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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.

John J. Vanisko Propagation Facilities

The land and buildings of the Bridger Plant Materials Center (PMC) are owned by a non-profit corporation made up of all the Conservation Districts (CDs) of Montana and Wyoming. The State Association of CDs appoint a 5-member PMC Board of Managers (BM) to oversee their investment, and the Montana NRCS leases and operates the facilities. The BM meet twice a year to offer guidance to the Plant Materials Staff and finance maintenance of the facilities. John Vanisko, a long time District Supervisor with the Deer Lodge Valley CD, was appointed as a member of this Board on January 5, 1978, and subsequently served as Chairman for 25 years. John Vanisko has been a staunch supporter of the Bridger PMC, using his state and national political connections to help maintain the PMC as a quality research facility. In recognition of Mr. Vanisko's dedication and commitment to the Bridger PMC, our propagation facility (greenhouse and laboratory) has been named in his honor. A plaque with pictures of the PMC and greenhouse were presented at the annual MACD meeting in Billings, and a permanent sign will be erected near the greenhouse this spring.

By Mark Majerus, PMC Manager

A Call for Field Plantings

The Plant Materials (PM) Program depends on landowner participation to field test new selections of grasses, forbs, and woody plants. This happens by working with local conservation districts and NRCS field offices that are routinely in contact with local cooperators. This unique relationship allows us to field test new plant materials in a "real world" setting on Montana and Wyoming farms and ranches before releasing them to the public.

The PM program has nine grasses, one forb, one shrub, and a tree in need of field testing in Montana and Wyoming. Accession 9005439 switchgrass *Panicum virgatum*, Foothills Canada bluegrass *Poa compressa*, High Plains Sandberg bluegrass *Poa secunda*, Garnet mountain brome *Bromus marginatus*, 'Rush' intermediate wheatgrass *Thinopyrum intermedium*, 'NewHy' hybrid wheatgrass *Elymus hoffmannii*, 'Goldar' bluebunch wheatgrass *Pseudoroegneria spicata* ssp.

spicata, 'Bannock' thickspike wheatgrass *Elymus lanceolatus* ssp. *lanceolatus*, Open Range winterfat *Krascheninnikovia lanata*, western yarrow (accession 9057902) *Achillea millefolium* var. *occidentalis*, and Bridger-Select Rocky Mountain juniper *Juniperus scopulorum*. The accessions of switchgrass, Canada and Sandberg bluegrass, mountain brome, winterfat, western yarrow, and Rocky Mountain juniper are the newest plant materials identified to help solve the resource concerns listed in the Bridger PM long range plan. Applications are due to the Plant Materials Specialist by February 15, 2004.

The Wyoming State Plant Materials Committee meeting is tentatively scheduled to begin at 1:00 pm, March 30, and will conclude at noon on March 31. The meeting will take place at the NRCS State Office in Casper. The Montana State Plant Materials Committee meeting is tentatively planned for March 11th or 12th.

By Larry Holzworth, Plant Materials Specialist

Coles Demonstration Planting

A demonstration planting was installed in May 2002 on David Coles' farm 3 miles south of Molt, Montana. Warm- and cool-season native grasses such as switchgrass, big bluestem, little bluestem, sideoats grama, western wheatgrass, thickspike wheatgrass green needlegrass, bluebunch wheatgrass, and basin wildrye were planted. Introduced species consisted of pubescent wheatgrass and Bozoisky-Select Russian wildrye.

On one edge of the plots, the native grasses were cross-seeded in 2 drill widths each with four-wing saltbush, Canada milkvetch, and slender white prairieclover. Introduced legumes, including alfalfa, sainfoin, and cicer milkvetch, were cross-seeded into the introduced grasses. The seeding trials also included two warm-season mixes and one cool-season mix of native grasses, forbs, and shrubs. By using a multiple-box drill we were able to test the 'alternate row' technique of seeding. 'Critana' thickspike wheatgrass was seeded in alternate rows with slender white prairieclover, Gardner saltbush, four-wing saltbush, and winterfat. Russian wildrye was seeded in alternate rows with alfalfa.

