

Bridger Plant Materials Center Activities

Joe Scianna, Horticulturist.

In 1999 and early 2000, conservation tree and shrub research at the Bridger Plant Materials Center (PMC) progressed with both ongoing and new projects. The GP-13 Rocky Mountain juniper seed orchard produced 506 pounds of fruit yielding 53.6 pounds of clean seed. This selection is recommended for windbreaks in the northern Great Plains, primarily Montana and Wyoming. Limited amounts of Bridger-Select Rocky Mountain juniper seed will be offered in the coming months through the Montana State University Foundation Seed Program and the Montana Seed Growers Association for seedling production. The 1999 seed collections were isolated by individual tree to determine the relative productivity of trees, seed sources, and populations over time. This information may prove valuable to those working on GP-13 seed source projects. During seed processing, several innovative techniques were tested in an attempt to reduce cleaning time. The use of a wire screen inside the macerator, in conjunction with applications of a citrus handcleaner containing pumice, significantly reduced cleaning time and improved product quality. Look for details of this technique in future issues of Nursery Notes or the Native Plant Journal. In addition, a seed dormancy study comparing the interaction of acid scarification and various cold and warm stratifications on the germination of Rocky Mountain juniper seed is nearing completion and the results should be published later this year.

The juniper plantation was one of three GP-13 studies making progress at the PMC last year. The ponderosa pine seed orchard produced its first fruit crop totaling 53.5 pounds of seed. This bulk selection will be released in 2001 as Selected Class material. Limited amounts of seed should be available in 2001 through the Montana State University Foundation Seed Program. Again, the seed collections were isolated by individual tree to determine the long-term productivity of the various seed sources. This selection was based on rates of growth, vigor, and seedling survival for use in windbreak and shelterbelt applications east of the continental divide.

The GP-13 bur oak seed source study installed in 1994 continues to be evaluated with some individual trees reaching 9 feet in height after 6 growing seasons in a 10 to 12 inch annual precipitation zone with no supplemental irrigation. The lack of acceptance of this species in the northern Great Plains is primarily the result of a reputation for slow growth. It appears, however, that growth is only slow the first few growing seasons as the plant establishes a deep taproot but increases substantially with age. Cultural practices as well as the seed source appear to influence rate of growth. Selections of superior seed sources will be made in the next 2 to 3 years.

Two superior silverberry *Elaeagnus commutata* sources are currently in the release process for riparian channel stabilization applications. Dupuyer Streambank Germplasm silverberry is recommended for use on the streambank and within the immediate riparian zone. Pondera Floodplain Germplasm silverberry is used on upper terraces in the floodplain zone. This species appears to be resistant to cattle browsing and may offer an option in locations where this is a problem. Both selections were made in north central Montana and will be released as Source Identified material in order to meet an immediate need for species diversity in riparian stabilization projects. Please feel free to call or email Joe (406.662.3579; jscianna@mt.usda.gov) at the PMC if you have questions on any of these topics.