

# PLANT MATERIALS TODAY

A Quarterly Newsletter of the Montana-Wyoming Plant Materials Program

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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.

## TIME TO SUBMIT 1999 FIELD PLANTING PLANS

All field planting plans should be submitted to Larry Holzworth, Plant Materials Specialist, by **February 15, 1999**. Prepare a field planting request (SCS-ECS-009 for Montana and WY-ECS-50-E for Wyoming) for plant materials committee review and recommendation. Look for cooperators that are interested in trying something new and who will provide the site preparation and management required for a "fair test".

The plants that need additional field testing include 9005438 and 9005439 **switchgrass** (late summer pasture), 9078408 **Sandberg bluegrass**, 'Goldar' **bluebunch wheatgrass**, 'Bannock' **thickspike wheatgrass**, and 9005308 **mountain brome** (reclamation), 'Newhy' **hybrid wheatgrass** (saline sites), and 'Rush' **intermediate wheatgrass** (early summer pasture).

## UPCOMING PLANT MATERIAL ACTIVITIES

February 21-26--Society for Range Management @ Omaha  
March 9-10--WY Plant Materials Committee @ Casper  
March 24--MT Plant Materials Committee--Teleconference

## REVIEWING THE 3 R's

Revegetation, Reclamation, and Restoration--all imply the re-establishment of plant cover on a disturbed site, but if taken literally may imply three levels or intensities of site mitigation. **Revegetation** is simply the re-establishment of a plant cover, often a monoculture of an introduced plant species. Although relatively inexpensive, revegetation may not offer permanence or ecological stability. **Reclamation** has been defined historically as the process of returning disturbed land to a

condition that approximates the original site conditions and is habitable by the same or similar plants and animals that existed before disturbance. **Restoration** strives to emulate the structure, function, diversity, and dynamics of a specific ecosystem. Topsoil salvage can preserve the soil biota, along with viable propagules of indigenous plant materials. By utilizing only native indigenous plant material (seed, cuttings, transplants), the genetic integrity and diversity of the native plant communities will be maintained.

Over the last several years there has been a progressive change from revegetation to reclamation to restoration. The use of crested wheatgrass, smooth brome, intermediate/pubescent wheatgrass, and tall wheatgrass for CRP, roadsides, mined-land disturbances, and wildlife habitat (Revegetation), evolved into the use of cultivars of native plants of western wheatgrass, thickspike wheatgrass, green needlegrass, slender wheatgrass, etc. (Reclamation). More recently the National Park Service and U.S. Forest Service have adopted policies of Restoration. They are collecting native plant material from close proximity of the disturbance, or at least from the same general habitat type or watershed. They contract with growers to increase seed and/or plants for their restoration efforts. This new restoration approach is opening the doors of opportunity to wildland seed collectors and commercial seed/plant producers. With the new certification classifications of 'Source Identified', 'Selected', and 'Tested', the seed/plant industry can provide a quality product to those interested in the use of native indigenous plant material. Any native collection of seed can be certified as '**Source Identified**' (yellow tag) if a certifying agency documents the collection location, i.e., state, county, elevation, and associated plant species. This material can also be propagated for one more generation under cultivated conditions. '**Selected**' (green tag) indicates seed of an ecotype that has been compared to other ecotypes of the same species and is shown to have unique characteristics. '**Tested**' (blue tag) indicates seed of an ecotype that has been selected and also progeny tested to prove that the unique traits are heritable. Cultivars are still very important in the reclamation of large acreages of disturbed or fallow sites, but now the above-mentioned options are available to the native restorationist.

Mark Majerus

## PLANT PROFILE--SWITCHGRASS

Switchgrass (*Panicum virgatum*) is a tall, perennial sod-forming warm-season grass that is found in all states east of the Rocky Mountains. This grass is found only in limited amount in the plains of eastern Montana and Wyoming. Switchgrass can be found in fertile lowland sites as well as on disturbances on upland sites with 15+” of precipitation. Warm-season grasses, such as switchgrass, do not initiate growth until late spring and put on the majority of their growth during mid to late summer. In our area of the northern Great Plains warm-season grasses are the most productive and most palatable at a time when the majority of the cool-season grasses have matured and cured. Switchgrass provides excellent forage or hay in late July or August. It is reported that mature switchgrass is virtually useless as a forage for livestock, but the leaves and seedheads are readily consumed by wildlife. The seed retention is good, making the seed available in late fall and early winter for wildlife. Switchgrass is in the millet tribe (Paniceae), so is among a group of grasses that provide excellent seeds for consumption by upland game birds and songbirds.

