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### **The Myth of Mighty Roots:**

*"Wire baskets will not interfere with root growth of transplanted trees"*

#### **The Myth**

What to do with those wire baskets that so neatly restrain rootballs of B&B trees? A perusal of websites reveals that many nurseries and plant advice pages recommend leaving the wire basket intact, or loosening it, or bending the top portion down so it's covered by soil. This "out of sight, out of mind" approach can give customers a false sense of security and most likely they won't even associate potential root problems when their tree begins to fail a few years down the road. Why is there such a reluctance to remove this slow-to-degrade, impervious material from planting holes?

About 10-15 years ago a handful of papers were published on this topic by Dr. Lumis at the University of Guelph. His most often cited work, published in 1990 in the popular magazine *American Nurseryman*, focused on *Salix* and *Acer* species planted in wire baskets in a municipal park and exhumed 4-15 years later. He reported that roots were able to grow around and over the wire with no permanent girdling. This single paper (which neither contains much scientific information, nor explains why these trees were removed in the first place) has been used to justify the practice of leaving wire baskets on transplanted trees.

#### **The Reality**

There are at least five publications that conclude that wire baskets do interfere with root growth, causing girdling and other root problems. In fact, one of these publications was coauthored by Lumis in 1992 in the *Journal of Arboriculture*. In contrast to his earlier paper, only *Populus* whips were able to overcome wire girdling; *Celtis* and *Fraxinus* roots were compromised. It appears this may be a species- and site-specific issue. *Populus* and *Salix* have aggressive roots that can grow through anything, so it's not surprising that wire baskets present no challenge to these genera. Other trees are apparently much more sensitive to girdling by wires, and it stands to reason that poorer site conditions will translate into increased stress on the tree. In other words, a willow growing in a large park setting will have fewer environmental stresses than an ash grown as an urban street tree, and would therefore be less likely to be hampered by underground impediments.

These latter papers, in peer-reviewed journals, are ignored by the web sites and businesses who instead champion the earlier article in *American Nurseryman*. I can only assume that this is an effort to make transplanting appear faster and easier and therefore more desirable to consumers.

#### **The Bottom Line**

- Most research has demonstrated that wire baskets are harmful to tree root establishment
- After lowering the tree root ball into the hole, use wire snips to completely cut the basket off at the base
- Partially backfill the hole to help support the root ball
- Remove the cut portions of the basket and continue to backfill

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