

Overview on use of zeolites as bulking agent to optimize organic waste composting process

Abstract

There is about 2.01 billion metric tons of municipal solid waste (MSW) produced annually and organic waste constitutes of a major portion from total waste generation worldwide. This current circumstance not only create extra burden on the landfill, but also causing some environmental issues such as greenhouse gases emission, odor emission and leachate production. Therefore, a sustainable and pro-environmental of organic waste disposal solution is acknowledged by composting practice. However, organic waste consists of some significant properties include high in salt, oil, nitrogen and moisture content. All of these properties contributing difficulties on the efficiency of organic waste composting process. In previous studies, researchers had studied various bulking agents such as biochar, sawdust, lime and others in order to optimize the efficacy of composting process. Nevertheless, utilization of zeolite as bulking agent in composting process is getting famous in the recent years due to its unique physiochemical characteristics. Hence, this article attempts to review the potential of zeolites in optimizing the composting process for better understanding of the mechanism as well provides valuable insights for sustainable organic waste management practice.