

LAND APPLICATION OF BIOSOLIDS: A THREAT TO OUR ENVIRONMENT & FOOD SUPPLY

Overview

The Province of Nova Scotia is promoting a plan to land apply biosolids on our agricultural farm land. HRM biosolids are a resultant of the sewage sludge being mixed in a process by the company Nviro with a liming agent to arrive at a Class A or exceptional quality biosolid. Sewage sludge and the liming agent are mixed in approximate 50/50 relationship. The Nviro process will not eliminate heavy metals and there is no proof to show that it will eliminate certain bacteria and drugs. The liming agent being used is in itself of great concern as it is cement kiln dust from Lafarge Cement Plant in Brookfield, which is industrial waste and contains significant levels of heavy metals. Calls for comprehensive testing of the biosolids are being ignored. The absence of scientific evidence requiring biosolid testing does not mean that there is no risk involved in the practice of land applying biosolids, instead it shows that there is not enough evidence to deem it a safe practice.

Halifax Harbour Solutions

Waste water treatment processes are designed to produce clean water and contaminated sludge. This sludge is commonly referred to as sewage sludge. In an attempt to clean up the Halifax harbour, the Halifax Regional Municipality (HRM) has selected a method that combines an equal amount of sewage sludge and cement kiln dust in a patented process which creates biosolids. These urban biosolids are then destined for disposal on rural agricultural land. The severe implications of spreading biosolids on agricultural lands is only beginning to be realized. Independent testing of biosolids created by Inglewood Farms of RR#1 Truro in 2004 indicated some of the highest levels of polybrominated diphenyl ethers, (flame retardants), ever recorded in the world in addition to a long list of additional contaminants. The Inglewood biosolids contained a large proportion of HRM sewage sludge.

HRM sewage sludge is mixed with cement kiln dust (CKD). CKD is an industrial waste of the cement industry and as such it has the potential to be contaminated with heavy metals and other toxins. Samples of CKD sourced from Lafarge's Pleasant Valley cement plant by Department of Environment and Labour (DOEL) staff in 2007, and tested by Maxxam Analytics, recorded the presence of 21 heavy metals in these samples. Of particular concern in these samples is the heavy metal Thallium, which was recorded at a level of 2.3 parts per million. This level exceeds the accepted parameters for contaminated soil in landfills, and yet it is a component of biosolids that are being applied to agricultural land and subsequently becoming part of our food chain. Thallium has recently been identified in milk which was the resultant of agricultural land contaminated by sewage sludge in Georgia. The potential for the presence of both thallium and polybrominated diphenyl ethers in HRM biosolids is problematic for the dairy industry in particular as both of these substances are lipophilic. PBDEs present an additional concern given the fact they have the ability to cross the placental barrier and contaminate newborn children.

It is important to consider that current waste water treatment plant technology was not designed to remove many of the nutrients, estrogenic compounds, pharmaceuticals, and personal care products present in waste water. Therefore, current technologies may be creating risks of unknown magnitude for public health, risks that could last for generations given the fact that many of the components found in biosolids are bioaccumulative and persistent.

We are concerned that comprehensive testing is not required on the biosolids that are now being and are about to be land applied in Nova Scotia. Present regulations do not adequately address the need to test for the drugs, chemicals, a number of toxic heavy metals, and pathogens that are contained in many biosolids, which can pose serious detrimental environmental and public health threats. Furthermore, present regulations do not consider the potential synergistic and lipophilic effects of multiple contaminants that may be contained in the biosolids. Chlorine, for example, can combine with natural organic material found in dirt and soils to create a variety of carcinogenic chlorinated hydrocarbons, including toxins like chloroform and trihalomethanes. The absence of scientific evidence requiring biosolid testing does not mean that there is no risk involved in the practice of land applying biosolids, instead it shows that there is not enough evidence to deem it a safe practice.

Moratorium on the Application of Biosolids

The land application of biosolids is an issue of immediate concern to the public. The Canadian Infectious Disease Society (C.I.D.S.) called for a moratorium on the spreading biosolids across Canada until further studies were carried out to determine if the process was safe. Dr. Mark Miller, president of C.I.D.S. stated:

C.I.D.S. remains steadfast that the disposal of all bio-materials be done in a safe and efficient manner, and that studies be taken to insure that current disposal/spreading techniques are safe for the human population. The fact that certain practices 'have always been done like this,' does not mean that they are necessarily safe in the present-day context.

A growing number of scientists are questioning the rationale of land application of biosolids. Ellen Harrison, Director of the Cornell Waste Management Institute, said:

Agricultural land is too important to take the chance of spreading sewage biosolids from the city. There are just too many unknowns. Are we prepared to have contaminants spread on our soils that will basically be there forever? Often times, we just don't know what the risks are.

How does the consumer differentiate between food that is grown on land treated with biosolids and food that is not? In Nova Scotia, there is no means to identify which foods have been exposed to biosolids. Consumers have the right to know which foods are the resultant of land applied biosolids; such foods should be labelled accordingly. Let's apply the precautionary principle and spread these materials only if they are proven not to be harmful. We must ensure that comprehensive testing is done, public safety is ensured, and that there is regulatory oversight of the process.

Resources

Dr. Carolyn Snyder "The Dirty Work of Promoting Recycling of America's Sewage Sludge"
http://biosolids.org/docs/IJOEH_1104_Snyder.pdf

Sewage-Based Fertilizer Safety Doubted By JOHN HEILPRIN and KEVIN S. VINEYS – Mar 6, 2008
http://ap.google.com/article/ALeqM5gbpCMPX9_kRtYkL1Yv9-OzuVxFfQD8V863181

Biosolids resources: <http://www.riles.org/sludge.htm>