

Supplementary Materials

Table S1. Nomenclature and symbols

Nomenclature	Meaning
m_i	Mass of component i (g)
$m_{i,out}$	Outlet mass of component i (g)
$m_{i,tot}$	Total mass of component i (g)
c_{i0}	Inlet concentration of component i (g/l)
c_i	Concentration of component i (g/l)
V_f	Volume of fermenter (l)
V_t	Volume of feeding tank (l)
V_h	Volume of holding tank (l)
d_t	Diameter of feeding tank (cm)
d_h	Diameter of holding tank (cm)
h	Level of medium in feeding tank (cm)
h_f	Level of medium in fermenter (cm)
h_h	Level of medium in holding tank (cm)
\dot{V}_{in}	Inlet flow rate (l/h)
\dot{V}_{out}	Outlet flow rate (l/h)
X	Conversion (-)
K_d	Dead coefficient (h^{-1})
K_{IX}	Substrate inhibition constant for growth of biomass (g/l)
K_{SX}	Substrate limitation constant for growth of biomass (g/l)
K_{SP}	Substrate limitation constant for lactic acid production (g/l)
K_{SS}	Substrate limitation constant for sugar consumption (g/l)
K_{PX}	Product inhibition constant for growth of biomass (g/l)
K_{PS}	Product inhibition constant for sugar consumption (g/l)
K_{PP}	Product inhibition constant for lactic acid production (g/l)
$q_{s,max}$	Maximum specific sugar utilization rate (g/(gh))
$q_{p,max}$	Maximum specific lactic acid production rate (g/(gh))
r_i	Reaction rate of component i (g/lh)
i	Component (1 Sugar, 2 Biomass, 3 Lactic acid)
<i>Greek symbols</i>	
α	Growth-associated constant in Luedeking-Piret model (g/g)
ν_i	Stoichiometry coefficient of component i
μ	Specific growth rate (h^{-1})
μ_{max}	Maximum specific growth rate (h^{-1})