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Opinion Article

Trace Gas Composition of Solid Organic Waste in Land Leachate

Zhenhan Scheutz*

Department of Environmental Simulation and Pollution Control, Tsinghua University, Beijing, China

DESCRIPTION

The accumulation of solid organic waste can reach critical levels in almost every region in the world. The organic waste needs to be managed in a sustainable way to avoid depleting natural resources, of minimizing human health risks, reducing environmental impact and maintaining overall ecosystem balance. This overview focuses on the anaerobic digestion process, which is considered one of the most viable options for recycling the organic portion of solid waste.

Many methods are currently used to treat and manage solid organic waste. The overview of digestibility and energy production (biogas) of various substrates and fermentor configuration yields the importance of ground-level NH_3 emissions from composting nitrogen-rich organic waste or post-AD solids. However, the better characterization of material-specific the NH_3 an emission from landfills and land-application of digestate is essential to trade-offs between alternatives.

The involvement of various microorganisms and the influence of co-substrates in environmental factors on the efficiency of the process have been extensively covered. According to anaerobic digestion the attractive option for converting raw solid organic wastes into useful products such as biogas and other energy-rich compounds, and will continue to do so in the future. The plant materials are derived from the compounds and degradation products of peptides, carbohydrates and lignin, numerous xenobiotic substances were identified and attributed to groups of pharmaceuticals, plasticizers, pesticides or chlorinated aromatics. It could play an important role in meeting the ever-increasing energy demand.

Waste-to-energy systems can play an important role in diverting organic waste from landfills. A constant concentration ratio was established between aliphatic hydrocarbons together with aromatics and methane in shredder waste cells, which was then used in an LFG generation model to estimate trace gas production. However, real-world waste management can deviate from ideal practices, and emissions driven by microbial communities and complex chemical processes are poorly understood and competing to the municipal organic waste management options, that including landfill, composting, dry Anaerobic Digestion (AD) for Renewable Natural Gas (RNG) production, and dry AD with power generation data to present a comprehensive life cycle assessment.

Waste-to-energy companies that recycle organic waste with energy recovery serve two eco-friendly functions. At the same time, Waste-to-Energy is serving two of his customers and making money. 4,444 waste disposal contractors and electricity consumers who purchase energy. A business strategy that maximizes corporate profits, taking into account the process characteristics of waste-to-energy operations, the market characteristics of waste management and energy, and the mechanisms used by regulators to promote renewable energy production and regulatory mechanisms influence the operational decisions of waste-to-energy. Our analysis shows that if the goal of social planners is to maximize landfill diversion, electricity subsidies per kilowatt-hour are more cost-effective and if the goal is to maximize renewable energy production. If so, it suggests that lump sum grants are offered. Capital cost is more effective. This has different regulatory implications in urban and rural areas where environmental goals may differ.

CONCLUSION

The Organic Waste AD process provides an effective solution for treating organic waste, meeting local energy needs, reducing waste, improving energy security and air pollution. The AD method gives a second life to materials otherwise considered waste. Biogas is a versatile renewable green energy source that can be used as a fossil fuel for heat and electricity, and as a fuel for automobiles. An exciting paradigm in organic waste fermentation technology is the analysis and characterization of organic materials, biodegradability, inclusion of diverse microbial activities, accessibility, determination of precise limiting factors and steps.

Correspondence to: Zhenhan Scheutz, Department of Environmental Simulation and Pollution Control, Tsinghua University, Beijing, China, Email: han@tshu.cn

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