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<b>Title</b>	<b>The Use of Effluent from an Anaerobic Baffled Reactor (ABR) for Irrigation in a Peri-Urban Community</b>
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### **The Use of Effluent from an Anaerobic Baffled Reactor (ABR) for Irrigation in a Peri-Urban Community**

Appropriate design of on-site sanitation for situations where dry toilets cannot be implemented can provide an opportunity to recycle and re-use flush water. The Anaerobic Baffled Reactor (ABR) represents such a technology. The ABR operates as a high rate septic tank, and therefore can treat blackwater from a number of households. The ABR offers several advantages for this situation; it allows high treatment rates with low space, energy and maintenance requirements. In addition, the effluent has the potential to be a valuable source of nutrient-rich water that may be used in irrigation agriculture within these communities. However, constituents within the effluent must conform to water quality guidelines for health and agriculture.

This study evaluates the performance of a pilot-scale ABR, which was used to treat domestic wastewater received at a local municipal wastewater treatment plant, with emphasis on the physico-chemical (COD, free and saline ammonia, pH) and microbial data (E. coli, total coliforms, coliphage and Ascaris). Re-use options are evaluated according to the South African Department of Water Affairs and Forestry (DWA) guidelines for water discharge and irrigation use. Also included in this study are greenhouse trials comparing growth and health risk associated with effluent irrigation. From the pilot study in progress, it has been established that the COD of the effluent consistently meets guidelines for agriculture, but the presence of pathogenic organisms remains a serious concern suggesting a need for a post-treatment option.