

News & Views

for New Hampshire's Green Industry

January 2011

Comparing Production Systems for New England Nurseries

A new research project comparing alternative production systems with traditional balled and burlapped (B&B) production for New England nurseries is underway. Dr. Cathy Neal, Extension Professor and Nursery Specialist at UNH, and Dr. Daniel Lass, Professor of Resource Economics at UMass, were awarded a grant from the USDA National Institute of Food and Agriculture for a three-year study. Field trials began early this year at two Massachusetts nurseries, with a third trial located at the NH Agricultural Experiment Station/College of Life Sciences and Agriculture at UNH in Durham, NH.

The objective of the project is to compare plant growth, production time and quality, and to analyze the production costs and economic returns associated with each system. This will all be incorporated into a decision-making model useful to those considering producing trees for the local landscape market. Most landscape trees are now imported from other regions of the country, but shipping (energy) costs may now favor local production.

Field production is the traditional method of nursery stock production in the northeast. Shrubs or trees grown in native soil are harvested by hand or machine then the roots and surrounding soil is wrapped in burlap, or "balled and burlapped" (B&B). The resulting product is very heavy and only a small portion of roots are transplanted along with the tree.

In-ground fabric containers or root control bags combine the advantages of growing plants in the ground with the root containment properties of a container. A flexible knit or geotextile fabric container is placed in the ground and back-filled with native soil during the planting process. The fabric container allows water, nutrients, and air to pass freely through the fabric, but restricts the passage of roots, keeping most of the root mass in the container. The fabric container also enhances branching of root tips, preventing circling of roots as one might



River birch plots in the UNH trial 3 months after planting; fabric containers in row on left, pot-in-pot on right

see in a plastic container. The entire fabric container is popped out at harvest, saving time and labor. The tree is then sold and handled in the bag, which is about half the size of a B&B rootball but contains more roots. The bag must be removed when planting into the landscape, however, to prevent it from restricting future growth.

Pot-in-pot nursery production is a modified container production system used extensively in the South and increasingly in the Midwest. Plastic nursery pots are set in the ground and liner pots of the same size containing the plants are inserted, making a double pot system that prevents rooting out into the soil. The pots are recessed in the ground, preventing blow-over and protecting the roots from extreme temperatures, negating the need for extra winter protection. The liner pots get pulled and sold with the plant; the outside socket pots are then replanted with a new crop. The end product, a plant grown in a peat/pine bark medium in a large pot, is easy to handle and plant.

Compared to field grown trees, pot-in-pot requires more labor and greater investment costs at planting, but provides labor and or equipment savings at harvest, saves valuable topsoil and provides a supply of fresh trees for market all season. In some parts of the country production time has been reduced by twenty percent in pot-in-pot.

The trees planted in the research blocks include river birch (*Betula nigra*) and swamp white oak (*Quercus bicolor*). Birch species are considered “fall dig hazards”, meaning they must be harvested by the nursery in early spring as B&B stock, but tree quality declines over time when sitting above ground in the sales yard. The advantages of pot-in-pot production include availability of fresh, high quality stock anytime during the growing season. Many landscape contractors as well as retail customers also find the lighter-weight container trees easier to handle.

Pot-in-pot or fabric container production may be particularly advantageous for oak trees, which are challenging to transplant because of their sparse root systems. More root mass is harvested and transplanted when trees are grown in containers or in-ground fabric containers than when produced as B&B stock. However, poorly drained or rocky fields are unsuitable for this production method.

Can pot-in-pot or in-ground fabric containers be viable production systems for New England? This project will evaluate the horticultural and economic aspects of each production system, including market assessment for trees grown in each of the three systems. When building starts to boom again in the future, contractors may be purchasing top-quality, locally produced trees at competitive prices rather than shipping them in from afar.

To see the planting process and learn more about this research, watch our YouTube video at <http://www.youtube.com/user/UMassFloriculture>.

