New NC-7 Web Site

Locate Outstanding Woody Ornamentals—Online

For gardeners in the north central United States, information on new trees, shrubs, vines, and groundcovers to plant is as nearby as their computers.

Agricultural Research Service scientists have created a unique web site with vital and extensive information on over 175 kinds of woody plants with potential ornamental use.

"Details on how these plants perform and evaluations of their aesthetic and adaptive characteristics are just some of the many reasons gardeners will find the site important," says ARS horticulturist Mark P. Widrlechner. He and ARS technician A. Paul Ovrom at the North Central Regional Plant Introduction Station in Ames, Iowa, developed the web site to make the information accessible to the general public. Ovrom created and designed it.

Data for the site come from a cooperative project funded by the U.S. Department of Agriculture and 12 state agricultural experiment stations in the north central States. Since historically it's the seventh such project in the region, it is commonly referred to as the NC-7 Project. Its official title, "New Crops—The Introduction, Multiplication, Evaluation, Preservation, Cataloguing, Enhancement, and Utilization of Plant Germplasm," describes the range of activities managed at the Ames station. Widrlechner and Ovrom, who conduct the horticultural project at the station, gather and disseminate the data from ongoing NC-7 trials on woody landscape ornamentals.

"Our NC-7 web site includes an overview of the trials, a list of the regional cooperators, plant descriptions, evaluation summaries, tables of the 10-year evaluation data collected and compiled from the cooperators, and pictures of many of the plants," says Widrlechner. "We rely heavily on our network of horticultural cooperators located at sites scattered across the region and in other states with similar climatic characteristics."

Widrlechner coordinates the cooperator network, guided by a committee of representatives from the participating state agricultural experiment stations. Emphasis is on detailed, long-term evaluations by cooperators at 36 sites in Alaska, Colorado, Connecticut, Illinois, Indiana, Iowa, Kansas, Maine, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, North Dakota, Ohio, South Dakota, and Wisconsin.

PEGGY GREB (K9044-1)

NC-7 woody ornamental trial plants growing at a research farm at Iowa State University. In the center is a white fringetree, *Chionanthus virginicus,* in full bloom.

Started in 1954, the north-central project trials are one of the longest running landscape plant evaluation networks in the United States. They address some of the landscape horticulture needs of the north central states and other parts of the country with similar challenging growing conditions.

"The region's climate is one of extremes, and many parts have alkaline soils that developed under grasslands. So there's less diversity here in commercially available woody plants adapted to the area than is found in most other parts of our nation," says Widrlechner. "Because of the broad range of environments found among the trial sites, it is unusual for any particular trial plant to perform well at most of them, so system-wide releases are difficult," he says. "But when plants perform especially well, we encourage trial-site cooperators to introduce the new plants to the nursery industry and ultimately to the general public."

Official releases are made through the cooperators' institutions, rather than through the ARS Plant Introduction Station.

Since many of the cooperating sites have participated in NC-7 since the 1950s, they have developed extensive collections of interesting plants. "These plants are available for public observation and teaching," says Widrlechner. "They're often featured in field days for the benefit of local nursery and landscape workers."

PEGGY GREB (K9037-1)

Saplings of Manchurian striped maple *(Acer tegmentosum)* are prepared by research aides Scott Wike and Sheilah Oltmans for shipment to a cooperator that evaluates NC-7 trial plants.

Since 1954, over 550 accessions have been distributed for testing to participating cooperators at the 36 trial sites. About half were trees—both evergreen and deciduous; 40 percent were shrubs; and the rest were vines, groundcovers, and herbaceous perennials.

Each year, Widrlechner and Ovrom assemble a collection of about 8 to 15 new items for testing. During winter, they send each cooperator a descriptive list of these plants. The cooperator selects plants to be tested at that site.

"Come spring, we ship or hand deliver the plants to the sites. The cooperators then plant, observe, and evaluate the selections through the seasons and prepare performance reports at 1, 5, and 10 years after planting. These are sent to the Plant Introduction Station for recording," says Ovrom.

Widrlechner has identified some current trends in the landscape and nursery industries likely to influence introduction of new plants. "Ideally, we choose trial plants that can meet changing needs," he says.

Where Trial Plants Come From

New plants for the NC-7 trials are acquired in many ways. Three of the most common are through USDA-supported exploration, seed exchange, and donation. Germplasm collections are part of the U.S. National Plant Germplasm System and serve as important sources of genetic diversity for researchers worldwide.

As one of the world's active gene banks, the North Central Regional Plant Introduction Station provides about 20,000 samples of germplasm free to researchers around the world each year. As a courtesy, many researchers who have received seeds reciprocate by sending the Ames station lists of seeds collected by their personnel.

"Occasionally, direct donations come from institutions with large numbers of extra plants after exploration. More often, they're propagated by originators of new selections who are seeking advanced testing in the NC-7 trials. During the last decade, selected plants or cuttings donated for testing have come from commercial nurseries and university research projects, the USDA's Natural Resources Conservation Service (NRCS), and Agriculture Canada," says Widrlechner. "The NC-7 trials also provide horticulturists and nursery workers throughout the region with an early examination of new releases from other institutions."

PEGGY GREB (K9034-1)

Horticulturist Mark Widrlechner (left) and technician Paul Ovrom examine seedlings of woody ornamentals that will be included in the USDA-ARS NC-7 woody ornamental trials.

Guide to the Web Site

According to Ovrom, the NC-7 trials' web site includes information about how a new plant may be an improvement over currently available ones. This might be because of aesthetics or adaptation, based on experience with new plants at one or more sites, or derived from hypothetical performance of wild plants based on the climate and soil of their native habitats.

"Users can click on a hot link to a summary and find plants suitable to their location or find trial site locations and cooperators' names and e-mail addresses. Cooperators are hot-linked to places where they work—like an arboretum, a botanical garden, a state experiment station, or a plant materials center operated by NRCS," says Ovrom.

Visit the NC-7 web site at http://www.ars-grin.gov/ars/MidWest/Ames/trialhmpge.html.—By **Hank Becker,** ARS.

This research is part of Plant, Microbial, and Insect Genetic Resources, Genomics, and Genetic Improvement, an ARS National Program (#301) described on the World Wide Web at http://www.nps.ars.usda.gov/programs/cppvs.htm.

Mark P. Widrlechner and A. Paul Ovrom are at the USDA-ARS North Central Regional Plant Introduction Station, Iowa State University, Agronomy Hall, Room G-212, Ames, IA 50011-1170; phone (515) 294-3511/3454, fax (515) 294-1903, e-mail nc7mw@ars-grin.gov nc7ao@ars-grin.gov. ◆