Temporal Variability Of Agrochemicals In A Riparian Wetland. (A05-rice164128-Oral)

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Abstract:

Pesticides that have been detected in a riparian wetland appear to come from at least two distinct sources: surface inputs and groundwater. The study site, part of a small agricultural watershed, includes a 1st-order stream that is primarily fed by local groundwater inputs. This is reflected in the pesticide constituents detected in the stream water, consisting mostly of pesticide degradation products contributed by the groundwater, and very little of the parent compounds Metolachlor and Atrazine. Nitrate data are consistent with this. However, during storm events, significant amounts of parent compounds are detected in the stream in the early portions of storm hydrographs, indicating a large influence of surface inputs on stream dynamics. These parent compounds themselves are contributed by at least two sources: direct runoff from the agricultural field, and pesticides washed off the tree canopy (stemflow and throughfall). The later parts of storm hydrographs show decreasing levels of parent compounds and increasing levels of degradation products. Rain events following pesticide applications yield the highest amounts of parent compounds in field runoff, stemflow, and stream water.

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