Dr. Cathy Neal, University of New Hampshire and Tina Smith, University of Massachusetts Extension.

Update on Invasive Insect Pests Brown Marmorated Stink Bug

The Brown Marmorated Stink Bug (BMSB), *Halymorpha bahys*, was found for the first time in NH in Portsmouth. It was found this summer as part of a swimming pool survey conducted by the state Division of Forests and Lands (DRED) and UNH Cooperative Extension to look for Asian longhorned beetle and Emerald ash borer. BMSB is a native of Asia and was first found in Pennsylvania in 1998. It is now found in most of the northeastern states, as well as some states in the south, mid-west, and California, for a total of 26 states. The spread of this pest was facilitated by various forms of ground transportation: cars, trucks, railroads, recreational vehicles, campers, and even mobile homes. This pest readily crawls into confined spaces to escape severe weather conditions. It will become a serious problem to the public as it enters homes in the fall to spend the winter.

BMSB is a typical “shield bug”. Besides its shield shape, each antennae has a white band, and white markings are visible on the abdomen just beyond the wings. No other stink bug has these markings. Adults are about 1/2” to 5/8” long. Adults emerge from their overwintering sites in the spring and lay eggs during the summer. The eggs are clustered underneath leaves in groups of 25-30. There is probably only one generation per year in northern New England.



David R. Lance, and accessed through www.bugwood.org

The BMSB is primarily an agricultural and homeowner pest. It feeds on the fruit of apples, peaches, sweet corn, tomatoes, beans, peppers, cucumbers, eggplant, and raspberries. The fruits and vegetables are distorted by the feeding and unmarketable. The ornamentals industry needs to be prepared to deal with this insect. In the Maryland area, BMSB has been observed to feed on the sap of maples, apples, crabapples, locusts, and lilac. The bugs puncture the bark and suck sap. After feeding, these wounds attract ants and wasps. BMSB has also been found on *Zelkova*, hibiscus, dahlia, chrysanthemums, zinnias, sunflowers, serviceberry, birch, butterfly bush, catalpa, hackberry, redbud, dogwood, honeysuckle, rose, linden, and viburnum. BMSB is probably “learning” to adapt to the whole menu of ornamentals available to it in the U.S. So far, no noticeable damage has been observed on ornamentals, but be wary. Don’t underestimate the nuisance factor. A report from Maryland states BMSB was so numerous in a retail nurseries, that customers were concerned and plant sales declined. However, pesticide sales increased.

Many of the low risk insecticides don’t work on BMSB. However, pyrethrum, a low risk botanical insecticide does give control if directly sprayed on the insect. The man-made version of pyrethrum are called pyrethroids and they can give longer residual control. Retail garden center owners/managers should be prepared for many questions on BMSB. They should also have some homeowner friendly insecticide products on the shelf. Spraying inside a

house is potentially dangerous if precautions aren't taken. Spraying a few bugs with a can of pyrethrum is reasonably safe, but controlling thousands of bugs inside or outside on the house calls for a professional exterminator.

Also, killing large numbers of bugs inside a wall or crawl space can have unintended consequences. The dead bodies can attract carpet beetles that will also feed on carpets, wool, dried foods, hides, clothing, or anything else that has animal or plant products in it. The best way to remove the bugs from a structure is to vacuum them. But, irritated and squashed bugs release an unpleasant odor. Now you know why they're called stink bugs. One suggestion is to use a shop-vac style vacuum filled with some soapy water. But, the very best way to solve the problem is to seal all cracks so BMSB can never enter the structure. It'll be a while before this bug becomes a serious problem in NH, so you have time to prepare.

Emerald Ash Borer

As most of you know by now, the Emerald ash borer (EAB), *Agrius planipennis*, is another invasive insect from Asia. It was first detected near Detroit in 2002. EAB has a similar life history as a native pest, the Bronze birch borer, but feeds on ash.

