

## IMPACT OF DIFFERENT ORGANIC FOOD SOURCES ON THE GROWTH AND REPRODUCTIVE PERFORMANCE OF COMPOSTING EARTHWORMS *EISENIA FETIDA* AND *PERIONYX SANSIBARICUS*

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**ABSTRACT :** The present assessment has been designed to study the effect of different organic waste material *viz.*; leaf litter and kitchen waste plus goat dung (1+1+2), fennel straw plus cow dung (1+1), groundnut straw plus cow dung (1+1) and castor straw plus cow dung (1+1) used as bedding mixture on growth and different life cycle stages of composting epigeic earthworm species (Oligochaeta) : *Eisenia fetida* and *Perionyx sansibaricus* under laboratory condition for 90 days. Evaluation of their life stages in a particular bedding mixture may be beneficial for large-scale earthworm production. Rapid maturity rate 29.34±1.45 day and incubation period of cocoon 10.33±0.34 day of *Eisenia fetida* was observed in groundnut straw plus cow dung bedding, while earlier maturity rate 41.00±3.05 day and incubation period of cocoon 13.00±0.55 day of *Perionyx sansibaricus* recorded in leaf litter and kitchen waste plus goat dung containing culture. High cocoon production rate was noted in *Eisenia fetida* (1.88±0.02 worm/week) in the groundnut straw plus cow dung bedding and in *Perionyx sansibaricus* (1.21±0.25 worm/week) in leaf litter and kitchen waste plus goat dung bedding. Maximum number of cocoon hatchling of *Eisenia fetida*, 3.69±0.06 no/cocoon was observed in culture containing groundnut straw plus cow dung bedding and in *Perionyx sansibaricus* highest hatchling success rate was recorded 2.28±0.08 no/cocoon in leaf litter and kitchen waste plus goat dung bedding. The biomass growth of *Eisenia fetida* and *Perionyx sansibaricus* also observed and it was higher in groundnut straw plus cow dung and leaf litter and kitchen waste plus goat dung bedding material respectively. Both the species performed poorly in bedding containing castor straw plus cow dung organic material. The present result concludes that the growth and reproductive strategy of worms shows suitability in a particular organic waste material.

**Key words :** Epigeic, Life cycle, Culture, Hatchling, Bedding material.