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Plant Chat

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for NRCS Field Offices in North Dakota, South Dakota, and Minnesota

Saline Tolerant Hybrid Poplar Study

Seven crosses of poplar were planted this spring in a randomized design to determine if the plants are as tolerant of field salinity as they are of laboratory salinity. Since some of the clones showed initial laboratory tolerance to 9 mmhos/cm salinity, performance to even half that level would be better than many of the species currently in ND, SD and MN Field Office Technical Guides. Initial death and survival should become apparent by fall. Future survival analysis will document impacts of salinity as the trees' expanding root systems seek more water and nutrients.

Sage Malingen and Jenna Mehlhoff install 6-foot fabric squares on a saline tolerant poplar study.

Restoring Cottonwood to the Missouri River Corridor

Since dams on the Missouri River system have dewatered free flowing sections of the flood plain, many are concerned about the eventual demise of the riparian cottonwood forest. A study was initiated last year to evaluate three stock types (conservation, deep pot, and unrooted cuttings) as a means to reestablish cottonwood on these sandy dry soils.

In 2013, the deep pot stock (potted stock planted with the root mass 4 feet deep) showed the best performance while the 6-foot unrooted cuttings had less than 10% survival. Perhaps the unrooted cuttings failed because the ends of the cutting were 2-6 feet above the water table.

This year, three additional sites were planted using similar material and techniques. These sites had water tables within 3-7 feet of the soil surface. After one month, most of the unrooted cuttings were alive with quite a few at the top of four foot tall tree shelters. That is quite amazing, considering only 2-6 inches of the cutting were sticking out of the ground after planting.

These are preliminary observations. Additional data will be collected and analyzed over the next 2-3 years to determine the method with the most promise for cottonwood forest restoration.

Cover Crop Demonstration Planted at the PMC

A demonstration showcasing 36 individual cover crop species was planted this spring at the PMC. Although its primary purpose is plant identification, plots will be monitored for emergence, weed competition, seed production, pollinator use, and forage biomass. Visitors are welcome for tours and training. Come take a look!

Three Conifers for Field Plantings

Field plantings are the real world test of species adaptability. Promising plants are tested on a variety of soils under various management conditions. Only after field planting success do species become part of the Field Office Technical Guide.

In 2014, more tree seedlings were distributed for field plantings than at any time in the recent past. Approximately 65 producers agreed to plant and monitor 1625 seedlings of the following species:

- Mongolian Scotch pine -- may have some resistance to pine nematode which has been devastating Scotch and Austrian pine across the Midwest
- Meyer's spruce -- requested by field offices as an alternative to Colorado blue spruce
- Lodgepole pine -- a tall conifer that has potential for the western Dakotas and has performed well the past 30 years at the USDA-ARS station in Mandan, ND

Within 5-10 years, evaluation data should indicate adaptability of a species to specific soils and climates.

Including the newly established field plantings, there are a total of 95 cooperators with 156 active field plantings. Any offices with active field plantings will be receiving evaluation forms soon. Please complete and return according to instructions. Questions related to evaluations can be directed to Wayne Markegard, Plant Materials Specialist. The assistance of field office staff and their cooperators is greatly appreciated!