The planting of switchgrass on the plains of eastern Montana and Wyoming push the natural limits of this grass. Preliminary results, however, from field plantings near Riverton and Buffalo, Wyoming, and Broadus, Circle, and Sidney, Montana, indicate that switchgrass has potential for use in Montana and Wyoming. The best uses for this grass are late summer pastures, waterways/run-in areas, and wildlife habitat. Switchgrass has coarse, deep rhizomes but does not form a tight sod. It can be planted with other warm-season grasses such a blue grama, side-oats grama, big bluestem, and little bluestem.

There are numerous cultivars of this species on the commercial market, however, there are only two that were specifically released for the extreme northern portions of the Great Plains--'Dacotah' and 'Forestburg'. Forestburg was released in 1987 by ARS-Mandan and the Bismarck PMC from a composite of four collections made near Forestburg, SD (between Huron and Mitchell). Dacotah was released in 1989 by the same agencies from a collection made near Breien, ND (south of Bismarck). Cultivars from more southern sources should be avoided in our area, e.g., 'Nebraska 28' (Nebraska), 'Blackwell' (Oklahoma), 'Pathfinder' and 'Trailblazer' (Nebraska/Kansas), and 'Cave-In-Rock' (Illinois).

Mark Majerus

## SEED SOURCE AND PRODUCTION SITE AS FACTORS INFLUENCING WOODY PLANTING ESTABLISHMENT

Each year we receive calls at the PMC from consumers looking for answers in regard to failed woody plantings. There are virtually an infinite number of factors that can result in the failure of a new planting. If the

producer seems to have a good handle on planting and care, we often consider the parent material (seed source) of the stock that was used, as well as the conditions at the nursery where they were grown.

Seed source is a particularly important factor in places like Montana and Wyoming, given the diversity of environments and climatic conditions that characterize these states. On the one hand, local, native plants have evolved over the eons to survive on these sites and are often the best source of seedlings, **for long term survival**. Unfortunately, Mother Nature is more concerned with the ability to reproduce and perpetuate the species than necessarily in rates of growth or ornamental attributes. The result is sometimes a plant that survives but does not perform satisfactorily in terms of the intended end use. In contrast, commercial selections from non-local seed sources may perform very well in a cultivated nursery situation or a mild climate but grow poorly in the Northern Plains. To further complicate this issue, some species tend to perform relatively uniformly over their natural range whereas others vary widely from site to site. In addition, cultivation and local microclimates can result in wide variation in performance between seed sources and sometimes favors non-local sources. In general, the best scenario is to use plant materials that originated from local sources or similar environs and have gone through a testing and selection program (hey, that's what we do in Plant Materials!).

Another potential factor in the success of woody plantings are the conditions at the nursery where they are produced. Seedlings grown under mild field conditions, such as in coastal settings or southerly latitudes, may not be fully hardened to Northern Plains conditions. There is also a tendency to "push" plant growth in commercial nurseries, especially ornamental stock, in order to produce a larger, more valuable tree in a shorter period of time. This can also result in reduced hardiness if not properly conditioned.

So, how can consumers guard themselves against these pitfalls? In terms of seed source, consumers should ask nurseries about the origin of their stock. If the nursery does not know and does not have first hand experience with the performance of their stock, consumers should shy away. The guarantee that a nursery provides with their stock often gives insight into their confidence in its performance. Consumers should also be cautious of material grown in mild climates and sold in Montana without being acclimated for at least one growing season. Even locally adapted seed sources grown in mild environs may not perform adequately without proper hardening-off. By hedging your bet with adapted seed sources and proper production conditions, woody planting success should be substantially improved.

Joe Scianna

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