



Alternative uses for agroforestry products: woodchip compost heated propagation bench

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The process of aerobic composting woodchips (and other materials) yields a large quantity of thermal energy, which is normally lost to the surrounding environment as heat. Some of this heat can be captured to produce a simple, low cost, off-grid propagation bench for raising frost sensitive horticultural transplants in sites without electricity.

The heat is generated from the microbial action of composting woodchip which can be sourced from management of woody elements (trees and shrubs) on the farm.

The propagation bench is essentially a wooden box with one side which can be opened and is easily accessible for loading and removing woodchip. If the woodchip is added to the box in winter then the composting process is already under way in spring when the heat is needed.

Propagation trays can either be laid straight on top of the chip or onto slatted shelves that move down as the chip pile composts and decreases in size. Covering the top of the bench with a raised insulating material (e.g. bubble wrap) helps to trap the heat and maintain a more even temperature for the plants.

Once the woodchip stops generating enough heat for propagation purposes the partially decomposed woodchip can be used for other purposes (e.g. composting, soil amendment or mulching pathways).



Figure 1. Woodchip heated plant propagation bench at Purton House Organics

References:

Matthew M. Smith, John D. Aber & Robert Rynk (2017) Heat Recovery from Composting: A Comprehensive Review of System Design, Recovery Rate, and Utilization, *Compost Science & Utilization*, 25:sup1, S11-S22, DOI: 10.1080/1065657X.2016.1233082

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