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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, 98 South River Road, 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.

Field Office 2007 Seed Collection List

The Plant Materials (PM) Program is requesting seed collections of 10 species in Montana and Wyoming. The number following each scientific name below represents the total number of collections received for the respective species. In 2007, continued collection is requested of fuzzytongue penstemon *Penstemon eriantherus* ssp. *eriantherus*--7, silverleaf phacelia *Phacelia hastata*--12, scarlet globemallow *Sphaeralcea coccinea*--26, and American vetch *Vicia americana*--7. There were six legumes species added to address emerging conservation concerns. These include milkvetch species *Astragalus*--2, groundplum milkvetch *Astragalus crassicaarpus*--4, silverleaf Indian breadroot *Pediomelum argophyllum* (synonym *Psoralea argophylla*)--0, large Indian breadroot *Pediomelum esculentum* (synonym *Psoralea esculenta*)--4, slimflower scurfpea *Psoralidium tenuiflorum* (synonym *Psoralea tenuiflora*)--2, and prairie thermopsis *Thermopsis rhombifolia*--5. Some of the species lack collections from certain geographic areas in Montana and Wyoming. That information can be viewed by following the steps below and opening the "Table of Areas Needing Species Representation."

A bulletin will be distributed electronically to each field office in Montana and Wyoming to provide guidance on accessing the seed collection instructions via each state's homepage. For immediate access to the respective guidance documents, species descriptions, and photos, go to the Montana or Wyoming NRCS homepage and click on Plant Materials, and then the Seed Collection List. Seed is subsequently planted in evaluation studies to test performance and utility for solving conservation problems outlined in the Plant Materials Long-Range Plans for Montana and Wyoming.

By Larry Holzworth, Plant Materials Specialist.

MT NRCS Invasive Species Specialist

The Invasive Species Specialist is a new position started in April 2006 that is currently filled by Dr. Jim Jacobs. Jim came to the NRCS from Montana State University where he was an Assistant Research Professor in the Land Resources and Environmental Sciences Department. His research focused on developing sustainable management of noxious weeds by integrating herbicidal, biological, and cultural control methods. Restoring heavily infested sites was an important part of his program at MSU. One of the conclusions drawn from his work was that regardless of the weed suppression method applied, sustainable management of invasive species is only likely where competitive, desired plants are present to compete with invading plant species. On native rangeland and wildland sites, developing and restoring diverse plant communities may be important in preventing and managing invasive species. A critical need in addressing the invasive species problem is the selection of plant materials with rapid establishment and competitive traits that can be grown at a reasonable cost to producers and that satisfy varied needs and management objectives.

Jim serves on the technology staff located at the NRCS state office in Bozeman, Mont. Jim is responsible for the invasive species phase of the resource conservation programs statewide. He provides leadership and guidance to field staffs, other agencies, and individuals in the use of invasive species suppression methods. These include surveying new and existing infestations; developing occurrence maps; identifying risks of invasive species and associated management activities to natural resources; directing prevention, early detection, and rapid response; integrating biological, chemical, and cultural methods, and developing adaptive management for invasive species populations. He works with other NRCS technical specialists to develop and integrate sustainable invasive species management practices and techniques into agency

planning, programs, and training. He collaborates on research projects with universities, ARS, NRCS, and other organizations. He is directly involved with assistance to the Bridger PMC on two herbicide studies in forbs, and development of a weed management plan. While most of the work involves noxious weeds and other invasive plants, the position is responsible for all invasive species. As part of his duties, Jim is also developing technical notes on the biology, ecology, and management of each of Montana's noxious weeds. He can be contacted at 406.587.6995, or email at jim.jacobs@mt.usda.gov. The technical notes and other information on invasive species can be found on the web at <http://www.mt.nrcs.usda.gov/technical/ecs/invasive/>.

By Dr. Jim Jacobs, Invasive Species Specialist.

