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Alison Stoven O'Connor, James E. Klett, and Anthony J. Koski

**Container Type Affects Root Development of Chanticleer® Pear (*Pyrus calleryana* 'Glen's Form') During Landscape Establishment ..... 165**

**Abstract.** While there are many advantages to producing woody plants in the industry-standard black plastic (BP) container, circling and girdling roots on plants grown in them may reduce transplant success, predispose plants to stress, shorten life span in the landscape, and increase the potential for the development of hazard trees. Plants grown in fabric containers may have fewer circling and girdling roots, possibly eliminating transplant problems sometimes seen with plants grown in BP containers. This study evaluated post-transplant root and shoot growth of *Pyrus calleryana* 'Glen's Form' (Chanticleer®) produced using three container types: black plastic, Root Pouch® (RP) and Smart Pot® (SP). Researchers found no container effects on aboveground growth one, two, and three years following transplant into the landscape. All trees doubled their root dry weight annually over the three-year study. No container effects were found for any measured root parameters one year after planting. However, two and three years following planting, trees grown in RP and SP containers showed greater total root growth beyond the original root ball than BP-grown trees. Three years after planting, 72% of all root growth of trees grown in BP containers was within the original root ball, while more than one-third of all roots of RP- and SP-grown trees were found outside of the original root ball. Researchers believe that fabric containers should be considered as alternatives to BP containers because they may enhance root growth of transplanted trees and reduce the formation of future circling and girdling roots.

**Key Words.** Black Plastic Container; Circling Roots; Deciduous Tree; Fabric Containers; Girdling Roots; Landscape Establishment; *Pyrus calleryana* 'Glen's Form' (Chanticleer®); Root Pouch®; Smart Pot®; Transplanting.

Antti S. Kämäräinen, Anu Riikonen, Asko Simojoki, and Leena Lindén

**A Case Study of Street Tree Soil Aeration in Two Different Soil Types ..... 174**

**Abstract.** This study compared the soil air composition in structural and conventional tree soils used for roadside plantings in the City of Helsinki, Finland. Soil air samples, collected from three depths during the growing seasons of 2012 and 2013, were analyzed for oxygen concentrations. The effect of soil cover on the soil-atmosphere gas flux was evaluated using relative gas diffusion coefficients as estimated from in situ measurements of CO<sub>2</sub> fluxes and CO<sub>2</sub> concentrations in soil air. The average O<sub>2</sub> concentrations were higher in structural than in conventional soil air in both years. No obvious depth profile for the O<sub>2</sub> concentration was detected. Structural soil aeration appears more favorable for root growth than aeration in conventional tree soil. However, soil aeration was also sufficient for healthy tree growth in the conventional soil. Cobblestone paving did not severely impair ground ventilation as compared with a cast-iron grate.

**Key Words.** Finland; Soil; Soil Oxygen; Soil Sealing; Soil Water Content; Structural Soil; Urban Soil.

Tenley M. Conway and Adrian Lue

**Resident Knowledge and Support for Private Tree By-Laws in the Greater Toronto Area..... 185**

**Abstract.** Urban municipalities across North America are developing policies to protect and manage not only public trees but also the numerous trees located on private property. One approach is the creation of private tree by-laws or ordinances that regulate tree removal on all private property through a permitting process. These regulations can successfully protect the private urban forest, particularly larger trees, but their success is dependent on landowners' willingness to comply given the difficulties of enforcement. This study examines residents' awareness and support for private tree by-laws in three cities in the Greater Toronto Area (Ontario, Canada) through a written survey that targeted neighborhoods with high tree canopy—places most likely to have trees regulated under the private tree by-laws. Basic awareness about by-laws varied across the five study neighborhoods, and support for specific components of the by-law, including size and number of trees regulated, tree replacement requirements, and permit fees was also mixed. While a larger number of survey respondents felt that their city should not regulate trees on private land than had supported the current by-law, this was still not a majority of responses. Participants with more trees on their property or who had planted trees were significantly more supportive of the regulations, while several socio-demographic characteristics were also significantly related to level of support for the by-laws. The management implications of these results are discussed.

**Key Words.** By-Law; Canada; Municipal Policy; Ordinance; Private Urban Forest; Residential Landscape; Toronto; Urban Forestry.