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Manhattan, Kansas Plant Materials Center

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“This cool season grass evaluation has been a cooperative effort between cooperator Darrel Schemm, the Wallace County Conservation District, Kansas State University Research and Extension, and the Manhattan Plant Materials Center,” according to Ted Houser, NRCS District Conservationist in Sharon Springs. “As a result, we have had many more cooperators interested in looking at ways to improve their current grazing and having operations through the use of better adapted and more productive forage species.”

Responsibility for plant science activities of the USDA, Natural Resources Conservation Service (NRCS), is a primary function of the Plant Materials (PM) Program. The Manhattan Plant Materials Center (PMC) is one of a national network of plant centers dedicated to providing vegetative solutions to conservation problems. The Center serves a diverse region of the heartland including Kansas, Nebraska, northern Oklahoma, and eastern Colorado.

Program Products

The mission of the Plant Materials Program is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. The primary products produced by the Program include the production of improved varieties of plants for commercial use and the development of plant science technology for incorporation into the Field Office Technical Guide. Plant and technology development objectives of the Manhattan PMC include:

- Water Quality Improvement
- Erosion Control
- Range and Pasture Improvement
- Native American Outreach
- Plant Variety Selection and Production



The mission of the Plant Materials Program is seeking vegetative solutions to conservation problems.

Program Highlights for 2001

Water Quality Improvement Activities

- Evaluations of switchgrass stands are being carried out to isolate selections that exhibit highly rhizomatous characteristics. These selections will ultimately serve as a commercial source of improved material for use in conservation buffer practices to reduce erosion and filter pollutants and sediment from water bodies.

- Nurseries of buttonbush and false indigo have been established from seed collections made in Oklahoma, Kansas, and Nebraska. Plants which exhibit superior growth traits will be selected and ultimately will serve as a commercial source of improved material for use in riparian forest plantings, streambank and shoreline protection, and wetland restoration and enhancement.



Selections of plants with superior traits for use in wetlands, riparian areas, and for streambank/shoreline stabilization will be made from this buttonbush nursery.

- Various plant species have been evaluated for potential use in wastewater treatment systems.



Common reed, as the key vegetative component within a rock plant filter wastewater treatment system.

Erosion Control Activities

- Bioengineering techniques incorporating structural components in association with plant materials have been installed and evaluated for effectiveness in stabilizing eroding shorelines.



Shoreline erosion at Cheney Reservoir (before bioengineering installation).



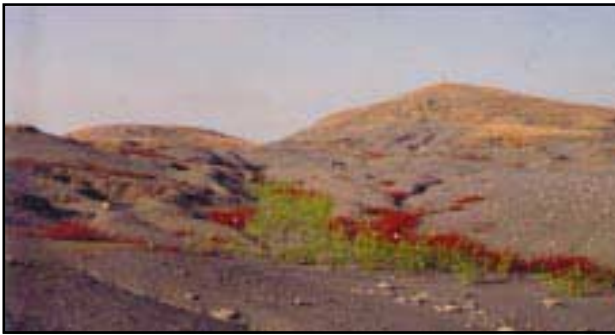
Bioengineering techniques and plant materials evaluated for effectiveness in shoreline stabilization (six months after installation).

- Switchgrass varieties are being evaluated for use as potential biofuels.



Switchgrass varieties evaluated for potential biofuels.

- Plant species are being evaluated for stabilization of critically eroding mine spoil-like areas.



Common reed plantings evaluated for establishment, persistence, and effectiveness in stabilizing drainages on highly erosive sites.



Common reed, once established, spreads quickly by rhizomes to begin to stabilize the site.

- Various tree and shrub species have been established and evaluated for use in windbreak plantings, wildlife habitat improvement, and riparian forest buffers.



Different Siberian elm accessions are being evaluated for use in shelterbelt and windbreak conservation practices in semiarid regions of the service area.

Range and Pasture Improvement

- Forage quantity and quality evaluations of perennial grass species are being conducted to determine overall performance for use in grazing and haying operations.
 - Various germination enhancement techniques are being evaluated for stand improvement of eastern gamagrass without affecting production or quality.
 - Germination and establishment requirements are being developed for Mead's milkweed, a federally-listed threatened plant species. The information will be used to enhance the re-introduction of the species onto native prairie.



Mead's milkweed, a federally-listed threatened plant species, is being studied to determine propagation requirements for reintroduction onto native prairies.

Outreach

- Santee Sioux Tribe of Nebraska were provided with culturally significant plants for nursery establishment on tribal lands.



Redosier dogwood propagation at the PMC for Native American cultural purposes.



Nursery established of propagated redosier dogwood.



Plant Variety Production

- The PMC provided 851 pounds of foundation class seed of various grasses, forbs, and woody species to commercial growers in five states and Canada for the purpose of seed increase for eventual sale to the general public.



Foundation class seed harvested at PMC for eventual use by commercial growers.

- Commercial growers produced over 107 tons of seed, 20,000 herbaceous rhizomes, and 2,300 woody seedlings from plant materials previously provided to them by the Manhattan PMC. The value of this commercially-produced material totaled more than 2.4 million dollars.

The Plant Materials Program also maintains a web site, <http://Plant-Materials.nrcs.usda.gov>, which contains useful plant information such as:

- Plant fact sheets on over 130 different species.
- Listing of commercial plant vendors who provide plants for use in conservation applications including wetland species.
- Listing of current plant related technical articles developed by the PMC.
- Links to other web sites with additional or supporting plant information.

For more information:

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Or visit your local office of the
USDA-Natural Resources Conservation Service

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