Irrigated Pasture/Hayland Trial

In spring of 2004, the Bridger PMC established replicated plots to compare 16 grass varieties and two mixtures in solid stands, and in alternate-rows with alfalfa. During the 2006 growing season, the plots were sampled on June 21st, August 2nd, and September 13th. The following data are total annual biomass produced (8" row spacing), listed as grass grown in solid stands, production of grass in alternate-rows with alfalfa, and the total combined production of grass and alfalfa in alternate-rows.

	Solid	Alt-Row	Alt-Row
	Grass	Grass	Grass+Alfalfa Total
	(lbs/a)	(lbs/a)	(lbs/a)
Intermediate w.g.	7,492	5,441	12,266
Creeping foxtail	4,703	4,763	11,928
Mix 1 (2 spp)	5,105	4,866	11,922
Mix 2 (5 spp)	5,039	5,292	11,850
Hybrid w.g.	6,265	5,367	11,788
Tall fescue	4,558	4,591	11,782
Tall w.g.	6,294	5,039	11,357
Meadow brome	6,689	4,474	11,243
Pubescent w.g.	7,046	4,894	11,220
Orchardgrass	5,753	4,876	10,721
Smooth brome	6,671	5,351	10,462
Timothy	5,378	3,413	10,260
Western w.g.	4,183	2,267	10,000

Basin wildrye	1,100	1,403	8,924
Beardless wildrye	4,064	916	8,696
Altai wildrye	3,139	1,192	8,439
Switchgrass	1,216	137	7,765
Big bluestem	167	18	6,873

In the solid stands, there was no significant difference in production among 15 of the 18 entries. The switchgrass, basin wildrye, and big bluestem produced significantly lower amounts of forage. The top five performing entries were intermediate and pubescent wheatgrass, meadow brome and smooth brome, and tall wheatgrass-- producing 3.5 to 4.2 tons forage per acre. Only four entries (22%) produced more forage in the alternate-row plots than in a solid stand. This is in contrast to the first harvest year, where 11 entries (61%) produced more forage in the alternate-row plots than in a solid stand. In the alternate-row grass plots, there were no significant differences in production among 14 of the 18 entries. Altai and beardless wildrye, switchgrass, and big bluestem produced significantly less forage. Total forage production in the grass-alfalfa plots ranged from 5 to 6.1 tons per acre. In the grass-legume plots, the simple mix (meadow brome and orchardgrass), slightly out-produced the complicated mix (smooth brome, orchardgrass, intermediate wheatgrass, tall fescue, and creeping foxtail).

By Susan R. Winslow, PMC Agronomist.

PMC Happenings

The BPMC staff offered a 6-week Plant Propagation Workshop in conjunction with the Bridger Schools Winter Adult Education program. Each Thursday evening from 7:00 to 10:00 PM, ten participants learned the art and science of plant propagation including greenhouse operations, propagation from seed, grafting, propagation of stem cuttings, vegetable crop production, and seedling planting and maintenance. Many of the participants were already experienced home gardeners, so the level of interaction and learning was outstanding. Feedback was terrific, so much so that additional requests to attend had to be turned down for this year. Another propagation course, as well as conservation landscaping workshops, is being considered for next spring.

By Joe Scianna, PMC Horticulturist.

The Soil and Water Conservation Society (SWCS) regional meeting was held in Red Lodge, Montana, and attending members came to the BPMC on March 9 for a tour. Participants were divided into three groups and rotated among presentations on BPMC history and

function, seed cleaning, and tree & shrub establishment/ greenhouse operations. Both BPMC personnel and the SWCS attendees thought the tour could have lasted all day as many pertinent questions and interesting discussions took place.

On March 24, a pruning workshop was held at the BPMC with 17 enthusiastic people attending from Powell, Wyoming, and Bridger, Belfry, Billings, Fromberg, and Red Lodge, Montana. The morning portion consisted of classroom instruction pertaining to tree anatomy, form and function, the proper tools for pruning, and additional information sources. In the afternoon, participants went outside and pruned several apple trees, removing dead and diseased limbs, crossing branches, suckers, and watersprouts, which greatly enhanced the trees' appearance. Many positive comments on the workshop were given by the participants to BPMC personnel.

By Roger Hybner, PMC Manager

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