Abstract

The method of vermicomposting experiences a big boom nowadays. The people living in flats can process bio-waste, which they produce on their own. Therefore, the amount of biodegradable municipal waste contained in the dumped mixed municipal waste slightly reduces. In addition, people can benefit from high-quality products called vermicompost and its leachate called worm tea.

In this work I summarize acquired knowledge about the vermicomposting focusing on kitchen waste, about conditions, which this method demands, about composition and the possibility of using the end products. Also, it is discussed which bio-waste is suitable for vermicomposting and what earthworm species can be used. The theoretical side of using worm tea in the hydroponic cultivation of plants is discussed. The toxicity of different concentrations of worm tea on a seeds of Sinapis Alba was tested in the experimental part. The concentration row 2,5; 5,0; 7,5; and 10,0 vol. % of four different samples of worm tea from different bio-waste was used. Distilled water was used as a control solution. The values of inhibition for each concentration of worm tea were calculated. Available literature recommends to dilute worm tea in ratio of 1:9 with water. However, the results showed that this dilution is already inhibitory for some samples. The concentration of 2.5 vol.% was stimulatory for all samples, while for the other concentrations the effects in terms of inhibition varied for all samples. The proper diluted worm tea have stimulating effect, which is the first prerequisite for using worm tea in hydroponics cultivation. To find out the optimal value of dilution, it is necessary to test more samples and to inquire bio-waste from which the worm tea was prepared. From the point of view of use of worm tea in hydroponics system it is also necessary to make an analysis of these worm tea solutions, in terms of composition. The work is complemented by the results of a short questionnaire, whose main aim was to find out what the attitude of people towards vermicomposting is.

Key words:

Vermicompost, biodegradable municipal waste (BMW), hydroponics.