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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.

Upcoming Plant Materials Activities: Mark Your Calendars!

2004 Field Day--The Plant Materials Program nationwide is celebrating its 70th Anniversary and the Bridger PMC is hosting a field day in honor of the event. On June 11, several tours throughout the day will focus on a variety of topics such as foundation seed production, seed processing, existing studies, technology development, and cooperative and future projects.

Tour--On July 11, a tour will be held at the PMC in conjunction with the Montana Native Plant Society's Annual Meeting being held in Red Lodge, July 9-11. The focus will be on native plant identification and function, and seed production, harvesting, and processing. Others interested in attending are welcome.

Training Opportunity--On July 14 and 15, at the request of the Montana NRCS Upper Missouri Natural Resource Area, the PMC will provide training to new employees from that area. New employees from several field offices in Wyoming will also have an opportunity to attend the session. The course will emphasize the Center's function, and responsibilities and assistance to Field Offices. Participants will get hands-on experience with developing seeding mixes and rates, drill calibration, species identification and appropriate conservation applications, and much more. There is a suggested limit of 20 to 25 people.

By Mark Majerus, PMC Manager.

Field Office 2004 Seed Collection List.

The Plant Materials (PM) Program is requesting seed collections of eight species in Montana and Wyoming. NRCS Field Office personnel, and other interested collectors, are being called upon to participate in the 2004 continued collection of fuzzytongue penstemon *Penstemon eriantherus* ssp. *eriantherus*, silverleaf phacelia *Phacelia hastata*, scarlet globemallow *Sphaeralcea coccinea*, and American vetch *Vicia americana*. Seed collections of the fuzzytongue

penstemon are being requested as part of ongoing evaluations in the DATC project. The Montana and Wyoming Plant Materials Committees have recommended the addition of five species to the collection list to address the representative state Long-Range PM Plan conservation concerns. New to the field office seed collection list this year are groundplum milkvetch *Astragalus crassicaarpus*, silverleaf Indian breadroot *Pediomelum argophyllum* (synonym *Psoralea argophylla*), large Indian breadroot *Pediomelum esculentum* (synonym *Psoralea esculenta*), and prairie thermopsis *Thermopsis rhombifolia*.

In the past, hard copies of the annual collection bulletin were sent to every field office in Montana and Wyoming. This year, the bulletin will be distributed electronically and will provide guidance on accessing the seed collection instructions via the Montana NRCS homepage; temporarily, Wyoming employees must access the Montana homepage for this information. Find the Plant Materials bullet and then simply work through a series of steps until locating the Seed Collection section, which contains examples of forms and detailed descriptions of each species to aid in identification, potential site location, bloom period, and approximate time of seed maturity. Descriptions are not yet available for the four legumes. Seed is subsequently planted in evaluation studies to test performance and utility for solving conservation problems outlined in the Long-Range Plans for Montana and Wyoming. The PMC prefers to secure 25 collections of each species and plant within 5 years of receiving the seed. For more information call Larry Holzworth.

By Larry Holzworth, Plant Materials Specialist.

Bridger PMC Announces New Conservation Plant Releases.

The PMC has added three more species to its list of released germplasm and cultivars, bringing the conservation plant arsenal to 26. In the third quarter of 2004, two forbs and a grass became officially available to the commercial seed industry via the Foundation Seed Programs at Montana State University in Bozeman and the University of Wyoming in Powell.

Great Northern Germplasm western yarrow--Achillea millefolium var. occidentalis.

This is a Selected Class release of western yarrow. It is the first release of this species to the commercial seed industry. Great Northern Germplasm is a native, perennial forb of the Aster Family adapted to droughty conditions on gravelly loam and thin or sandy soils. The original collection site is in Flathead County, Montana, near Glacier National Park. This selection will be utilized primarily in seed mixtures to add species' diversity on rangeland, mineland, and roadside revegetation projects. Western yarrow is one of the most widely recognized and adaptable wildflowers in North America.

Stillwater Germplasm prairie coneflower--Ratibida columnifera.

This is a Selected Class release of prairie coneflower. It is the first release of this species to the commercial seed industry. Stillwater Germplasm is a native, perennial, forb of the Aster Family adapted to dry, open spaces with loam, sandy loam, or clayey loam soils. This release is comprised of five superior performing accessions bulked from seed originally collected in Stillwater and Carbon Counties, Montana. This drought-tolerant native wildflower selection will be utilized primarily in seed mixtures to add species' diversity on a multitude of revegetation projects and for enhancing wildlife habitat.

Spirit Germplasm sweetgrass--Hierochloa odorata.

This is a Selected Class release of sweetgrass. It is the Bridger PMC's first release of vegetative plant material. Spirit Germplasm is a native, cool-season grass that inhabits moist environments of riparian and wetland areas. This selection of sweetgrass originated in the Sweetgrass Hills in Toole County, not far from Whitlash, Montana. Spirit Germplasm has a sweet vanilla fragrance and will be primarily used as a culturally significant plant in Native American spiritual and religious ceremonies. The vegetative propagules may also have utility in the stabilization and restoration of riparian and wetland ecosystems.

By Susan R. Winslow, PMC Agronomist.

Treat Brome Seed Prior to Planting.

Head smut *Ustilago bullata* is a naturally occurring, seed-borne fungus that has a detrimental effect on seed production in a variety of cool-season grass species. It is sparsely present to locally abundant in populations of several brome grass species and the degree of contamination may be influenced by the microclimate of the immediate area and the level of pathogen present in the soil.

