

ANALYSIS OF THE FEASIBILITY OF THE USE AS FERTILIZERS, OF LEACHATES FROM A MECHANICAL BIOLOGICAL TREATMENT PLANT FOR MUNICIPAL SOLID WASTE

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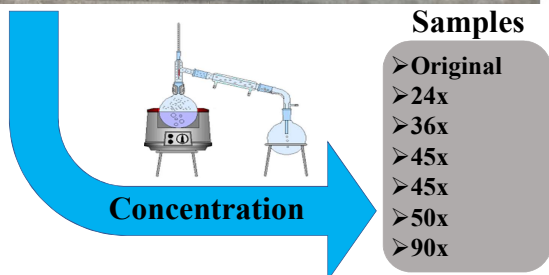
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INTRODUCTION

The main environmental issue associated with the compost production is the production of a liquid leachate. However, compost leachate may also be considered as a source of nutrients and used as fertilizer. Chemical properties were determined for a raw leachate from a mechanical biological treatment plant for municipal solid waste, to check if it meets the adequate requirements for using as commercial fertilizer according to the proposal of regulation of the European Parliament of 2016, for fertilizers. This study intends to access if the leachate can be used as potential source for fertilizers. It qualitatively meets the requirements established for the composition of commercial fertilizers and the production cost of leachate as raw material is low. Preliminary results showed low concentrations of heavy metals and suitable amounts of nutrients after the concentration of the leachate by simple batch distillation.

EXPERIMENTAL

1. Leachate samples



2. Analyses

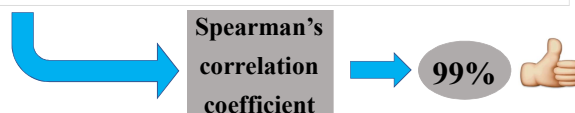
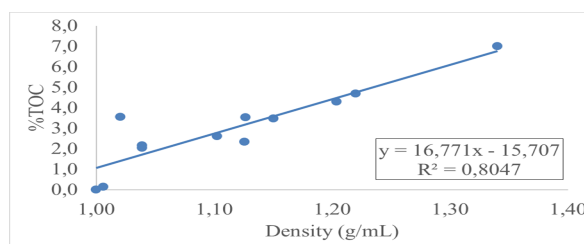


RESULTS

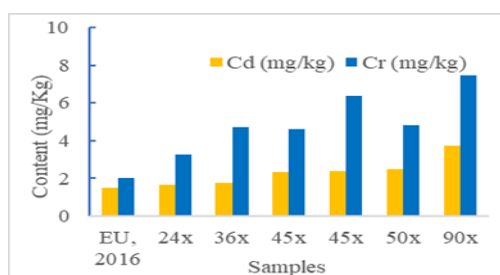
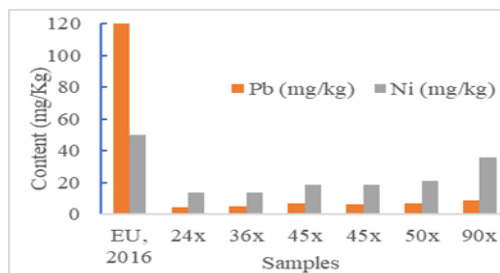
1. Chemical properties

Samples	pH	Conductivity (mS/cm)	% TOC	Density (mg/L)
EU, 2016	-	-	3	-
Original	8,7	12,5	0,14	1,01
24x	11,0	124,8	3,48	1,15
36x			3,53	1,13
45x			4,69	1,22
45x			4,30	1,20
50x			3,54	1,02
90x			7,01	1,34

2. Correlation between Density and TOC



3. Heavy metals content



CONCLUSIONS

- ✓ The concentrated leachate has potential to be used as fertilizer after simple processing.
- ✓ It shows high concentration of total organic carbon (TOC) and low levels of heavy metals but some adjustments must be made to tune the concentration of these components. Other analysis will be performing to quantify nutrients such as phosphorus, potassium and nitrogen.

ACKNOWLEDGEMENTS

This work was financially supported by Project VALORCOMP, funded by FEDER through Program INTERREG V-A Spain–Portugal (POCTEP) 2014–2020.

RESEARCH UNITS WEBSITES

<http://www.cimo.ipb.pt/>