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Adsorption and degradation of sulfadiazine and sulfamethoxazole in an agricultural soil system under an anaerobic condition: Kinetics and environmental risks

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1 **Adsorption and degradation of sulfadiazine and sulfamethoxazole in an agricultural**
2 **soil system under an anaerobic condition: Kinetics and environmental risks**

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12 **ABSTRACT**

13 Sulfonamides, one of the commonest antibiotics, were widely used on humans and
14 livestock to control pathema and bacterial infections resulting in further environmental risks.
15 The present study evaluated the adsorption and degradation of sulfadiazine (SDZ) and
16 sulfamethoxazole (SMX) in an agricultural soil system under an anaerobic condition. Low
17 sorption coefficients (K_d , 1.22 L·kg⁻¹ for SDZ and 1.23 L·kg⁻¹ for SMX) obtained from
18 Freundlich isotherms experiment indicated that poor sorption of both antibiotics may pose a
19 high risk to environment due to their high mobility and possibility of entering surface and

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