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Implementation of Best Management Practices in the Little Arkansas River Watershed

Daniel Devlin, Philip Barnes, Ron Graber, Rick Schlender, Dale Ladd

Abstract Text:

The Little Arkansas River watershed is located in central Kansas. Ninety-seven percent of the land area in the watershed is in agricultural uses. Approximately 67% of the waterways in this watershed do not meet their designated uses. The most common pollutants for rivers and streams include fecal coliform bacteria, excess nutrients, atrazine herbicide, and sediment and total suspended solids. The local watershed stakeholder group determined in 2004 that the top priority for implementation was to reduce atrazine herbicide concentrations in surface waters. Three watersheds in 2006 and five watersheds in 2007 within the Little Arkansas River watershed were targeted for rapid implementation of best management practices (BMPs) for atrazine herbicide. An education and demonstration program, surface water monitoring plan, and incentive program for atrazine BMP implementation were developed and delivered during 2006 and 2007 to the targeted watersheds. Grain sorghum acres were targeted in 2006 while both grain sorghum and corn acres were targeted in 2007. The education and demonstration program focused on teaching atrazine BMPs to farmers, pesticide dealers and applicators, and consultants in the watershed. Thirteen crop consultants were trained on atrazine BMPs. Fifty-four farmers were trained in 2006 and 67 farmers were trained in 2007. A publication, "Atrazine Best Management Practices for the Little Arkansas River Watershed," was developed and distributed to explain atrazine runoff and BMPs. Integrated agricultural management BMP demonstration/research sites were developed at three farmer field sites to study and demonstrate the effectiveness of BMPs for pesticides, sediments, and nutrients. The city of Wichita and the State Conservation Commission provided funding for incentive payments to farmers for implementing atrazine BMPs. Payments were based on the amount of pollutant reduction practices the farmers were willing to implement. A KSU extension agronomist visited on-farm with farmers to get their commitment to implement atrazine BMPs. Forty-one farmers implemented atrazine BMPs in 2006 and received incentive payments. Seventy-two farmers implemented atrazine BMPs in 2007. A total of 4,792 acres in 2006 and 10,512 acres in 2007 had atrazine BMPs implemented as a result of this program. A paired watershed study was designed to determine water quality improvements with BMP implementation. An automated surface water monitoring system was installed in the streams at the base of the watersheds targeted for BMP implementation and also at the base of two adjoining watersheds. The adjoining watersheds had no special programs for BMP implementation so can serve as check watersheds to determine water quality improvements in the targeted watersheds. Water quality monitoring of treated and untreated watersheds found approximately 40% and 17% lower atrazine concentrations in 2006 and 2007, respectively, in streams in targeted watersheds in which best management practices had been implemented.

Impact Statement:

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