

The Secret to Composting is Oxygen – O₂

O₂Compost utilizes a method of composting referred to as Aerated Static Pile Composting. Using an electric blower, we induce airflow through the pile to maintain aerobic conditions at all times. Most people believe that the compost pile needs to be turned to maintain aerobic conditions; however, when air is introduced into an active compost pile by turning, the oxygen level in the pile drops off very quickly - often to less than 1% within 30 to 45 minutes. For this reason, “turning the pile” is an expensive and purely ineffective approach to composting.

Aeration:

- Controls the pile temperature, destroying pathogens, parasites and weed seeds;
- Significantly increases the rate of composting;
- Mitigates problems with offensive odors, flies and rodents;
- Degrades vaccines, antibiotics, deworming products and pesticides;
- Converts a raw waste into a humus-rich soil amendment for use in pastures;
- Produces superior quality compost with strong market value;
- Is ideal for pre-composting feedstocks for vermi-composting;
- Produces a compost rich in aerobic microbes, ideal for compost tea.

With aerated static pile composting, the pile temperature must exceed 55°C (131°F) for a minimum of three days to ensure pathogen destruction and to produce a safe product for unrestricted use on pastures and for sale into the community. The pile temperature can be easily controlled by adjusting the airflow into the pile.

When air is first introduced into a static (non-aerated) compost pile, the micro-organisms that are already in the mix “go berserk” and their increased activity causes the pile temperature to rise very rapidly, often to well over 150°F in 24 hours or less. We take advantage of this heat to destroy pathogens, parasites, weed seeds and fly larvae.

However, hotter is not better with composting. Temperatures much over 160°F actually decrease the rate of composting by decreasing the number and diversity of the microbes in the pile. While it may seem counter-intuitive, additional airflow into the pile causes the pile temperature to drop by expelling (displacing) excess heat to the environment. In short, by managing the frequency, duration, and volume of airflow into the pile we are able to optimize the composting process.

With aeration, the increased number and diversity of microorganisms greatly expedites the composting process. With aerated composting, the active phase typically lasts 21 to 30 days and the subsequent curing phase lasts an additional 30 to 60 days.

With aerobic composting, our goal is to maintain the oxygen level at 8% or greater. By maintaining aerobic conditions, the main by-products are carbon dioxide, water and heat. Conversely, with anaerobic composting, the by-products also include a wide variety of complex, highly odorous chemical compounds. All life forms and organic systems (i.e., composting) produce some odors. However, with aerobic composting, the quality of the odor is often described as “pleasant” and the intensity as “mild”. With anaerobic composting, the odor is often intense and highly objectionable.

The O₂Compost Training Program includes everything that a horse owner or stable manager needs to construct and operate an efficient, aerated composting system.