

# 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.

## ★WOODY PROGRAM COLLECTORS EDITION!★

The staff of the Bridger Plant Materials Center (PMC) has bestowed upon me the enormous honor of dedicating the entire October issue to the Woody Plant Program! Specifically, I'd like to discuss our windbreak and shelterbelt program and how it ties in with the Montana Conservation Seedling Nursery (MCSN) and supports the field offices and conservation districts of Montana and Wyoming.

As many of you know, the PMC program had an early emphasis on grass species, testing and selecting species and sources for forage production, saline remediation, mine land reclamation, wildlife applications, and other conservation needs. With enthusiastic support from the former Montana State Staff Forester (the legendary Hal Hunter), the plant materials program moved into woody plant research, beginning in 1978 with our participation in MITOSIS (Montana Interagency Tree and/or Shrub Improvement Study). The core of our program is a group of regional seed source studies coordinated by numerous individuals and agencies. Species include Rocky Mountain juniper (established 1980), ponderosa pine (1989), and bur oak (1994). A cottonwood study has been suggested for some time in the future. There are also several similar but smaller studies in various stages of completion that include such species as green ash, Amur maple, honeylocust, currant, snowberry, rose, among others. The goal of the studies is to select superior seed sources of each species, i.e., plants that genetically perform better than common stock (which is often of unknown origin) for windbreak and shelterbelt applications. If the plants perform better than common grade stock, the windbreak functions sooner and more effectively, cooperators "sell" the results over the fence to their neighbors, more windbreaks are planted, more soil and water conserved, wildlife is happy -- you get

the picture. Of course, proper species and seed source selection is one of several steps in obtaining a successful windbreak system (see the Windbreak/Shelterbelt Seedling Planting article in the April 1995 [Volume 2 Number 2] issue of Plant Materials Today).

After 8 to 10 years, selections are made and nonselected trees are removed. The selected trees are then moved into a designed seed orchard. This may involve transplanting the existing trees or starting a new orchard through grafting or stem cuttings, asexual propagation techniques that produces clonal plants. Remember, the goal is to stay as genetically close as possible to the selected plants. The MCSN currently maintains our grafted green ash orchard (among others) and the PMC maintains Rocky Mountain juniper and ponderosa pine orchards. A minimum of one orchard is always located at the PMC and the second at a cooperators site. This brings us to the role of the Montana Conservation Seedling Nursery.

As most of you know, the MCSN at Missoula is the state forest tree nursery in Montana. Wyoming does not have a state tree nursery. The goal of the nursery is to provide affordable, high quality conservation grade nursery stock for windbreak, shelterbelt, wildlife, and other conservation related uses. These are important points for several reasons. The **quality** of the stock, particularly its performance and adaptability to the environmental conditions over its intended range of use, has an enormous impact on the success of tree planting programs. The fact that Missoula only sells **conservation** type materials is also important because there are numerous commercial operations that sell landscape material and it is generally against government policy to compete with the private sector. The competition issue periodically arises regarding the MCSN, but some important distinctions need to be considered. Firstly, the private sector has to base their product line on a cost/benefit basis. There is a real possibility that the conservation grade lines may not produce a rate of return sufficient to warrant continued commercial production. Conservation of natural resources is something that needs to continue whether the profit margin is substantial or not. Also, most commercial operations cannot afford to tie up production space in long term seed orchards. This may change as the PMC is now working with the Montana Association of Nurserymen (MAN) to determine if there is any interest in the commercial industry to commit to the long term establishment of seed orchards. The MCSN has been a major cooperator on several woody

plant studies and continues to act as the primary production vehicle for the sale of improved plants from the Plant Materials Program. As a result of our cooperative efforts and field testing programs, several adapted, hardy windbreak/shelterbelt species are currently being offered. These species were selected from windbreaks/shelterbelts having functional lives for over 50 years with proven performance. We consider the nursery a major asset to the successful conservation efforts of NRCS in Montana and Wyoming.

