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Effect of leachate recirculation and bulking agent on leachate quality

Oktiawan W.^a; Priyambada I.B.^a; Purwono P.^b [Save all to author list](#)

^a Department of Environmental Engineering, Faculty of Engineering, Diponegoro University, Jl. Prof. Soedarto, SH, Tembalang, Semarang, 50275, Indonesia

^b Center for Science and Technology, UIN Raden Mas Said Surakarta, Jl. Pandawa, Pucangan, Kartasura, 57168, Indonesia

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Abstract

The purpose of leachate processing is to reduce pollutants in leachate without using equipment that requires high investment and complicated maintenance. This research aims to determine the impact of leachate recirculation and bulking agents on leachate quality. Fresh solid waste recirculated using artificial leachate with a continuous flow of 1 L/h. The study is conducting for 14 days on a laboratory scale. On the 14th day, combination recirculation and bulking accelerate the increased pH value.

Leachate recirculation increases the potential for contact between methanogenic bacteria and dissolved organic matter and contributes to buffering pH during the hydrolysis process. R3 produces a higher Electric Conductivity (EC) value than other reactors since the 7th day. This increase is probably due to the addition of dissolved salts from solid waste decomposition. The role of the bulking agent may not be too significant for changes in the EC value. On day 14, TDS at R1 was 11,748 mg/L, R2 was 12.144 mg/L, and R3 was 14.916 mg/L. © Published under licence by IOP Publishing Ltd.

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👤 Purwono, P.; Center for Science and Technology, UIN Raden Mas Said Surakarta, Jl. Pandawa, Pucangan, Kartasura, Indonesia; email:purwono.ga@gmail.com
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