

## RESULTS AND DISCUSSION

We have tried several different production methods for growing boxwoods over the years at Zelenka Nursery. The hardwood propagated Boxwoods with the above-mentioned hormone and bottom heat have performed the best for yields and product cost. The plugged liner, which is field planted 9 months after sticking, has given us very good yields and size we need for our container program. Two-year liners are used for 1-gal pots and 3-year liners are put in 3-gal pots. The liners are potted in October and are ready for sale the following spring (May or June).

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## Potential New Garden Plants from Maine®

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## INTRODUCTION

New and colorful plants are the new “blood” for the horticultural trade (Armitage, 1993) Under the support of Maine Landscape and Nursery Association, University of Maine R&D, and Western Maine Nurseries, the “New Plant Production” program was established 6 years ago in the Landscape Horticulture Program in the Department of Plant, Soil, and Environmental Sciences at the University of Maine in Orono, Maine. With an area as large as the five other New England States combined, plus plant lovers, plant breeders, gardeners, and horticultural professionals, Maine has great potential for new garden plants. All plants mentioned in the text have originated from our beloved Maine. They could be plants discovered in the wild or cultivated areas (natural selections) or derived from breeding, hybridization, tissue culture, and gene transformation (artificial selection) here in Maine. The purposes of this paper are to share potential new garden plants from Maine, to seek more information on their propagation and production, and to promote further industry-research institute collaborations.

## MATERIALS AND METHODS

New plant production is a long-term research project. From the discovery of a new potential garden plant to its production stage, it usually takes 3–20 years. After a plant is targeted as a potential new garden plant, we will study this plant by three sequential steps: (1) Identify the uniqueness of this plant, including morphology, physiology, molecular markers, etc., (2) Investigate the reproduction methods, especially feasible propagation methods, (3) Set up trials in different locations of Maine as well as other states. Replicate experiments are set up if applicable. If the plant gives its unique traits to its offspring and performs well in the landscape trial sites, this new plant will be released to the industry.

### Herbaceous Plants.

***Rudbeckia hirta* 'UMaine'**. This is a new selection from *R. hirta* 'Plainview Farm' trial beds. The selection is a short-lived perennial with ray-flower only head (usually with invisible disc-flowers). Divisions, seed germination, and tissue culture are in process to retain its unique characteristics.

***Iris* Snowbrook Series**. These are hybrids between *I. sibirica* and *I. versicolor*. The unique features are new yellowish sprouts and many colored flowers. Propagation is by division.

***Lysimachia tridentaloides* UM#05**. UM#05 is a new introduction with glossy leaves and clustered yellow flowers. Propagation is by stem cuttings and divisions.

***Hemerocallis* 'Ann Taylor Hovey'**. 'Ann Taylor Hovey' is a new cross from 'Uptown Girl' and 'Senegal' by Valente Gardens in North Berwick, Maine. It is semi-evergreen with a unique blending of pink and amber and nice edges. Divisions or tissue culture can be used for propagation.

***Vinca minor* 'Fieldstone Splash'**. This is a new introduction from Fieldstone Gardens in Vassalboro, Maine. This new plant can be distinguished from others by its soft, light yellow variegated foliage. Propagation is done by stem cuttings at any time.

### Shrubs/Groundcovers.

***Vaccinium angustifolium* 'Burgundy'**. This *Vaccinium* is a new selection from a lowbush blueberry field for its burgundy fall color. The cultivar is an attractive groundcover with four-season appeal (spring flowers, summer fruits, and colorful twigs for winter). Reproduction is from winter dormant root or spring stem cuttings. In vitro shoot production should follow the protocol of Frett and Smagula (1983).

***Rhododendron* UM#6**. UM#6 is a hybrid from *R. maximum* and *R. fortunei* with pistillate (female only) flowers. Propagation by softwood cuttings was not successful and further studies on tissue culture propagation are in progress.

***Empetrum nigrum* 'Compass Harbor'**. 'Compass Harbor' was selected from a Maine nursery at Mt. Desert Island, Maine. It is a native plant, which can tolerate drought (dry soil), full sun, and low fertility. This new cultivar grows quickly and stays compact. Detailed description can be found in HortScience (Cappiello, 2003). Stem cuttings can be done at anytime.

***Taxus canadensis* 'Fryeburg'**. This yew is a new clone selected by Western Maine Nursery from a native population. The plant has dark green foliage in winter. This new selection will easily root from stem cuttings.

### Small Trees.

***Acer pseudosieboldianum* 'Paul's Select'**. 'Paul's Select' is a new selection from a seedling population. Three plants with better fall color were selected and further evaluated in the Lyle E. Littefield Ornamental Trials Garden by Dr. Paul Cappiello (currently at Yew Dell Gardens in Crestwood, Kentucky). One of them was selected for its brilliant red fall color (45A in Red Group of Royal Horticultural Society Color Chart). Other colors are 167B and 169A (Grayed-Orange Group), 34B (Orange-Red Group), and 183B (Grayed-Purple Group). Experiments on softwood cuttings with types and concentrations of hormones are in process.

