



# 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.

## 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 who 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 8 grasses in need of field testing in Montana and Wyoming. Accessions **9005438** and **9005439** **switchgrass** *Panicum virgatum*, **9078408** **Sandberg bluegrass** *Poa secunda*, **9005308** **mountain brome** *Bromus marginatus*, **'Rush'** **intermediate wheatgrass** *Elytrigia intermedia*, **'Newhy'** **hybrid wheatgrass** *Elytrigia repens* X *Pseudoroegneria spicata*, **'Goldar'** **bluebunch wheatgrass** *Pseudoroegneria spicata* ssp. *spicata*, and **'Bannock'** **thickspike wheatgrass** *Elymus lanceolatus* ssp. *lanceolatus*. The accessions of switchgrass, Sandberg bluegrass, and mountain brome are the newest plant materials identified to help solve the resource concerns listed in the PM long range plan. The following are attributes of these grasses and the conservation applications they offer landowners.

**Switchgrass** has been identified as a warm season grass that could be useful in pasture, hay, and wildlife plantings. As a component in a pasture mix, this grass provides nutritious forage in late summer and early fall when our cool season grasses have matured and declined in protein. Switchgrass, therefore, can be used to extend the grazing period and its high production makes it well suited for hay. The upright stature and high protein seed also makes it an important grass for wildlife food and cover.

Accession 9005438 was selected for its late maturity to be used as a southern type, while 9005439 was chosen for its earlier maturity to be used as a northern type.

Switchgrass is normally a component of the mixed grass prairies: the Central High Plains of southeast WY (MLRA 67); Pierre Shale Plains and Badlands in Rosebud County and southeast MT, and extreme east WY (MLRA 60); and the Northern Rolling High Plains of eastern MT (MLRA 58). Field testing is needed to determine how far into the shortgrass prairie and foothills this species will successfully establish and persist. Plantings are needed in central and eastern parts of Montana and Wyoming.

**Sandberg bluegrass** has been identified as a species useful in providing ground cover and diversity in reclaiming drastically disturbed sites (i.e. minelands, gas pipelines, etc.) and rehabilitating deteriorated rangelands in regions with less than 10 inches of precipitation. This grass is adapted to the shallow soils often found on dry, rocky sites. Its drought tolerance is attributed to its extensive, deep, fibrous root system.

Accession 9078408 is a composite of three native collections. The individual collections were chosen for their superior emergence and survival, seed production, and morphological and physiological uniformity. Field testing of this accession is needed to evaluate its performance and adaptation in a mix with other native species. Since Sandberg bluegrass naturally occurs in most areas, the program needs field plantings in all MLRAs of Montana, and in MLRAs 32, 34, 46, 58, and 60 in Wyoming.

**Mountain brome** has been identified as a species useful in reclaiming disturbed lands after mining and timber harvest, reseeding areas following wildfires, and restoring native plant communities in the mountains and foothills of Montana and Wyoming. This grass is a short-lived perennial bunchgrass which establishes quickly to provide soil stabilization, weed suppression, and ground cover while slower long-lived species become established. Mountain brome is naturally found as a component in plant communities on disturbed sites related to erosion, rodent activity, or man-made disturbances.

Accession 9005308 originated near the old ghost town of Garnet, MT, in Granite County. It was selected because it showed better overall vigor, maintained stands

longer, and has less head smut than 'Bromar', the standard cultivar. Field testing of this accession is needed to evaluate its performance and adaptation in a native mix. Plantings are needed in Montana (MLRAs 43, 44, 46, and 58). In Wyoming, plantings are needed in MLRAs 58 and 60 in the east, and in the foothill and valley MLRAs 33, 43, 46, and 48.

**Rush** is comparable to other intermediate wheatgrasses in production, yet has better drought tolerance (similar to pubescent wheatgrass). Cooperators planning to seed a field to hay or pasture using pubescent wheatgrass may want to include five acres of Rush intermediate in a side by side comparison. Other uses for this grass include buffer strips, critical area plantings, bank stabilization, filter strips for ag waste, and upland wildlife habitat.

