



Phosphorus dynamics in a Korean mixed agricultural catchment during storm events

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The phosphorous (P) dynamics in runoff from a 6.7-km² mixed agricultural catchment (82% forest, 7% paddy field, 9% upland, and 2% others) in South Korea were investigated for five storm events. Total phosphorous (TP) and total dissolved phosphorous (TDP) concentrations were significantly proportional to the total runoff discharge. Total particulate phosphorous (TPP) showed a stronger first flush phenomenon than TDP, suggesting that much of particulate phosphorus washes off at the beginning of storms. Stormflow and baseflow was separated by the constant-discharge method from total runoff. TDP accounted for 60-75% of TP exported in baseflow, but 24-34% of TP in stormflow. Moreover, the ratio of mean TP concentration between stormflow and baseflow (7.6) in the study area was much higher than that (1.6) reported in a flooded paddy field catchment. The results suggest that the majority of the P lost from the study catchment may come from highly fertilized uplands despite small area proportions of uplands.