

## Why is HotRot Better?

Composting is an aerobic process (occurs in the presence of air/oxygen). Organic Waste breaks down into water ( $H_2O$ ) and carbon dioxide ( $CO_2$ ); this is the same as what we breath out. Carbon dioxide is heavier than air and is readily adsorbed into water; this can in-turn inhibit traditional composting processes.

When water absorbs carbon dioxide ( $H_2O + CO_2 = H_2CO_3$ ). Carbonic acid has a pH of about 5.0. Colonies of bacteria thrive in neutral pH conditions (6.5-7.5) while they struggle to survive in lower pH. The pH in most composting processes increases from about 5.0 rising to 6.5-7.5 after 3 months. Again, efficient removal of carbon dioxide as it is generated ensures the pH increases more quickly.

It is all but impossible to evenly distribute air throughout a static bed of wet organic waste, resulting in serious anaerobic conditions (depletion of oxygen) throughout the process. This in turn creates potential odour issues and release of GHG such as methane. Similarly, heat and moisture distribution are uneven in static systems with areas becoming too wet or too dry, too hot, or too cold.

HotRot takes a technological approach to processing organic waste. Rather than have the product sit still and try to pump air throughout the bed or tumble the product to a point of dryness, the centralised shaft with outreaching tines, gently lifts the bed allowing the  $CO_2$  to rise to the top and leave the process through the exhaust air system before it is absorbed into the moisture inside the bed. This methodology avoids the buildup of  $H_2CO_3$  and therefore promotes a neutral to slightly alkaline pH and an environment where critical bacteria colonies flourish.



*HotRot units with lids removed showing release of moisture and gases during shaft rotation.*

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