

BLDG. 509 BARC-East, East Beaver Dam Road, Beltsville, MD 20705, Tel. 301-504-8175, Fax. 301-504-8741

April 2001



### What We Do

The National Plant Materials Center, located in Beltsville, MD, is one of 26 Plant Materials Centers (PMC) in the Plant Materials (PM) Program of USDA's Natural Resources Conservation Service. The mission and activities of the NPMC are twofold: 1) to provide assistance to and coordination for the National PM Program, and 2) to assist with high-priority conservation issues in the Mid-Atlantic region of the US. Regional work is closely coordinated with the Cape May, NJ PMC.

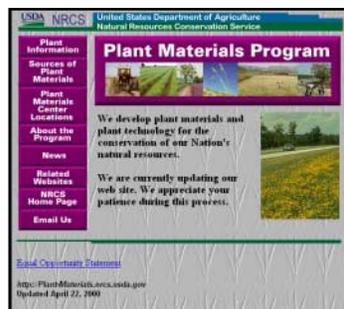
On the national side, the NPMC provides assistance to the National Program Leader for Plant Materials, the Plant Materials Information Coordinator, Plant Materials Specialists, and Plant Materials Centers. Significant activities include maintenance of the PM web site, consolidation of Program information for reports and newsletters (such as 'Plants: A Growing Alternative'), assistance to PMCs with the release of new plants, archiving of all PM-generated written information, desktop publishing of PM publications, data collection and database development and maintenance

(conversion of the Plant Materials Evaluation and Automation System [PEAS] to the Plant Materials Operation and Management System [POMS]) and the redevelopment of the ECS-8 data collections system), and coordination of Plant Fact Sheets and Plant Guides. These activities are critical to the continued success of the PM Program.

High priority plant materials work conducted for the region includes assembly and selection of ecotypes of mid-Atlantic native species for use in NRCS Conservation Programs, development and promotion of propagation methods for submerged aquatic vegetation (SAV) species needed to improve the health of the Chesapeake Bay and its watershed, assembly and selection of native shrub ecotypes for use in streambank stabilization and bioengineering systems, and direct assistance to Field Offices in our region. In conducting this work, the NPMC maintains a balanced field program of plant selection, technology development, and demonstrations to give visitors to the NPMC a feel for what a typical PMC does.

### Plant Materials Web Site

The NPMC is responsible for maintaining and expanding the National PM Program web site. In May 2000 parts of the web site were transferred from the server in Ft. Collins to the server in



Washington, D.C. (NHQ). This transfer allowed for a more rapid update and expansion of information on the web site. Many of the pages that had not been current in 2-3 years were updated and the information expanded. Extensive work was done to increase the number of publications from all PMCs available over the Internet. By the end of 2000, users could view over 800 publication citations and download about 320 publications in PDF format from the web site. In 2000, the NHQ part of our web site averaged between 32,000 and 40,000 hits each month. Our web site can be visited at <http://Plant-Materials.nrcs.usda.gov>.

## Plant Fact Sheets

Production of Plant Fact Sheets and Plant Guides is a joint effort between the Plant Materials Program and the National Plant Data Center (NPDC), with input from other cooperating organizations. Primary coordination of assembling and maintaining Fact Sheets and Guides is a responsibility of the NPMC. These sheets cover a variety of native and introduced species, in such categories as conservation, culturally significant, noxious and/or invasive plants. Plant Fact Sheets are 2 page quick reference sheets, while Plant Guides are generally longer documents and contain similar categories with more detailed information.

In 2000, the NPMC worked with the NPDC to re-design the templates for Fact Sheets and Guides, provided guidelines and templates that contributors could download from the Internet, and updated or compiled new Plant Fact Sheets for 160 species. Two hundred sixty-one Plant Guides from the NPDC were funneled through the NPMC for entry into the database and archiving.

Currently the NPMC is working to get new Fact Sheets for 65 high priority conservation species, and searching for good quality photos to enhance Plant Fact Sheets already on the Internet.

Fact Sheets and Guides can be downloaded for printing and distribution to landowners from the PLANTS web site at [http://plants.usda.gov:80/plants/cgi\\_bin/topics.cgi?earl=fact\\_sheet.cgi](http://plants.usda.gov:80/plants/cgi_bin/topics.cgi?earl=fact_sheet.cgi).

