

Simulation on Agricultural Non-point Sources Pollution Based on SWAT Model in Dahuofang Reservoir Catchment, China

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Abstract: This study was to simulate the agricultural non-point source pollution input of Dahuofang reservoir in China based on export coefficient method and SWAT model, and the simulation model was calibrated and verified by the monitoring data of hydrology and water quality from 2006 to 2009. The results of model evaluation showed that the annual load of sediment, total nitrogen and total phosphorus was 82.65×10^3 t, 1873.49 t and 81.97 t. Besides, the monthly amount of the load was strongly relevant with runoff. The generation and migration of ANSP was substantially influenced by the rainfall and runoff. The loss of sediment, nitrogen and phosphorus was up to the maximum in July and August each year, accounting for 67.91%, 42.64% and 44.42% of the annual loss amount respectively. The contribution rate of nitrogen and phosphorus pollution caused by the reservoir catchment area as Hun River, Suzi River, She River and small rivers was descending.

Keywords: Simulation; SWAT model; Agricultural Non-Point Source Pollution; Reservoir