

# Appalachian Plant Notes

## Newsletter of the Appalachian Plant Materials Center

January 2013

The Appalachian Plant Materials Center (PMC) is one of 27 strategically located centers of the USDA Natural Resources Conservation Service, with a mission of finding plant solutions to solve conservation problems. The area served by the Appalachian PMC encompasses 11 states in the southern Appalachian region from Pennsylvania to Georgia and Alabama. The center encompasses 185 acres of Greenbrier River bottomland and associated woodland uplands. The center was established in 1967 and was formerly located in Quicksand, KY, but moved to its present location near Alderson, West Virginia, in 1998. The property was formerly the location of the farm of the Federal Prison Camp, Alderson, a minimum-security U.S. Federal prison for female inmates.

The facility includes two greenhouses and one shade house used to propagate plants, a seed barn with seed and plant coolers, and a shop and administration building that can serve as a classroom. The extensive cropland is planted to many different plants including native warm season grasses, clovers, trees, and shrubs, all developed to solve specific conservation problems related to climate, rugged topography, soil limitations, various land uses, and fish and wildlife needs in the Appalachian service area.

### West Virginia Plant Materials Committee Set Priorities

The NRCS Plant Materials Program responds to requests from NRCS field staff for plants that could meet the needs of their customers to solve resource problems on their lands. The reorganized WV Plant Materials Committee receives input from NRCS field staff regarding those resource concerns and directs the activities of the WV Plant Materials Program accordingly.

To meet the needs of these customers the WV Plant Materials Committee has set the following priorities:

Cover crop technology transfer, poultry house exhaust fan grass windbreaks, streambank stabilization, and warm season grass establishment

WV NRCS Field Staff should contact their Plant Materials Representative (Barbara Greenleaf – West Team, Ray Carr – East Team, Clay Handley – South Team) to request plants to meet resource concerns. Form [NRCS-ECS-9](#) should be used to make such a request:

### Cover Crop Study

Improving soil quality, reducing chemical inputs, evaluating cover crop mixtures and the timing of the use of the roller/crimper

technology are the aims of the current cover crop study underway at the Appalachian Plant Materials Center (PMC). Cover crop mixtures of cereal rye, 'Purple Bounty' hairy vetch, and crimson clover were planted in late August and rolled onto the soil surface just prior to planting in early May.



***Roller/crimpers are used to kill cover crop and press it onto the soil surface***

Weed control and corn yield responses are additional aspects being evaluated. This study is a cooperative effort between the USDA Natural Resources Conservation Service (NRCS) and the West Virginia University Cooperative Extension Service.

“These cover crops have controlled weeds and provide over 12 tons of dry matter per acre to the soil surface.” stated John

Vandevender, Manager of the Appalachian PMC.



***A young corn crop is growing through a rolled and crimped cover crop.***

### **Bigtooth Aspen Propagation Project**

The need for seedlings of Bigtooth Aspen for the reforestation of high elevation reclaimed coal mining sites in West Virginia is being met by the Appalachian PMC with the propagation of this native plant. Bigtooth Aspen, *Populus grandidentata* Michx., is a forest tree that grows in rich woods or old fields and is common in every county in West Virginia. It is a member of the willow family (Salicaceae) and a cottonwood (genus *Populus* L.). Ordinarily a small or medium-sized tree up to 30 to 40 feet in height, Bigtooth Aspen can attain a trunk diameter of from 1 to 2 feet. The wood of the bigtooth aspen is soft, light, weak, close-grained, and is used for pulpwood but can be used for veneer. The wood decays quickly. The bark of the bigtooth aspen is a favored food of the beaver and is a winter food for the varying hare. The twigs are browsed by white-tailed

deer and the buds are a winter food of the ruffed grouse.

It propagates freely from root suckers that are located just under the soil surface, and forms Aspen thickets. Bigtooth Aspen frequently “pioneers” in burned-over areas or in abandoned fields, but shows a more marked preference for richer and moister soils.



***Digging the shallow roots of the Bigtooth Aspen***

Roots are collected in March when the tree is dormant. Digging some of the shallow roots from each tree with hand tools liberates roots of 3 to 6 feet in length and does not harm the tree. These roots are then placed on potting soil on a warming bed in the greenhouse and kept at 75 degrees F.



