Supplementary Material

**Title:** Optimization of simultaneous production of volatile fatty acids and bio-hydrogen from food waste using response surface methodology

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**Table S1** The VFA production and VFA generate rate under various TS content at pH 7.0

| Item                  | TS (g/L)   |
|-----------------------|------------|
|                       | 50         | 80         | 100        |
| VFA (g/L)             | 17.86      | 21.65      | 26.17      |
| VFA (g/g VS\textsubscript{added}) | 0.416      | 0.315      | 0.305      |

**Table S2** The Box-Behnken Design of independent variables for process optimazation

| Run | TS (g/L) | pH | Time (d) |
|-----|----------|----|----------|
|     | A        | B  | C        |
| 1   | 80       | 7  | 1        |
| 2   | 80       | 7  | 5        |
| 3   | 80       | 4  | 5        |
| 4   | 80       | 5  | 3        |
| 5   | 80       | 6  | 3        |
| 6   | 100      | 4  | 3        |
| 7   | 50       | 6  | 1        |
| 8   | 80       | 4  | 1        |
| 9   | 80       | 5  | 3        |
| 10  | 50       | 6  | 3        |
| 11  | 100      | 5  | 5        |
| 12  | 100      | 6  | 1        |
| 13  | 80       | 6  | 3        |
| 14  | 50       | 5  | 5        |
| 15  | 50       | 7  | 3        |
Fig. S1 Evolution of the bacterial community: (a) heat map at the gene level and (b) the abundance of different bacterial phyla.