



PLANT MATERIALS TODAY

A Quarterly Newsletter of the Montana-Wyoming Plant Materials Program

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This is a quarterly field office newsletter to transfer plant materials technology, services, and needs. The plant materials personnel will be featuring short articles on project results, new cultivar releases and establishment techniques, seed collection, and field planting needs, etc. All offices are encouraged to submit articles about plant material-related activities relative to plant performance, adaptation, cultural and management techniques, etc. Direct inquiries to USDA NRCS, Plant Materials Center, RR2 Box1189, Bridger, MT 59014, Phone 406-662-3579, Fax 406-662-3428; or Larry Holzworth, Plant Materials Specialist, USDA NRCS Montana State Office, Federal Bldg., Rm 443, 10 East Babcock Street, Bozeman, MT 59715-4704, Phone 406-587-6838, Fax 406-587-6761

Wyoming Work Detail

In July, I had the privilege to go to the Bridger Plant Materials Center for a 4-day work detail. When I first arrived I was given a tour of the facility -- Mark explained and pointed out the different types of grass plots for seed production he was working on and explained who they were for. I was kept busy helping with harvesting and doing seedhead counts on different species of plants. I hope I was some help to the Center because I received quite an education from the people there. Mark, Susan, and Joe went out of their way to teach me their techniques for developing new plant varieties. I was shown the results up to that time. I also had the opportunity to observe preventative treatment of insect damage on the different types of evergreen trees. Not only was this an educational week but very enjoyable. I have a better appreciation of the work that goes into the development of a new variety of plant.

Thank you for this opportunity.

Dean Watson, Resource Conservationist, Torrington Field Office

Tree Dedication

A tree dedication was held at the Plant Materials Center on September 20, 2002, in memory of James R. Stroh, former Bridger PMC manager, who served from 1965 to April 1973. An area in front of the office building has been landscaped with bark mulch to surround a bur oak tree (one of his favorite trees) donated by the SWCDMI-PMC Board of Managers. Native wildflowers are also included in the planting. During the ceremony, a memorial plaque was cemented near the base of the tree to commemorate Jim's service at the PMC.

John Scheetz, former PMC manager, spoke of Jim's many significant achievements during his term at Bridger, perhaps most notable was his leadership in assisting the conservation districts of Montana and Wyoming in purchasing the land on which the PMC is located, and in establishing the organization of the Board of Managers. He was instrumental in securing Bridger's first varietal release, 'Lutana' cicer milkvetch, as well as releasing 'Rosana'

western wheatgrass and 'Critana' thickspike wheatgrass. Other subsequently released material in which he was initially involved includes 'Goshen' prairie sandreed, 'Wytana' fourwing saltbush, 'Shoshone' beardless wildrye, 'Trailhead' basin wildrye, 'Rimrock' Indian ricegrass, and the 2000 release of 'Antelope' slender white prairieclover. These varieties are still recommended for use in conservation and reclamation plantings throughout the northwestern U.S.

Jim was a prolific writer and had many articles published in professional scientific journals, including *Crop Science*, *Journal of Range Management*, and *Agronomy Journal*. In 1973, he was transferred to Palmer, Alaska, to establish their PMC, and later became the plant materials specialist located in Anchorage. In 1978, he was appointed plant materials specialist in Washington State. After the volcanic eruption of Mount Saint Helen's, he was selected to coordinate the rehabilitation efforts on this devastated area. His achievements are evident in the many awards, certificates, and commendations he received throughout his career.

Jean Hodges, Secretary, PMC Board of Managers

Mongolian Forage Germplasm Evaluations

Mongolian Forage Germplasm replicated plots were evaluated at two locations in Mongolia during the first part of June by Mark Majerus, Manager, Bridger PMC; Dr. Douglas Johnson, Plant Physiologist, ARS, Logan, Utah; and Larry Holzworth, PMS, Bozeman, Montana. Nine scientists from the Mongolian Research Institute of Animal Husbandry (RIAH) accompanied us to share their evaluations and make recommendations for species to be placed in large scale seed increase. Other species were targeted for additional cooperative evaluations in various disturbed sites such as mine reclamation, deteriorated grasslands, and salinized areas. Susan Winslow and Mark Majerus assisted with planting these trials in June 2000. Over 1300 native Mongolian collections plus numerous US cultivars are featured in three trials within three different environments. The native Mongolian species were collected during the 1993, 1995, and 1998 ARS Germplasm Expeditions. Susan and Mark participated in the 1998 expedition.

A draft of the book "Forage Plants of Mongolia" is being written in Mongolian by Dr. Jigjidsuren, RIAH, Mongolian Agriculture University, and Dr. Sanchir, Head of Systematic Laboratory, Mongolian Academy of Sciences Institute of Botany. Majerus and Holzworth are assisting Mongolian scientists with editing, English translation, and formatting. The book will have over 200 pages and feature colored photographs of the plants with one-half page descriptions of each plant in English and one-half page in Mongolian. A Foreign Agriculture Service (FAS) grant will pay for the interpretation into English and the eventual publication.

