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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. 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.

Seed Collection Reminder for 2003

All NRCS Field Offices (FO) have received the annual seed collection bulletin for 2003. This is a reminder that the Plant Materials (PM) Program is requesting seed collections of four species in Montana and Wyoming. NRCS Field Office personnel, and other interested collectors, are being called upon to participate in the 2003 collection of fuzzytongue penstemon *Penstemon eriantherus* ssp. e*riantherus*, silverleaf phacelia *Phacelia hastata*, scarlet globemallow *Sphaeralcea coccinea*, and American vetch *Vicia americana*. Our goal is to get a good representation of each species throughout it's range of occurrence in both states. In 2003, we are trying to obtain additional collections from areas of the states not currently represented.

Please refer to the bulletin for details on those areas in each state that still need species representation. The bulletin also contains information on species identification, descriptions of natural habitat for potentially locating harvest sites, expected time of flowering, and approximate dates of seed maturity. Most of Montana and Wyoming received satisfactory spring moisture, so it should be a good year for seed production on our native range.

By Susan R. Winslow

Employment and Education at BPMC

New DATC Technician

Shannon Majerus was hired in October 2002 as the new Development of Acid/Heavy-Metal Tolerant (DATC) Project's Agricultural Technician. She has a Bachelor of Science degree in Range Resources from Montana State University-Bozeman. Previously she has worked for Tractor Supply Company and Hybritech Seed in Billings, and as a ranch hand on her family's property near Roundup. Shannon is an employee of the Deer Lodge Valley Conservation District and is stationed at the Bridger Plant Materials Center (PMC) where the DATC project is headquartered. Her position is funded by a grant from the Natural Resource Damage Program through September 2004.

Italian Fellowship Student

Federica Sancin learned of the Bridger PMC by reading a journal article about roadside restoration in Yellowstone and Glacier National Parks using native indigenous plants. She applied for and received a Post-Graduate scholarship from Padua (Pa-dew-wa) University in northern Italy to conduct reclamation research in the United States for an eight month period. While at Padua University she was involved in reclamation research on high altitude ski areas using native plants. She is presently housed at Montana State University-Bozeman working in the Plant Pathology lab with Dr. Bill Grey investigating the incidence of headsmut teliospores on native collections of mountain brome. She will periodically spend time at the Bridger PMC to get a better understanding of how the Plant Materials Centers collect, evaluate, propagate, and channel plants into the commercial seed and nursery industry. She hopes to take all this information back to Italy and assist her country in the development of a native seed/plant industry while working toward a Doctorate degree.

Montana State University-Bozeman Internship

My name is Carey Andersen and I am working at the Bridger PMC under a summer internship funded through the MSU Foundation Seed Program. I graduated from Belgrade High School and I am currently a senior in Crop Science at MSU-Bozeman. My internship includes evaluating and documenting phenology of all major plant species at the PMC. I will also gain experience and training in land rehabilitation, range, horticulture, seed physiology, and seed harvest. This next fall I will give a presentation at MSU to finalize my internship.

Chadron State College-Nebraska Internship

My name is Rachel Novakovich, and I am an intern at the Bridger PMC. I graduated from Tongue River High School in Dayton, Wyoming, and am majoring in Range Management with a livestock option at Chadron State College. I am also working on a basketball coaching endorsement. As part of my internship I am collecting, pressing, and identifying the weed species that are found in this area. I am also learning to identify forages and the various uses associated with each species. The final area of my internship is to assist Carey in evaluating the phenology of the plant species at the PMC.

By Mark Majerus

Montana Employees Receive PMC Training

Twenty-five NRCS and Conservation District employees attended a two day Bridger PMC training session on June 24 and 25. The session discussed the Center's history, functions, responsibilities, and assistance to FO's. The trainees had the opportunity to evaluate seedling emergence of 'Critana' thickspike wheatgrass resulting from a study of a combination of three different seedbed preparations and three different planting procedures (see results below); various seedbed and

plant establishment techniques were also reviewed. The training culminated with a half day tour of Bridger PMC projects, plant identification, and FO responsibilities and opportunities with the plant materials program.