So, this brings us to the issue of ordering the right species from appropriate sources. **We encourage Montana and Wyoming conservation districts and field offices to use the MCSN as their primary source of windbreak and shelterbelt material.** It carries selections of plant materials that research has proven to be best adapted to our region of the northern plains and from seed sources of known identity. Order forms should be in every USDA Service Center this month. If the species you are looking for are not available from the MCSN, call the new manager, John Justin @ 406-542-4244, and discuss your needs.

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## THE MONTANA CONSERVATION SEEDLING NURSERY

Hi. I am John Justin, the manager of the Montana Conservation Seedling Nursery (MCSN). I have been the MCSN manager since July of 1996. I have over ten years of experience growing tree and shrub seedlings for conservation plantings, most recently for the Utah Division of Forestry, Fire, and State Lands. Joe has asked me to write about the State nursery program. The MCSN has experienced many significant changes over the last four years. I will discuss these changes and the evolving direction and goals of the MCSN.

The Mission of the MCSN is to produce and distribute high quality, source identified, locally adapted seedlings at an economical price for use in conservation plantings and for the reforestation of State lands. We accomplish this mission with an experienced staff of full and permanent part-time employees, most of whom have over ten years of experience.

The most significant recent changes in the MCSN program are in funding sources and management (myself). Traditionally, the nursery received funding from a large general fund appropriation and revenue generated from seedling sales. In 1994 all general fund appropriations ended and now the nursery is solely funded from seedling sales revenue. This event has forced the MCSN to change the way it operates (i.e., do more with less funding). The MCSN can no longer afford to produce seedlings at a cost that does not recover production expenses. I closely monitor production costs and price each species based on these costs. In a sense, we now operate more like a private nursery but do not have a profit margin built into our prices.

We will continue to provide high value to cooperators by pricing quality seedlings at the production cost.

My number one goal is to provide seedlings which have the highest possible long term survival rates and function as intended in conservation plantings. The MCSN achieves this by selecting seed sources which research indicates are best adapted to the various environments in Montana and surrounding areas. All seed lot identities are carefully maintained throughout the production cycle to insure seed source integrity. The MCSN has worked closely with the PMC and the Montana Interagency Tree and Shrub Improvement Study (MITOSIS) to determine suitable seed sources for Montana. We currently grow seedlings from PMC seed of Rocky Mountain juniper and honeylocust. Through Plant Materials and the MITOSIS programs, the nursery has on site seed orchards for amur maple (*Acer ginnala*), American plum (*Prunus americana*), Arnold hawthorn (*Crataegus mollis*), blueleaf honeysuckle (*Lonicera korolkowii*), black cherry (*Prunus serotina*), late lilac (*Syringa villosa*), 'Midwest' crabapple, (*Malus baccata* var. Mandshurica), centennial cotoneaster (*Cotoneaster intergerrima*), green ash (*Fraxinus pennsylvanica*), 'Sakakawea' silver buffaloberry (*Shepherdia argentea*), Russian olive (*Elaeagnus angustifolia*), and a stooling block of Daniels cottonwood (cottonless *Populus deltoides*). Field trials suggest that all of these selections are well suited for conservation plantings in eastern Montana and northern Wyoming.

The MCSN also grows many selections which have not had formal field testing. Most of these are native species or widely planted non-natives with known performance attributes. Occasionally we receive a request to produce a species for which little site adaptation information exists. Usually we will produce small (<2,000) quantities of these species and then rely on feedback from cooperators to determine field performance. If the species performs well in the field, and demand remains, we increase production. This not an ideal way to test plant adaptation but the nursery no longer has funds available for detailed research. We will continue to assist other agencies, such as the Plant Materials Program, with field testing and seed orchard establishment as funds allow.

The quality of our seedlings is of primary concern to all MCSN staff. We continually update our production procedures to increase seed quality and improve efficiency. Recent operational changes include new fertilizer mixes for each plant growth stage, multiple annual root prunings of conifer stock, scheduling irrigation based on plant needs, testing new herbicide to reduce weed competition, improved monitoring of seedling storage and greenhouse environmental conditions, grading bareroot seedlings to minimum height **and** caliper specifications, and modifying containerized production cycles to increase seedling size and dormancy.

