

**TEKTRAN**

POLYACRYLAMIDE EFFECT ON FURROW EROSION AND INFILTRATION

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Interpretive Summary:

Erosion during furrow irrigation is a serious problem in southern Idaho and several other areas in the western U.S. Soil erosion reduces crop production and runoff water carries sediment and nutrients to lakes and streams. Polyacrylamide, a long chain polymer, stabilizes soil and can reduce erosion in irrigation furrows. Sediment movement and infiltration was measured in a recirculating furrow infiltrometer with polyacrylamide added to the irrigation water. The results confirmed earlier field studies in which irrigation water-applied polyacrylamide in very low concentrations (0.7 kg/ha per application) dramatically reduced furrow erosion. Polyacrylamide is an economical (about \$20/ha per season) method to control furrow erosion. Polyacrylamide also increased infiltration, probably the result of reduced sediment movement and less furrow surface seal formation. Farmers who use polyacrylamide to control furrow erosion must adapt their irrigation management to the higher infiltration to maintain desired irrigation efficiencies.

Keywords:

conservation tillage production efficiency cropping systems irrigated land computer models nitrate leaching groundwater quality irrigation systems surface water quality

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