

Healthy crops. Knowledgeable neighbors.

EVERYTHING YOU NEED TO KNOW ABOUT FARMING WITH BIOSOLIDS.





**Your neighbor is planning to use
biosolids on their farm.**



IT'S GOOD TO KNOW:

Biosolids contain essential nutrients, organic matter, improve soil tilth, and help build soil structure which make soils healthier.

You probably have some questions.

Farmers depend on the healthiness of their farm. So, when considering fertilizers used to promote healthy soils and improved productivity, they want to make the best possible choices for their family farms, their crops or livestock — ***and for their neighbors.***

WHAT ARE BIOSOLIDS?

They are an endlessly renewable resource containing valuable nutrients and organic matter which are used to improve soils and close the nutrient loop. Municipal utilities employ the same processes that nature uses to clean wastewater during treatment. In streams and lakes, natural aeration helps purify the water, while good bacteria and microorganisms break down solids. Municipal utilities do the same thing, but use engineered technology and regulated processes. Biosolids are recovered as a result of these processes.

BIOSOLIDS ARE COMPLETELY NATURAL. SO ARE QUESTIONS.

The municipal utilities who generate biosolids and the companies that recycle it are committed to answering any questions you may have about biosolids. Once you have the facts, we're confident you'll agree that recycling biosolids is good for our environment, soil health, and even the future of our family farms.

WHAT ARE THE AGRICULTURAL BENEFITS OF BIOSOLIDS?

Biosolids improve soil and provide much-needed organic matter and essential plant nutrients. These essential nutrients are slowly released to promote plant growth. The organic matter improves soil structure, helps retain soil moisture, holds nutrients for future use by plants and microorganisms, and helps prevent nutrients from migrating offsite or running off into

waterways. Similar to readily available synthetic (man-made) fertilizers, biosolids contain the primary nutrients nitrogen, phosphorus, and, to a lesser extent, potassium; as well as secondary macronutrients.

The agricultural benefits of biosolids have been documented for decades by numerous scientific studies and through the practical experience of thousands of farmers.

IT'S GOOD TO KNOW:

Biosolids are a renewable resource used by farmers in the U.S. and in many other countries.





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or more information.

LET'S TALK ABOUT SAFETY.

Based on the best available scientific evidence, a 2017 Joint Legislative Audit and Review Commission (JLARC) study concluded that the risk of biosolids use is low. Biosolids must meet very strict regulatory criteria designed to protect public health and the environment. The recycling of biosolids is approved by the U.S. Environmental Protection Agency (EPA) and the Virginia Department of Environmental Quality (VA DEQ) for land application as a fertilizer, soil amendment, and composted biosolids product. Per- and polyfluoroalkyl substances (PFAS) are a class of manufactured compounds found throughout the world. They are in common household products and are widely used in industrial processes. Biosolids typically contain low, but measurable, concentrations of PFAS. Most of the PFAS in wastewater treatment plants come from people's homes; our wastewater reflects our lives. PFAS are not created in wastewater treatment plants. Detectable concentrations of PFAS in biosolids are a symptom, not a cause, of PFAS, in the environment. The only way to reduce PFAS contamination is to reduce their manufacture and use. The U.S. EPA is investing

in scientific research to fill gaps to understand PFAS. Some of that research is currently underway in Virginia.

WHAT OTHER BENEFITS DO BIOSOLIDS PROVIDE?

Recycling biosolids on farms and forests in Virginia can offset greenhouse gases. Biosolids have a dark, earthy color and contain carbon. According to a study published in *Applied Soil Ecology*, the use of biosolids can change agricultural soils from prevalent carbon-neutral to a carbon sink. This change helps offset global carbon dioxide (CO₂) emissions, and reduces our carbon footprint. CO₂ is a greenhouse gas.

When farmers use biosolids, they reduce or possibly eliminate their use of synthetic fertilizer. Synthetic fertilizer takes a tremendous amount of fossil fuel to manufacture. In contrast, the production of biosolids creates a source of energy. Many utilities capture biogas — created during the breakdown of organic material — to supplement power use in operations to reduce the purchase of gas or electricity.

DOES ITS USE AFFECT SURFACE OR GROUNDWATER?

The application of biosolids is regulated to ensure that biosolids do not runoff or seep into surface water or groundwater. A 2017 comprehensive study performed by the JLARC committee in Virginia said, “The risk of water contamination from biosolids applications is generally very low, both for groundwater and surface water.” Studies also show that biosolids can help reduce excess nutrient runoff into our waterways and the leaching of those nutrients into groundwater. Most recently, a study conducted by University of Florida (July 2023) evaluated how biosolids affected the movement of phosphorous. The study found that a relatively small proportion of phosphorous leached, corroborating previous findings. Federal and state regulations, agricultural best management practices, and nature provide multiple layers of protection for our streams and groundwater.

WHAT DO BIOSOLIDS SMELL LIKE?

Like any fertilizer product, freshly applied biosolids can have an odor. It is often described as earthy, with a slight ammonia type odor. Biosolids produced by different utilities have their own distinctive odors due to the types of processing or handling practices. Compost or soil mix products have less odor — similar to organic mulch. Importantly, while the smell can sometimes be objectionable, it is not harmful.

IT’S BEEN USED BY FARMERS FOR DECADES.

Biosolids are successfully recycled on farms and forests across the U.S. and in most developed countries around the world. Biosolids have been used as a fertilizer and beneficial soil amendment by Virginia’s farmers for decades. Long-term, peer reviewed academic studies show that farmers who use biosolids experience improved soil structure, higher crop yields, and increases in organic matter, a measure of healthy soil.



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