



## Water Resources Division

### What are biosolids, how are they used, and are they safe?

Biosolids are the nutrient-rich organic materials resulting from the treatment of domestic sewage in a wastewater treatment facility (i.e., treated sewage sludge). Biosolids are a beneficial resource, containing essential plant nutrients and organic matter and are recycled as a fertilizer and soil amendment.

Biosolids are created through the treatment of domestic wastewater generated from sewage treatment facilities. The treatment of biosolids can actually begin before the wastewater reaches the sewage treatment plant. In many wastewater treatment systems, regulations require that industrial facilities pre-treat their wastewater to remove hazardous contaminants before it is sent to a wastewater treatment plant. Wastewater treatment facilities monitor incoming wastewater streams to ensure their recyclability and compatibility with the treatment plant process.

Once the wastewater reaches the plant, the sewage goes through a biological process that cleans the wastewater and removes the solids. The excess biological solids are then digested or stabilized through other processes to reduce or eliminate pathogens.

After treatment and processing, these residuals can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth. Farmers and gardeners have been recycling biosolids for ages, reducing the need for chemical fertilizers. Biosolids are applied to promote the growth of agricultural crops, fertilize gardens and parks, and reclaim mining sites. When applied to crops application rates are restricted to the nutrient needs of the crop. The plant nutrients are slowly released throughout the growing season enabling the crop to absorb these nutrients as the crops grow. This efficiency lessens the likelihood of groundwater pollution of nitrogen and phosphorus.

Biosolids are one of the most studied materials that have ever been regulated by the U.S. Environmental Protection Agency (USEPA). Decades of studies have demonstrated that biosolids can be safely used for the production of crops. The National Academy of Sciences has reviewed current practices, public health concerns, and regulator standards and has concluded that “the use of these materials in the production of crops for human consumption when practiced in accordance with existing federal guidelines and regulations, presents negligible risk to the consumer, to crop production, and to the environment.

For further information on the biosolids program, contact the DEQ, Water Resources Division, Biosolids Program Web site at [www.michigan.gov/deqwater](http://www.michigan.gov/deqwater). In addition, you can contact the Environmental Assistance Center at 800-662-9278 or Email at [deq-assist@michigan.gov](mailto:deq-assist@michigan.gov).

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