

Protect farmlands from sewage sludge

By MURRAY McBRIDE

Chronicle Herald: <http://thechronicleherald.ca/Opinion/1132478.html>

Wed. Jul 15

[Dr. McBride came to speak for the Nova Scotia Environmental Network in May 2009 – this article rebuts Nviro's earlier Op/Ed based on that presentation]

A recent opinion piece by Rae Wallin, president of N-Viro Systems Canada, has evidently attributed to me a statement that the Halifax biosolids product, if applied at agronomic rates on farms, would be no threat to Nova Scotia soils. I did not make that statement.

While it is true that the heavy metal loading to soils, if the material is applied as a lime substitute, would probably not increase soil total heavy metals (at least the ones being regulated) perceptibly over the short term, this statement cannot be made with confidence for toxic metals that are not being monitored (e.g., thallium, tin, silver), as concentrations can vary markedly over time in these waste products.

But there are other serious concerns with this type of sludge product as well. The alkaline-stabilized Halifax product has a very high pH (in the 11 to 12 range): this high pH actually makes some metals (such as copper, nickel and molybdenum) more soluble and potentially mobile in the soil almost immediately, increasing the risk for surface and shallow groundwater contamination. In my experience, molybdenum and sulphur can be very plant-available where alkaline sludge products are applied to forages and pastures, a concern for livestock, as poor thrift or disease resulting from secondary copper deficiency can occur.

There is the additional problem that no synthetic organic chemicals are regulated in sludge materials, despite the known presence of brominated fire retardants, plasticizers, triclosan, pharmaceuticals, detergents, etc. in the products. Some of these are persistent organic pollutants (POPs) which do not decompose to a significant degree in the wastewater treatment plant, concentrating instead in the sludge.

Once applied to farmland, the POPs persist for decades to centuries, and as was learned with DDT and PCBs many years ago, are likely to concentrate into the fat tissue and milk of livestock. In fact, it is already known from published research that the brominated fire retardants accumulate in soils and soil organisms (such as earthworms) where sludges have been applied, and show little sign of decomposing in the soil.

Research has also shown that these chemicals can concentrate in the fat tissue of cattle. It is only reasonable to conclude that fire retardant chemicals, and many others, will increasingly enter the human food chain as well as natural ecosystems with continued sewage sludge application on land.

In summary, my position is that sewage sludge products should not be applied to our agricultural lands where food crops are grown. There are far too many unknowns and uncertainties about the amounts, behaviour and toxicity of the thousands of chemicals in sewage sludge products, and the precautionary principle must be applied here.

Farmlands must be protected as the irreplaceable resource that they are — we hold them in trust for future generations.

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