



NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

Bio-Solids or Sewage Sludge Revealed Part 2 of 4

By John Ferguson

First, what is biosolids? Biosolids is the *marketing name* given to the toxic sewage sludge cake that is produced from waste water treatment plants. It was coined by public relations firms to make toxic sewage sludge sound benign and even friendly. Remember: ***Biosolids = Sewage Sludge***

Since Dr. Caroline Snyder wrote the article in Part 1, there has been a lot of additional research published and material discovered on the dangers of sewage sludge (biosolids). Let us look at some of the new information that has become available that we will not hear about in the media.

Let's look at PFAS (Perfluoroalkyl and Polyfluoroalkyl Substances), these are the 'forever chemicals' found in 99% of Americans".

Hundreds of everyday products are made with highly toxic fluorinated chemicals called PFAS. They build up in our bodies and never break down in the environment. Very small doses of PFAS have been linked to cancer, reproductive and immune system harm, and other diseases.

For decades, chemical companies covered up evidence of PFAS' health hazards. Today nearly all Americans, including newborn babies, have PFAS in their blood, and [more than](#)

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[200 million people may be drinking PFAS-tainted water.](#) What began as a [“miracle of modern chemistry”](#) is now a national crisis.

PFAS get in our bodies from many sources and end up in our sewage sludge. When the toxic sludge is used, from land application or in biosolid compost, these chemicals build up in the soil. Our vegetable crops absorb them and they become concentrated in our bodies when we eat the vegetables. The cumulative effect from food and other sources increasingly causes many health problems.

Many environmental groups are involved with educating consumers about the dangers of sewage sludge. The image below I borrowed from the Ecology Center and Sierra Club.

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PFAS Contamination from Wastewater to Farm & Garden



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Let's look at a simple example of how something common can cause problems in sewage sludge. There are hundreds of scientific reports on the dangers of artificial sweeteners from how they destroy the human enzyme system, to causing cancer, to causing weight gain. If they make it to the soil, they also cause significant harm.

Hence, another issue has emerged dealing with artificial sweeteners that they pass-through one's digestive system into the sewage sludge or waste water (also known as purple pipe water). These chemicals in the artificial sweeteners can cause good microbes in the soil to turn toxic (or become pathogenic) when the sludge itself, compost made from the biosolids, or waste water from the dewatering of the sewage sludge is applied to the soil.

This is very similar to what was discussed in our newsletter where I recently talked about how a good yeast (fungi) *Candida albicans* becomes pathogenic. This fungus is all around us, in the soils, in the air we breathe, and lives in our digestive tract. The paper found it exists in two forms, one that is harmless and one that can kill you. Chemicals in the environment turn it into a pathogen.

Another new issue has emerged with sewage sludge (biosolids) in recent years, is that it now contains radioactive isotopes from both medicine and industry that bio-accumulate in the sludge. Radioactive compounds are regularly used in cancer treatment and in many industrial applications. These radioactive compounds cause DNA damage and increase the cellular damage from natural gamma radiation.

In addition, there are now many petrochemical derivatives in the sewage sludge and over *80,000 different chemicals* have been identified. *There has been NO testing on how they interact.* Compost made from sewage sludge like "Dillo Dirt" or fertilizer pellets like "Milorganite or Houactinite" (dried and pelletized sewage sludge) contain chemicals

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that cause many health problems from birth defects to cancer. Additionally, over two dozen human pathogens can survive the standard waste water treatment process.

Note: The Dr. Mercola's health e-newsletter had a recent article on this issue and it can be found at: <https://www.organicconsumers.org/news/toxic-sewage-sludge-your-food>

Antibiotic resistance is an issue causing more and more problems in our society today and now killing thousands of people every year. Antibiotics are fed to animals to make them grow faster and keep them alive from the unhealthy conditions of our factory farms. Medical doctors increasingly prescribe antibiotics to their patients for any cause. Hence, pathogens with antibiotic resistant genes are excreted in the manure (human or animal). These antibiotic resistant genes can be transferred back to the environment and pose a serious threat to public health.

Research from The University of Birmingham and the International Center for Diarrheal Disease Research has found high levels of antibiotic resistance genes in surface water exposed to sewage sludge and in in sewage sludge. Journal mSystems, (2021)

Biosolid composting is only required to reach a temperature of 55⁰ C (131⁰ F) for a few days. However, it takes a temperature of 90⁰ C (194⁰ F) to kill these antibiotic resistant bacteria and destroy the genes. When one land applies sewage sludge (biosolids) or compost made from biosolids, these dangerous genes and bacteria are released back into the environment. Journal of Environmental Science and Technology, 2017.

