# PAM for Sequestering Weed Seed in Irrigation Runoff. (S06-sojka160205-Oral)

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## Abstract:

Anionic polyacrylamide prevents erosion and maintains infiltration of furrow-irrigated fields. Recent studies also show PAM prevents movement of microorganisms away from PAM-treated fields in runoff. We hypothesized that PAM treatment of irrigation water might also sequester weed seed. A two year study in furrow irrigated silage corn was conducted with PAM applied either as a predissolved 10ppm slug during advance or as a 28 gram powder patch applied to the dry furrow. Corn plots had either no herbicide treatment or had either metolachlor or EPTC+safener soil-preplant-incorporated. Sediment loss was 3-7x greater without PAM. Both PAM treatments performed the same in all respects. Herbicide treatment doubled sediment loss. PAM reduced weed seed loss 49 and 93% in the two years of study. Herbicide choice did not affect seed movement. Seed loss was greatest at water advance, wich was 44% longer with PAM. Weed counts were higher with PAM because germinating seed was not eroded away. No-herbicide plots acted as mulched plots, retaining sediment and weed seed. Use of PAM prevents erosion and prevents transfer of seeds via runoff across fields or to other fields, but demands stricter attention to layby weed control because stabilized soil favors weed germination.

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## Presentation Information:

Presentation Date: Monday, November 11, 2002

Presentation Time: 9:20 am

**Keywords:**
polyacrylamide, erosion, runoff, water quality