2009
Progress Report of Activities

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Plant Materials Special Service Award

Dr. Alan Schlegel, Southwest Research and Extension Center, (SWREC), Kansas State University (KSU) is recognized for over 15 years of support to the Manhattan, Kansas, Plant Materials Center (PMC) and to the mission of the Natural Resources Conservation Service (NRCS). His outstanding efforts and support with evaluating woody plant trials, assisting in Conservation Reserve Program (CRP) enhancement studies, and advancing the work of the PMC have resulted in improving NRCS conservation recommendations and specifications for Kansas.

Rich Wynia, PMC Manager, Alan Schlegel, SWREC, Terry Conway, State Resource Conservationist

Beginning in 1993, he provided acreage and support to complete the first shrub study planting that consisted of 16 species totaling 142 shrubs. In 1995, an additional 14 species including trees and shrubs were planted totaling 133 trees/shrubs. The trees/shrubs that have shown favorable characteristics have been included in the Field Office Technical Guide (FOTG) for planting in Kansas.

In 1998, Dr. Schlegel assisted in the CRP Enhancement Seeding Study by securing established native grass CRP acreage and providing equipment used in the forb/legume interseeding study. The results of this study were published in Kansas Plant Materials Technical Note KS-24, Conservation Reserve Program (CRP) Enhancement Seeding Summary. This study has served as the basis for all interseeding recommendations for forbs/legumes.

In 2006, a conifer study was initiated coming from the Kansas PMC Long-Range Plan (LRP) that evaluates selections of conifer trees as potential replacements for eastern red cedar. In 2008, a blue grama/forb study planting was initiated consisting of five accessions of blue grama along with potential PMC releases of New Jersey tea, leadplant, dotted gayfeather, and compassplant.

Dr. Schlegel has substantially advanced the efforts of the Plant Materials Program (PMP) by providing the SWREC as a base for at least five study plantings. He has provided the PMP land, equipment, and expertise in the implementation and evaluation of these studies. The PMP will benefit from Dr. Schlegel's contributions for many years.

‘Tropic Sun’, Sunn Hemp Study

A national sunn hemp study involving 25 plant materials centers took place this summer. Sunn hemp is a tropical or sub–tropical legume grown for green manure or as a cover crop. It produces high organic matter yields (up to 6,000 pounds per acre) while fixing large amounts of nitrogen (120-140 pounds per acre).

This study attempts to determine areas of the country with the potential to use sunn hemp for green manure and as a cover crop. The anticipated use of sunn hemp is a 30 to 45-day green manure crop. It should not produce seed above 28 degrees N latitude (southern tip of Texas). Sunn hemp is adapted to a wide range of soils with a superior performance on poor sandy soils.

Sunn hemp at 90 days. L-R, Mark Janzen, Richard Wynia, John Row.

Sunn hemp blooms

Sandy Site Study Planting

A sandy-site study planting was installed this past spring to evaluate existing and new plant materials on sandy sites. A resource need was identified as a result from seeding failures under the Conservation Reserve Enhancement Program (CREP) in Kansas. Under this program, priority is given to acreage where the retirement of the land and attendant water rights would have the greatest conservation benefit on the groundwater and river systems and protect the wind erosion-prone soils. The study contains 15 species that were replicated three times. A wheat straw mat was placed over the seeding to serve as a cover crop and protect the seeding from erosion. Species planted include: Siberian wheatgrass, sand bluestem, prairie sandreed, mammoth wildrye, sand love, Indian ricegrass, needle and thread, blowout grass, sandhill muhly, giant sandreed, sand dropseed, spike dropseed, Arizona cottontop, galleta grass, and blue grama. Requirements for these species included: Adapted to sandy soils, received 14 inches or less rainfall, and tolerate some cold temperatures. Several plant materials centers contributed seed to this study.

Pollinator Habitat

Native forbs at the PMC host an abundance of pollinators that are an integral part of the environment and important for crop production.

Because of the importance of pollinator habitat, the PMC is preparing for a pollinator workshop in June 2010. Enhancement of existing pollinator habitat along with planting additional pollinator species has been completed in preparation of the workshop. A tentative agenda for the meeting includes guest speakers and a tour of pollinator habitat at the PMC. Look for additional information as the date approaches.

Indian Blanket with pollinators

Modoc Cypress

Modoc Cypress (*Cupressus bakeri*), continues to be evaluated as a potential conifer for use in windbreaks. Currently there are two plantings; one at Tribune in western Kansas and the other at the PMC. Initial results at Tribune have indicated good survival along with very slow growth. At the PMC we have had good growth along with some disease and insect pressures that have resulted in some death loss. Initial results from the planting indicate that this species is probably not a good conifer for Kansas and that we need to keep looking and evaluating conifers for windbreak plantings not only in Kansas, but in Nebraska and Oklahoma.