The University of North Carolina found that over half the people living within one half mile of a sewage sludge land application site developed acute physical symptoms. These included eye, nose, and throat irritations, gastrointestinal symptoms (nausea, vomiting

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and diarrhea). Other people experienced coughing, difficulty breathing, sinus congestion or drainage, and skin infections or sores.

In one study a farmer began to lose his milk cows after applying biosolids to his pastures. It turns out the sludge was contaminated with the element Thallium (Ti) which is the active ingredient in rat poisoning. This toxic metal is also used in the production of the artificial sweetener NutraSweet.

Mineral imbalances in the soil can be caused by biosolid applications. A few examples are:

Researchers recently found that there is another reason to avoid biosolids or compost from biosolids as they cause mineral imbalances in the soil. One of the issues is that the repeated use of biosolids leads to an excess of copper in our soils and when this occurs, the symptoms we see in our plants resembles an iron (Fe) deficiency. Hence, if we add iron, we make the soil problems worse.

Other sewage sludges have been found to contain lead, dioxins and asbestos. It just depends on what industries are dumping into the sewer systems.

It gets worse when using biosolids that are often high in manganese (Mn). When there is too much manganese in our soil, the activity of required enzymes and hormones in plants are reduced. With excess manganese in the soil, many legumes will no longer fix nitrogen into the soil. High levels of manganese prevent plants from absorbing and using calcium (Ca) efficiently, which leads to a calcium deficiency in plants. This deficiency in turn, increases the insect and disease problems a gardener will encounter. High levels of manganese also stunt the growth of many plant species like Pines.

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High levels of zinc (Zn) are often found in sewage sludge (131-1,670 ppm). In soils, levels of zinc over 500 ppm are known to prevent plants from absorbing other critical elements which lead to many long-term problems. Many plant species have been shown to accumulate zinc in their tissues to the point of death. Once the soil has been contaminated by excess elements (or toxins) it is very costly to fix the problems and takes a very long time.

High levels of Phosphorous (P) are commonly found in sewage sludge. When applied to the soil, excess phosphorus occurs. When there are too much phosphorous in the soil, mycorrhizal fungi that are essential for a plant's health will not colonize plant roots.

Another new problem that occurs when biosolids are applied to the soil is that many plants suffer, even with low level exposure. The drugs (pharmaceuticals) left over in the sludge interferes with plant hormones that support the plants defense mechanisms against predators and diseases, thus increasing the problems.

They also reduce a plants ability to absorb energy from sunlight and in some cases even caused a reduced level of chlorophyll due to too much magnesium (Mg) since sewage sludge has magnesium in it. At higher levels plants can experience stunted roots and burnt edges of leaves. The chemicals caused many plants to absorb so many elements that they were essentially poisoning the plants.

There are 27 toxic heavy metals known to cause health problems. However, the EPA only monitors 9 of the 27 toxic heavy metals. There are over 352 toxic chemical pollutants that have been identified in the sewage sludge, including pesticides, pharmaceuticals, and solvents. Of these 61 are listed as hazardous materials with known human health effects.

Some of these include hormones (including those used in birth control pills), fire retardants, plasticizers, PCP's, dioxins, PFH's, etc. Other chemicals in sewage sludge are medicines from anti-depressants to steroids, detergents, fragrances, disinfectants like triclosan, antibiotics, hormones like estrogen, PCB's (poly chlorinated biphenyls),

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asbestos (two thirds of the sludges tested), pesticides, heavy metals (arsenic, mercury, lead, nickel, cadmium), dioxins, naphthalene, and other POP (persistent organic pollutants).

Industry has manipulated the system (EPA) to allow each company to dump 33 pounds of hazardous waste per month into the sewer without having to report it. The amount and type of toxics in sludge depends on the source and the treatment it has received.

Researchers at the Spanish Foundation for Science and Technology have found an association between esophageal cancer in people living in areas where soils have lead (Pb) in them. Lung cancers are higher in areas that have excess copper in them. Brain tumors are more common with soils that have arsenic in them. Bladder cancer is associated with soils with high cadmium levels. *Journal of Environmental Geochemistry and Health*, 2017; 40 (1): 283.

