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## IMPACTS OF COMPOST AND WASTEWATER SLUDGE ON SOIL BIOLOGIC ACTIVITIES

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One of the major concerns today in all over the world is the pollution and contamination of the soil. The use of agrochemical such as chemical fertilizers and pesticides has caused tremendous harm to the eco-environment. Organic fertilizer differs from chemicals in that they feed plants and adding organic matter to the soil. Organic farming technology is necessary to support the developing organic, sustainable and non-pollution agriculture. Organic matter application to soils has different effects such as speeding up of NaCl leaching, decrease of the exchangeable sodium percentage and electrical conductivity and increase of water infiltration. Meanwhile, the biosolids application increases soil microbial biomass and some soil enzymatic activities linked to C, N, P and S soil cycles. In fact hydrolytic enzymes are sensitive indicators of management induced changes in soil properties due to their strong relationship with soil organic matter content and quality. Acidity is one of the major edaphic factors limiting crop production and eco-environmental quality in acid-affected soils throughout the world. Acid soil was amended with 15 and 30% of solid waste compost (SWC) or municipal solid wastewater sludge (MSWS), and aryl-sulphatase (ARY-S), phosphatase (PHO), dehydrogenase (DEH),  $\beta$ -glucosidase ( $\beta$ -GLU), urease (URE) and catalase (CAT) activities as well as physico-chemical and biological properties were determined after 63 day of incubation under laboratory conditions. SWC and MSWS significantly improved soil physico-chemical and biological properties, especially carbon and nitrogen contents. Accordingly, overall enzyme activities were substantially promoted in presence of both amendments and the higher increases were measured at 30% of SWC (increases by 134%, 62%, 49%, 47, 43%, and 172% for, DEH,  $\beta$ -GLU, PHO, ARY-S, URE, and CAT, respectively). Lower beneficial effects occurred at the combination of SWC and MSWS together at 30% possibly because of the increased the presence of trace elements by MSWS application. As a general response, SWC supplied at 30% seems to be a useful strategy to enhance biological activities of acid- or salt-affected soil.

**Keywords:** Acid or saline soil, biological activities, solid waste compost, municipal solid wastewater sludge.

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