A small trial was conducted at the PMC to assess the potential effect of head smut contamination on seed production in mountain brome grass. In the spring of 2002, six rows of *Bromus marginatus* were planted with fungicide-treated (Prevail®--Metalaxyl 3.12%:PCNB 15%:Carboxin 15%) seed, and two rows were planted with untreated seed. Seed from each of the two plots was separately harvested and processed, and a small amount of each was sent to the Montana State Seed Testing Laboratory for germination tests.

There was a substantial difference in productivity with the treated plot (0.10 acre) yielding approximately 181 lb/ac, compared to the untreated plot (0.03 acre) yield of 114 lb/ac (127 kg/ha). Seed viability of the treated lot was 93% and the untreated seed was 95% viable.

The results indicate that overall production was reduced more than 35% when seed was not treated with a fungicide for head smut contamination, but seed viability was not necessarily impaired. The PMC recommends a fungicide treatment of all brome grass seed at, or prior to, the time of planting.

By Susan R. Winslow, PMC Agronomist.

Woody Program Activities.

Tree and Shrub Conservation Information Available for Spring Planting-- Each spring planting season spurs a rush of requests for practical information on tree and shrub planting design, species selection, planting, temporary storage, watering, maintenance, and protection. Although there are numerous texts and references that contain general information addressing these topics, there is also information specific to Montana and Wyoming that is available for the asking (OK, occasionally for a small fee). Here's just a sampling of information that is readily available.

Windbreaks for Montana: A landowner's guide, is a Montana State University-Extension publication providing a wealth of windbreak design and installation information. Still as relevant today as when first published, this is the bible of windbreak and shelterbelt practices. Hard copies are available from the Extension Service and can be ordered online at <http://www.montana.edu/wwwpubs/pubscatalog.html> or by calling 406.994.3273.

Conservation Trees and Shrubs for Montana is a handy, 10-page color brochure providing photographs and technical information on many trees and shrubs used for conservation practices in the northern Great Plains. For hard copies contact Bob Logar, State Staff Forester, at 406.587.6836 or the Bridger PMC.

Hand-Planting Guidelines for Bareroot Trees and Shrubs is a handy, color, one-sheet handout that walks prospective planters through a series of steps, from receipt of plant materials through temporary storage, handling, installation, and maintenance. Attractive color graphics on the front page are supplemented with a step-by-step narrative on the back page. The graphics showcase weed barrier, windscreens, and tree shelters, as well as how NOT to plant a bareroot seedling. Hard copies are available from the Bridger PMC, electronic versions can be downloaded at the Montana NRCS website at <http://www.mt.nrcs.usda.gov>.

Planting Guidelines for Containerized and Balled & Burlapped Stock is a companion publication to *Hand-Planting Guidelines for Bareroot Trees and Shrubs* covering proper handling of larger ball and burlap stock. This publication is helpful for backyard conservation landscaping and urban forestry practices. Hard copies and electronic versions are available as previously described.

The HortNote series provides technical information on a variety of conservation horticulture topics, including many tree- and shrub-related subjects. HortNote No. 1 provides information on the proper handling and temporary storage of bareroot and container stock. HortNote No. 2 discusses proper establishment watering for new plantings of various stock types. HortNote Numbers 5 and 6 cover the topics of salt-affected soils and selecting appropriate species for these conditions. HortNote No. 7 discusses iron chlorosis in plants, a common problem on the high pH soils characteristic of eastern Montana and Wyoming. Some electronic versions are available at the Montana NRCS website at <http://www.mt.nrcs.usda.gov>, or contact Joe Scianna to obtain individual HortNotes or to be placed on the list-serve for free subscription to this publication.

NRCS Plant Materials and Montana Urban and Community Forestry Association Host Tree Transplanting Workshop--The Bridger PMC and Montana Urban and Community Forestry Association will host a large tree transplanting workshop on April 15 and 16, 2004, at Bridger. The training session targets certified and municipal arborists, and qualifies for 10.25 CEUs from the International Society of Arboriculture (ISA). The workshop will emphasize the importance of the physiological status of the plant in regards to water relations, and demonstrate the primary transplanting techniques used to move large stock. Participants will gain firsthand experience balling and burlapping trees and using a 45-inch tree spade to transplant stock. For more information, contact Jeff Roe, Community Forester, at 406.232.2034 or Joe Scianna at the PMC

Two New Technical Notes Identify Potential Tree Maintenance Problems-- Although many commercial products enhance tree and shrub survival, establishment, and growth, some of these products require periodic inspection, adjustment, and even removal to maintain performance over time. Two such products are rigid seedling protector tubes and weed fabric. Rigid seedling protector tubes are quite effective at reducing animal damage to seedlings, but can girdle stems and deform the shape of lateral branches if not monitored and removed in a timely fashion. Plant Materials Technical Note No. MT-45, *Proper Installation, Maintenance, and Removal of Rigid Seedling Protector Tubes* discusses these issues and offers corrective measures to prevent plant injury over the life of the protector. Similarly, weed fabric can girdle the base of growing trees over time and potentially reduce the desirable sprouting of some woody species. To bring attention to these potential problems and to suggest corrective actions, Bob Logar, Montana State Staff Forester, and Craig Stange, North Dakota State Staff Forester, have developed Forestry Technical Note No. MT-23, *Use of Woven Fabric for Weed Control in Conservation Tree/Shrub Plantings*. Contact Bob at 406.587.6836 for copies.

By Joe Scianna, PMC Horticulturist.

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