Towards a sustainable pit latrine management strategy through LaDePa technology

Introduction
Disposal of pit latrine sludge is a major health and environmental problem in the Third World. Further the sludge contains phosphates (a critical but diminishing resource) and other nutrients, which are generally wasted in current disposal methods.
LaDePa (Latrine Dehydration and Pasteurisation) is a machine that provides a containerised method of processing sludge in order to produce a nutrient rich soil conditioner that is workable and improves sustainability on a number of fronts. The technology removes the digestus, pasteurising and drying the sludge to beyond the sticky phase. Due to its low technology LaDePa relates well to the social environment where pit latrines are usually encountered in the developing world urban environment, in that it provides both business and work opportunities for the poorly skilled.

Results and Discussions

The Big Five of Sludge Management

Operation of LaDePa
Sludge and digestus are separated by means of a screw compactor with lateral ports

VIP
WWTW
LaDePa technology
Land fill site

Social, economic and sustainable benefits
The emptying of pits through the sustainable pit management programme ensures a healthy environment for residents
Disposal costs are reduced substantially
Local contractors gain skills, provide employment and enhance local economic development
Food security is improved through the distribution of sludge pellets which are rich in nitrates and phosphates (i.e. an organic fertiliser is provided to farmers

Addressing challenges
Disposal of sludge at Treatment Works is not visible due to nitrification challenges and overload of the digesters
LaDePa addresses social challenges in addition to technical and environmental challenges
Sludge disposal methods waste valuable phosphates from urine deposited in sludge
Sludge takes up valuable space in landfill sites

Conclusion
The deployment of the pioneering pilot LaDePa’s plant to treat the sludge produced from the Durban pit latrine emptying project has been remarkably successful at producing a potentially marketable product from a waste. The uninterrupted long production runs and the consistency of the product produced under working conditions

bodes well for full commercialisation. It is the intention of the Municipality to implement a franchised continuous pit emptying programme anchored around LaDePa’s, starting when the next pit latrine emptying cycle is due, late in 2011.
An environmentally safe sludge disposal technology is a critical component to the well being of the environment. The LaDePa Technology addresses this.