RESEARCH UPDATE

New cultivars await Great Lakes nurseries

by Doug Chapman, Dow Gardens

The development of new cultivars remains a main thrust of the nursery industry, as evidenced by the many new shade trees and ornamental shrub cultivars now offered in the nursery trade. These plants have been selected or developed for unique morphological characteristics (such as habit, flower color, fruit color, and/or fall color), disease resistance and environmental tolerance.

Nurserymen select and develop these plants for specific regions of the country. Results include low temperature hardiness, adaption to continental climate and sensitivity to photoperiod. The introduction of tailored-superior trees into the trade should reduce maintenance while improving quality.

One university program devoted to the development of new cultivars is at the University of Minnesota. This program is designed to introduce plants that are extremely cold temperature hardy but adaptable to continental climates. Several of Minnesota's current introductions include Northern Lights azaleas and Northwood red maple (*Acer rubrum Northwood*).

'Northwood' red maple is so well adapted to the continental climate that it is one of the first *Acer rubrum* cultivars to develop fall color. Further, it is completely winter hardy.

Michigan State University and Dow Gardens in Midland, Mich., have spent years developing new propagation techniques for clone introductions. Welsh and Sink, at Michigan State, were early researchers, developing techniques for tissue culture production of *Acer rubrum*. At Dow Gardens, we have worked on techniques for propagation of trees by cuttage. Some of the most notable that can be propagated by cuttage include: *Malus (M.) Donald Wyman, M. Mary Potter, M. Profusion, M. Red Jewel, M. Sugar Tyme, M. Snowdrift*, and *M. Selkirk*; a number of maples, such as *Acer (A.) griseum, A. ginnala, A. campestre, A. rubrum* and *A. saccharum*; and *Tilia cordata cv.*

This type of research helps circumvent the graft incompatibility problem that was noted earlier by Davidson with red maple (*Acer rubrum cv.*), ash (*Fraxinus cv.*) and Sovereign pin oak (*Quercus palustris Sovereign*).

Crab apple (Malus) has become an extremely important landscape plant from the Midwest to the Northeast. Disease posed the single largest problem related to everyday use of crab apples. Although other plantsmen are working on the problem, two nurseries doing the most with the introduction of fireblight and apple scab-resistant cultivars are Simpson Nursery in Vincennes, Ind. and Lake County Nursery Exchange in Perry, Ohio. A few unique cultivars that these two nurseries have introduced include: *M. Sugar Tyme, M. Brandywine, M. Molten Lava, M. Candied Apple*, and *M. Centurion*.

Beware of origin

With the introduction of new cultivars, the nurseryman must be particularly sensitive to where the plant was developed or selected. Further, a testing program must be initiated to determine if these plants will grow in certain areas.

Curt Peterson, Ph.D., at Michigan State, working with the Michigan Association of Nurserymen, is setting up a series of shade tree and ornamental shrub evaluation plots that should give information to the nursery industry about the acceptability of these plants to culture in the Great Lakes region. This exciting new area of research will focus on growing plants in three distinct zones in Michigan: the Detroit area, East Lansing and Cadillac. Further, they are working with other universities in the region on data collection so that other states evaluating these new cultivars will have uniformity in reporting results.

This type of research is analogous to the shade tree evaluation plots that were developed by the Ohio Nurseryman's Association in cooperation with Ohio State University. Those shade tree plots located at the Ohio Research and Development Station in Wooster, Ohio, have resulted in significant contributions and have given some direction for the Ohio nursery industry. The research, jointly conceived by Peterson (at M.S.U.) and the Michigan Association of Nurserymen is where much of the action in the coming years will be.

No one is suggesting that clonal production is the only direction for the nursery industry, but it is one current thrust that should be researched.

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