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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.

Montana Employees Receive PMC Training

Twenty-four NRCS and Conservation District employees attended a 2½-day Bridger PMC training session on July 6-8. This session is designed for newer employees and those interested in gaining a better awareness of the program--how it provides valuable technical support to NRCS, and hands-on training in revegetation, as well as plant selection, culture, and management techniques. The session discussed the Center's history, functions, responsibilities, and PMC assistance to FO's. Comprehensive technical instruction included seedbed preparation methods, drill calibration, plant identification, species selection, legume inoculation, seeding mixtures, cultural and establishment practices, and stand maintenance. Included was a ½-day tour of herbaceous and woody seed production fields, seed processing and greenhouse facilities, research plots, and farming and specialized equipment. The trainees had the opportunity to evaluate a seedling emergence study of 'Pryor' slender wheatgrass featuring combinations of three different seedbed preparations and five different planting procedures (see results below)-- various seedbed, plant establishment, and stand maintenance techniques were also reviewed.

Results of Seedbed Preparation Study. In early spring 2005, a site was chosen at the PMC for a seedbed preparation study. Three techniques were used to prepare a seedbed: (1.) plowed; (2.) sweeps; and (3.) conventional, full treatment of disked, roller-harrowed, and leveled. On April 25, each of the three prepared seedbed areas were planted using five separate seeding methods: (1.) grass (Pryor slender wheatgrass) drill-seeded at a rate of 6 pure live seed pounds per acre (pls lb/acre.); (2.) grass drill-seeded at 6 pls lb/acre and barley nurse-crop drill-seeded at ½ bushel/acre; (3.) grass broadcast-seeded at 12 pls lb/acre and harrowed; (4.) harrowed, grass broadcast-seeded at 12 pls lb/acre, and re-harrowed; (5.) barley nurse-crop drill-seeded at ½ bushel/acre, grass broadcast-seeded at 12 pls lb/acre, and harrowed. On

July 7, seedling density counts/ft² were randomly sampled three times within each of the 15 plots and averaged over each seeding treatment .

	Full	Sweeps	Plow
Grass drill-seed	26	22	10
Grass/barley drill-seed	24	13	13
Grass broadcast-seed/harrow	11	16	13
Harrow/ grass broadcast/harrow	15	12	14
Grass broadcast-seed/ barley drill-seed/harrow	9	9	6

Results indicate that seedling emergence across the three seeding treatments was highest in the conventional, fully prepared plot, and stand establishment is considered to be successful.

By Larry Holzworth, Plant Materials Specialist.

Pre-Emergent Herbicide Study Completed

The results are in on the cooperative study initiated last spring in a greenhouse at Montana State University. The intent of this initial chemical screening was to observe pre-emergence herbicide impacts of atrazine-Aatrex; DCPA-Dacthal®; oryzalin-Surflan™; sulfentrazone-Spartan; and trifluralin-Treflan™ on germination and seedling emergence of blanketflower, dotted gayfeather, fuzzytongue penstemon, prairie coneflower, silverleaf phacelia, western yarrow, and white prairieclover. Scientists at MSU-Bozeman twice conducted chemical treatments, forb seedings, and plant evaluations. The Center for Invasive Plant Management (CIPM) provided additional funding for this study. A ranking table displays relative treatment effects on seedling density, with 1 the least affected (compared to the Control) and the greatest impact rated as 6. As shown below, the DCPA and Trifluralin treatments caused the least reduction in seedling density, with the exception of the dotted gayfeather (LIPU), that tolerated all but the Atrazine treatment. Seedling densities in the fuzzytongue penstemon were too low to rank. Seedling

densities in the western yarrow and silverleaf phacelia were also very low. Additional results on herbicide effects on the number of leaves, seedling height, and biomass production are available upon request.

