



United States Department of Agriculture
Natural Resources Conservation Service

**MANHATTAN PLANT
MATERIALS CENTER**
Manhattan, Kansas



Redbud in bloom

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Plants for the Heartland

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‘Kanlow’ Switchgrass Takes Center Stage

Ever since President Bush announced his vision for our nation’s energy independence and the U.S. Department of Agriculture’s announcement of a plan for \$1.6 billion in new funding for renewable energy that would focus on cellulosic energy research and production, a Plant Materials Program release has taken center stage. The Manhattan Plant Materials Center (PMC) has received numerous inquiries about its release of ‘Kanlow’ switchgrass, a lowland type of switchgrass that produces a lot of biomass. While other upland cultivars of switchgrass are more widely planted, demand for Kanlow has been cyclical. Kanlow is a good choice for poorly drained or

frequently flooded sites. It can be planted along the water’s edge to protect earth berms and stream-banks because of its ability to withstand up to 25 days of inundation. It is a rather coarse, heavy-stemmed grass and is not used much for grazing. Kanlow, whose



Head fire roars across Kanlow foundation seed increase field.

origin was Wetumka, Oklahoma, was released for public use in 1963. Over the years it has been planted on the upstream face of

many watershed dams. As demand for the cultivar declined, the seed increase field was plowed under in 1980. In 1991, once its seed supply had diminished, the PMC began producing Kanlow again. The demand for Kanlow once again has been cyclical. Seedsman do not grow it unless there is a government contract that specifies it. That is all changing with the spotlight on biofuel research. Interest in Kanlow has come from across the U.S. and as far away as Belgium and France. The PMC staff has fielded inquiries from growers, researchers, and landowners on topics ranging from seed availability to adaptability of Kanlow to a given region.

Prescribed Burning on the PMC

Prescribed burning at the Manhattan PMC is a tool used in the maintenance and production of foundation seed fields. As stated in the Field Office Technical Guide, Prescribed Burning Practice Standard 338 definition, “Applying controlled fire to predetermined area” certainly applies to prescribed burning at the PMC.

Prescribed burns are often completed adjacent to tree,



Backfiring field can help prevent damage to adjacent conifers.

shrub, or other herbaceous plantings that should not be burned or damaged by fire. Planning and extreme caution is needed to successfully complete prescribed burning while avoiding damage to nearby studies.

Benefits of burning include, but are not limited to, controlling undesirable

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Lathhouse Updated

After 14 years of sun, rain, snow, wind, and any other element Mother Nature could throw at it, the lathhouse was beginning to show its age and had started to deteriorate. The good news was that the framework of the structure was intact and sound. However, a panel in the cooler wall was suffering from water deterioration and rot in the area where the heat pump had been installed. A replacement panel was purchased and installed. Cedar boards were cut to produce 1- by-2- inch lath for the roof and sidewalls. The old lath was removed from the building and replaced by new lath a section at a time. This time instead of nailing or stapling the lath to the framework, screws held it in place. This decision made a tremendous difference in the overall strength and stability of the building.

The wooden garage and pedestrian doors were about to fall apart. Years ago, the PMC replaced a metal garage door on the shop with a fully insulated door to conserve energy. That metal garage door had been stored in a corner of the machine shed since that time. Four panels



from that displaced door were shortened and used to replace the wooden garage door in the lathhouse. The original track from the wooden door was used with the “new” metal panels. The update of the lathhouse should make the structure functional for several more years. The only comment by the crew at the PMC was that they hoped that they do not have to take the lathhouse apart with all those screws they used to attach the lath to the framework of the building.



Wood Words

Bow: A warp in which the ends of a board or wooden member curve in the same direction away from the desired plane, usually along the length.

Burl: A swirling, twisted figure in wood grain caused by growths on the outside of the tree or root.

Edge grain: Wood characterized by the growth rings being 45 or more degrees, preferably perpendicular, to the surface of a board.

Grain direction: The direction in which the dominating, elongated fibers or cells lie in the structure of wood.

Green wood: Stock, usually in rough-cut lumber or log form, that has been cut but not dried, and retains a high moisture content. Wood turners often use green stock because of its workability.

Heartwood: The darker mature wood at the center of a tree.

Redmon Crimean Linden

In 1966, the PMC staff planted a Redmon Crimean Linden, *Tilia X euchlora*, on the PMC grounds. The seedling was obtained from Plumfield Nursery, Fremont, Nebraska. With its classic pyramidal growth form and branches reaching the ground, the Linden has graced the PMC’s landscape for more than 40 years.

Today, the tree stands 51 feet 10 inches tall with a diameter at breast height of almost 35 inches, a

circumference of 9 feet 11 inches, and a canopy of 48 feet 8 inches. The Redmon Crimean Linden is a hybrid tree whose parentage, according to Hortis Third, was *T. cordata* (probably) X *T. dasystyla*. The tree’s only problem has been the loss of lower branches due to shading from adjacent buildings. Other than that it has been a specimen tree for the PMC.





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**SEEKING VEGETATIVE SOLUTIONS
TO CONSERVATION PROBLEMS**

The mission of the Plant Materials Program is to develop and transfer state-of-the-art plant science technology to meet customer and resource needs. The primary products produced by the program include the production of improved varieties of plants for commercial use and the development of plant science technology for incorporation into the electronic Field Office Technical Guide (eFOTG).



Prescribed Burning on the PMC *continued from page 1*

diseases, improving forage production quantity and/or quality, and enhancing seed production. Burning is carried out on the PMC's foundation seed increase fields annually to reap many of these benefits.

Burning also is a cheap and inexpensive way to remove the residue of the previous year's crop. This allows the PMC to go in with tillage equipment, unobstructed by crop residue, to incorporate fertilizer between crop rows and repair furrows used for irrigation.

"We have to pay attention to wind speed and direction. Direction is critical because we don't want to

scorch our windbreaks or adjacent crops that have already emerged," says John Row, fire boss for the PMC. "We do a lot of backfiring, which takes a lot of time but is



Fire kills young, spring weeds and clears furrows of last year's crop residue.

necessary to protect these areas.

We like to burn when wind speeds are between 5 to 15 mph. We have a lot of flexibility due to the small sizes of our fields and numerous firebreaks. If the wind becomes excessive, we can easily quit for the day as most burns only last for a few minutes. We like to do ring fires whenever possible to send the smoke aloft so that it does not become a problem for our neighbors. We monitor the stage of our crops, moisture content of the soil, and the residue to be burned, and try to burn at times most beneficial to the crop."

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