

Modelling the Anaerobic Digestion of Esparto Paper Industry Wastewater Effluent in a Batch Digester Using IWA Anaerobic Digestion Model No. 1 (ADM1)

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Abstract : In this work the original ADM1, implemented in the simulation software package MATLAB/Simulink, was modified and adapted and applied to reproduce the experimental results of the mesophilic anaerobic digestion of Esparto paper industry wastewater in a batch digester. The data set from lab-scale experiment runs were used to calibrate and validate the model. The simulations' results indicated that the modified ADM1 was able to predict reasonably well the steady state results of gas flows, methane and carbon dioxide contents, pH and total volatile fatty acids (TVFA) observed with all influents concentrations.

Keywords : anaerobic digestion, mathematical modelling, Simulation, ADM1, batch digester, esparto paper industry effluent, mesophilic temperature

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