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EFFECTS OF RESIDENTIAL FOOD WASTE DISPOSERS ON MUNICIPAL WASTEWATER AND SOLID WASTE MANAGEMENT

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INTRODUCTION

Disposal of putrescible solid wastes remains a challenge for municipalities and local authorities. Decomposing wastes breed odors, attract vermin, are costly to collect, transport and process, and, if disposed of in landfills, generate leachate, organic compounds, some toxic, and large quantities of global warming gases. Most municipalities have sought to reduce this burden by encouraging use of kitchen food waste disposers (FWD), integrating treatment of food and sewage solids. In most of the United States, the proportion of food waste in the municipal solid waste (MSW) stream has decreased over the period 1960 to 1994 from 13.9% to 6.7% of the MSW collected¹. This is attributed more to the growing use of food waste disposers than to the increase in non-organic waste².

However some municipalities are accompanying use of FWDs with separate collection of food wastes or mixed waste processing to produce a biosolid for land application. Moving in a different direction, recently, two wastewater treatment agencies have adopted policies restricting use of FWDs by commercial food establishments.

CHARACTERISTICS OF FOOD WASTE DISPOSERS

FWDS are used to dispose of food wastes in about 45% of U.S. households³. On average, the in-sink appliances grind about half of the 0.30 lbs/capita/day of wet food waste generated in a typical household, leaving 0.15 lbs/cap/day of food waste, 70% of which is water⁴, to be added from the FWDs via the collection system to wastewater treatment plants (WWTPs) where they add 0.05 lbs/capita/day of food solids to sewage solids. The remaining 0.15 lbs/cap/day of wet food waste are added to MSW.

USING WASTE WATER COLLECTION SYSTEMS TO COMPOST FOOD WASTES

In 1996, the New York City Department of Environmental Protection, with the participation of the NYC Department of Sanitation, undertook a study of the impact of allowing citywide residential use of FWDs on all aspects of the waste water treatment system and the environment⁵. It was based on measurements of the discharges of three sets of comparable buildings, with and without installation of FWDs. It was found that food solids would increase the typical daily per/capita total suspended solids by .047 lbs/cap/day. The combined sewage and FWD solids are dewatered to 25% solids, producing biosolids that may be further processed into compost, pellets, or other form, or be transported directly for land application⁶. The value of biosolids to enrich arid soils