SOCIAL BEHAVIOUR IN *EISENIA FETIDA* (OLIGOCHAETA, LUMBRICIDAE)

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Eisenia fetida is important ecological earthworm species that is commonly used in industrial vermiculture and vermicomposting and is the model species for ecotoxicological research. Chemical ecology and behaviour of this earthworm are poorly studied. Therefore this information is essential to understand *E. fetida* life and to enhance our biological knowledge. As a first step to achieve such understanding, we focus our study on the interaction between *E. fetida* individuals in a two-arm olfactometer and we try to understand the mechanism of interaction with a two choices device. The number of earthworms in each arm was recorded after a given time and the obtained distribution was compared to a theoretical distribution to determine whether positive interactions exist between *E. fetida* earthworm individuals. Finally, results were validated by theoretical simulations.
For the first time, *E. fetida* earthworm's cooperation behaviour has been found as earthworms choose direction. We have proved that contact between individual earthworms plays an important role in cooperation behaviour.