Microbial and phenyl acid dynamics during the start-up phase of anaerobic straw degradation in meso- and thermophilic batch reactors

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Table 1. Volatile fatty acid (VFA: acetate, propionate, i-butyrate and butyrate) concentrations, C/N$_{\text{liquid}}$ and pH of mesophilic control, LCL, MCL and HCL samples of day 0, 2, 4, 7, 14 and 28. VFA concentrations are shown in mmol L$^{-1}$; mean values are presented with the respective standard deviations (SD).
Table 2. VFA (acetate, propionate, i-butyrate and butyrate) concentrations, C/\text{N}_{\text{influent}} and pH of thermophilic control, LCL, MCL and HCL samples of day 0, 2, 4, 7, 14 and 28. VFA concentrations are shown in mmol L$^{-1}$; mean values are presented with the respective standard deviations (SD).

| Day | CL | Acetate  | Propionic  | i-Butyric  | Butyric  | C/\text{N}_{\text{influent}} | pH  |
|-----|----|----------|------------|------------|----------|-----------------------------|-----|
|     |    | mean     | mean       | mean       | mean     | mean                        |     |
|     |    | SD       | SD         | SD         | SD       | SD                          |     |
| 0   | control | 17.7     | 3.40       | 0.08       | 0.08     | 0.24                        | 0.10|
|     | LCL   | 20.8     | 0.55       | 0.25       | 0.05     | 0.41                        | 0.08|
|     | MCL   | 24.6     | 0.42       | 0.23       | 0.13     | 0.64                        | 0.03|
|     | HCL   | 78.0     | 2.21       | 2.77       | 0.59     | 2.36                        | 0.05|
| 2   | control | 26.3     | 0.26       | 0.99       | 0.01     | 0.21                        | 0.09|
|     | LCL   | 27.3     | 0.25       | 1.09       | 0.16     | 0.21                        | 0.10|
|     | MCL   | 31.8     | 0.17       | 2.14       | 0.26     | 0.00                        | 0.00|
|     | HCL   | 45.9     | 0.43       | 1.84       | 0.07     | 0.12                        | 0.01|
| 4   | control | 29.1     | 0.71       | 0.88       | 0.02     | 0.10                        | 0.01|
|     | LCL   | 31.2     | 0.47       | 1.18       | 0.11     | 0.17                        | 0.01|
|     | MCL   | 35.6     | 0.53       | 2.30       | 0.04     | 0.19                        | 0.01|
|     | HCL   | 53.1     | 0.35       | 2.60       | 0.08     | 0.28                        | 0.30|
| 7   | control | 38.0     | 0.94       | 1.11       | 0.15     | 0.57                        | 0.36|
|     | LCL   | 41.7     | 0.25       | 1.32       | 0.13     | 0.72                        | 0.13|
|     | MCL   | 49.1     | 0.75       | 2.71       | 0.08     | 1.47                        | 0.07|
|     | HCL   | 68.7     | 3.42       | 5.51       | 0.28     | 0.36                        | 0.20|
| 14  | control | 46.1     | 1.12       | 3.03       | 0.30     | 0.98                        | 0.16|
|     | LCL   | 46.9     | 1.22       | 2.77       | 0.70     | 1.07                        | 0.02|
|     | MCL   | 52.7     | 0.99       | 3.18       | 0.14     | 1.82                        | 0.65|
|     | HCL   | 5.89     | 0.90       | 6.66       | 0.12     | 0.00                        | 0.00|
| 21  | control | 48.5     | 1.25       | 4.14       | 0.38     | 0.72                        | 0.05|
|     | LCL   | 49.3     | 1.38       | 2.30       | 0.79     | 0.84                        | 0.08|
|     | MCL   | 53.4     | 0.82       | 2.98       | 0.08     | 1.57                        | 0.37|
|     | HCL   | 2.89     | 0.60       | 2.03       | 0.60     | 0.00                        | 0.00|
| 28  | control | 51.3     | 0.48       | 3.18       | 0.38     | 1.08                        | 0.12|
|     | LCL   | 48.6     | 1.89       | 3.53       | 0.36     | 1.04                        | 0.11|
|     | MCL   | 53.2     | 1.77       | 3.13       | 0.24     | 1.13                        | 0.56|
|     | HCL   | 1.72     | 0.55       | 0.89       | 0.18     | 0.00                        | 0.00|
Table S3. *mcrA* copies mL⁻¹ of meso- and thermophilic control, LCL, MCL and HCL samples of day 0, 14 and 28.

| Temperature | Day | CL variant | mean   | SD    |
|-------------|-----|------------|--------|-------|
| mesophilic  | 0   | control    | 3.44E+06 | 4.83E+04 |
|             |     | control    | 2.60E+07 | 4.12E+06 |
|             |     | LCL        | 3.10E+07 | 6.82E+06 |
|             |     | MCL        | 3.24E+07 | 8.22E+06 |
|             |     | HCL        | 2.73E+06 | 1.06E+06 |
|             | 14  | control    | 2.39E+07 | 1.43E+06 |
|             |     | LCL        | 4.86E+07 | 1.66E+07 |
|             |     | MCL        | 2.38E+07 | 9.62E+06 |
|             |     | HCL        | 5.93E+06 | 2.59E+06 |
| thermophilic| 0   | control    | 1.57E+03 | 4.25E+02 |
|             |     | control    | 2.76E+05 | 1.33E+05 |
|             |     | LCL        | 4.35E+05 | 6.56E+04 |
|             |     | MCL        | 3.90E+05 | 1.69E+05 |
|             |     | HCL        | 3.53E+06 | 6.76E+05 |
|             | 14  | control    | 1.45E+05 | 6.36E+04 |
|             |     | LCL        | 1.92E+05 | 1.61E+05 |
|             |     | MCL        | 1.89E+05 | 7.73E+04 |
|             |     | HCL        | 5.86E+06 | 1.24E+05 |

Figure S1. Interactive visualisation of mesophilic taxa of control, LCL, MCL and HCL samples of day 0, 14 and 28.

Figure S2. Interactive visualisation of thermophilic taxa of control, LCL, MCL and HCL samples of day 0, 14 and 28.

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