



INDEX Arboriculture & Urban Forestry Volume 38, 2012

Acer spp. (maple)

effects of compacted subsoil, 151 humectants as post-plant soil amendment, 6

impact of sapwood cuts on tree stability, 286

response to soil compaction and preplant N, 64

soil C and microbial biomass in root zone, 262

Aesculus spp. (horsechestnut)

biostimulants to control leaf blotch, 258 Aiken, John Joseph. *see* Doccola, Joseph J. **Alabama, U.S.**

municipal tree programs, 160

allometry

urban tree growth model, 172

anchorage

effect of root pruning, 229

apple scab

paclobutrazol for control, 112

arboriculture

online education, 105

Arnold, Michael A. (and D.L. Bryan, R.I. Cabrera, G.C. Denny, J.J. Griffin, J.K. Iles, A.R. King, G.W. Knox, L. Lombardini, G.V. McDonald, C.B. McKenney, D.T. Montague, G. Niu, H.B. Pemberton, A.L. Purnell, L.J. Shoemake, D.K. Struve, and W.T. Watson), Provenance experiments with baldcypress, live oak, and sycamore illustrate the potential for selecting more sustainable urban trees, 205

ash (Fraxinus spp.)

treat or remove borer-threatened, 121 **Askenasy Potential Energy Curve, 31** Autio, Wesley R. *see* Smiley, E. Thomas Ayuga-Téllez, E. *see* Grande-Ortiz, M.A. **azadirachtin**

to control red elm bark weevil, 255

baldcypress (Taxodium spp.)

sustainable urban trees, 205

Banks, Jonathan M. (and G.C. Percival), Evaluation of biostimulants to control *Guignardia* leaf blotch (*Guignardia aesculi*) of horsechestnut and black spot (*Diplocarpon rosae*) of roses, 258 Beeson, Richard C. see Gilman, Edward F.

Betula spp. (poplar)

humectants as post-plant soil amendment, 6

biostimulants

to control foliar pathogens, 258

black spot

biostimulants for control, 258
Blank, Gary B. see Keto, Evan M.
Booth, Michael (and M. Goettel),
Control of red elm bark weevil
(Magdalis armicollis) in American
elm (Ulmus americana) by trunk
injection of azadirachtin, 255
Bothmer, Roland. see Sjöman, Henrik
Bowles, Marlin L. see Fahey, Robert T.
boxwood (Buxus spp.)

imidacloprid for spider mites, 37

branches

torsional stress, 141

breaking load

of hitches and ropes, 1 Broschat, Timothy K. (and K.A. Moore), Fertilization rate and placement effects on areca palms transplanted from containers or a field nursery, 146

Bryan, Donita L. see Arnold, Michael A.

bulk density

effects of compacted subsoil, 151 Bullock, Bronson P. see Keto, Evan M. Burcham, Daniel C. (and E.C. Leong, Y.K. Fong, and P.Y. Tan), An evaluation of internal defects and their effect on trunk surface temperature in Casuarina equisetifolia L. (Casuarinaceae), 277

Buxus spp. (boxwood)

imidacloprid for spider mites, 37 Cabrera, Raul I. *see* Arnold, Michael A. Campbell, Kathy L. *see* McKenney, Daniel W.

Canada

potential costs of emerald ash borer, 81 **carbon**

organic amendment effect on soil C in root zone, 262

career development

arboriculture education online, 105 *Casuarina* spp. (she-oak)

internal defects and trunk temperature, 277

Catania, Michelle. *see* Scharenbroch, Bryant C.

Chappelka, Arthur H. *see* Martin, Nicholas A.

container stock

fertilization rate and placement effects on palm, 146 humectants for drought-stressed, 6 impact of mulch on water loss, 18 substrate- versus soil-filled, 18

Contato-Carol, M.L. see Grande-Ortiz, M.A.

continuing education

arboriculture education online, 105

cost-benefit analyses

potential costs of emerald ash borer, 81 treat or remove borer threatened ash trees, 121

Crataegus spp. (hawthorn)

environmental benefits, 75

crown

vigor and structural root depth, 13 width equations for oak, 58

cytospora canker

paclobutrazol for control, 112
Dahle, Gregory A. (and J.C. Grabosky),
Determining if lateral imbalance
exists in first-order branches leading
to a potential development of
torsional stress, 141

Davis, Troy L. *see* Wiersma, Yolanda F. Day, Susan D. *see* Wiseman, P. Eric Denny, Geoffrey C. *see* Arnold, Michael A.

diseases

apple scab, 112 cytospora canker, 112 Dutch elm disease, 99 foliar, 258

distance learning

arboriculture education online, 105 Doccola, Joseph J. (and W. Hascher, J.J. Aiken, and P.M. Wild), Treatment strategies using imidacloprid in hemlock wooly adelgid (*Adelges tsugae* Annand) infested eastern hemlock (*Tsuga canadensis* Carrière) trees, 41 296 Index for 2012

drought-stressed

humectants for conatiner stock, 6

Dutch elm disease

rapid removal of symptomatic trees, 99

Dypsis spp. (palm)

fertilization rate and placement effects, 146

Eberendu, Elizabeth C. *see* Wiersma, Yolanda F.