The training was initiated by the Assistant State Conservationist's for field office operations. The plant materials program offers this mini session each year designed for newer employees who gain an awareness of the program and how it provides the technical support to NRCS. A more in-depth course is also available to provide comprehensive training on drill calibration, plant identification, species selection, legume inoculation, seeding mixtures, cultural and establishment practices, and stand maintenance.

Results of Seedbed Preparation Study In late Fall 2002, a site was chosen at the PMC for a seedbed preparation study. Three techniques were used to prepare a seedbed: plowed, barley stubble, and full treatment--disked, rolled, and leveled. On May 5, 2003, each of the three prepared seedbed areas received three separate seeding treatments of Critana thickspike wheatgrass: 1. drill-seeded at a rate of 7 pure live seed pounds per acre (pls lbs/ac); 2. harrowed, broadcast-seeded at 20 pls lbs/ac, and re-harrowed; 3. broadcast-seeded at 20 pls lbs/ac and harrowed. On June 24, seedling density counts/ft^2 were randomly conducted three times within each of the nine plots and averaged.

	Full	Stubble	Plow
Drill-Seed	17	6	3
Harrow-Broadcast-Harrow	16	12	4
Broadcast-Harrow	20	6	1

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

By Larry Holzworth

Caution When Using Wildland Transplants

We often field questions from producers, cooperators, and Field Office personnel on using uncultivated wildland transplants for various conservation practices. For several reasons, wildland transplants are inferior to cultivated bareroot and container stock, and should not be used. There are, however, a few situations when wildland plants can be successfully transplanted, either directly to another field location, or to a nursery for cultivation.

Wildland plants, especially large, well-established woody material, are nearly always inferior to cultivated stock. Most wildland plants are found growing under significantly more stress than cultivated plants, an important factor in transplanting success. Limited or excessive water, marginal nutrition, and the presence of insects and disease frequently reduce vigor. The root systems of wildland woody plants are typically long and coarse, with many less fibrous roots captured in the rootball than a comparable cultivated plant. Cultivated plants, in contrast, are usually root-pruned before moving and have relatively large and healthy root systems after transplanting. The root systems of containerized stock remain fully intact, so there is little or no transplanting shock after moving. Wildland plants grown on coarse, well-drained and/or rocky sites are very difficult to transplant with an intact rootball. Plants grown on heavy-textured, poorly drained soils can be unmanageably heavy. The larger the wildland plant, the smaller the transplanted root system relative to the amount of foliage and number of stems, and therefore, the greater the transplanting shock.

There are factors beyond the ability to successfully move a plant to consider as well. Digging wildland plants creates a disturbance that can lead to soil erosion and weed invasion at the original growing site. It may be necessary to replace soil, prepare the site, and sow an appropriate cover crop to stabilize the disturbance and create weed competition from desirable species. Written permission or proper permits should be secured before digging wildland plants on private or public lands. When scouting potential wildland plants, consider the ecological impact on the sampled population. Avoid transplanting from small or unique populations, or from transplanting too many plants from a single population. It may be appropriate, however, to transplant wildland seedlings from future mining or construction sites when total loss of the population is inevitable.

There are several steps that can be taken to improve the probability of success using wildland plants. Target small herbaceous plants with fibrous root systems, these generally transplant more successfully than larger herbaceous plants and woody species. If possible, culture wildland transplants in a nursery or greenhouse prior to field planting. Another possibility is to irrigate, fertilize, and control insects and disease in the field before transplanting. Avoid transplanting coarse or taprooted species. Reducing the foliage area often helps balance the root:shoot ratio and improve transplanting success. Some vigorous sprouting species of trees and shrubs such as willow *Salix*, cottonwood *Populus*, dogwood *Cornus*, alder *Alnus*, snowberry *Symphoricarpos*, silverberry *Elaeagnus commutata*, Wood's rose *Rosa woodsii*, and chokecherry *Prunus virginiana* transplant well if dormant sprouts are properly transplanted to adequately moist sites, such as riparian areas. It is often the case, however, that small nursery grown bareroot and container stock will outgrow large wildland transplants in relatively few growing seasons.

