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HOW TO DEAL WITH ORGANIC MUNICIPAL SOLID WASTE OVER-SIEVE FRACTION

Short communication

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Abstract

The steady increase in separate waste collection has highlighted the urgent need to adequately deal not only with urban waste (differentiated and undifferentiated) but also with special waste produced by separate waste collection and recycling processes. Source collected municipal solid waste produces different waste streams. One of this is the organic fraction of municipal solid waste (OFMSW). This fraction is central for circular economy, since it can be further transformed in order to recover valuable products such as compost and fertilizers, both through biogas fermentation and composting.

OFMSW, however, contains up to 10-20% of non-organic residues, such as plastic and bioplastic bags, coupled materials, textile and cellulose. This fraction is normally mechanically separated from the organic part as an over-sieve, that is in some cases washed, squeezed and dried, and then disposed as special waste.

One of the emerging issues is where to dispose it or even better, if there is a way to recover it. Disposal costs are increasing, since the over-sieve fraction competes for final destination, such as incinerators and cementer production sites, with other more energetic valuable residues. A very new and valuable solution to solve the problem is to recover it through a thermo-chemical transformation into a bioliquid (Reach qualified), with different market destinations, both second-generation fuel and chemical commodity for regenerable plastic production.

The thermo-chemical transformation is energetically self-sustaining and provides thermal energy as an output, that can be valorised in the organic waste transformation process. The present paper shows the technology main features and gives insight to economic aspects.

Keywords: bioliquid, material recovery, municipal waste, over-sieve residues, special waste

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