EcojectTM Microinjection System

azadirachtin for control of elm bark weevil, 255

education, online, 105

elm (*Ulmus* spp.)

azadirachtin for red elm bark weevil, 255 Dutch elm disease, 99

elm bark weevil

azadirachtin for control, 255

emerald ash borer

estimates of potential costs, 81 treat or remove trees, 121

environmental benefits

tree size dependent? 75

evaporation

impact of mulch on container stock, 18 Fahey, Robert T. (and M.L. Bowles and J.L. McBride), Origins of the Chicago urban forest: Composition and structure in relation to presettlement vegetation and modern land use, 181

Fair, Barbara A. (and J.D. Metzger and J. Vent), Characterization of physical, gaseous, and hydrologic properties of compacted subsoil and its effects on growth and transpiration of two maples grown under greenhouse conditions, 151

Fair, Barbara A. (and J.D. Metzger and J. Vent), Response of eight maple cultivars (*Acer* spp.) to soil compaction and effects of two rates of pre-plant nitrogen on tree establishment and aboveground growth, 64

fertilizer and fertilizing

effects on palm, 146

foliage

biostimulants to control foliar pathogens, 258

Fong, Yok-King. see Burcham, Daniel C.

forests and forestry

Ohio Shade Tree Project, 75 origins of Chicago's, 181 parking lot design and urban, 50 potential costs of emerald ash borer, 81 urban tree management, 247

Fraxinus spp. (ash)

treat or remove borer-threatened, 121 Gidge, Ian. *see* Wiersma, Yolanda F.

Gilman, Edward F. (and C. Wiese), Root pruning at planting and planting depth in the nursery impact root system morphology and anchorage, 229

Gilman, Edward F. (and R.C. Beeson and D. Meador), Impact of mulch on water loss from a container substrate and native soil, 18

Gleditsia spp. (honeylocust)

environmental benefits, 75
Goettel, Mark. *see* Booth, Michael
Grabowsky, Jason C. *see* Dahle, Gregory A.
Grande-Ortiz, M.A. (and E. AyugaTéllez and M.L. Contato-Carol),
Methods of tree appraisal: A review
of their features and application
possibilities, 130

Griffin, Jason J. *see* Arnold, Michael A. **growth regulators**

paclobutrazol, 112

Gunnarsson, Allan. see Sjöman, Henrik

Harmanis, Ryan. see Roberts, Bruce R. Harris, J. Roger. see Wiseman, P. Eric

hawthorn (Crataegus spp.)

environmental benefits, 75

hemlock (Tsuga spp.)

imidacloprid for hemlock woolly adelgid, 41

hemlock woolly adelgid

imidacloprid for, 41

Hess, George R. see Keto, Evan M. Hewitt, Angela M. see Watson, Gary W. Hirons, Andrew, Straightening out the Askenasy Curve, 31. see also Johnston, Mark

hitches

breaking load, 1 Holliday, N.J. *see* Veilleux, J. Holmes, Liza. *see* Smiley, E. Thomas **honeylocust** (*Gleditsia* **spp.**)

noneyiocusi (Gieausia spp.)

environmental benefits, 75

horsechestnut (Aesculus spp.)

biostimulants to control leaf blotch, 258

humectants

post-plant soil amendment, 6

hurricanes

factors in tree fall, 92

hydraulic conductivity

effects of compacted subsoil, 151 Iles, Jeffrey K. *see* Arnold, Michael A. **Illinois**, U.S.

origins of Chicago urban forest, 181

imidacloprid

for hemlock woolly adelgid, 41 for spider mites on boxwood, 37

irrigation

impact of mulch on container stock, 18 Jacobs, Karel. *see* Watson, Gary Jewison, Maria. *see* Wiersma, Yolanda F. Johnston, Mark. *see* Stobbart, Matthew Johnston, Mark (and A. Hirons), Goping online with arboricultural education, 105

Kane, Brian, Breaking load of hitches and ropes used in rigging, 1. see also Smiley, E. Thomas

Keevr, Gary J. see Martin, Nicholas A. Keller, Julie Kjeldsen-Kragh (and C.C. Konijnendijk), Short communication: A comparative analysis of municipal urban tree inventories of selected major cities in North America and Europe, 24

Keto, Evan M. (and M.R. McHale, G.R. Hess, B.P. Bullock, and G.B. Blank), Design choices and urban forest characteristics in Raleigh, North Carolina, U.S. parking lots, 50

King, Andrew R. *see* Arnold, Michael A. Knox, Gary W. *see* Arnold, Michael A. Konijnendijk, Cecil C. *see* Keller, Julie Kjeldsen-Kragh

Krause, Charles R. see Roberts, Bruce R. land use

origins of Chicago urban forest, 181 Lawrence, Kevin. *see* McKenney, Daniel W. **leaf blotch**

biostimulants for control, 258 Leibowitz, Rachel, Urban tree growth and longevity: An international meeting and research symposium white paper, 237

Leong, Eng-Choon. *see* Burcham, Daniel C.

linden (Tilia spp.)

torsional stress in branches, 141 Linder, R. Scott. *see* Roberts, Bruce R.