The objective of the June 2002 Scientific and Technical Exchange was to evaluate the status of the Collaborative Evaluation of Mongolian Forage Germplasm Project funded by FAS Grant No. X01-4510-62-751054-4 and PL-480 Food for Progress grant. Also during the trip, work discussions were held at the Chinese Academy of Sciences Institute of Botany in Beijing and the Gansu Agricultural University in Lanzhou concerning a 2003 Sino-U.S. Workshop on the Sustainability of Grazingland Ecosystems and organizing Sino-U.S. Joint Centers of Excellence on Sustainability of Grazingland Ecosystems.

Larry Holzworth

Disturbed Forestland Revegetation Effectiveness Monitoring--Results of 30 Years

Wildfires, combined with extended drought, have devastated millions of acres of forest and grazing lands in the West. Over the past 3 years, more than 272,000 fires occurred on 18.5 million acres across the United States. In the aftermath of the destruction, there are questions such as: should intense burns be seeded, with what species and methods, will seeding protect soil and water resources and suppress invasive species, and will seeded species impact timber regeneration?

In 1974, in response to a Headwaters RC&D project measure, the USDA Natural Resources Conservation Service (NRCS) in Montana began investigating these issues with the establishment of three field evaluation plantings (FEPs) representing five forest habitat types on privately owned land in western and eastern Montana. The FEPs were installed as replicated and unreplicated plots in the fall or winter after disturbance from timber harvest.

In 1988, following widespread criticism of extensive aerial seeding conducted under the NRCS Emergency Watershed Program, six fire-impacted watershed monitoring studies were established. Burned, or harvested and mechanically scarified sites were seeded with introduced and native grasses at an average rate of 60-80 pure live seeds/ft². Permanent transects were installed on all the study sites to monitor changes in ground cover and canopy cover by species on successful seeded and unseeded (controls) treatments. Biomass production of seeded and other vegetation was determined; and tree regeneration counts were conducted. Sites were monitored at prescribed intervals extending over at least 10 years.

The successful seeded treatments appear to have little effect on tree seeding survival when compared to the controls. Invasive weeds were significantly suppressed by several of the seeded species on some sites. Average soil erosion for the 5-year period after seeding on successful treatments was at least half that of the controls when computed using the Revised Universal Soils Loss equation. Successful seeding treatments established plant communities nearly as diverse as the controls. The planting of properly selected native or introduced forage grass species can provide the benefits of erosion control, weed suppression, and an enhanced forage resource on a variety of sites without significantly affecting the survival of tree seedlings.

Larry Holzworth

Tech Transfer

The Plant Materials program is always trying to get the word out, whether it is assisting via telephone, e-mail, personal contact, or written material. In the recent months we have been involved in

the creation of several Tech Notes and have been on the road giving presentation at various symposia and training sessions.

Some of the recent Tech Notes include:

Washington PM Tech Note No. 47

History, Biology, Ecology, Suppression & Revegetation of Russian Olive Sites. By: Stannard, Ogle, Holzworth, Scianna, and Sunleaf.

Plant Materials Tech Note MT-42

Hardy and Heavy metal Tolerant Woodyies for Contaminated Sites. By: Leslie Marty

Plant Materials Tech Note MT-41

Current Nomenclature of Plant Species Used in Conservation Activities in MT & WY. By: Scianna & Majerus

Plant Materials Tech Note MT-39

Development and Use of Cost Estimation Matrices for Project Planning & Evaluation. By: Scianna, Schaefer, Majerus.

Idaho PM Tech Note No. 41

Restoration and Diversification of Plant Communities with Woody Plants. By: Scianna, Holzworth, Ogle, Cornwell, St. John.

The PMC staff also had a busy FY2002 on the speaking circuit:

10/18/01 Montana Education Association--Belgrade, MT

11/15/01 Wyoming Association of Conservation Districts--Sheridan, WY

11/16/01 Montana Association of Conservation Districts--Missoula, MT

11/27/01 MT County Agent Training Session--Lewistown, MT

12/12/01 Native Plant Conference--Eugene, OR

01/29/02 Kiwanis Club--Columbus, MT

02/05/02 National Park Service Restoration Workshop--Seattle, WA (x's 2)

02/06/02 Native Seed Production Workshop--Fort Collins, CO

02/17/02 Society for Range Management--Kansas City, MO

03/02/02 Living on a Few Acres Seminar--Cody, WY (x's 2)

03/28/02 Intensive Grazing Workshop--Basin, WY

04/27/02 Master Gardeners--Casper, WY

4/30/02 Parks Canada Native Plant Workshop--Swift Current, Saskatchewan

06/02/02 Sheridan Exp. Sta. Forage Days--Sheridan, WY (x's 2)

06/13/02 Salish-Kootenai College Intertribal Native Plant Conference--Pablo, MT (x's 2)

06/20/02 Central MT Exp. Sta. Forage Days--Moccasin, MT

08-08-02 Joint British Columbia/Western Forest & Conservation Nursery Association--Olympia, WA

Mark Majerus

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