Snowmelt Runoff as a Transport Factor in a Phosphorus Site Index. (S06-hansen112152-Poster)

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Abstract:

In cold climates, snowmelt runoff can be an important vehicle for P loss from agricultural systems to surface waters. A phosphorus site index is presented that includes snowmelt runoff as a transport factor. The Minnesota P Index evaluates risk based on three transport pathways, particulate P in erosion, soluble P in rainfall runoff, and soluble P in snowmelt runoff. Snowmelt transport risk is evaluated based on historical snow depth records and on the roughness of the soil surface as a result of fall tillage practice. Smooth surfaces with no fall tillage have a higher transport risk from snowmelt than surfaces with roughness elements from fall tillage. Sources of P in snowmelt runoff include crop residue and winter applied fertilizer or manure. The snowmelt runoff pathway interacts with risk factors during the growing season to identify overall risk of P loss to surface water.

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