# Earthworms Reproduction on Various Nutrition Media

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## Abstract

In the presence of climate change, land degradation and biodiversity loss, soils have become one of the most vulnerable resources in the world. There is still insufficient global support for protecting and conserving the world's soil resources. That's why we decided to provide some research to study the earthworms' lifestyle and their breeding one of the main representatives of soil inhabitants, constituting more than 20% of its biomass. The study shows the results of long-time research conducted on the study of earthworms, their vital activity and their role in soil remediation. Also, it analyses experiments conducted with several species of earthworms on their reproduction, nutrition and role in the participation of organic residue processing. Taking into account the worldwide importance of the problem of improving the quality of agricultural and food products, the interest of scientists in improving and recultivating soils is quite understandable. This explains the purpose of this work, which is the result of many years of research conducted in Georgia. Thus, the importance of earthworms attracts even more attention from scientists, farmers and private entrepreneurs engaged in agriculture and interested in organic farming and agricultural production. The life activity of these soil inhabitants and their waste products (biohumus) are very important for increasing crop yields and the quality of agricultural products. Selection and comparison of various food substrates allow us to regulate the composition and properties of biohumus, the biotechnological production process which is based on the ability of earthworms to consume and process organic matter. We conducted experiments to compare of the food substrate to determine its effect on the reproduction rate of earthworms. Grape leaves, a mixture of grape leaves and pruning, and cattle manure were used as food for the worms. The experiments were conducted on local species of worms (Eisenia fetida (Savigny, 1826), Eisenia sp., Aporrectodea caliginosa (Savigny, 1826) and Aporrectodea sp.) from the Caspian region of Georgia. Experiments have shown that worms reproduce more efficiently when fed a mixture of leaves and grapevine cuttings, with earthworm numbers increasing by more than 300%. The work was executed in the framework of the Project: "Healthy Soil for Food Safety" [FR-23-268] and was supported by the Shota Rustaveli National Science Foundation of Georgia.

## Keywords

Vermicompost, Earthworms, *Eisenia Fetida*, *Eisenia sp.*, *Aporrectodea Caliginosa*