

# **Biosolids Require Balanced Perspective**

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The recent “anti-biosolids” letters to the editor signal a need to inject some balance into the discussion. Biosolids are wastewater solids treated to meet contaminant standards that make them suitable for recycling on land as a fertilizer. Currently, three major biosolids management options exist in Pennsylvania: land application, landfilling, and incineration. None of these options are totally environmentally benign, so the selection of the most appropriate option is based on an array of factors and tradeoffs.

The 2002 National Academy of Sciences study report is cited as warning of the inadequacies of the Part 503 federal land application regulations and the risk uncertainties of recycling biosolids on land. Opponents of the practice conveniently avoid the first statement in the report’s Overarching Findings: “There is no documented scientific evidence that the Part 503 rule has failed to protect human health.” And the lack of evidence is not because the evidence has not been sought. No scientifically defensible data exists to prove the claim that land application of biosolids has “killed” people. Some people will eat carrots today and die, but one cannot therefore conclude that carrots are lethal. Linking cause and effect is extremely complicated when dealing with trace contaminants.

Three important principles should guide forming opinions about environmental health risks. First, listen to individuals who have earned the right to be heard because of their education and experience. We should value the opinions of celebrities when they discuss acting, but generally ignore them when they speak on environmental issues. Of scientists who have devoted their careers to studying land-based recycling of biosolids, most feel the management practices mandated by federal and state laws, while not perfect, are adequately protective of human health and the environment. The contrary opinion represents a small minority.

Second, a maxim of toxicology is that “the dose makes the poison.” The chemicals and toxicants present in biosolids and cited as reason for their danger are also present in our food and drinking water. It is not their presence or absence that is important, but rather their concentrations and the frequency of exposure. Even for pathogenic microorganisms, one must be exposed to numbers above some threshold “infective dose” before initiation of disease.

Third, a specific hazard must be considered in the context of all related exposures. The potential pathogen risk from drinking the groundwater beneath biosolids-amended fields is negligible compared to eating fast food prepared by workers who don’t wash their hands, taking a sloppy kiss from your dog after it has just cleaned its tail end, and certain sexual practices. Those worried about health risks from land application of byproducts

should more productively focus their efforts on a really nasty, carcinogenic material that is spread on hundreds of acres every day without regulatory oversight or public concern. That material is asphalt. In this and other areas of life we “strain out a gnat and swallow a camel.”

Some fancy that they have uncovered a great conspiracy among the EPA, municipalities, and scientists to hide problems, manipulate data, and silence critics to promote land-based biosolids recycling. In reality, the scientific consensus is that land application is often the most environmentally sound and sensible means of dealing with this unavoidable societal byproduct. If global warming really is a problem, why not sequester biosolids carbon in soil and plants instead of converting it to methane via landfilling or into carbon dioxide via incineration? True, bone-dry biosolids have a heat value near that of low-grade coal, but the energy needed to remove water from the material produced by municipalities means the net energy gain is small. Skyrocketing mineral fertilizer prices underscore the wastefulness of landfilling or incinerating biosolids. When guided by unreasoning fear we make silly choices and divert precious human and financial resources away from real problems.

Readers interested in the challenges associated with achieving a balance between environmental protection and affordability in dealing with the solids produced in municipal wastewater treatment can access the Center for Rural Pennsylvania report entitled Biosolids Disposal in Pennsylvania at <http://www.ruralpa.org/biosolids07.pdf>.

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