



*Biophyt Ltd*

## *Description of a home vermicomposting system*



*Octobre 2024*

---

***biophyt ltd, quality guaranties your future!***

*biophyt ltd, Dr. J. Fuchs, Nackthof 41, CH-5465 Mellikon,  
☎ 079/216'11'35, e-mail: [jacques.fuchs@biophyt.ch](mailto:jacques.fuchs@biophyt.ch), website: [www.biophyt.ch](http://www.biophyt.ch)*



## Description of a vermicomposting micro-system

### 1. Introduction

This home worm composting system is simple, robust, easy to use and inexpensive. It can be used to produce valuable organic fertilizer for the garden, for example, from organic kitchen waste. It also produces compost worms that can be used, for example, in larger-scale trials.

This system can also be used to test the activity of compost worms in various input mixtures, enabling the process to be optimized. Or to recycle peelings.

### 2. System concept

This system consists of five stacked plastic containers and a lid. Closed euro containers (3 measuring 60 x 40 x 17 cm and one measuring 60 x 40 x 7.5 cm, plus a lid measuring 60 x 40 x 2.2 cm) are particularly suitable for building such a system, but any stackable, sufficiently sturdy container can be used.

The tray (60 x 40 x 7.5 cm) at the bottom of the stack serves as a collection tray for any juices that may run off the decomposing material. It is advisable to place a tap near the base of the tray, so that any liquid in it can be easily removed.

Eight holes (8.5 mm diameter) at the top of the sides of the tray ensure adequate ventilation of the system.



Fig. 1. View of the tap installed on the system's lower tray and the ventilation holes.

The bottom of the other three bins (measuring 60 x 40 x 17 cm) needs to be perforated with numerous 8.5 mm diameter holes. On the one hand, these holes ensure aeration of the system and drainage of any excess liquid, and on the other, they allow the worms to move from one bin to another. At the top of the sides of the bin, four holes (8.5 mm in diameter) ensure adequate aeration of the system.



Fig. 2. View of the bottom of the trays with numerous 8.5 mm diameter holes, and ventilation holes at the top of the sides of the trays.

The lid (60 x 40 x 2.2 cm), fitted with a handle for practical reasons, is placed on the system's top tray.

The system rests on a wooden slatted frame, which makes it easier to work with the trays and, above all, to collect the juice flowing into the lower tray. For this operation, the frame is built so that the system is slightly tilted.

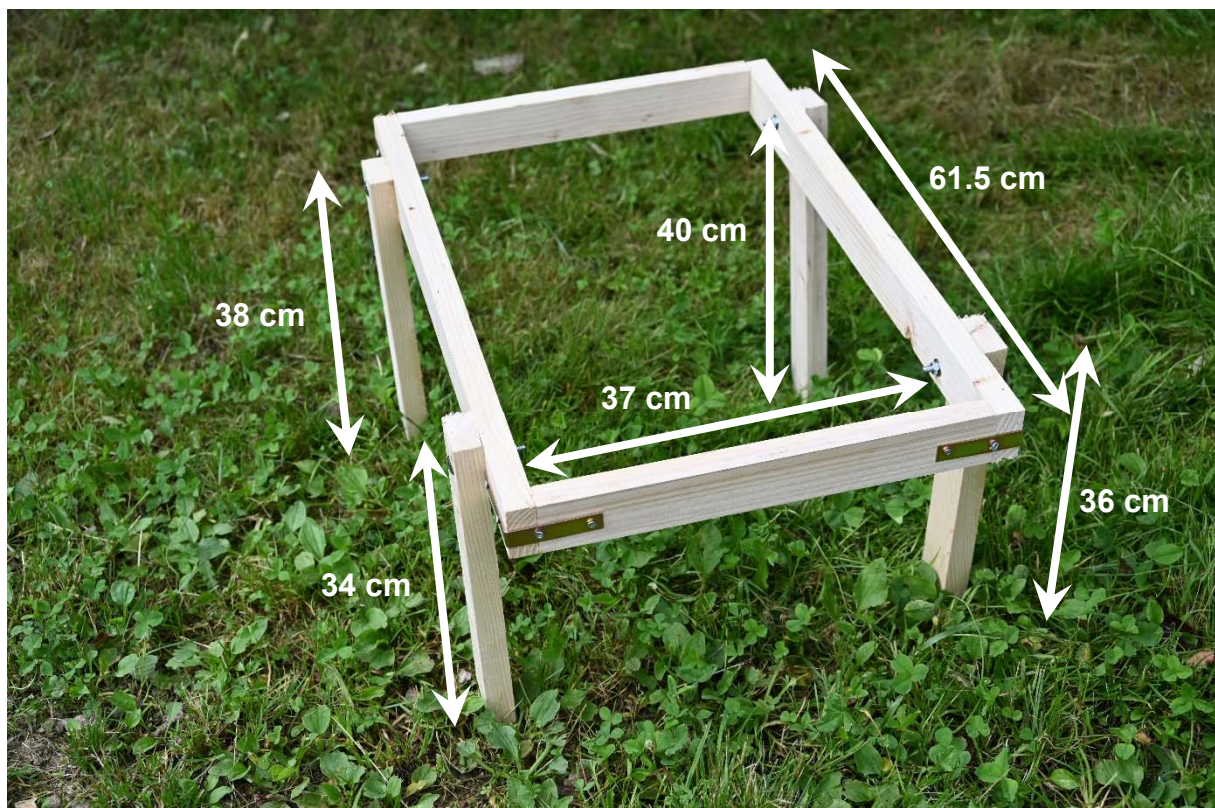


Fig. 3. View of the frame supporting the system, with measurements of the batten pieces.



Fig. 3. View of the complete home vermicomposting system.



### **3. System start-up instructions**

1. Place the home vermicomposting system in a shady spot protected from rain and wind (e.g. cellar, garage, covered terrace, etc.).
2. Install the first vermicompost bin on the collection bin.
3. Spread a layer (ca. 5 cm) of straw or other lightly structured organic material, then add compost worms (at least a hundred; more will get the system going more quickly). Moisten the material and put the lid on. You can then add peelings, salad scraps or other materials on a regular basis. For the first few weeks, until the worm population has developed, add only small quantities of fresh material (one or two handfuls every 2-3 days).
4. When this first vermicompost bin is full, place the second one on top and add non-woody organic waste regularly. When this second bin is also full, continue with the third bin.
5. When the worms have finished their work in the lower bin, they move up and colonize the upper bin. When all three bins are full, the compost in the lower bin is finished. It can then be emptied and returned to the top of the system, where it can be refilled. If there are still a lot of worms in the material, you can place it on top of the upper bin for 2-3 days, so that the worms can move into the fresher material.
6. We recommend regularly sprinkling organic waste with fine, dry soil. This improves compost structure, prevents excess moisture and stimulates the growth of compost worms.
7. If the raw material used is acidic, it is advisable to add a little lime or biochar to raise the pH of the material. This reduces the risk of ants colonizing the system.

### **4. Conclusions**

This home vermicomposting system is highly efficient once it's off to a good start.

This system can be very useful for research purposes, but it can also be installed in private households to recover household organic waste.

Dr. Jacques G. Fuchs

Biophyt Ltd

Mellikon, 30<sup>th</sup> October 2024