



The United Sludge-Free Alliance

Health, Food, & Water

HEALTH – IF YOU DON'T POISON THE PEOPLE, YOU DON'T NEED TO FIND A CURE.

By Darree Sicher

What is the value of a healthy life for yourself, your family, your parents and your friends? Your lifestyle, your hometown, your job, your genetic family tree – all combine together to create a life balanced with health or illness, safety or danger. Some of the largest impacts on your health are the personal choices you make about the food you eat, the water you drink and the community you live in. What if the food that you consume is fertilized and watered with known heavy metals, infectious waste, bacteria, and other modern toxins? Does the water you drink contain pharmaceuticals and pathogens that will affect your health? Does the playground and park where your family enjoys time together spread sewage sludge to make the grass green? Is the wind that blows across the farm fields where sewage sludge spread near your child's school creating a constant health problem?

The issue of sewage sludge impacts our health whether we eat foods grown in sludge, drink water laced with the contaminants of sludge run-off or live in a community where sewage sludge is used as a 'fertilizer' on open space, farm land or gardens. But what is sewage sludge?

Everything that goes down the drain of homes, businesses, industries, hospitals and mortuaries collects at the municipal waste water treatment plants (WWTP). At the WWTP, sewage is heated and chemically treated with the goal of lowering bacteria. Heavy metals and other hazardous chemicals do not go away from the heating or squeezing performed at the WWTP. WWTP were created and intended to separate the liquids from the solids to 'clean' the water in order to return it to the community. Water returned into the community is called effluence and is often poured directly into waterways, streams and rivers or used to water crops or lawns. The solid remains from the WWTP are called sewage sludge or "biosolids". The term "biosolids" was created by the sludge industry as a cozier way to promote the solid byproduct of sludge after they were forced to stop ocean dumping because it was poisoning the oceans. Unfortunately, the minimal testing requirements actually do not guarantee the health or safety of the water being returned to your community or the biosolids/sewage sludge used as a 'fertilizer' for your food.

There are no federal guidelines for the testing of dioxin and a myriad of other highly toxic industrial byproducts currently found in most municipal sludge. No federal, state or government agency has ever conducted conclusive scientific studies that prove pouring known toxic waste on our food, water and communities is safe. The use of sewage sludge on any open land means that these antimicrobial compounds, as well as the host of other heavy metals, pharmaceuticals and hormones, may be absorbed by crops and find their way up the food chain and into human diets. Thousands of modern and discontinued chemicals used in U.S. industry eventually find their way into the sewer system and then into municipal sludge. These chemicals interact to form new and often more toxic chemicals.

Instead, the US Environmental Protection Agency (EPA), the bureaucracy responsible for sewage sludge safety, maintains that the minimal testing requirements of nine elements – arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, zinc – and two pathogens – salmonella OR E. coli – are sufficient in "estimating" our health risk. Biosolids/sludge is classified as Class A if they show no salmonella OR E. coli when testing at the waste water treatment plant. Class B sludge means levels of salmonella OR E. coli have been registered. This is the only difference between classes of sewage sludge. Class A can be spread anywhere without recording location or amount.

Newest studies from researchers at Yale University, Connecticut find that sludge/biosolids isn't heated high enough to kill pathogens. This is no surprise - in 2006, studies funded by the sludge industry Water

Copyright United Sludge-Free Alliance, 2010
www.usludgefree.org

Environmental Research Foundation (WERF) - formerly known as the Federation of Sewage Workers - noted that sludge/biosolids that were dewatered by centrifuge created a material that passed standard bacteria tests, yet just 20 minutes after dewatering, showed substantial increase in bacterial counts. WERF also released findings that confirm the re-growth of fecal coliform after treatment. Rocket science? Hardly - bacteria re-grow after treatment.

The U.S. EPA created regulations in 1993 that permits sewage sludge that is too contaminated with certain toxic pollutants to be disposed of safely in a landfill to be promoted as a fertilizer for farms, landscaping, playgrounds, golf courses and bagged 'compost'.

Nearly half of all the municipal sewage sludge produced in the USA each year -- up to 8 million tons -- is land applied. Known toxins and antibiotics found by the EPA in sewage sludge have no regulations, remain untested for the impact on human health and are introduced into our food and water supply through land application as a fertilizer option. Dozens of chemicals introduced into the environment are neurodevelopmental toxins, altering brain growth. Polychlorinated biphenyls (PCB), dioxin, brominated flame retardants and pesticides are examples, and all are found in sewage sludge. The issue of land application of sewage sludge is two-fold: the infiltration of known toxic waste in America's food and water supply and community impact where sewage sludge is land applied. There is no state or national systematic tracking of health incidents related to sewage sludge. In some cases, laws are put into place to remove the community's right to restrict or even test for sewage sludge safety.

