



ORGANIC COUNCIL of NOVA SCOTIA

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OCNS Position Paper:

Sewage sludge ~ also known as Bio-solids

Bio-Solids, also known as Sewage Sludge, is what is left behind after water is removed in waste treatment works. It is high in organic content and plant nutrients and, in theory, makes good fertilizer. However, it can also contain a multitude of metals, organic pollutants, medical by-products (hormones, antibiotics and pathogens).

Advocates enthuse about the natural ability of sludge, like soil, to immobilize potentially toxic metals, and they point to cleaner water, as well as higher crop yields for farms that use the material as the rationale behind their active marketing campaign.

Our main concern is the long-term build up of heavy metals in the soil. Over time, metals such as cadmium, zinc, and copper can build up to levels high enough to severely damage soil biology, and in the process seriously reduce future crop yields.

Research in the United Kingdom suggests that soil limits for several metals might not be adequately protective of soil organisms, soil processes, and fertility. Evidence has emerged that sludge-borne metals could have adverse effects on total soil microbial biomass and on nitrogen fixation by cyanobacteria and by the nitrogen-fixing bacteria *Rhizobium*. This evidence came from long-term experiments at sites where sludge was repeatedly applied.

Caution is appropriate for sewage sludge standards, particularly regarding heavy metals, which unlike many other pollutants, cannot degrade and are retained in soils virtually indefinitely.

Granted, heavy metals are to some extent, immobilized by soil and sludge, but the effect is not complete, nor does it apply to every metal. The availability of cadmium remains relatively high, so for this metal, a serious problem could emerge decades after the sludge is applied.

It is the position of OCNS, that while sewage sludge (Bio-Solid fertilizers) may have some benefits as a slow release nitrogen delivery system, the potential risk of heavy

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metal (and other pollutant) accumulation and contamination in the soil and food crops makes this product incompatible with not only organic agriculture but with any socially/environmentally responsible land stewardship practice.

It must also be pointed out, to anyone who may be contemplating conversion to organic agricultural production, that sewage sludge (no matter by what name it is marketed) is a listed prohibited substance by the Canadian Government within its own Canadian Organic Standard. Any producer having used the product (or with an inadequate buffer zone from a neighbouring farm that has used the product) could find it impossible to make to conversion due to long term contamination of the soil.

Food Action Committee's position on the use of biosolids on agricultural land

On June 16, 2008, the committee met with Laurence Nason of the Federation of Agriculture and Lise LeBlanc of N-Viro Systems Canada, the company responsible for the stabilization of HRM sewage sludge through addition of cement kiln dust, and the marketing of the resulting product, known as Halifax Soil Amendment. The committee also heard from Fred Blois, a resident of Lower Truro whose community was negatively affected by earlier applications of sludge on neighbouring farmland.

While there seems to be little doubt that treated sludge, known as biosolids, contains valuable nutrients such as phosphorus and nitrogen, it also contains heavy metals, flame retardants, pharmaceutical residues and estrogenic compounds. In combination, these elements can often interact with each other in unanticipated ways, and many are bioaccumulative, remaining in the soil for generations. Scientists are only beginning to study the synergistic effects of the multiple contaminants in biosolids; meantime, in the absence of comprehensive testing, the apparent risks of spreading a potentially toxic material on agricultural lands would seem to be extremely high.

The committee was left with several unanswered questions:

1. Who stands to reap the greatest financial benefit from the disposal of biosolids on agricultural lands (HRM? N-Viro?)
2. What other Nova Scotia municipalities are involved in the creation and use of biosolids?
3. Of what grade are the biosolids produced in other municipalities (grade A or B?) and where are these being spread, especially B-grade biosolids?
4. Who is subsidizing the transportation and selling of biosolids in Nova Scotia? (tax payers?)
5. What testing and treatment, if any, is being done for pharmaceuticals in biosolids? Flame retardants? Other chemicals?
6. Can the polymers used in sludge stabilization create a neurotoxin when combined with the pesticide RoundUp, commonly used by farmers?
7. Why is the federation of agriculture, a promoter of buying and eating local food, also a proponent of biosolids, material that could undermine public confidence in Nova Scotia's food supply?

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8. Who at HRM (or Halifax Water, now responsible for wastewater treatment in the city) is/are advocating the use of biosolids?
9. Are farmers being clearly advised of the potential risks of land application of biosolids, and who assumes responsibility for the risks incurred with the use of biosolids? (HRM? N-Viro? Farmers?)
10. Can Nova Scotians expect labeling of products grown using biosolids?
11. How can we use bioremediation to detoxify sewage waste in NS?

In conclusion, in the absence of comprehensive testing on biosolids and adhering to the precautionary principle, the Food Action Committee supports a moratorium on biosolids spreading on agricultural land.