

PLANT MATERIALS TODAY

A newsletter from the USDA-NRCS Montana-Wyoming Plant Materials Program for those interested in Plants and Conservation



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For more information on Plant Materials or for electronic access to this and other documents, access our web sites, [Montana NRCS](http://www.mt.nrcs.usda.gov) at <http://www.mt.nrcs.usda.gov> or [National Plant Materials Program](http://plant-materials.nrcs.usda.gov/mtpmc/) <http://plant-materials.nrcs.usda.gov/mtpmc/>. Direct inquiries to USDA-NRCS, Plant Materials Center, 98 South River Road, Bridger, MT 59014, phone: 406-662-3579, FAX: 855-510-7028. All photos by BPMC or Montana NRCS staff unless otherwise noted.

Important Reminders

A reminder for field staff to be thinking about field planting requests for 2016 and beyond for the upcoming Montana and Wyoming Plant Materials Committee Meetings.



Installing a field planting in the Miles City Area.

Feature Topic

A Year of Collaborations/Partnerships/Coordination

The importance and value of collaborative efforts, partnerships, and coordination was never more obvious at the Bridger Plant Materials Center (BPMC) than in 2015. With both BPMC science staff retiring earlier this year, maintaining a strong research component in the Montana and Wyoming plant materials program was looking challenging. With the help of some

longstanding collaborators, as well as some new ones, all existing studies were evaluated and maintained, and we even managed to initiate some new studies.

All existing studies at the BPMC were evaluated in 2015. The entire staff, including our biological technicians (Ross, Darren, Bob), the DATR project leader (Joe LeFebvre), and even former BPMC Manager and Botanist Mark Majerus (Earth Team volunteer) all pitched in. Over 2,000 pieces of evaluation data were collected from on-Center studies in 2015.



Seed age study, Bridger Plant Materials Center.

Results from one study may be of particular interest to field staff and landowners. In a pollinator study examining the effects of different percentages of grass species in the mix, even relatively modest amounts of slender

wheatgrass dominated the established stands and forb composition. Look for these results in an upcoming Technical Note.



Grass proportion pollinator study.

Joe LeFebvre, DATR Project Leader for the Deer Lodge Valley Conservation District established two new greenhouse studies on silverleaf phacelia (see DATR Chatter). Dr. Emily Glunk, Associate Professor at Montana State University, established and evaluated two replicated studies



Montana State University alfalfa variety trial.

at Bridger investigating cover crop and alfalfa variety performance. The Center is also collaborating with Pheasants Forever on cover crops for upland game bird habitat and salt-affected sites and established 6 plots at Bridger this year.



Upland gamebird and salinity cover crop studies.

This fall the BPMC will install a replicated study testing a novel cheatgrass control herbicide using seven conservation grasses. Our hopes, of course, are to increase control options for cheatgrass in rangeland. Also this fall the PMC and Plant Materials Specialist will begin collaboration with the Washakie County, Wyoming Conservation District on a Wyoming Department of Agriculture Producer Research Grant investigating ways to improve the productivity and conservation benefits along the Gooseberry Creek riparian area.

Work also continued with ARS at the Livestock and Range Research Laboratory in Miles City, Montana, on our Russian olive control and revegetation study and plains cottonwood deep pot test. Three year data on both studies has been collected and is being summarized.

Joe Scianna - BPMC Manager/Horticulturist

🌿 Project Progress 🌿

DATR Chatter – The Development of Acid/Heavy Metal Tolerant Releases (DATR) Project

It was a busy summer for the Development of Acid/Heavy Metal Tolerant Releases (DATR) project! The results of the Stucky Ridge

Comparative Evaluation Planting, comparing species and mixes collected from the Anaconda area to non-local sources, was completed and is currently in the final stages of review. Look for this Technical Note on the USDA-NRCS Plant Materials website under the title, “Stucky Ridge Comparative Evaluation Planting”. Keep in mind that many of the DATR selections are well suited for various conservation applications in many areas of Montana and Wyoming.

Research was completed on three studies this summer involving silverleaf phacelia *Phacelia hastata*. The first study on seed dormancy breaking supported recent research findings at



Silverleaf phacelia establishment study.

Montana State University on the value of a light seed coat scarification prior to sowing. The DATR study suggests some benefit to a 30-day cold moist stratification in conjunction with the seed coat scarification, a different finding than the Montana State University study. It is unclear whether seed handling, storage, or other differences between the two studies resulted in this difference.

Two additional silverleaf phacelia studies investigating germination in various un-amended, amended, and commercial potting

mixes were also completed this summer at Bridger.

Foundation seed production of the six releases from this project continues, with seed harvests of Washoe Germplasm basin wildrye, Copperhead Germplasm slender wheatgrass, Old Works Germplasm fuzzytongue penstemon, and Mill Creek Germplasm silver buffaloberry. Foundation seed is made available to commercial seed growers through the Foundation Seed Program at Montana State University and the Wyoming Seed Certification program in Powell, Wyoming.

Joe LeFebvre, Project Leader, Deer Lodge Valley CD

Staff News

Mongolian Fulbright Graduate Intern

This summer we had a special guest interning at the BPMC hailing from the far reaches of Outer Mongolia. Dorj (Dorjderem Sukhragchaa) is a Fulbright graduate student at Montana State University interested in mined-land rehabilitation and plant community restoration. Dorj helped the staff with summer operations and learned about the Plant Materials Program, row crop cultivation, Foundation seed production, mined land reclamation, plant testing and selection, seed certification, and more. We took Dorj to the Miles City Area Office to meet with staff and visit the ARS Livestock and Range Research Laboratory and look at our Russian olive revegetation and plains cottonwood deep pot studies. We also made trips to the Wyoming State Seed Laboratory, Wyoming Seed Certification, commercial seed growers, and reviewed restoration projects in Yellowstone National Park.



Dorj (left) and Joe LeFebvre (right) at Mill Creek study.

Another highlight of the summer was a seed collecting trip to smelter-impacted areas of Anaconda in support of Dorj's graduate thesis. Dorj hopes to use his education and experience to improve reclamation efforts back in his homeland someday.

Technician's Tip

Does Your Swather Need A Diaper?!

Harvesting seeds and seedheads from medium sized fields (<0.10 acres) has always presented challenges. Whereas very small lots may be hand-harvested by a crew, these medium-sized fields are too much for hand collection but not enough material for our plot combine.

A successful compromise used at the BPMC is to suspend a cloth tarp or "diaper" below our swather to collect bulk seedheads prior to processing. In this manner, we do not need to fork harvested material onto a truck or trailer, but simply drive the swather to a shed for unloading. The harvested material is spread out on tarps in a storage shed and allowed to cure and ripen before cleaning.

The tarp is custom made of heavy, reinforced canvas, with a slick vinyl section in the front to



Seed tarp (diaper) hanging below swather.



Side view of tarp suspended below swather.

minimize drag and increase the life of the tarp. Grommets accommodate the use of bailing wire to suspend the tarp, and springs are attached to



Swathed seedheads curing on a plastic tarp.

the middle and back wires to allow for flexibility while transporting and unloading the harvested material.

**Darren Zentner, Ross Oyler, and Robert Fisher -
BPMC Biological Technicians**

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