The nursery industry is continually evolving and the MCSN will respond to new customer needs as they arise. The current trends I have observed include increased use of containerized conifer stock, increased demand for larger container sizes to improve survival on tough sites, increase demand for riparian and wetland trees and shrubs, requests

for non-traditional native plants, and continued emphasis on the use of native and source identified seedlings. The MCSN is responding to these trends by increasing production of 30 cubic inch containers and diversifying our species selection. The new species we are offering this year include subalpine fir, Austrian pine, honeylocust, grass plugs, and sandbar willow. New items we expect to offer next year include Sitka alder, centennial cotoneaster, and seedlings grown in ten cubic inch copper coated containers. The copper coating prunes roots at the container wall and results in improved root system morphology and an increase in fine roots.

I encourage all agency and nursery customers to call me with input on the quality of our stock, the service we provide, and our species selection. The feedback and suggestions we receive has a great influence on the direction of our program. MCSN cannot adapt to changing customer needs without significant lead time. Once an order is received, seed must be obtained, stratified, and sown; and then the seedlings must be grown, hardened off, harvested, and packaged for shipment. It takes from 18 to 30 months to produce bareroot hardwoods and 30 to 42 months to produce bareroot conifers. Container stock can take from 12 to 24 months to produce. As you can see, it takes some foresight to insure that the seedlings a cooperator needs are available when they want them. The MCSN will take seedling orders as far in advance as necessary. We will also grow new species if combined orders of at least 750 containerized seedlings per species or 2,000 bareroot seedlings per species are requested.

Seedling order forms are available from extension offices, conservation districts. USDA Service Centers, or by calling the nursery at 406-542-4244.

Thanks for the opportunity to be included in your newsletter. I look forward to working with you in the future.

John Justin  
Nursery Manager  
Montana Conservation Seedling Nursery

## **COST SHARE PROGRAMS FOR TREES**

In order to make the planting of trees and shrubs for windbreaks/shelterbelts, forestry, wildlife, and other conservation applications more economically attractive, several cost share programs are available to assist producers. The following are programs that producers can access to assist in meeting their forestry and windbreak needs.

### Forestry Incentive Program(FIP)

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA Office of Communications at (202) 720-5881 (voice) or (202) 720-7808 (TDD).

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

FIP is intended to assure the Nation's ability to meet future demand for sawtimber, pulpwood, and quality hardwoods by planting more trees and placing more forest land under good forest management. This program is available to non-industrial private forest landowners and the forest site needs to be or have the potential of producing 20 cubic feet/acre/year. The intent is to target the better producing forest sites. Tree planting, thinning a stand of forest trees, and site preparation for natural regeneration are practices that are cost shared under FIP.

### Stewardship Incentive Program(SIP)

SIP is available to non-industrial private forest landowners. A forest stewardship plan needs to be developed and all forest sites qualify. This program enables producers to address a wider array of resource concerns. Some of the practices that are cost shared under SIP are: Reforestation and Afforestation; Forest and Agroforest Improvement; Soil & Water Protection and Improvement; Riparian and Wetland Protection and Improvement; and Wildlife Habitat Enhancement for Game and Nongame Species.

### Conservation Reserve Program(CRP)

Under the continuous CRP, eligible cropland can be planted to a number of conservation practices. Producers are paid to retire or set aside their eligible cropland. Cost share is provided to establish practices on those fields. Some of the woody practices that are allowed are: Field Windbreaks; Living Snow Fences; Shelter Belts; and Riparian Forest Buffers.

### Wildlife Habitat Incentive Program(WHIP)

WHIP is a program for people who want to develop and improve wildlife habitat on private lands. A wildlife habitat development plan is necessary. Technical assistance and cost share is available to help establish and improve fish and wildlife habitat. Much of the wildlife habitat to be developed will involve planting woody vegetation.

For more detailed information about these practices, please contact your local USDA-Natural Resources Conservation Office. If you have any questions or concerns, please give me a call @ 406-587-6836, or in Wyoming contact Richard Rintamaki at 307-261-6488.

Robert Logar  
USDA/NRCS State Staff Forester