Liquidambar spp. (sweetgum)

impact of sapwood cuts on tree stability, 286

Loewenstein, Edward F. *see* Martin, Nicholas A.

Lombardini, Leonardo. *see* Arnold, Michael A.

Lyons, D. Barry. *see* McKenney, Daniel W. **maple** (*Acer* **spp.**)

effects of compacted subsoil, 151 humectants as post-plant soil

amendment, 6 impact of sapwood cuts on tree stability, 286

response to soil compaction and preplant N, 64

soil C and microbial biomass in root zone, 262

Martin, Hiliary C. *see* Wiersma, Yolanda F. Martin, Nicholas A. (and A.H.

Chappelka, E.F. Loewenstein, G.J. Keever, and G. Somers), Predictive open-grown crown width equations for three oak species planted in a

southern urban locale, 58 McBride, Jeanette L. see Fahey, Robert T. McDonald, Garry V. see Arnold, Michael A. McHale, Melissa R. see Keto, Evan M. McKenney, Cynthia B. see Arnold, Michael A. McKenney, Daniel W. (and J.H. Pedlar, D. Yemshanov, D.B. Lyons, K.L. Campbell, and K. Lawrence), Estimates of the potential cost of emerald ash borer (Agrilus planipennis Fairmaire) in Canadian municipalities, 81 McKenney, Daniel W. (and J.H. Pedlar), To treat or remove: An economic model to assist in deciding the fate of ash trees threatened by emerald ash borer, 121 McPherson, E. Gregory (and P.J. Peper), Urban tree growth modeling, 172 Meador, Dustin. see Gilman, Edward F. Metzger, James D. see Fair, Barbara A. microbial biomass organic amendment effect on root zone, 262 models Askenasy Curve, 31 Canadian Forest Service Ash Protection Model, 121 EAB Spread, 81 urban tree growth, 172 Montague, D. Thayne. see Arnold, Michael A. Moore, Kimberly A. see Borschat, Timothy K. mulch impact on water loss, 18 municipal programs urban trees, 160 **New Zealand** urban tree management, 247 nitrogen pre-plant and growth of maple, 64 Niu, Genhua. see Arnold, Michael A. North Carolina, U.S. parking lot design and urban forests, 50 nursery stock fertilization rate and placement effects on palm, 146 oak (Quercus spp.) crown width equations, 58 impact of sapwood cuts on tree stability, 286 origins of Chicago urban forest, 181 soil C and microbial biomass in root zone, 262 sustainable urban trees, 205

Ohio Shade Tree Project, 75

paclobutrazol

control of apple scab and cytospota canker, 112 palm (Dypsis spp.) fertilization rate and placement effects, 146 parametric indexes tree appraisal methods, 130 parking lots design and urban forests, 50 Parsons, Kaylah C. see Wiersma, Yolanda F. pathogen suppression biostimulants for, 258 Patterson, Heidi. see Wiersma, Yolanda F. Pauleit, Stephan. see Sjöman, Henrik Pedlar, John H. see McKenney, Daniel W. Pemberton, H. Brent. see Arnold, Michael A. Peper, Paula J. see McPherson, E. Gregory Percival, Glynn C. see Banks, Jonathan M. pests and pest control black spot, 258 emerald ash borer, 81, 121 imidacloprid for hemlock woolly adelgid, 41 imidacloprid for spider mites, 37 red elm bark weevil, 255 planting depth effect on root morphology and anchorage, 229 Platanus spp. (sycamore) sustainable urban trees, 205 poplar (Betula spp.) humectants as post-plant soil amendment, 6 professional development arboriculture education online, 105 pruning Askenasy Curve, 31 effect on root morphology and anchorage, 229 Purnell, Adam L. see Arnold, Michael A. Quercus spp. (oak) crown width equations, 58 impact of sapwood cuts on tree stability, 286 origins of Chicago urban forest, 181 soil C and microbial biomass in root zone, 262 sustainable urban trees, 205 Quirke, Ashley. see Wiersma, Yolanda F. Raupp, Michael J. see Szczepaniec, Adrianna

