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THE EFFECT OF THE MESOCOSM DIAMETER ON THE RESULTS OF STUDIES WITH EARTHWORMS USING THE EXAMPLE OF *APORRECTODEA CALIGINOSA*

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Abstract. The study of the effect of mesocosm diameter on the population parameters of Aporrectodea caliginosa earthworms and soil properties is necessary for standardization of soil-ecological experiment methods. The aim of the work is to determine the optimal mesocosm diameter that provides reliable results at minimal cost. The experiment was conducted in mesocosms with a diameter of 10, 15 and 25 cm filled with alluvial sod soils. The morphometric parameters of worms (length, thickness, weight), population parameters (survival, productivity, biomass), and soil properties (pH, organic matter content) were studied. Statistical analysis was performed using ANOVA and Tukey's test. The effect of mesocosm diameter is significant only for morphometric parameters, but not for population ones. Acidity and organic matter content were dependent on the presence of earthworms and the soil horizon, but not on the mesocosm diameter. In experiments with earthworms, it is necessary to take into account the mesocosm diameter when studying the morphometry of individuals.

Keywords: arable worm, fluvisols, population indicators, pH, soil organic matter, experiment planning

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