



2009 CSREES National Water Conference; St. Louis, MO

Water Quality of Subsurface Drainage in Salinized Soils of Eastern North Dakota

Roxanne Johnson*
North Dakota State University
roxanne.m.johnson@ndsu.edu

Abstract:

Following ten years of higher than average precipitation, agricultural land owners in eastern North Dakota have installed tile drains to remove excess soil moisture and to reduce the impact of salinization to their crops. While subsurface drainage is common in many areas of the country, not many have been installed in saline soils; such as those in eastern North Dakota's Red River Basin. Questions regarding drain effluent properties and their impacts to the Red River of the North and downstream at Lake Winnipeg in Canada have increased as drained acres rise. Following advisory meetings with partners in the tile drain industry, producers, agencies, and soil and water specialists, a 319 Nonpoint Source Pollution grant was obtained by NDSU and sampling at 19 sites (10 land owners) in Cass County in North Dakota was initiated in the early spring of 2008. The data from the first year of monitoring will be shared at this session and a discussion of how partnerships have made this project move from a one year/one soil conservation district project to a 5 year/8 soil conservation district project, with expanded parameters will be discussed.

Impact Statement:

Partnerships become much easier to form when many natural resource groups and individuals have a common goal. In our quest to understand how a new agricultural practice may influence the quality of public waters in the U.S. and Canada, many entities have come together to develop a plan of action to monitor effluent from tile drains in highly salinized soils in the Red River Basin of North Dakota. Partners such as land owners, Soil Conservation Districts, Water Boards, ND State Water Commission, NDSU soil scientists, hydrologists, agricultural engineers, and economists, ND Department of Health and EPA, tile drain owners, NRCS, RC&D's and others have all contributed, either in the planning process or with financial assistance to move this project forward. The knowledge of these individuals will be instrumental in assessing any impacts and developing BMPs to change behaviors.

Category: Other Water Resource Topics

Type of Presentation: Oral Presentation