EAB is responsible for the death of millions of ash trees in the mid-west. It is an expensive problem. One Illinois town estimated that it will take 12 million dollars to cut down and replace all its dead ash trees. Besides municipalities, EAB has also impacted the forest and nursery industry. Ash trees, logs, and hardwood firewood cannot be moved outside of the quarantined areas. EAB is moving throughout the U. S. primarily on firewood. EAB is moving eastward from Chicago towards us. This summer, EAB was discovered in Saugerties, NY. This infestation is just 25 miles from the Massachusetts border. EAB will likely arrive in NH. At this time, there is no way we can stop it. This insect is difficult to detect, flies too far, is easily carried by the wind, and is moved long distances by firewood. The best we can do is prepare for it. EAB only attacks ash (*Fraxinus*). For further information on ALB and EAB visit the official NH website www.albnh.org

Stan Swier, UNH Cooperative Extension Specialist, Entomology

Dorr Grant Supports Development of New Ecological Landscaping Certificate Program

Great Bay Community College (GBCC), in partnership with the UNH Cooperative Extension's Natural Resources Stewards Program (UNHCE-NRS), was recently awarded a 2-year grant from the Dorr Foundation to support course and program development in the areas of natural resources stewardship and ecological landscaping. The course is part of a larger initiative that the partnership is working on (also supported by the Dorr Founda-

tion), to establish the course as a keystone in a proposed ecologically-based landscaping certificate program at Great Bay Community College.

According to Leslie Barber, Professor of Biology and Chair of the Department of Life Science and Chemistry at Great Bay, "We are grateful for the Dorr Foundation funding and the opportunity it offers to develop and expand our course and program offerings."

"This is a multi-pronged approach to curriculum development," noted Leslie Paul, the Dorr grant administrator for Great Bay Community College. "It addresses increasing environmental education to promote further volunteer stewardship in NH communities. It also addresses the development of college-level workforce training in ecological based landscaping and land care critically needed in our state. Students, landscape professionals and community volunteers alike will benefit."

"As a result of the partnership fourteen community volunteers and nine Great Bay students recently completed the twelve-week Natural Resources Stewards course," according to Mary Tebo Davis, UNH Coop. Ext. Educator.

Mary Tebo, Extension Educator, Community Forestry

Tractor Rollover Protection Systems Program (ROPS) launched in New Hampshire

On November 30th three simultaneous events were held around New Hampshire to launch the New Hampshire Tractor Roll Over Protection Systems (ROPS) Program. This has been established to offer a rebate program to farmers for installing rollover protection on their tractors. The number one cause of farming fatalities is tractor rollover, and a ROPS system and seat belt are 99% effective in preventing these deaths. The purpose of these events was to make farmers aware of the benefits of rollover protection and introduce a new cost-share program in the state to help defray the expense of installing the steel roll bar unit, which provides a space of safety for the operator in the case of a tractor overturn.

The John Deere companies of NH accepted the challenge to host the launch event and area representatives, Anthony Souhrada & Raymond Nunez, helped put together a meeting and refreshments at Blackmount Equipment in North Haverhill, R.N. Johnson in Walpole, and James Rosencrantz and Sons in Kensington. The sessions were organized in partnership with the NH Dept. of Ag, Mrkts & Foods; New York Center for Agricultural Medicine and Health (NYCAMH); UNH Cooperative Extension; and the NH Farm & Rural Education Foundation, and NH Farm Bureau.

A typical ROPS installation can cost \$700- \$1,500 and the NH ROPS Rebate Program will reimburse farmers 70% of the cost of a tractor rollover protection kit.

The New Hampshire ROPS Rebate Program is entirely funded by donations and to date has been supported by: John Deere, the NH Dept. of Agriculture Markets & Food, Co-Operative Insurance Companies, Farm Family Life & Casualty Insurance Companies, Blackmount Equipment, RN Johnson, James Rosencrantz & Sons, Farm Credit East, Yankee Farm Credit, Farm Service Agency, Chappell Tractor and Townline Equipment.