## Native Grass Selections Underway

The emphasis on native seed mixtures for CRP and other Farm Bill Programs has highlighted the lack of native grasses available in the Northeast and mid-Atlantic regions for large-scale plantings. Native cool season grass species are largely absent in the commercial



**bottlebrush grass**  
(*Elymus hystrix*)

market while native warm season grass species are often ecotypes native to the Midwest and Great Plains. A combined collection effort by NRCS and partners was initiated in 1995 to address these needs.

In 1998, the NPMC began seed collections for the native cool season grass species Virginia wildrye (*Elymus virginicus*) and bottlebrush grass (*Elymus hystrix*). Initial germination rates were determined and seedlings were field planted. In 2000, materials were evaluated for survival, vigor, seed production, and appearance (Virginia wildrye can hybridize with other *Elymus* species and does not always appear true to type). The NPMC will be setting up a breeder block of 13 bottlebrush grass accessions and preparing to make a composite release in 2001. Additional Virginia wildrye collections will be necessary, since only 4 of the original accessions appeared true to type.

In 2000, the NPMC started 2 related projects with Virginia wildrye and bottlebrush grass. One project, in cooperation with the Agricultural Research Service (ARS) Pasture Lab (Rock Springs, PA) and the Big Flats, NY PMC, consists of field research plots designed to investigate the forage potential of the 2 species as compared to orchardgrass. A second

project was initiated with the Penn State University Agronomy Department to investigate the genetic variability or similarity of Virginia wildrye over a wide geographic area. This laboratory genetic analysis was undertaken to help answer questions about the importance of regional plant releases.

Regional collections of over ten species of warm season grasses have been made since 1995, and field evaluations of indiagrass (*Sorghastrum nutans*) have been completed.



**indiagrass**  
(*Sorghastrum nutans*)

Evaluations were based on initial seed germination, seedling survival, and overall plant vigor. Since evaluations were made at several University of

Maryland locations, selected plants were dug and installed in a block at NPMC. A breeder block of the 8 selected accessions will be established, and seed will be harvested for a composite release in 2001.

Collections of other native cool season and warm season species important in the mid-Atlantic region are continuing.



## Native Plants for National Parks

In the early 1990s cooperative agreements with the National Park Service (NPS) revitalized the field and greenhouse work at the NPMC. Since that time we have worked with six different NPS units. Our current agreements include Cumberland Gap National Historical Park (KY, TN, VA), Great Smoky Mountains National Park (TN, NC), George Washington Memorial Parkway (VA), National Capital Parks-East, Oxon Run (Washington DC), and New River

Gorge (WV). Production of native ecotype plants for these parks has enabled us to gather a tremendous amount of information and technology related to native plant materials. As a result, the NPMC has been able to assist many other customers, including NRCS Field Offices, other government agencies and NGOs, and the general public with native plant issues. The NPS work also gave the NPMC a big head-start in the development of native ecotypes for the Mid-Atlantic region and has established the Center as an authority on native plant activities.

The NPMC is currently developing plant propagation sheets for over 85 species we have grown for the NPS; these sheets will be available on the Internet.

## Submerged Aquatic Vegetation Propagation

For the past 4 years, the NPMC has been



**American wild celery**  
(*Vallisneria americana*)

involved with the propagation of native submerged aquatic vegetation (SAV) species critical to improving

water quality, wildlife habitat, and restoration of the Chesapeake Bay. The NPMC has developed propagation techniques for American wild celery (*Vallisneria americana*), redhead grass (*Potamogeton perfoliatus*), water stargrass (*Heteranthera dubia*), and elodea (*Elodea canadensis*); the staff has also successfully grown sago pondweed (*Stuckenia pectinata*), slender pondweed (*Potamogeton pusillus*), and widgeon grass (*Ruppia maritima*). In 2000, the NPMC published an article in the new Native Plants Journal about a simple technique for growing redhead grass plants to use in restoration plantings (Kujawski, J. and R. Thompson. 2000. Propagation of redhead grass

(*Potamogeton perfoliatus* L.) transplants for restoration projects. Native Plants Journal 1(2):124-127).

In 2001, the NPMC plans to work with a new species, Southern naiad (*Najas guadeloupeensis*), and work on development of a reference containing propagation information for a number of species.

