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EVALUATION OF BAGASSE PITH AS A SKELETON BUILDER FOR IMPROVEMENT OF SLUDGE DEWATERING

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Abstract

High contents of colloidal and organic materials in municipal wastewater sludge cause problems in the process of dewatering. The filtering efficiency can be improved by chemical conditioning, but the effectiveness of mechanical dewatering is limited because flocculated sludge is highly compressible. Physical conditioners such as bagasse can be used to facilitate mechanical dewatering. This paper describes the use of bagasse pith (cane sugar waste fiber) to improve the dewatering process of municipal wastewater sludge. The effectiveness of the process was examined using a lab scale filter press. Experiments to evaluate the influence of pith showed that conditioning of sludge with pith entailed better dewatering than that of flocculated sludge alone. Conditioning with pith yields a more porous, rigid and permeable structure that allows the water to pass through it more easily. In addition, bagasse pith has a relatively high cellulose content that effects the C:N ratio; changing it to an average of 35 when dewatered sludge is composted.

Key words: bagasse pith, filter press, mechanical dewatering, physical conditioner

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