People wishing to support the New Hampshire effort can send checks payable to the NH Farm and Rural Education Foundation, 295 Sheep Davis Road, Concord, NH. 03301.

To find out about participating in the program, call toll-free 877-ROPS-R4U (877-767-7748) or visit www.ropsr4u.com.

Coming Events

January 25, 2011. NHPGA-NHLA (NH Plant Growers Association & NH Landscape Association) Joint Winter meeting. Grap-pone Center, Concord, NH. For more information visit: www.nhpga.org/ or www.nhlaonline.org/news-events/JointWinterMeeting.cfm

February 2-4, 2011. New England Grows. Boston, MA. For more information visit: www.newenglandgrows.org/

February 2, 2011. Greenhouse Bedding Plant Breakfast Series - Peat Moss, Perlite & Lime, Oh My! Wentworth Greenhouses, ROLLINSFORD, NH. 8:00 - 10:00 am. For more information contact Brian Krug at 862-0155 or brian.krug@unh.edu.

February 16, 2011. Greenhouse Bedding Plant Breakfast Series - N-P-K... Why is it so Complicated? Frizzhome Gardens, Bedford, NH. 8:00 - 10:00 am. For more information contact Brian Krug at 862-0155 or brian.krug@unh.edu.

March 2, 2011. Greenhouse Bedding Plant Breakfast Series - Flowers on Time, Every Time with Temperature & Light Management. Pleasant View Gardens, Loudon, NH. 8:00 - 10:00 am. For more information contact Brian Krug at 862-0155 or brian.krug@unh.edu.

March 3, 2011. Ecological Landscape Conference. Springfield, MA. For more information visit: www.ecolandscaping.org/

March 8, 2011. New England Nursery Conference. Common Man Restaurant, Concord, NH. For more information contact Cathy Neal at cathy.neal@unh.edu or 862-3208.

March 16, 2011. Greenhouse Bedding Plant Breakfast Series - The Complete PGR Toolbox. D.S. Cole Growers, Loudon, NH. 8:00 - 10:00 am. For more information contact Brian Krug at 862-0155 or brian.krug@unh.edu.

March 16, 2011. Spring landscape conference. NHTI, Concord, NH. Co-sponsored by NHLA and UNHCE.

March 23, 2011. Municipal Turf and Grounds Conference. Oaks Country Club, Somersworth, NH. For more information contact Margaret Hagen at 641-6060 or Margaret.Hagen@unh.edu. Pesticide credits will be available.

March 30, 2011. Greenhouse Bedding Plant Breakfast Series - Diseases Got You Headed for the Dump Pile? Chakarian Farm Greenhouses, Derry, NH. 8:00 - 10:00 am. For more information contact Brian Krug at 862-0155 or brian.krug@unh.edu.

April 30, 2011. Greenhouse Bedding Plant Breakfast Series - Don't Get Carried Away by Insect Pests! Stonewall Farms, Keene, NH. 8:00 - 10:00 am. For more information contact Brian Krug at 862-0155 or brian.krug@unh.edu.

This newsletter is a cooperative effort of the Ornamentals Extension Educators and Specialist at the University of New Hampshire. It is published quarterly. Its purpose is to inform and update industry members on issues and research to the production, use and maintenance of ornamentals and turf in New Hampshire.

Contributors for this issue:

Cathy Neal, Extension Specialist, Landscape & Nursery Horticulture
Stanley Swier, Extension Specialist - Entomology
John Porter, UNH Extension Professor and Dairy Specialist, Emeritus
Mary Tebo, Extension Educator, Community Forestry
Margaret Hagen, Extension Educator - Hillsborough County
Nada Haddad, Extension Educator - Rockingham County

Address corrections, additions and deletions should be sent to Suzanne Hebert
E-mail: suzanne.hebert@unh.edu, fax: 603-862-2717, phone: 603-862-3200

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