North Dakota State University * Dickinson Research Extension Center
1089 State Avenue, Dickinson, ND 58601-4642 Voice: (701) 483-2348 FAX: (701) 483-2005

EVALUATION OF SHELTERBELT RENOVATION ALTERNATIVES

Jerry Larson, Extension Agent/Stark-Billings County
Vern Quam, NDSU Extension Horticulture/Forestry Specialist
Josh Dohrmann, Extension Agent-in-Training/Stark-Billings County
Bonnie Twogood, Central Stark/Western SCD
George Stull, Central Stark/Western SCD

SUMMARY

The past years of drought, additional environmental stresses and other factors have caused deterioration of the health of area shelterbelts. Increased concerns are being expressed by producers on how to deal with declining shelterbelts and methods/alternatives of shelterbelt renovation.

In response to this increased concern, a collaboration was organized to establish a shelterbelt renovation evaluation demonstration. Cooperators include the Central Stark and Western SCDs, the Stark-Billings County Extension Office, the Dickinson Research Extension Center, NDSU Department of Plant Sciences, Dickinson Parks and Recreation District, the Soil Conservation Service, the Master Forestry Volunteers and other individuals. Project participants prepared and submitted a proposal for a North Dakota Forest Service Windbreak Renovation Grant. The proposal was approved and a $1,000.00 matching grant was received.

The shelterbelts located at the Dickinson Research Extension Center were selected as the site for this project. The 35 acres of ninety-year-old windbreaks are showing the effects of previous stresses. The location provides good public access to be utilized in the future for educational programs.

PROJECT OBJECTIVES

- To evaluate renovation alternatives that may be utilized by area producers in dealing with shelterbelts in decline.
- To evaluate the response of different tree species in a renovation environment.
- To compare tree establishment under different weed control practices including chemical, mechanical weed barriers and with no control.
- To compare methods of planting by machine and hand planting.

MATERIALS AND METHODS:

Dead trees within the renovation site were removed by early June. The majority of activity this summer dealt with site preparation for the planting of trees next spring.

Site preparation involved spraying Roundup to burn down perennial grasses and other weeds. Herbicide applications were made in September and October. Tillage will be conducted next spring prior to planting. The major share of this planting will receive weed barrier to aid in establishment.

RESULTS AND DISCUSSION:

Cooperators in this project have met on several occasions to finalize the master plan for this shelterbelt renovation project. In addition to evaluation of various shelterbelt renovation alternatives, it is the consensus to place emphasis on the evaluation of the performance of different tree species in an interplanting situation.

Tree species to be included in this renovation project are: nannyberry, cranberry, juneberry, Ohio buckeye, black walnut, Douglas fir, Siberian larch, Colorado blue spruce, ponderosa pine, eastern red cedar and rocky mountain juniper. A total of 1,800 feet of trees will be planted.

This year, 370 feet of Douglas fir were hand planted in an existing shelterbelt area and will be included as a part of our renovation study. This year's performance is included in the Evaluation of Douglas Fir Report which was compiled by Vern Quam.

Our local responsibility for the windbreak renovation grant has been met. This was achieved through in kind

contributions from volunteers and labor provided by research extension center personnel in removal of dead trees and site preparation work. Roundup used for burn down herbicide treatments was donated by the Monsanto Chemical Company.

The cooperation that is taking place with project participants has been outstanding. With this type of cooperation, the potential for a successful windbreak renovation evaluation study is enhanced.

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Email: drec@ndsuext.nodak.edu
