

WATER CONSUMPTION PATTERN AND LAND AMELIORATION EFFECTS OF SELECTED SALIX PLANTS UNDER FIELD CONDITIONS

Linus Zhang
Lund University,
Sweden

Abstract

Short rotation willow coppice (SRWC) has been used in many countries either as a vegetation filter for wastewater treatment or as an alternative to fossil fuel. Numerous researches reported the ability of SRWC to take up pollutants such as heavy metals and excess nutrients from the soil. However, no study or field experiment has been done for growing SRWC in semi-arid areas irrigated by mineralized marginal or saline water. The purpose of the current paper is to evaluate the possibility using saline water in wasteland in semi-arid zones to grow SRWC for the purposes of both land amelioration and ecological restoration. A field experiment was undertaken to explore the new approaches of using the saline resources (saline water and saline soil) with five selected species of SRWC (3 Swedish and 2 Chinese Salix species). The contents of the project are to evaluate feasibility of cultivation of SRWC with saline water; to investigate Salix species' adaptation, drought-resistance, salt-tolerance; to determine safety standard of saline water use and water consumption of different Salix species and finally to provide feasible, scientific decision-making guidelines for saline water use and environmental restoration in arid and semi-arid areas.