***Stewartia koreana* ‘UMaine’.** This *Stewartia* was selected for its cold hardiness and fantastic fall color. The plant is hardy to USDA Zone 4 (*Stewartia* spp. normally grow in USDA Zone 6 or warmer locations). The fall color is gorgeous grayed red (181A in Grayed-Red Group of RHS Color Chart). Other colors include 167B and 169A (Grayed-Orange Group), 34B (Orange-Red Group), and 183B (Grayed-Purple Group). No plant has been obtained after 3 years’ softwood cuttings. Cuttings rooted well, but could not survive during winter months.

***Magnolia stellata* ‘Lyle’s Legacy’.** ‘Lyle’s Legacy’ is a new cultivar derived from a seedling distributed by Professor Lyle E. Littlefield about 20 years ago. The white flowers that open before the leaves in early spring attract a lot of attention. Dr. Paul Cappiello discovered this plant and named it after Professor Lyle E. Littlefield. Each flower has between 48 and 69 tepals, which has never been seen before. Softwood cuttings with Hormondin #3 or 3000 to 8000 ppm KIBA rooted well.

***Cornus florida* UM#1 (white flowers) and UM#2 (pink flowers).** Studies are in progress with both selections.

### Trees.

***Abies fraseri* ‘Richard Eastman’.** This is a new selection from millions and millions of seedlings at Western Nurseries. It was selected for its intense bluish needles (foliage color like *Picea pungens*). Currently, only a few stock plants exist. Grafting is the current means of propagation and further studies will focus on how to propagate this plant commercially.

***Magnolia* UM#3.** This magnolia is a hybrid between *M. acuminata* and *M. liliiflora*. The plant has distinguished long and short shoots. Each short shoot bares a golden yellow flower (much deeper yellow color than *M. acuminata*). Softwood cuttings with 8000 ppm KIBA was not successful (due to overwintering difficulty). Further studies should focus on how to generate this plant.

***Tsuga diversifolia* ‘Emerald Ice’.** ‘Emerald Ice’ is a new cultivar with cold tolerant to  $-40^{\circ}\text{F}$  in lab test (Cappiello, 1998). The plant survived  $-32^{\circ}\text{F}$  in a garden. This clone has dark green foliage, good compact habit, and soft texture. Propagation is by hardwood cuttings taken in early spring or late winter and treated with 10,000 ppm IBA. Seed germination is possible for further selection.

***Chamaecyparis pisifera* ‘Wilson’, *C. thyoides* ‘Maine Form’ (Zhang, 2000), and *Magnolia* ‘Purple Eye’.** Studies on these are in progress.

### CONCLUSIONS

Regardless which university campus you are visiting today, you will be “greeted” by *Juniperus horizontalis* ‘Bar Harbor’. It is a great groundcover plant (male) from Mt. Desert Island, Maine. In this short summary, it is impossible to share with you all the new garden plants originating from Maine. However, we could not conclude this paper without mentioning the following programs: Dr. Currier McEwen and his *Iris* breeding, Mr. Roger Luce and his plant collection and breeding, daylily collection and breeding in Valente Gardens, Dr. Richard Churchill and his *Ginkgo biloba* collection and breeding, and many more specialty plants collections in Maine nurseries and garden centers. Please join us on this potential new garden plant research program and help to enhance the popularity of these new introductions. We believe that better garden plants will make our living conditions and life better.

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## University of Connecticut Plant Introductions<sup>®</sup>

### Sidney Waxman

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***Larix laricina* 'Newport Beauty'**. An extremely dwarf form of eastern larch having an annual growth of 9 cm. This selection has grown to a height of 36 cm and a width of 69 cm in 10 years. Its shape is a low mound with branches reaching to the ground.

***Larix laricina* 'Deborah Waxman'**. In sharp contrast to 'Newport Beauty', 'Deborah Waxman' is an upright dwarf that has a more rapid rate of growth. It has attained a height of 1.5 m and a width of 1 m in 10 years. 'Deborah Waxman' a very attractive upright dense shrub.

***Pinus strobus* 'Sea Urchin'**. 'Sea Urchin' is a truly miniature shrub. It has very small needles, 3 cm long. After 10 years of growth it has developed into a low mound with a height of only 35 cm and a width of 55 cm. The foliage has a bluish-green appearance.

***Pinus strobus* 'UConn'**. This selection is relatively fast growing compared to other dwarf evergreens and is currently producing approximately 39 cm of stem growth annually. It has grown to a height of 3 m and has a diameter of 2.6 m in 12 years. It is the largest of the dwarf plants named. With time its form changes from pyramidal to flat-topped.

***Pinus strobus* 'Soft Touch'**. 'Soft Touch' is a dense mound. The needles are relatively short and thin and have a slight twist. It has grown 0.6 m high and 1.2 m across in 8 years.

***Pinus strobus* 'Paul Waxman'**. This cultivar was selected from a population of seedlings obtained from a witches'-broom plant in 1963. This dwarf specimen is unusual because it is more than twice as broad as tall. This low-growing broad mound is densely branched and has a fine texture. It measured, after 22 years, 1.5 m across and only 60 cm high. Its annual growth rate in width is approximately 5 cm.