**Newhy** is a hybrid of quackgrass and bluebunch wheatgrass. It has salt tolerance similar to tall wheatgrass but is easier to manage and is adapted to wet-saline sites. Landowners interested in reclaiming saline areas may want to test Newhy hybrid wheatgrass against tall wheatgrass. Newhy may also be used for forage under dryland and irrigated conditions.

**Goldar bluebunch wheatgrass** has better seedling vigor and production than 'Secar' or 'Whitmar' cultivars. **Bannock thickspike wheatgrass** is a forage type selected for its improved yields over 'Critana'. Ranchers planning a rangeland seeding may want to substitute Goldar or Bannock in the seed mix on a portion of the acreage as a test. On the test plot, Goldar would replace the regular cultivar of bluebunch in the mix; Bannock would replace the regular cultivar of thickspike wheatgrass. Goldar also shows promise in critical area stabilization as part of a mix, re-establishment of native plant communities, cheatgrass control, and mine spoil reclamation. Bannock can be used for wildlife cover, nesting, and food; erosion control; and stabilization of sandy sites.

To submit a request for test material, field office personnel in Wyoming need to use the Plant Materials Planting Form WY-ECS-50 and the field office personnel in Montana need to use the Form MT-ECS-9. The planting plans should include intended use of the planting; background information about the site such as cropping history, past tillage, and pesticides used; planned seedbed preparation and planting method; soils information, including map; and topographic map and copy of aerial photograph outlining the site. Minimum acreage for the test material and standard of comparison is five acres for each. This information, as well as seeding rates can be found in

the Planting Guide for each featured specie. **The deadline for submitting planting plans is Feb. 1, 2000.**

Connie Reynolds

### Plant Profile: Switchgrass

Switchgrass *Panicum virgatum* L. is one of the 475 species in the largest genera of all the grasses. It is an important native perennial, warm-season, sod-forming grass that occurs throughout most of the United States. It is abundant in the central and southern parts of the Great Plains. In Montana, it can be found only in scattered stands or individual plants in relatively fertile, moist areas in the eastern counties. In Wyoming, it is reported in the bottomlands and prairies, primarily in the southeastern areas of the state. It grows to a height of 2 to 5 feet, with numerous, scaly, creeping rootstocks, and is an excellent soil binder. The roots are greatly branched, penetrating vertically downward to a depth of 8 to 11 feet and occupying many cubic feet of soil. The sod it forms is very open and does not resist heavy grazing and trampling. Switchgrass plants are usually in large colonies, erect and coarse-stemmed, with abundant broad leaves that are light-green to bluish-green in color and often purplish tinged. The inflorescence is an open, spreading, diffuse panicle. The growing period begins in late spring and continues through the summer months, usually reaching maturity in September. Switchgrass is very productive and recent sampling from the Wayne Berry Trial at Sidney, MT, estimated biomass production at approximately 6,400 lbs/acre. In addition to two Bridger PMC test accessions (9005438 and 9005439), the accessions best adapted to eastern Montana and Wyoming are 'Dakotah' (origin: Morten Co., ND) and 'Forestburg' (origin: Sanborn Co., SD). It is rated as a good forage grass when utilized in the earlier stages of growth, but palatability dramatically decreases with maturity as the stems lignify, or become hard and tough. Forage quality is considered low as standing winter feed. It stands up over winter and recovers from heavy snow and is ideal for wildlife cover. Seed production ranges from 200 to 700 lbs/acre under irrigation, and 100 to 400 lbs/acre under dryland. The high protein seed is used for food by wildlife and livestock species and is highly desirable to upland game birds, waterfowl, and songbirds. This grass retains its seed, making it available for use into the fall and winter months. Switchgrass is excellent for range reseeding, critical area stabilization, revegetation of surface mines, and permanent waterways. Planting is recommended in late spring, early summer, and if necessary, as a dormant seeding in late fall. The recommended full seeding rate is 4 PLS lbs/acre (approximately 390,000 seeds per pound).

Susan Winslow

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