

Sewage Sludge, Humanure and Biosolids

https://www.wte-ltd.co.uk/sewage_sludge_biosolids.html

The Dangers of Sewage Sludge

Water Technology Engineering Ltd (WTE Ltd), United Kingdom



Sewage sludge (Biosolids or Humanure) is the residue left after the [sewage treatment process](#) is complete. It is often dried and either incinerated, taken to landfill or used as an agricultural fertiliser. However, it is not a safe material, as research has recently found. It contains waste from industry, laboratories, hospitals, funeral parlours, in fact, all waste that is flushed down sinks and drains wherever they are.

The dangers fall into 3 main categories:

- Hormones and Synthetic Hormones
- Prion Contamination
- Toxin Contamination

Hormones and Synthetic Hormone Contamination

In 2012, Scientists at the University of Aberdeen studying sheep maintained on pastures fertilized with sewage sludge (treated waste derived from human sewage processing plants, often called Humanure) found a high incidence of abnormalities in the animals. The abnormalities are being attributed to the presence of man-made hormones, particularly as those found in the contraceptive pill, in the treated waste.

They found that exposure to the chemicals in sewage sludge or 'Humanure' as it is called in the UK, affected the structure or function of testes, ovaries, uteri, parts of the brain, and thyroid and adrenal glands of sheep foetuses. In adult sheep changes in bone structure, the testes and offspring behavior were observed.

The researchers explained that man-made chemicals known to be endocrine disruptors, found in such things as electrical equipment, building materials, plastics, adhesives, paints and vehicle exhaust, have long been considered a health hazard. However the synthetic hormones found in contraceptive pills, known as progestins, which mimic progesterone, either alone or combined with estrogen, and excreted in human waste pose a greater problem because they are not removed or destroyed by sewage treatment and find their way into the food chain.

“These chemicals are in our air, soil and water. Some are fat soluble and may accumulate in our bodies while others are water soluble and end up passing through us and being flushed down our toilets, entering our environment where they may affect other animals or enter our food chain re-exposing humans,” said Dr Rhind at the British Science Festival 2012.

Professor Fowler added, "Many of the changes we see are very subtle and not apparent in the living animal; nevertheless, they may be associated with disruptions of many different physiological systems and increased incidences of diseases and reproductive deficiencies such as those that have been reported in a variety of species, including humans. Embryos, fetuses and young animals appear to be particularly vulnerable. "It's notable that incidences of breast and testicular cancer and of fertility problems in humans are increasing, while populations of animal groups as diverse as amphibians and honey bees are in decline."

Research into the fertility of sheep exposed to endocrine disruptors in the environment by Dr. Michelle Bellingham of the University of Glasgow found that abnormalities that could result in low sperm counts were found in the testes of 42% of the animals, which led her to suggest that the rise in the use of in-vitro fertilization in humans, particularly as a result of low sperm counts, is due to exposure to these chemicals in the environment.

The Aberdeen researchers remarked that, "We are using our sewage sheep studies as a tool to investigate the impact on physiological systems of long-term exposure, to low concentrations of mixtures of chemicals because in the real world that is what happens."

"One solution to the problems that these chemicals pose," they point out, "might be to simply stop using them.

"So what we must do is attempt to identify the most critical disruptors and their impacts and we are beginning to do that in Aberdeen with our sewage sludge studies. We believe there should be a gradual reduction in the use of disruptors identified as being particularly problematic."

More ominously, the scientists warn that, "If we do nothing, endocrine disruptors may not only impact on human health but all the ecosystems including those on which we depend – if we compromise soil productivity and sustainability of our agricultural systems or cause imbalance in marine and freshwater ecosystems through damage to populations of top predators, ultimately, we threaten our own survival."

Prion Contamination

Typical wastewater treatment processes do not degrade prions. Prions are virtually indestructible rogue proteins that cause incurable brain infections such as Mad Cow disease and its human equivalent, variant Creutzfeldt-Jakob Disease, are difficult to inactivate, resisting extreme heat, chemical disinfectants, and irradiation. Until now, scientists did not know whether prions entering sewers and septic tanks from slaughterhouses, meatpacking facilities, or private game dressing, could survive and pass through conventional sewage treatment plants.

However, recent simulated wastewater treatment shows that prions can be recovered from wastewater sludge after 20 days, remaining in the "biosolids," a byproduct of sewage treatment sometimes used to fertilize farm fields.

Toxin Contamination

There are 27 heavy metals found in sewage sludge. None of the toxic organic chemicals it contains are regulated, or even monitored. Not even priority pollutants, including pesticides, pharmaceuticals, and plasticizers are regulated in sewage sludge. Many of these poisons are accumulative. Sewage sludge has been spread on land for far longer in the USA than here in the UK. By the late 1990s, reports of adverse health effects started showing up in local newspapers across the United States and Canada. Skin lesions often developed in people who contacted the material. Residents near land application

sites reported burning eyes, burning lungs, and difficulty breathing when exposed to dusts blowing from treated fields. People who couldn't afford to move away developed chronic infections and permanent scarring of the lungs. Some died.

In the 1990's, a dairy farming family claimed that hundreds of their cows died after sludge from an Augusta wastewater treatment plant was spread on their land in a program promoted by the U.S. Department of Agriculture. They claimed that the sludge contained high levels of heavy metals and other dangerous pollutants. This was denied for years by the Authorities. However, in February 2008, U.S. Southern District of Georgia Judge Anthony Alaimo ruled in favor of the dairy farmers, a family named McElmurray, that maintained the sludge contained dangerous pollutants like chlordane and metals such as thallium and arsenic. Alaimo said sludge application records from the city of Augusta were accepted by the USDA and EPA even though they were "unreliable, incomplete and in some cases fudged," and that when the dairy farmers showed federal officials evidence their land was contaminated, the evidence was ignored. Alaimo also wrote in his February ruling that "senior EPA officials took extraordinary steps to quash scientific dissent and any questioning of the EPA's biosolids program."

In 2014, one in six children suffers from some form of neuro-developmental abnormality. The causes are mostly unknown. Some environmental chemicals are known to cause brain damage and many more are suspected of it, but few have been tested for such damage.

The brain's development is uniquely sensitive to toxic chemicals, and even small amounts may negatively impact our academic achievements, economic success, risk of delinquency, and quality of life. Chemicals such as lead, mercury, polychlorinated biphenyls (PCBs), arsenic, and certain solvents and pesticides pose an insidious threat to the development of the next generation's brains. All of these chemicals are present in Biosolids. When chemicals in the environment affect the development of a child's brain, he or she is at risk for cognitive deficits, learning disabilities, more serious mental retardation, ADHD, autism, cerebral palsy, and other disorders that will remain for a lifetime. Please view this video with Professor Philippe Grandjean, 2013 <https://youtu.be/M7pqF43WIOk>

It is our opinion that all spreading of sewage sludges, humanure and biosolids on agricultural land in the UK should be stopped until it is PROVED to be safe. The evidence that it is not at all safe is growing and that has been the opinion of WTE Ltd. from the beginning.

You will know if it is being spread on a field near you as it has a horrible, sickly sweet smell unlike any manure you have ever smelt. Stay away from it.

Water Technology Engineering Ltd (WTE Ltd)