

VERMICOMPOSTING OF RABBIT MANURE FOR SUSTAINABLE ORGANIC WASTE MANAGEMENT AND ENVIRONMENTAL QUALITY IMPROVEMENT

Milena Milojević¹, Suzana Knežević^{2*}, Maja Došenović Marinković², Aleksandra
Milošević³

¹University of Belgrade, Faculty of Agriculture, Nemanjina 6, Zemun, Republic of Serbia

²Academy of Applied Studies Šabac, Unit for Agricultural and Business Studies and Tourism,
Vojvode Putnika 56, Šabac, Republic of Serbia
s.knezevic@akademijasabac.edu.rs

³University of Belgrade, Faculty of Law, King Aleksandar Boulevard No 87, Belgrade, Republic
of Serbia

ABSTRACT

This paper analyzes a model of sustainable organic waste management through the utilization of rabbit manure via vermicomposting. Rabbit manure, consisting of solid and liquid excreta combined with bedding materials (straw, sawdust), is not directly applied to agroecosystems but is biologically transformed using California red worms (*Eisenia fetida*). Given the high annual manure output (approximately 90 kg per animal), this approach represents an efficient valorization strategy. During vermicomposting, organic matter is decomposed and converted into stable humus with significantly increased macroelement content compared to conventional farmyard manure, including nitrogen, phosphorus, and potassium. The process is conducted under controlled conditions in wooden containers with continuous addition of fresh manure. The resulting vermicompost is applied in the production of fruit, vegetables, and ornamental plants without the use of synthetic fertilizers. The results indicate that this system enables nutrient cycling within the household, reduces waste generation, and improves soil fertility while simultaneously supporting the production of healthy feed for rabbits. The described approach represents a practical model of sustainable agricultural practice applicable in small-scale production systems.

Keywords: vermicomposting, *Eisenia fetida*, rabbit manure, organic waste management, soil fertility, environmental quality.