TUHH
Technische Universität Hamburg-Harburg

aww
Institute of Wastewater Management and Water Protection

Waste management: Simulation of biological degradation processes

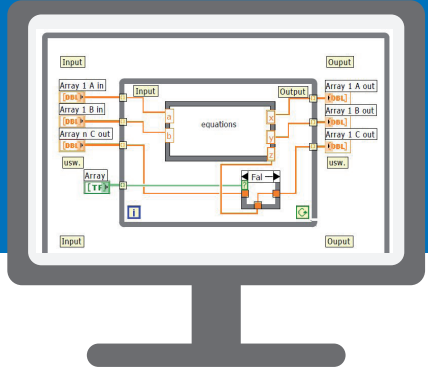
With the SimuCF simulation software, processes in anaerobic fermentation and composting systems can be predicted. In such a manner, plants can be better planned and optimised, and emissions can be determined. SimuCF is also intended for educational purposes.

SimuCF

Input

The substrate type can be selected from a specified list. However, the specific chemical composition can also be entered directly. Further input values describe the reactor and the process operation.

- Fats
- Proteins
- Carbohydrates
- Lignocellulosic organics
- Minerals
- Water



Output

The output of the simulation results is implemented in the form of diagrams and data tables. The user can select output parameters as well as units and scales and store simulated variants.

Data for:
- Solid phase
- Substrate water phase
- Exhaust gases
- Condensate
- Leachate

Simulation In the software, the essential aerobic and anaerobic microbiological, chemical, biochemical, and physical processes are merged. The programming was implemented with the graphic programming system LabVIEW™ 7.0 from National Instruments. The developed complex simulation software, with more than 50 iteration loops, allows for expansions and integrations of additional special objectives up to measurement and control tasks.

Anna Deipser, 2014:
Prozesssimulation biologischer Abbauprozesse im Bereich der Abfallwirtschaft,
Hamburger Berichte zur Siedlungswasserwirtschaft,
Vol. 88; ISBN 978-3-942768-13-9,
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Further details: Dissertation at the Hamburg University of Technology, Institute of Wastewater Management and Water Protection, Bioconvension and Emission Control Group, http://www.tu-harburg.de/aww/;
Reviewer: PD Dr. habil. Ina Körner, Prof. Dr. Gerhard Schmitz

Design: Marion Münzberg, info@muenzbergdesign.de

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