



## USDA-CSREES 2007 National Water Quality Conference

### Implementation of BMPs in the Little Arkansas River Watershed

The Little Arkansas River watershed is located in central Kansas. Ninety-seven percent of the land area in the watershed is in agricultural production (78% cropland and 19% grazingland). Approximately 52% of the rivers and stream segments require TMDLs. Fifty percent of the lakes require TMDLs. A water restoration and protection strategy (WRAPS) was completed in November 2004 by a watershed stakeholder group consisting of landowners, agency personnel, and other citizens. The local stakeholders in the watershed identified implementation goals needed in order to achieve the desired endpoint of overall water quality improvement. Once the WRAPS strategy was completed, implementation began. The watershed stakeholders group's top priority for implementation was to reduce atrazine herbicide in water to reach their goal of 3 µg/L, with no seasonal spikes. A decision was also made to target three smaller watersheds within the Little Arkansas River watershed in order to document water quality improvements. The watersheds selected were: Dry Turkey Creek (23,290 acres), West Upper Emma Creek (30,300 acres), and Black Kettle Creek (19,790 acres). An education and demonstration program, surface water monitoring plan, and incentive program for BMP implementation were developed and delivered during 2006 to the three watersheds. Grain sorghum acres were targeted, as past research indicated that atrazine BMP implementation would have greatest impact on atrazine applied to grain sorghum. An education and demonstration program taught atrazine BMPs to farmers, pesticide dealers and applicators, and consultants in the watershed. Integrated agricultural management BMP demonstration/research sites were developed at three farmer field sites in McPherson County to study and demonstrate the effectiveness of BMPs for pesticides, sediments, and nutrients. At each site, several different BMPs were demonstrated and automated samplers to catch samples of runoff were installed. The BMP sites were also used as demonstrations to show farmers the crop production and weed control effectiveness of the various BMP options. A KSU extension agronomist visited on-farm with farmers, instructing them on water quality concerns and atrazine BMPs and getting their commitment to implement atrazine BMPs. The city of Wichita and the Kansas State Conservation Commission each provided \$10,000 (total \$20,000) for incentive payments to farmers for implementing atrazine BMPs on grain sorghum fields located within the three targeted watersheds. Payments were based on the amount of pollutant reduction practices the farmers were willing to implement, with a maximum payment of \$6.00 per acre. An extension agronomist visited on-farm with farmers to get their commitment and sign up to implement atrazine BMPs. A automated surface water monitoring system was installed in the streams at the base of the three watersheds targeted for BMP implementation

and also at the base of two adjoining watersheds. The adjoining watersheds had no special programs for BMP implementation and can serve as check watersheds to determine water quality improvements in the targeted watersheds. Forty-one farmers committed to implementing a trazine BMPs and receive incentive payments. \$19,243 in incentive monies were committed to the participating farmers.

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