Consider these factors when deciding whether or not to use wildland transplants. In most cases, time, labor, and material expenses plus reduced out-planting success will favor cultured plants.

By Joe Scianna

Plant Profile: Skunkbush Sumac

Skunkbush sumac *Rhus trilobata* is a tough native woody plant with many useful conservation applications including windbreaks, living snow fences, wildlife plantings, woody draw restoration, hedgerows, native landscapes, and Xeriscapes™. Skunkbush sumac is native to North America and ranges from Saskatchewan and Alberta south to Texas and California, but not Washington or British Columbia. It is often found growing in the northern Great Plains in association with sandstone or limestone outcroppings, and is frequently huddled against large rocks where it can extract additional soil moisture. It grows over a wide range of soils from rocky, sandy sites to heavy clay, but does not tolerate standing water. It prefers a soil pH ranging from 6.5 to 7.5, but will tolerate 8.0. Wildland skunkbush sumac keeps company with some of the tougher plants in the neighborhood including prickly pear cactus *Opuntia polyacantha*, sagebrush *Artemisia*, yucca *Yucca*, saltbush *Atriplex*, Rocky Mountain juniper *Juniperus scopulorum*, and limber pine *Pinus flexilis*. It is generally

considered USDA Zone 4 winter hardy, but I have observed it growing well in Zone 3b.

Skunkbush sumac is a spreading deciduous shrub with erect, stout branches that form a rounded, moundlike thicket. New stem growth is lightly pubescent to glabrous. Skunkbush sumac reaches a mature height of 3 to 5 feet and a width of 4 to 8 feet under wildland conditions in 10 to 12 inch annual precipitation zones. Selections of this species respond well to clean cultivation and supplemental irrigation, reaching 12 feet high and twice as wide. Although branching can be fairly open under wildland conditions, skunkbush sumac forms an impenetrable mass of stems given extra care. The flowers are inconspicuous, varying from greenish yellow, yellow to whitish in color and appear in late April to early May at Bridger, Montana. The fruit is similarly small, a hairy red to reddish orange drupe that contrasts nicely with the dark green foliage. Seeds of this species require a cold moist chilling period to break dormancy. Fall plant seeds directly outdoors or provide an artificial chill of 120 to 150 days in a refrigerator. Vegetative propagation is by root and softwood cuttings.

For landscape applications, the primary visual appeal of skunkbush sumac is in its dark green to blue-green foliage, a color that is retained when most other vegetation turns chlorotic or brown from heat induced stress. The pinnate leaves have an interesting trifoliate arrangement with three, lobed leaflets. Leaflet shape and color retention reminds me of a miniature version of another drought tolerant plant adapted to the northern plains, the hardy bur oak *Quercus macrocarpa*. Fall color can be striking and varies from bright yellow, orange to red.

The real beauty of skunkbush sumac is, however, its performance and function. Drought tolerant, winter hardy, insect and disease resistant, requiring virtually no maintenance, it is truly a plant suited for Xeriscape™ and low maintenance landscapes in full sun or partial shade. It can be used as a backdrop in a rock garden or informal area, and looks particularly attractive when situated in front of large, light-colored rocks. It forms an awesome unpruned hedge, windbreak, living snow fence or other mass planting. For these uses, we recommend 'Big Horn' skunkbush sumac, a New Mexico Plant Materials Center release originating in Big Horn County, Wyoming. Our 12 foot tall and 24 foot wide living snowfence at the PMC was planted with this selection. On heavy snow years, the entire hedge is filled with snow, but we have never observed any branch damage as a result. Skunkbush sumac is excellent for quick soil stabilization on disturbed sites and provides fall and winter food for song and game birds, as well as outstanding cover, nesting, roosting, and loafing habitat.

And don't let the common name prevent you from using this plant. The aroma, although strong, is not offensive, and is only truly noticeable if the leaves are crushed or stems broken. If public acceptance of a plant named "skunkbush" is a concern, use its alternative name, lemonade sumac.

By Joe Scianna