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Quantification of soil respiration in a soil amended with sewage sludges

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The measurement of biological activity is a parameter that can be used as a quality index to evaluate, for example, the influence of an organic amendment or a contaminant in soil or to select the better substrates. Soil biological activity can be estimated by different indexes such as nitification index, humification index or soil respiration measuring CO2 evolved in incubation experiments.

The objective of this work was to study the influence of sewage sludge at different rates in soil biological activity measuring CO2 evolved. The CO2 was determined by passing CO2 and NH3 free air through respiration vessels, trapping the evolving CO2 in NaOH and periodic titration of the CO2 trapped with HCl after BaCl2 precipitation of carbonates. Experimental results obtained during incubation process of amended soils show that all treatments presented the same mineralization pattern which was satisfactorily described by means of a power model CO2-C= a•tb.