***Bigtooth Aspen root suckers growing in the greenhouse***

Root suckers sprout within about 2 weeks and are pinched from the root when they are about 7 inches in length. These are potted and placed under irrigation in the greenhouse for

about a month then are held until the threat of freezing is over before being “hardened off” outside.



*Potted seedlings of Bigtooth Aspen in the greenhouse*

### **Upcoming Event**

A Soil Quality Workshop is to be held at the Appalachian Plant Materials Center in Alderson, West Virginia, in the spring of 2013. This day long workshop will demonstrate the use of the roller/crimper, used to kill a standing cover crop and push it onto the soil surface just prior to the no-till planting of an annual crop, as well as a demonstration of the rainfall simulator that demonstrates precipitation infiltration rates. The workshop will include discussions of soil quality and increasing soil biological activity through management. A tour of the plant materials center and activities will be given as well.

All Conservation Partnering Agencies in West Virginia are invited to participate as well as farmers, private industry representatives and interested agency staff from surrounding states. More information will be available when the date is confirmed with invited speakers. Please contact Steve Ritz, WV Plant Materials Specialist for additional information.

### **Solarization Demonstration Underway**

Site preparation for the planting of pollinator plants is an important step in the successful establishment of these important plants. Recycled plastic greenhouse covers have been used to cover a pollinator planting site at

the Appalachian Plant Materials Center. The use of such covers that allow sunlight to strike the soil’s surface and kill any growing plants is the technique of solarization.



*Plowing end furrows for the installation of plastic used in solarization.*

A plow is used to create a furrow in which the edges of the plastic cover will be secured to the soil surface.

Soil is used to bury the edges of the plastic cover and hold it in place.



*Placement of the plastic sheet into the end furrows that hold it in place.*

All plants under the cover will germinate and grow, for at least a short time, before the intense heat from the sun kills them. The soil surface must be covered for a year so that all the different plants that germinate at different times of the year will be killed by the excessive heat.

### **Soil Quality Improvement Project**

In October 2012, NRCS kicked off its’ soil health campaign and began spreading the word about soil health and its benefits far and wide – to producers, partners and the public.

Initially, NRCS's attention is focused on cropland, with plans to rapidly expand this soil health effort to range, pasture, and forest lands. In support of this soil health campaign, the Appalachian Plant Materials Center in Alderson has developed and initiated a ten year duration Soil Quality Improvement Project. This project is designed to verify and/or compare plant productivity (yield), harvested feed value and/or seed quality commercial fertilizer and pesticide usage. It also studies changes in soil quality when cations are balanced on the base saturation of the soil cation exchange capacity (CEC) and timing of practice implementation on fields.

All plots will use the same crop rotation and soil quality practices. A total of five soil treatments will be used and each treatment will be replicated four times for statistical purposes. Plots will be evaluated annually using a broad diversity of parameters, including: cation base saturation, infiltration, soil respiration, active organic matter, available nitrogen, crop yield and feed harvest values and seed quality. These and other measurements will be used to develop a comprehensive soil health picture in response to the soil treatments imposed on each plot. With time, it is anticipated that commercial fertilizer and pesticide requirements will decrease and that overall soil health will improve with these treatment regimens. Such information will no doubt be invaluable to field offices, farmers and the general public as costs of commercial fertilizers and pesticides continue to increase. Look for more on this exciting endeavor in future editions of Appalachian Plant Notes!

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### **Featured Plant:**

Rhododendron or Great Laurel  
The flower of the Rhododendron (*Rhododendron maximum L.*) was selected as the West Virginia State Flower by West Virginia school children and the West Virginia Legislature on January 23, 1903. The largest Rhododendron in North America thrives in damp woods in most if not all of the counties in West Virginia. Often forming nearly impenetrable thickets in the mountains, it serves as optimum habitat for black bear.



For more information check the [NRCS Plants Database](#).

### **Related Plant websites:**

[USDA NRCS Plants Database](#)  
[USDA NRCS Plant Materials Program](#)  
[USDA NRCS](#)  
[USDA NRCS East National Technology Support Center](#)  
[Xerces Society](#)  
[Lady Bird Johnson Wildflower Center](#)

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