

The dependency of leaching ratio on leachate quality

Katarina Kylefors*, Lale Andreas & Anders Lagerkvist

Div. of Waste Science & Technology, Luleå University of Technology, SE 971 87 Luleå, Sweden

* e-mail: Katarina.Kylefors@sb.luth.se

Many small and big scale experiments have been made in the landfill research in recent years. One thing all of them have in common is the lack of a tool to interpret the results for a full-scale landfill. Some authors *e.g.* Reitzel et al. (1992), Kylefors (1997) used the ratio between liquid and solids (L/S) to transfer the time scale. However, in most cases only concentration trends over the duration time of the lab test were shown. Yet it is not only of scientific interest to know when *e.g.* the leachate concentrations will reach an environmentally sound level but rather very important from a leachate management perspective. For example, there is a need to predict the extension of time when leachate treatment will be needed.

Here we focus on the possibilities of using L/S as a tool for predictions. It will show differences in leachate quality at certain L/S ratios between simple leaching tests versus model simulations and model simulations versus field observations. These comparisons are made for different kinds of wastes ranging from a compostable fraction of municipal solid waste (MSW), a typical MSW, MSW mixed with ashes, and pure ashes.

Differences in the leaching performance between simple leaching tests and model simulations as well as between model simulations and field observations will be discussed. The differences are *e.g.* dependent on factors like the particle size and the residence time of the water.

Conclusively L/S is a tool that may be used to estimate the time required for leachate treatment. However, the L/S is not a complete tool, *i.e.* it will not solve all the problems of predicting full-scale performance from small scale experiments.

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