### **Crider Garden of Conservation Plants Rehabilitation**

Because of its central location in Maryland and the mid-Atlantic region, the National Plant Materials Center is a convenient location for regional tours and training opportunities. In an effort to meet the need of Field Office staff to see the conservation plants they recommend to landowners, the NPMC has revitalized and expanded the Crider Memorial Garden of Conservation Plants. The demonstration garden consists of 132 200-sq. ft. plots containing numerous Plant Materials releases, cultivars, and local ecotypes of species important to conservation programs in the eastern US.

In 2000, 35 plots were planted, including warm season and cool season grasses, legumes, and woody bioengineering species. The garden was used during 2 training sessions, 2 guided tours, and numerous informal tours. Additional plots will be planted in 2001.

In a separate area, the NPMC has set up 1000-sq. ft. plots to demonstrate 12 herbaceous seed mixes recommended in the Maryland Conservation Practice Standard 372 (Conservation Cover). Cool season mixes were sown in fall 2000 and warm season mixes will be sown in spring 2001.

The Crider Garden and other demonstration plots are open to the public during regular

business hours. Contact the NPMC in advance to receive an informal tour of these areas.

### **Eastern Gamagrass Cooperative Study**

Eastern gamagrass (*Tripsacum dactyloides*) is a desirable forage, wildlife, and erosion control plant, but is difficult to establish from seed. Pre-chilling seed helps stand establishment, but treated seeds must be kept refrigerated and they have a very short shelf life. A priming technique (Germtec II™) recently developed by a seed company also improves germination, and



**eastern gamagrass**  
(*Tripsacum dactyloides*)

allows seed to be stored at room temperature prior to sowing. Since 1998, the NPMC has been involved in a cooperative study with the ARS Climate Stress Lab (Beltsville, MD) to investigate

how long this primed seed can be stored before germination declines.

In preliminary study results from 1998 and 1999, greenhouse germination of Germtec II™ seeds declined within a month after obtaining seed (from 65% down to 38%). Year 2000 research focused on germination of 1998, 1999, and 2000 Germtec II™ seed lots that had been stored at room temperature and in a seed cooler. Germination differed greatly between lot years, with 2000 seed exhibiting the lowest rates. Most recent testing in the NPMC greenhouse resulted in germination percentages of 39%, 35%, 30%, and 19% for 1998, 1999, 2000 (cooler stored), and 2000 (room temperature stored) seed, respectively. Data from 3 separate sowing dates are currently being analyzed.

## 2000 Highlights

Technology transfer is a critical part of the National Plant Materials Center's work; it enables NRCS field staff and others to use the plant science technology we develop for maintaining a productive natural resource base and a healthy environment.

### Written Technology Transfer

<u>Type of Publication</u>	<u>Number</u>
Technical and Progress Reports	4
Plant Guides and Fact Sheets	1
Symposia, Posters, and Papers	8
Informational Brochures	1
Stand-alone Publications	3
Popular articles	4
Newsletters	2
<b>Total Publications</b>	<b>23</b>

### Oral Technology Transfer

<u>Type of Presentation</u>	<u>Number</u>
Tours	6
Local Presentations	5
Regional Presentations	2
Training	5
<b>Total Presentations</b>	<b>18</b>



### 2000 Publications

#### **2<sup>nd</sup> Eastern Native Grass Symposium Proceedings**

This reference contains full summaries of papers and posters presented at the NRCS, ARS, and NACD-sponsored conference held in Baltimore, MD (November 1999).

#### **Improved Conservation Plant Materials Released by NRCS and Cooperators through September 1999**

This publication provides a single source guide to releases that have been developed through NRCS cooperative efforts for use in resource conservation, from 1939 through 1999.

Limited copies of these publications are available from the National Plant Materials Center or they can be accessed online through the Plant Materials Program web site.

**Plants: A Growing Alternative. Vol. 6, Spring 2000.** This issue of the National Plant Materials Program periodical focuses on Plant Materials Technology Transfer.

**Plants: A Growing Alternative. Vol. 7, Fall/Winter 2000.** This issue of the National Plant Materials Program periodical focuses on Conservation Buffers.

To obtain a copy of these issues or to add your name to the mailing list for Plants: A Growing Alternative, contact the National Plant Materials Center at 301-504-8175.

The United States Department of Agriculture (USDA) prohibits discrimination in all its programs on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write the USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14<sup>th</sup> and Independence Avenue, SW, Washington, D.C., 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.