CSREES National Water Quality Program

Title: South Dakota Water Quality Activities: Assisting producers conduct on-farm research

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Organization: South Dakota State University

State: SD **Region:** Northern Plains and Mountains **Year of Funding:**

Theme: Nutrient and Pesticide Management

Situation: Given the large number of options available for each decision, managers must be very careful to select appropriate management strategies that increase profitability without adversely affecting the environment. Successful land management is not accomplished by implementing independent management recommendations, but rather implementing management recommendations that account for interactions among plants, soil, and the environment. Given that each producer has a unique management style, the most efficient approach for improving the management decision process may be to assist producers conduct-on-farm research.

Objectives: The overall objective of the South Dakota water quality coordination team is to coordinate water quality efforts within and between other states in Region 8. Activities partially funded by Region 8 Water Quality project are: manure management training, K-12 environmental awareness training, precision farming, BMP development, on-farm-research training, updating and developing new Site Specific Management Guidelines, developing state wide spatial and temporal data sets, and providing resources for quick response to emergencies. This poster will only discuss the need for on-farm-research training for producers and county extension educators.

Methods: Producers and county extension educators are trained in how to conduct on-farm-research. This training includes: (i) the need for identifying a hypothesis; (ii) statistical analysis; (iii) how to collect unbiased data (remote sensing, soil sampling, and yield monitors); (iv) how to use GIS and simple statistical analysis program; and (v) presentation of finding to other agronomic professionals.

Partnerships: This project has encouraged the development of improved relationships between environmentalist, agronomists, agribusiness, and state-agency personnel. Current partners on the project include the Potash and Phosphate Institute, SD Corn Utilization Council, SD Soybean Research and Promotion Council, NASA, USGS, SD Department of Agriculture and South Dakota Department of Environment and Natural Resources, NRCS, Independent Crop Consultants, Resource 21, UMAC, United Soybean Board, and USDA-CSREES. Currently annual planning meetings and statewide symposium is held every two years. Members of the above develop the program for the symposium.

Research: Linking research, teaching, and educational activities are a basic concept in this project. The collaboration function by delivering useful information products to the growers and other end users, and partnering academics with end users in the interpretation and analysis of on-farm-research. Collaboration between students, producers, and agricultural professionals are intended to link on-farm-research conducted by producers and their advisors on crops, soils, weeds, nutrients, diseases, and insects with university scientists. Findings from these studies are used to develop case studies that are shared with students.

Resources: This project has a number of cooperating agencies that are contributing financial support. Many of these agencies are listed above. One of the largest contributions that have been made is the time and effort of collaborating farmers. These producers are willing to take time out of their busy schedules to attend training sessions, visit with other producers and scientists, review guideline papers, share results from their studies with other producers at producer meetings, and conduct on-farm-research.

Results: County extension educators and producers that use on-farm-research to improve their management decisions. These producers have shared results from their studies with other producers at meetings. Improved linkages between county extension educators, producers, and university scientists.

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