EVALUATING EFFLUENT AND CANAL WATER IRRIGATION FOR WOOD BIOMASS PRODUCTION AND PHYTOTECHNOLOGY

N. Larry White

Saskatchewan Forest Centre

Irrigation provides an opportunity to produce increased volumes of wood biomass and identify phytotechnology applications. There are currently up to 500,000 underutilized irrigable acres in the irrigation area of Saskatchewan where woody crops could be grown. If landowners are to grow biomass tree crops in the future, there must be a positive economic return. The unknown is the potential yield of various tree crops under dryland and irrigation management systems. Projects are under way to evaluate the yields of hybrid poplar, willow, and various other tree species using secondary cell effluent water and clear canal water from the Saskatchewan River. These projects will help to identify those species which do well under irrigation and will identify future genetic improvement needs under an irrigation regime. The two sources of water are being used to evaluate the performance of two different types of irrigation systems: a) a trickle system and b) a microsprinkler system. In addition three different systems will be used to determine soil moisture levels, which in turn will determine the application rates for irrigation water. The projects will help communities better understand the technology involved in using irrigation to dispense with effluent water in an environmentally safe manner. More than 100 communities in the Province could potentially benefit from this technology. A secondary benefit of using trees to dispose of the effluent water is the production of a marketable wood product. The projects will further demonstrate to communities the use of trees for phytotechnology applications.

KEY WORDS: irrigation, phytotechnology, effluent management, hybrid poplar, willow

*Contact information: 101-1061 Central Avenue, Prince Albert, SK, S6V 6K7, Canada; E mail: lwhite@saskforestcentre.ca