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Quantifying the Economic Benefits of Using Human Excreta-derived Plant Nutrient Sources: “LaDePa” Pellets and Struvite

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ABSTRACT The paper advances the argument that indigenous approaches to waste management could be applied to mitigate contemporary challenges facing local municipalities in provision of sanitation services and contribute to improved agricultural productivity. The paper determined the economic feasibility of human excreta – derived plant nutrient sources Latrine Dehydrated and Pasteurization (“LaDePa”) as a soil conditioner and nitrogen source; and Struvite as a phosphorus source for maize, wheat and sugarcane production. The results showed that the use of Struvite as a phosphorus source was financially viable. It was found that LaDePa pellets as sources of high energy density materials (HEDMs) and Struvite have environmental benefits, and improved soil texture and water retention capacity. Future studies should assess the impact of HEDMs use on sanitation or effects on waste treatment plants. This will help to determine the best way to use these HEDMs and improve both the livelihoods and some economic factors.