	CO	TR	DC	OR	SU	AT
ACMIO	1	1	1	6	6	6
DACA	1	2	1	6	6	6
GAAR	1	1	1	4	6	6
LIPU	1	1	1	1	1	6
PEER	-	-	-	-	-	-
PHHA	1	1	2	6	6	6
RACO3	1	1	1	5	6	6

Wildflower species: ACMIO western yarrow; DACA white prairie clover; GAAR blanketflower; LIPU dotted gayfeather; PEER fuzzytongue penstemon; PHHA silverleaf phacelia; RACO3 prairie coneflower. *Treatments:* CO Control; TR Trifluralin; DC DCPA; OR Oryzalin; SU Sulfentrazone; AT Atrazine.

The results indicate that field application of DCPA or Trifluralin may improve establishment of wildflowers for seed production by reducing weed competition with minimal injury to the wildflowers. There are very few chemicals specifically labeled for controlling broadleaf weeds in wildflower seed production fields, including the five herbicides tested in this study. More data is needed to determine whether any of the products warrant applying for a 24C special-use label under the rules of the Environmental Protection Agency. The BMC, MSU-Bozeman, and CIPM plan to install a dormant field planting this fall to continue examining the effects of pre-emergence herbicides, and to evaluate herbicide effectiveness on weed control in established wildflower seed production fields.

By Susan R. Winslow, PMC Agronomist.

New Plants Available to Producers

There are many new plant releases that you may be hearing about and wondering if they can be used in Montana and Wyoming. The USDA-Agriculture Research Service in Logan, Utah, has made the biggest contribution to the availability of new germplasm on the commercial market. Many of the new releases are from Colorado, Utah, Nevada and other Northwestern states and southwestern Canadian provinces, some of which have been developed specifically for BLM revegetation needs on sites impacted by fire and invasive weeds. The following releases have not been adequately tested in MT or WY environments for FOTG recommendation.

Indian ricegrass: **Star Lake** (New Mexico), **White River**, and **Ribstone** (Alberta, Canada) are recent germplasm releases, but the cultivar '**Rimrock**' (Yellowstone County, Montana) has been extensively tested in Montana and Wyoming.

Bluebunch wheatgrass: **P-7** (composite of 25 ecotypes mostly from the Great Basin region), **Columbia**, and **Anatone** may be adapted for use in areas where we are presently using **Goldar**, **Secar**, and **Whitmar**.

Snake River wheatgrass: **Secar** is no longer considered a bluebunch wheatgrass and is now called Snake River wheatgrass (*Elymus wawawaiensis*). **Expedition** is a new germplasm release of this species.

Green needlegrass: **Cucharas** (southern Colorado) and **AC Mallard** (Manitoba) are recent releases. AC Mallard has been tested in Montana, but was not significantly different than '**Lodorm**'.

Meadow brome: **Cache** (Utah) is a recent release, but has not yet been compared to **Regar**, **Fleet** (Canada), **Paddock** (Canada), **Montana** (MSU), and **McBeth** (MSU) in Montana and Wyoming.

Altai wildrye: **Mustang** (ARS Logan) is reported to have better seedling vigor than the Canadian releases of **PrairieLand**, **Pearle**, or **Eejay**.

Big & Bottlebrush squirreltail: **Sand Hollow** (Idaho), **Fish Creek** (Idaho), and **Toe Jam Creek** (Nevada) are all germplasm releases adapted for use in northern Utah, northern Nevada and the Snake River plains of southern Idaho.

Sandberg bluegrass: **Reliable** is a new germplasm release from Utah, but **High Plains** Selected class germplasm originated from three high plains sites of Wyoming and has been found to be adapted to both the plains and foothills of Montana and Wyoming.

Bozoisky II: This release is reported to have better seedling vigor and longer seedheads than **Bozoisky-Select**. Pending commercial availability of Bozoisky II, Bozoisky-Select and **Mankota** are still the best material for Montana and Wyoming.

The Montana/Wyoming Plant Materials program is including many of these new releases in Field Planting and Demonstration Plantings to get a better idea of their adaptation to our region.

By Mark Majerus, PMC Manager.

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