

## **Modified Indore method for decentralized food waste composting in southern Brazil**

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### **Abstract**

Composting is a rural practice developed by many agrarian cultures, particularly those societies with animal waste as a feedstock. Almost one hundred years ago, researchers half a world apart studied aspects of thermophilic degradation of fresh organic matter (Howard and Wad, 1931, Waksman et al., 1938). Howard and Wad described the Indore Method, with careful control of aeration, moisture, feedstock nitrogen, and microbial inoculation. During the same time period, Waksman et al. (1938) described the organisms responsible for the thermophilic phase of the transformation of fresh organic matter into humus. In 1994, the Federal University of Santa Catarina initiated campus-wide food waste collection and composting, adapting the Indore Method to local conditions. Food wastes substituted animal manures, wood chips were introduced for continuous aeration and odor control, and straw was used to construct vertical walls for fresh air inflow, and to recover latent heat by condensation of water vapor in hot air outflow on top. Piles are constructed over months, with new layers of food waste applied to the thermophilic top layer. This modified Indore system was described in Inacio and Miller (2009), and named the UFSC method of composting. The Federal Government of Brazil passed legislation in 2010 mandating the diversion of organic waste from landfills by municipal governments. The UFSC method proved to be reliable, easy to adopt, requiring very little capital outlay for infrastructure, and a small footprint per unit of food waste treated. Most importantly, the method proved to be neighborly, without insect or odor problems, and scalable, from small manual to large mechanized composting yards. Studies have evaluated different aspects of these composting operations, such as Lazzari et al. (2020), demonstrating extremely low levels of heavy metals.

**Keywords:** UFSC method, passive aeration, thermophilic

### **References**

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