves as a nice source of slow-release nutrients.

The Bottom Line

- Plants with woody roots often need corrective root pruning before transplanting
- Containerized plants are notorious for concealing fatal root flaws

- “Bare-rooting” container plants is a more successful transplanting technique as root flaws can be corrected and container media removed
- In a healthy, well-watered plant, root pruning at transplant time will induce vigorous new root growth and assist in establishment

For more information, please visit Dr. Chalker-Scott’s web page at <http://www.theinformedgardener.com>.