All of these toxic and dangerous heavy metals are found in sewage sludge and they are not removed by pelletizing or by composting, or by changing the name from sewage sludge to "Biosolids".

In 2014 the United States Geological Survey analyzed nine different consumer products containing biosolids as a main ingredient, for 87 different chemicals found in cleaners, personal care products, pharmaceuticals, and other products. These analyses detected 55 of the 87 chemicals measured in at least one of the nine biosolid samples, with as many as 45 chemicals found in a single sample.

In 2014, the City of Charlotte discovered extreme levels of PCB's in their biosolids after being alerted by SCDHEC that illegal PCB dumping was taking place at regional waste water treatment plants across the state. Biosolids land application was halted after an emergency regulation was enacted by SCDHEC that outlawed any PCB contaminated biosolids from being land applied regardless if Class A or Class B. Very soon thereafter,

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SCDHEC expanded PCB fish consumption advisories for nearly every waterway bordering biosolids land application fields.

The most recent discovers of dangerous materials in biosolids is nano-particles that have showed up in the last few years. Health effects from these items are just beginning to be studied. These particles get into our lungs and other bodily tissue where they are linked to increased health issues.

The current EPA regulations are outdated and no longer protect the public. Many of the diseases and illnesses reported in the media over the last few years (food recalls) have come from conventional crops fertilized with sewage sludge. This is another reason to buy organic produce, as sewage sludge is not allowed to be used.

Warning signs that a product contains sewage sludge or sewage sludge compost are the following Buzz words (the producers rarely tell you the truth or consumers would not purchase it):

- Natural organic nitrogen
- Naturally grows plants
- Recycling symbol on the bags
- Pictures of a mother and child or beautiful flowers
- A big seal from some certifying agency
- Meets strict EPA standards
- EPA's exceptional quality compost (means it is sewage sludge)

Note: The Biosludged full movie launched Wednesday, Nov. 28th, 2018: See trailer 2 below, and prepare to be shocked

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Your world is being deliberately mass poisoned with toxic sewage sludge that's dumped on forests, food crops, city parks and landscapes and on landscape maintenance of public-school grounds. A massive, coordinated



cover-up has been in place for years, making sure you never learn the truth about this deliberate environmental poisoning that's spreading toxins everywhere. Two years in the making, the *Biosludge* film launched Wednesday, Nov. 28, 2018, at Biosludged.com and BrighteonFilms.com. You can watch the full film for free, and you'll also be able to download the film's video file and **post the full video to your own video channels**. The full film is *closed captioned* for the hearing impaired.

Other Resources:

www.biosludge.news

www.BrighteonFilms.com

www.Biosludged.com

www.SourceWatch.org

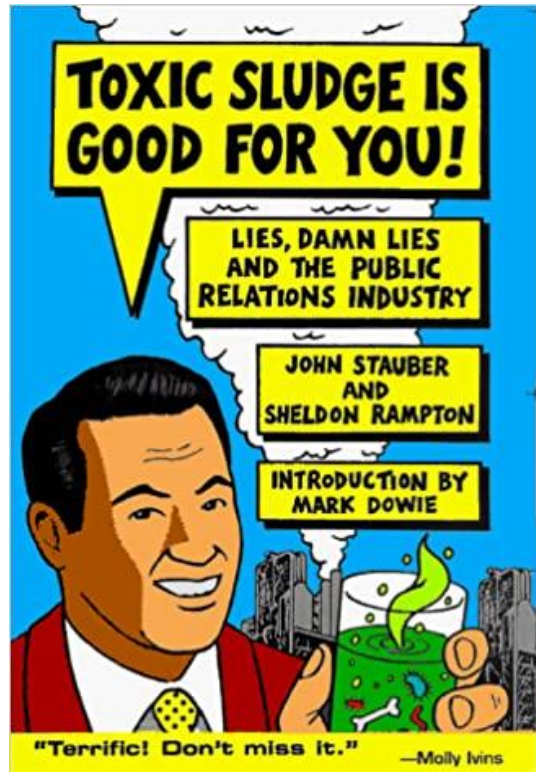
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The book "Toxic Sludge Is Good For You", by John Stauber and Sheldon Rampton, 1995, Common Courage Press, ISBN: 1-56751-060-4 is about the public relations industry and how they try to green wash the risk factors of sewage sludge and compost made from sewage sludge.



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