



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2004IA62B

Title: Identification of Relationships Between Soil Phosphorus and Phosphorus Loss Through Tile Drainage to Improve the Subsurface Drainage Component of the Iowa Phosphorus Index

Project Type: Research

Focus Categories: Surface Water, Water Quality, Nutrients

Keywords: Phosphorus, subsurface drainage, water quality, environmental soil testing

Start Date: 04/01/2004

End Date: 03/31/2005

Federal Funds: \$17,000

Non-Federal Matching Funds: \$34,494

Congressional District: 3rd

Principal Investigators:

Mallarino, Antonio P.
Iowa State University

James L. Baker

Ramesh Kanwar

Abstract

Many questions related to the impact of current phosphorus (P) management practices on P-related water quality problems are being asked by the public, government agencies in charge of nutrient regulations, producers, and researchers. Because of inappropriate P fertilizer or manure management or the need to dispose of manure, excess P often is delivered from agricultural fields to water resources. For example, the Iowa Department of Natural Resources (IDNR) has established that most Iowa lakes are seriously impaired by elevated P concentrations (Olson and Van Gorp, 2003). The Environmental Protection Agency (EPA) is developing new regulations concerning P levels in lakes and streams. The National Resources Conservation Service (NRCS) and state agencies (such as IDNR) have developed or are developing guidelines for fertilizer and manure management based on P, in addition to existing guidelines based on nitrogen (N). These guidelines are based

on P risk assessment tools, often referred to as P indexes. The P index considers a variety of factors that influence P loss from agricultural fields. Although a P index has been developed for Iowa and many other states, the gaps and insufficient information of some processes have created a great deal of uncertainty in some P index components. Two co-investigators of this proposal (Mallarino and Baker) were prominent members of the team that developed the Iowa P index (Iowa NRCS, 2001; Mallarino et al., 2002b).