Modoc Cypress, 3 years old

Silverscape Evaluations

Silverscape olive (*Elaeagnus* X 'Jefmorg'), is being evaluated both at Tribune and the PMC. Silverscape is a hybrid between Russian olive and silverberry. It is a medium shrub with a weeping growth habit, moderate growth rate, and attractive silver-white foliage. It produces small silver fruit with non-viable seed and exhibits reduced suckering compared to its parents.

In the 2007 planting at the PMC, silverscape olive has shown excellent establishment and growth characteristics. It has not produced fruit. In the planting at Tribune, silverscape olive has not survived. Evaluation of this shrub will continue.

Silverscape olive at the PMC

Outreach

The Asian population of the Manhattan area gathers each year to harvest hundreds of pounds of chestnuts. In exchange for the chestnuts, each harvester shares part of their harvest with the PMC. The collection of chestnuts enables the PMC to assist with projects and nut demands. The PMC is working on a selection of chestnut for a future release.

Chestnuts

Plant Materials Programs

Each year we have the privilege to share information about the PMP with the public and our customers. This year we were invited to share with several groups in Oklahoma. First, the "To Bridge a Gap Conference" which is a conference involving Native American Tribes in the southeast United States and the United States Forest Service. The second was the Oklahoma Tribal Conservation Advisory Council (OTAC) which includes tribes from across Oklahoma. Many Native American Tribes are very interested in the PMP along with the assistance and knowledge we can share about plant propagation and establishment.

Mark Janzen presenting PMP to OTAC

Training/Tour

The PMC coordinated a plant materials training session for the Nebraska NRCS employees in August. Training was specialized to the needs of Nebraska and included: Cover crops, endangered species, invasive species, wind erosion, review of studies, and an overview of the PMP. Instructors from KSU, Agricultural Research Service, and NRCS served as instructors. Also, included was a tour of the seed cleaning and storage buildings, equipment, greenhouse, and production fields.

Jerry Longren, PMC Technician, explains new seed harvesting and cleaning methods.

Kraig Roozeboom, K-State Agronomy, discusses cover crops.

Who We Are

The PMC is one of 27 centers nationwide that uses plants to solve natural resource problems and is owned and operated by the NRCS. The PMC offers services to a diverse region of the heartland including Kansas, Nebraska, northern Oklahoma, and northeastern Colorado. It is located on 169 acres of sandy loam soil in the Kansas River Valley, south of Manhattan, Kansas.

What We Do

The mission of the PMP is to develop and deliver plant science technology to meet the nation's natural resources conservation needs. The PMP vision: Productive Lands – Healthy Environment. The PMP is recognized as the nation's leading technical source of plant solutions and plant technology to meet natural resource conservation needs. This includes the production of improved varieties of plants for commercial use and the development of plant science technology for incorporation into the FOTG. Plant and technology development objectives of the PMC include:

- Water quality improvement
- Erosion control
- Range and pasture improvement
- Native American outreach
- Plant variety selection and production

Seeking Vegetative Solutions to Conservation Problems

Contact Information

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L-R: Mark Janzen, Richard Wynia, Jerry Longren, Donald Garwood, John Row, Erma Leuthold

PMP Web site:

http://www.plant-materials.nrcs.usda.gov

Foundation Seed Production

The PMC maintains a variety of native grass and forb fields for foundation seed production. Native grass varieties include:

- Kaw big bluestem
- Pete eastern gamagrass
- Osage Indiangrass
- Cheyenne Indiangrass
- Aldous little bluestem
- Cimarron little bluestem
- Garden sand bluestem
- Bend sand lovegrass
- El Reno sideoats grama
- Blackwell switchgrass
- Kanlow switchgrass
- Barton western wheatgrass
- Pronghorn prairie sandreed

Cheyenne Indiangrass

Dotted gayfeather

Native forb varieties include:

- Midas false sunflower
- Sunglow grayhead prairie coneflower
- Prairie Gold maximilian sunflower
- Nekan pitcher sage
- Kaneb purple prairie clover
- Kanoka round-head lespedeza
- Eureka thickspike gayfeather
- Reno Germplasm Illinois bundleflower
- Riley showy partridge pea

PMC Tours

Tours of the PMC are available Monday through Friday during regular business hours. Advance reservations are recommended for group tours.