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Impacts of Wire Basket Retention and Removal on *Fraxinus americana* ‘Autumn Purple’ Growth Nine Years After Transplanting.....79

Abstract. The topic of wire basket removal during planting remains an area of contention among nursery growers, landscapers, and arborists who work with balled-and-burlapped planting material. Those in favor of removal fear that the burlap and wire surrounding a tree’s root ball will impede root regrowth and eventually lead to the girdling of any roots that do penetrate into the surrounding soil. Those opposed to removal believe the advantages to tree and root system stability during transplanting and establishment outweigh any negatives to leaving the root ball intact. In 2008, 45 *Fraxinus americana* ‘Autumn Purple’ were randomly assigned one of three transplanting treatments: 1) transplanted by tree spade without burlap/wire; 2) transplanted as balled-and-burlapped with only burlap and string removed; or 3) transplanted as balled-and-burlapped with all packaging materials (i.e., string, burlap, wire basket) removed. All trees survived regardless of treatment. In addition to survival, trunk diameter and tree height were measured annually for nine years. Marginal differences were noted for the two growth responses over the course of the trial (min *P*-value = 0.0599).

Key Words. Best Management Practices; Burlap; Planting; Transplanting; Wire Basket.

Laurel J. Haavik and Daniel A. Herms

Growth and Physiology Vary Little Among North American, an Asian, and a North American x Asian Hybrid Ash in a Common Garden in Ohio, U.S.A85

Abstract. The emerald ash borer (EAB) (*Agilus planipennis* Fairmaire) invasion of North America has increased interest in ash (*Fraxinus*, Oleaceae) phylogeny, ecology, and physiology. In a common garden in central Ohio, we compared the performance of three North American ash cultivars that are highly susceptible to EAB (*F. pennsylvanica* ‘Patmore,’ *F. americana* ‘Autumn Purple,’ and *F. nigra* ‘Fall Gold’), one North American species that is less susceptible to EAB (*F. quadrangulata*), and two taxa that are resistant to EAB (*F. mandshurica* and *F. mandshurica* x *F. nigra* ‘Northern Treasure’). During the 2015 growing season, we measured diameter growth, foliar N concentration, specific leaf area, and on four dates (two with adequate and two with low precipitation) we measured CO₂ assimilation rate (A), stomatal conductance (g_s), intercellular CO₂ concentration (C_i), photosynthetic nitrogen use efficiency (PNUE), variable fluorescence (Fv’/Fm’): efficiency of energy harvested by open photosystem II reaction centers), and the fraction of photons absorbed by photosystem II that were used for photosynthesis (ϕPSII). *F. pennsylvanica* grew fastest and on most sampling dates was superior in physiological performance (A, g_s, and ϕPSII). Generally, however, there was little interspecific variation in growth and physiology among the different ash taxa tested, as all performed well. This suggests that the EAB-resistant *F. mandshurica* and *F. mandshurica* x *F. nigra* hybrid, as well as the moderately resistant blue ash, are as physiologically well-suited to growing conditions in the Midwestern United States as green and white ash cultivars that had been widely planted prior to the EAB invasion.

Keywords. Emerald Ash Borer; North American x Asian Ash Hybrid; Plant Performance; Tree Ecophysiology.

María del Carmen Moreno-García and Ignacio Baena

The Microclimatic Effect of Green Infrastructure (GI) in a Mediterranean City: The Case of the Urban Park of Ciutadella (Barcelona, Spain) 99

Abstract. The use and promotion of green infrastructure (GI) is of great importance for improving urban climates and for helping cities to be more resilient and sustainable in the context of climate change. For this reason, the effect of urban parks on city climates is of great interest for research. In this study, temperature measurements were made during 14 nights in the winter and spring of 2015 in the largest park of the Mediterranean city of Barcelona, Spain: the Ciutadella Park. The analysis of the measurements made inside the park and in its adjacent urban environment has confirmed the existence of an urban cool island (UCI) with a maximum cooling intensity of 5.2°C (9.4°F) in winter, under anticyclonic situations preferably, and an average cooling intensity of 2.7°C (4.9°F). In the spring months, the urban cool island has an intensity under the average, with a maximum of 2.1°C (3.8°F).

Key Words. Urban Climate; Urban Cool Island; Weather Type.