# An Evaluation of Polyacrylamide and Surface Hydrologic Effects on Runoff Water Quality. (S06-huang161748-Poster)

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## Abstract:

Polyacrylamide (PAM) and surface hydrologic condition are known to affect sediment and runoff water quality as individual factors, but their combined effects have not been quantified. In this study, we quantified the interactive effects of PAM and three near-surface hydrologic conditions: drainage, saturation, and seepage, on sediment, nitrogen (N) and phosphorus (P) discharge under a simulated rainstorm. Results showed that PAM application reduced N and P loading in runoff. The reduction ranged between 26 to 71%, depending on the surface hydrology. N loading was increased under saturation and seepage conditions, as compared to those under the drainage condition. Analysis of surface soil samples showed more extractable phosphorus was retained under conditions where PAM was applied and soils were allowed to freely drain than soils without PAM and under saturation and seepage conditions. Nitrate concentrations at the surface were greater for soils with high water tables than those allowed to drain freely. These data showed that improved infiltration or soil drainage through either subsurface tiles or soil amendments could minimize the chemical loading in surface runoff.

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