Erosion and Sediment Yields in the Changing Environment (Proceedings of a symposium held at the Institute of Mountain Hazards and Environment, CAS-Chengdu, China, 11–15 October 2012) (IAHS Publ. 356, 2012)., 91-97

Dynamics of sediment delivery in drain flow on clay soils across England and Wales

YUSHENG ZHANG, ADRIAN L. COLLINS & JOHN R. WILLIAMS

ADAS, Pendeford House, Wobaston Road, Wolverhampton WV9 5AP, UK
yusheng.zhang@adas.co.uk

Abstract A large area of agricultural land across England and Wales is on drained clay soils. Field drains have been shown to be an efficient pathway for the delivery of sediment and associated agricultural pollutants to watercourses. As part of a major monitoring programme on agricultural diffuse pollution, sediment samples were collected from hydrologically-isolated experimental plots at two sites in England from 2007 to 2009. Temporal variations in drain sediment loss for different land use and soil types were examined and relationships between drain flow and sediment concentration were also explored. The data analysis has shown that there are significant contrasts between the two soil types under investigation and that the observed sediment concentrations are often above the limits set for freshwater fish. Efforts are being made to characterize the observed patterns with respect to soil and climate conditions to assist extrapolation to national scale for policy support purposes.

Key words sediment loss; field drains; clay soils; plot experiments