If you live in communities that spread sewage sludge, odors are often a cause of complaints surrounding land application and, until recently, odors have been dismissed as a purely esthetic or quality-of-life issue. But evidence that exposure to odor-causing chemicals can cause illness is mounting. Some airborne contaminants can cause a variety of symptoms including eye, nose, and throat irritation, headache, nausea, diarrhea, hoarseness, sore throat, cough, chest tightness, nasal congestion, palpitations, shortness of breath, stress, drowsiness, and alterations in mood. When residents living near land where sewage sludge is applied report symptoms, they are often dismissed by the bureaucracies and elected officials charged to protect their health and safety.

The following health concern examples, lifted from years of scientific studies and media reports, are just a small sample of the true concern of the poisoning of the very elements that sustain life -- our food, water and homes. Full articles follow, as well as an overview and support articles concerning food and water issues. Really, our health cannot be separated from the food we eat and the water we drink -- it's just common sense.

Archives of Environmental & Occupational Health, in 2007, reported in their, "Health Survey of Residents Living Near Farm Fields Permitted to Receive Biosolids." The findings suggest an increased risk for certain respiratory, gastrointestinal, and other diseases among residents living near farm fields on which the use of biosolids was permitted.

"Many of the risks to individuals living near farm fields where biosolids were applied are chronic and may be evident only after long-term exposure. Such effects are difficult to measure and relate to exposure from these fields. In conclusion, our findings suggest an increased risk for certain respiratory, gastrointestinal, and other diseases among residents living near farm fields where the application of biosolids was permitted. Moreover, the reported occurrence of certain chronic diseases, such as multiple sclerosis, were elevated in the exposed group."

In 2009, University of California reported that California's sevenfold increase in autism cannot be explained by changes in doctors' diagnoses and most likely is due to environmental exposures.

"It's time to start looking for the environmental culprits responsible for the remarkable increase in the rate of autism in California," said Irva Hertz-Picciotto, an epidemiology professor at University of California, Davis who led the study.

Throughout the nation, the numbers of autistic children have increased dramatically over the past 15 years. Autistic children have problems communicating and interacting socially; the symptoms usually are evident by the time the child is a toddler. Researchers theorize that pregnant woman's exposure to chemical pollutants, particularly metals and pesticides, could be altering a developing baby's brain structure, triggering autism. Some California farms that grow America's fruits and vegetables, use the water exiting waste water treatment plants to irrigate crops. Is it safe to use sewage sludge and the waste water effluent as crop fertilizer and irrigation? Never tested for human safety.

Pollution from sewage sludge, animal slurry and disinfectants add to the rise in bacteria resistant to the most powerful antibiotics. Media headlines describing hospital infections caused by superbugs - such as Methicillin-resistant *Staphylococcus aureus* known as MRSA - often blame over-prescription of antibiotics and poor hygiene standards, but these are just two of the reasons why bacteria now resist many antibiotics.

Research by Dr. Will Gaze, Professor Liz Wellington and Professor Peter Hawkey of the University of Warwick and Birmingham University, United Kingdom, studied antibiotic resistance genes in bacteria living in soils, and how pollution may influence the way resistance evolves. Antibiotics and other chemicals drive antibiotic resistance into rivers and soils in many ways. Industry uses large volumes of detergents and disinfectants - including quaternary ammonium compounds (QACs) - know together as biocides. Nearly all domestic cleaning products and shampoos also contain QACs. They wash out in large volumes with the waste water from factories and homes. QAC resistance genes are significant because they are often located with antibiotic resistance genes on the same piece of DNA, so exposure to one will co-select for the other.

A new drug resistant pneumonia, known as *Klebsiella pneumoniae* carbapenemases (KPCs), has a mortality rate between 22% and 59%. Outbreaks throughout the country, including Virginia, North Carolina and Florida, are persistent and of great concern to the medical community.

"The emergence of KPC resistance is a major threat to global health. Recent results show that KPC genes are diverse, stable genetic elements that can be difficult to detect. Furthermore, KPC-producing organisms can spread inside hospitals as well as in the community setting." Luke F. Chen, MBBS, of Duke University, North Carolina, published these findings in 2009. What is the role of sewage sludge land application in spreading these antibiotic resistant diseases into the community? Never tested for human safety.

One study out of Johns Hopkins Bloomberg School of Public Health 2007, predicted up to 25% annual increases in the cryptosporidiosis rate in a community consuming products from agricultural lands where sewage sludge end products were legally applied. Cryptosporidiosis, a parasitic disease that is often spread through fecal-oral contaminated water route, affects the intestines of mammals. The main symptom is diarrhea in people with intact immune systems but in immuno-compromised individuals, such as AIDS patients, the symptoms are particularly severe and often fatal. Do the known pathogens in sewage sludge contaminate our food, water and communities? Never tested for human safety.

Scientists from the National Oceanic and Atmospheric Administration (NOAA), at their 2009 conference, discussed the newly completed studies of ocean beach users increasing risk of staph and MRSA infections, and that current treatments for seafood poisoning may be less effective due to higher than expected antibiotic resistance. Antibiotics and other toxicants discharged into the waste stream by humans may increase the frequency of antibiotic-resistant *Vibrio* strains in contaminated coastal environments.

