

Survey of literature for worms

Year 2006

Authors: Curry, J. P., Schmidt, O.

Title: The feeding ecology of earthworms - a review.

Source: Pedobiologia (2006), 50(6):463-477.

Language: English

Address: School of Biology and Environmental Science, University College Dublin, Belfield, Dublin 4, Irish Republic.

Abstract: Current knowledge of earthworm feeding ecology is reviewed, with particular reference to food selection, ingestion, digestion and assimilation, and the use of novel techniques to advance understanding of the functional significance of these processes. Traditional research methods including direct observation of feeding behaviour, gut content analysis, choice tests, and litter bags have provided a wealth of information on earthworm feeding. However, there is a lack of the mechanistic, quantitative information required to characterise adequately their functional role in soil ecosystem processes such as soil C sequestration and loss, decomposition of organic residues, the maintenance of soil structure and trophic interactions with plants and microorganisms. Stable isotope ratio analysis of light elements offers a powerful research tool to reveal and quantify trophic relationships of earthworms in soil food webs, while molecular techniques can further enhance understanding of the interactions between earthworms and microorganisms and their functional significance

Authors: Velando, A., Dominguez, J., Ferreiro, A.

Title: Inbreeding and outbreeding reduces cocoon production in the earthworm *Eisenia andrei*.

Source: European Journal of Soil Biology (2006), 42(suppl. 1): 354-357

Language: English.

Address: Departamento de Ecología e Biología Animal, Universidade de Vigo, Vigo, 36310, Spain.

Abstract: Earthworms are animals with reciprocal insemination. *Eisenia andrei* is a simultaneous hermaphroditic earthworm that lives in manure heaps at high densities, with low opportunities of dispersal, thus very close inbreeding is expected. As the negative effects of inbreeding and outbreeding may be severe, we studied whether *E. andrei* adjusts its breeding effort according to the degree of mate relatedness. To test this, we performed experiments in which earthworms were mated with their sibs and with non-sibs from the same population and no-sibs from a geographically isolated population. Inbreeding and outbreeding matings caused a strong reduction of cocoon production, especially in genetic lines with high reproductive rates. Optimal outbreeding should be considered a crucial point in the management of breeding populations for applied purposes.

Authors: Kostecka, J., Paczka, G.

Title: Possible use of earthworm *Eisenia fetida* (Sav.) biomass for breeding aquarium fish.

Source: European Journal of Soil Biology (2006), 42(suppl. 1): 231-233.

Language: English

Address: Institute of Natural Bases for Agriculture, Economy Department, Rzeszow University, 35-959 Rzeszow, Cwiklinskiej 2 str., Poland.

Abstract: The aim of this research was to find further arguments advocating the idea of vermicomposting in household and school conditions. An alternative use of *Eisenia fetida* biomass was feeding it to aquarium fish (*Poecilia reticulata*). Fish were bred in two groups, each with six specimens of both genders. The control group consisted fish fed on standard food whilst the treatment group was fed on earthworm biomass. Compared to those fed on a standard food, earthworm-fed fish increased brood number significantly and produced twice the offspring.

Authors: Karabrantanal, S. S., Awaknavar, J. S.

Title: Impact of fertilizers on growth and development of earthworm, *Eudrillus eugineae* under in situ vermiculture.

Source: Journal of Ecotoxicology & Environmental Monitoring (2006), 16(3): 267-271.

Language: English.

Address: Department of Agricultural Entomology, University of Agricultural Sciences, Dharwad 580 005, Karnataka, India.

Abstract: A field experiment was conducted to determine the effects of different fertilizers (urea, NPK (15:15:15), diammonium phosphate (DAP), muriate of potash and single superphosphate) on the growth and reproduction of the earthworm *Eudrilus eugeniae* under in situ vermiculture. The highest values for earthworm length, weight and survival (17.20 cm, 73.35 mg and 90.7%, respectively) were recorded under the urea treatment at 45 days after release (DAR). Reproduction was optimum at 90 DAR. It was closely followed the complex fertilizers (NPK and DAP). The potassium and phosphorus fertilizers least influenced the earthworm biomass and reproduction.