

# Safety Measures for Biosolids Compost



The management of biosolids to minimize environmental and health risks has been the focus of hundreds of university research studies conducted for many years. The results of this extensive research show that biosolids can be managed so that the risk of adverse effects to the environment or public health from land application of biosolids is extremely low.

## Government limits:

In order to protect human health and the environment, the Environmental Protection Agency (EPA) sets limits on the amount of trace metals allowed in biosolids. These levels are based on more than 20 years of research on how trace metals affect soils, plants and animals. In February of 1993, EPA issued its biosolids use and disposal regulation, 40 CFR Part 503, commonly referred to as "Part 503".

## Pretreatment requirements:

Rigorous "pretreatment" programs control the amount of metals entering wastewater treatment plants. Laws regulate industries to make sure that they dispose of their chemicals safely. This means that metals are removed from the waste stream before they ever reach the sewer. This ensures that biosolids contain metals only in small quantities.

## Biosolids quality:

Biosolids are routinely tested for metal concentrations to make sure that they comply with all regulatory requirements. Before treatment, wastewater may contain disease-causing microscopic organisms, such as bacteria and viruses, which are known as pathogens, or germs. Federal law requires treatment to reduce pathogens: Digesters and other forms of treatment kill at least 90 percent of the pathogens originally found in wastewater solids. Additional treatment by heating or composting is required to eliminate pathogens in biosolids used in home gardens and landscapes.

Biosolids contain minute concentrations of certain regulated organic compounds including polycyclic aromatic hydrocarbons, phthalates and plasticizers, polychlorinated biphenyls (PCBs) and solvents. Organic compounds found in biosolids are present in such low concentrations (near the lowest detectable limits), that studies have found risks to be negligible. **For this reason, the EPA did not include trace organics in the 503 Rule.**

Odor issues are a common concern associated with biosolids applications. The odor varies depending upon the treatment process used and ranges from a strong ammonia scent to an earthy, organic smell similar to that of freshly sterilized potting soil. Odor perception varies from person to person.

## Worker and Community Safety

There are over 250 biosolids composting plants operating in the United States. There has been considerable research on pathogens in and around sludge composting facilities to evaluate potential worker health and environmental aspects. There is NO evidence or data indicating that worker health was impaired. The impact on neighborhoods has been primarily as a result of odors. Odors are considered a nuisance factor, not a health issue.