red elm bark weevil

rigging systems

risk assessment

azadirachtin for control, 255

internal defects and trunk

temperature, 276

sapwood cuts, 286

breaking load of hitches and ropes, 1

Roberts, Bruce R. (and R.S. Linder, C.R. Krause, and R. Harmanis), Humectants as post-plant soil amendments: Effects on growth and physiological activity of droughtstressed, container-grown tree seedlings, 6 root systems pruning effects, 229 soil C and microbial biomass in root zone, 262 structural depth and tree vigor, 13 root zone moisture management, 6 breaking load, 1 Rosa spp. (rose) biostimulants to control black spot, 258 sapwood cuts and impact on tree stability, 287 Scharenbroch, Bryant C. (and M. Catania), Soil quality attributes as indicators of urban tree performance, 214 seed sources sustainable urban trees, 205 she-oak (Casuarina spp.) internal defects and trunk temperature, 276 Shoemake, Larry J. see Arnold, Michael A. Sjöman, Henrik (and A. Gunnarsson, S. Pauleit, and R. Bothmer), Selection approach of urban trees for inner-city environments: Learning from nature, 194 Smiley, E. Thomas (and B. Kane, W.R. Autio, and L. Holmes), Sapwood cuts and their impact on tree stability, 287 soil amendments, 6, 262 compaction, 64, 151 impact of mulch on water loss, 18 tree performance indicator attributes, 214 soil injection imidacloprid for hemlock woolly adelgid, 41 Somers, Greg. see Martin, Nicholas A. spider mites imidacloprid for, 37 Stobbart, Matthew (and M. Johnston), A survey of urban tree management in New Zealand, 247 storm damage factors in tree fall, 92 streets trees environmental benefits, 75 stress, torsional, 141 Struve, Daniel K. see Arnold, Michael A.

urban tree management in New

298 Index for 2012

Zealand, 247

sweetgum (*Liquidambar* spp.)

impact of sapwood cuts on tree stability, 286

sycamore (Platanus spp.)

sustainable urban trees, 205

Szczepaniec, Adrianna (and M.J. Raupp), Effects of imidacloprid on spider mite (Acari: Tretranychidae) abundance and associated injury to boxwood (*Buxus* spp.), 37

Tan, Pauy-Yok. see Burcham, Daniel C.

Taxodium spp. (baldcypress)

sustainable urban trees, 205

temperature

internal stem defects and trunk temperature, 276

Tilia spp. (linden)

torsional stress in branches, 141

torsion stress, 141

transpiration

effects of compacted subsoil, 151

tree appraisal

review of methods, 130

tree establishment

fertilization rate and placement effects on palm, 146 soil compaction, pre-plant N, and growth of maple, 64

tree failure

and sapwood cuts, 286

tree growth

soil indicator attributes, 214

tree injection

azadirachtin for control of elm bark weevil, 255 imidacloprid for hemlock woolly adelgid, 41

tree inventories

major cities in North America and Europe, 24

tree removal

for control of Dutch elm disease, 99

tree selection

for inner-city, 194 sustainable urban trees, 205

Tsuga spp. (hemlock)

imidacloprid for hemlock woolly adelgid, 41

Ulmus spp. (elm)

azadirachtin for red elm bark weevil, 255 Dutch elm disease, 99

urban forests. see forests and forestry urban trees

growth and longevity, 237 growth model, 172 inventories of major cities in North America and Europe, 24 municipal programs, 160 selection for inner-city, 194 sustainable, 205

tree appraisal methods, 130

Veilleux, J. (and N.J. Holliday), Rapid removal of symptomatic trees reduces Dutch elm disease infection rate, 99

Vent, James. see Fair, Barbara A.

Watson, Gary (and K. Jacobs), Control of apple scab and cytospora canker with paclobutrazol, 112

Watson, Gary W. (and A.M. Hewitt), The relationship between structural root depth and vigor of urban trees, 13

Watson, W. Todd. see Arnold, Michael A.

weevil, red elm bark

azadirachtin for control, 255

Wiersma, Yolanda F. (and T.L. Davis, E.C. Eberendu, I. Gidge, M. Jewison, H.C. Martin, K.C. Parsons, H. Patterson, and A. Quirke), Hurricane Igor impacts at northern latitudes: Factors influencing tree fall in an urban setting, 92

Wiese, Christine. *see* Gilman, Edward F. Wild, Peter M. *see* Doccola, Joseph J.

wind damage

factors in tree fall, 92

Wiseman, P. Eric (and S.D. Day and J.R. Harris), Organic amendment effects on soil carbon and microbial biomass in the root zone of three landscape tree species, 262

Yemshanov, Denys. *see* McKenney, Daniel W.

Zhang, Yaoqi (and Bin Zheng), Urban tree programs from municipal officials' perspective: Evidence from Alabama, U.S., 160

Zheng, Bin. see Zhang, Yaoqi