

The Transformation of Virtual Water to Compost

The amount of water needed to produce crops and food products is called *virtual water*. According to the 'Food and Agriculture Organisation' (FAO) 2400 litres of water are needed to produce 1 hamburger and to produce 1 slice of bread, 40 litres of water are needed. Throwing away any unused fruit and vegetables is a waste of water which is evermore precious to our country. According to the Malta Water Association, the Maltese Islands have less than the 1,000m³ threshold of water per inhabitant usually required to be a minimum to sustain life and safeguard the production of crops. As a result of the lack of rainwater currently being recorded across the Maltese Islands, making maximum use of our limited resources is essential. So much water is stored and left in uneaten fruit and vegetables. Why can't this be used in a more beneficial water rather than ending up in a landfill? Not to mention the fact, that a vermi compost bin will also decrease the amount of litter ending up at the landfill especially if more and more people who have a garden at home set up a vermi compost bin.

This was the idea which prompted the students, Krista Gatt and Marija Camilleri from St Thomas More Secondary School in Zejtun, to set up a vermi compost bin. In a vermi compost bin, earthworms are used. Earthworms are segmented worms belonging to the phylum Annelida. Although some might find earthworms not particularly attractive, earthworms are beneficial to the environment. Earthworms were the chosen type of worms because they aeriate the soil and feed on organic matter which result in the production of excretory matter. The latter is mixed with refined soil enriched with organic matter. This organic matter

is rich in nitrogen and phosphorous amongst other minerals which are essential for plant growth. Thus, a vermi compost bin produces a natural fertiliser. Thus the remains of fruit and vegetables are rich in water and are being returned back to the environment for use by the earthworms.



Figure 1: Compost bins with holes, newspapers and soil

Two compost bins were set up with holes on all sides (including the lid) to ensure sufficient ventilation as well as to allow water mixed with nutrients produced by the earthworms to leak out into the soil. This acts as a natural fertiliser. In fact, soil should be present under the compost bins. Fruit and vegetable peels were placed in the compost bins, as well as shredded newspaper which acted as a worm bedding and soil. Earthworms feed on this organic litter which will turn into compost after a few months. Since earthworms feed only on fruit and vegetables peels, one must not add bread and other such foods. One must therefore be very careful what to place in the compost bins. Over the spread of four months, around 4.5kg of fruit and vegetable remains were placed in two compost bins.



Figure 2: Compost bin with organic waste

Any plastic container may be used as a compost bin so long it has a wide bottom. This allows earthworms to move around. Why not encourage anyone who has a garden, field or even a yard with soil to build their own vermi compost bin? Think about the positive difference you could make by making different use of fruit and vegetable remains.

Advantages of having a vermi compost bin over the traditional compost bins, is that less mosquitoes are attracted. Furthermore, they also emit a less powerful stench.

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References:

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