This planting has now gone through two growing seasons, both of which were droughty with high grasshopper populations. Heavy use by jackrabbits and antelope is quite apparent. In spite of the harsh conditions, this planting has done very well. Good stands of all species were established, but the cool-season grasses are presently out-performing the warm-season grasses. The legumes, both native and introduced, were severely cropped by grasshoppers. The existing stubble was a good indication of stand density, with alfalfa and Canada milkvetch performing the best. Worth noting is the very successful establishment of four-wing saltbush and winterfat in the alternate row seedings. When seeded in alternate rows, the various species do not have to compete with each other during the establishment stage. As they mature, their different rooting patterns and plant stature allow them continue to co-exist in separate rows.

Considering this planting was established during a drought year, it is considered a success and a great learning tool. The success of the planting can be attributed, in part, to the excellent firm, weed-free seedbed prepared by Mr. Coles. We have had one tour with the Stillwater Range Association and are planning more in the summer of 2004.

By Valerie Robertson, DC Billings FO

DATC Project Research

The Development of Acid Tolerant Cultivars (DATC) Project continues its research and selection of plants for use in revegetating hardrock mineland in western Montana. In May 2003, three Comparative Evaluation Plantings (grass, forb/subshrub, and seed mixture) were installed on Stucky Ridge, approximately 2 miles north of Anaconda, Montana. Stucky Ridge has been impacted by smelter emission fallout containing sulfur and metallic compounds creating low pH and heavy metal contaminated soils. Prior to planting, the study site was amended with a calcareous material to neutralize the soil to a depth of 12 inches.

The grass trial comparatively tests 33 grass accessions representing 9 grass genera. "Local" accessions originating from the Anaconda Smelter Superfund Site accounted for 16 out of the 33 accessions. Density data collected in June showed that the grass trial generally had good emergence ranging from 15.0 to 0.3 seedlings/ft² and averaged 5.4 seedlings/ft². Several wheatgrass accessions (slender, western, and bluebunch) had notably high seedling densities. Local grass accessions did not have significantly greater seedlings densities compared to nonlocal accessions during the first growing season.

The forb/subshrub trial comparatively tests 14 accessions representing 5 forb genera of which 5 were local accessions. Also included in this trial are 2 subshrub accessions representing 1 subshrub species, neither of which is of local origin. Seedling density data collected in June found that 10 out of the 16 accessions had no seedling emergence and 15 out of the 16 accessions had less than 0.5 seedlings/ft². The subshrub, winterfat (Open Range Germplasm), was the exception with 9.5 seedlings/ft². The lack of forb emergence may be attributed to the late spring planting date, which did not allow for adequate stratification.

The seed mixture trial tested 4 seed mixtures representing 2 seed formulations. The "Upland" formulation, consisting of native species, was designed to provide wildlife habitat on slopes with generally low water infiltration. The "Waste Management Area" (WMA) formulation, consisting of both native and introduced species, was designed to provide a vegetative cover for areas that contain mine wastes. Each formulation tested one seed mixture containing local accessions and one containing nonlocal, commercially available varieties. None of the forbs/subshrubs included in the two seed formulations emerged. The density of grass seedlings in late June were generally good ranging from 10.5 to 6.3 seedlings/ft² and averaged 8.7 seedlings/ft². The nonlocal WMA seed mixture had the greatest seedling density and the local WMA seed mixture had the lowest seedling density. The two nonlocal seed mixtures averaged 7.7 seedlings/ft² and the two local accessions averaged 6.9 seedlings/ft². There were no significant differences between seed mixtures, however, at the P=0.05 level.

Second year establishment will be evaluated in 2004 by collecting basal cover and aerial production data. Aboveground plant tissue sampling of selected top-performing accessions will be tested for metal accumulations.

By Leslie Marty, DATC Project Leader

Yes Virginia, there is a Santa Claus

On December 29, 2003, our shiny, new red combine was delivered. The Massey-Ferguson 2065 replaces our 28 year old International 715 combine, which is used for the harvesting of all our larger Foundation seed production fields. After a three year campaign to purchase this new equipment, it was a very welcome delivery. The Bridger PMC maintains Foundation seed production fields of 20 grass, legume, and forb releases.

By Mark Majerus, PMC Manager

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