

## Clusters formation in *Eisenia fetida* (Oligochaeta, Lumbricidae)

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Earthworms represent up to 70 per cent of soil biomass and are the major representatives of the drilosphere and the detritusphere. More particularly, *Eisenia fetida* is an important ecological earthworm specie that is commonly used in industrial vermiculture and vermicomposting and is the model specie for all scientist ecotoxicological researches. Moreover, like some other lumbricids, *Eisenia fetida* lives in patchy distribution and in rearing conditions some earthworms group are observed. These earthworms groups are often maintained by contact between individuals and some earthworms balls can be formed out of soil or in rearing substrates. However, chemical ecology and behaviour of this earthworm are poorly studied. Therefore this information could have an important impact on soil ecology's and on fundamental earthworm biology's knowledge.

As a first step to achieve such understanding, we have focused our study on intra-specific interactions in *E. fetida* to explain earthworms group formation. We have explored two mechanisms of earthworms groups formation: retention of individuals and earthworms attraction by conspecifics in circular arena and in two-arm olfactometer. We have proved that retention between individuals maintains group formation and that one earthworm is attracted by an earthworms group.

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