Supplementary material

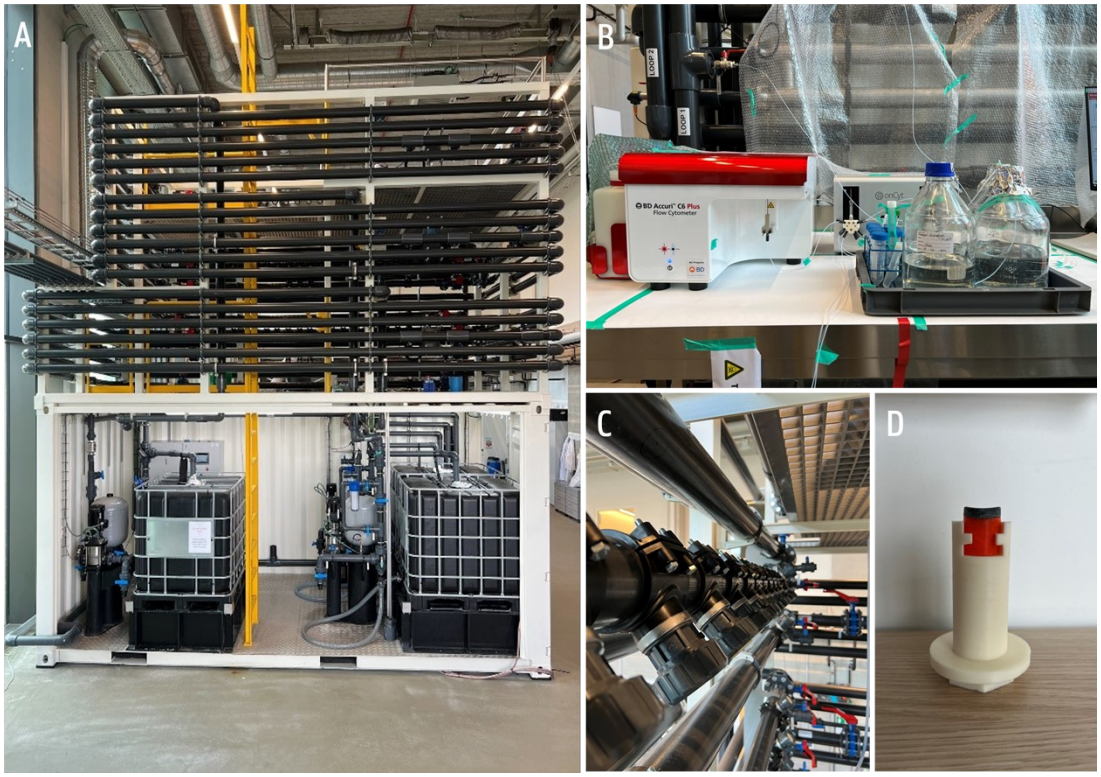

Figure S1: (A) The drinking water distribution pilot comprises three identical loops of 100 m each, connected to a non-translucent IBC. The structure measures 5.2 m × 2.6 m. (B) Implementation of online microbial monitoring: An Accuri™ C6 Plus flow cytometer (left) is coupled with an onCyt© autosampler, facilitating automated sampling from the pilot and cleaning solutions (right). (C) Biofilm sampling involves the use of coupons for undisruptive examination. These coupons are installed on a pipe using a system designed to resist pressure. (D) The coupon when removed from the pipe. It consists of a white holder (3.4 cm of diameter, 9.5 cm long), with a small insert (2.2 cm of diameter, 2.5 cm long) that can be placed within it. The top of this insert, which comes into contact with the water, is made of PCV-U, the same material as the pipes.

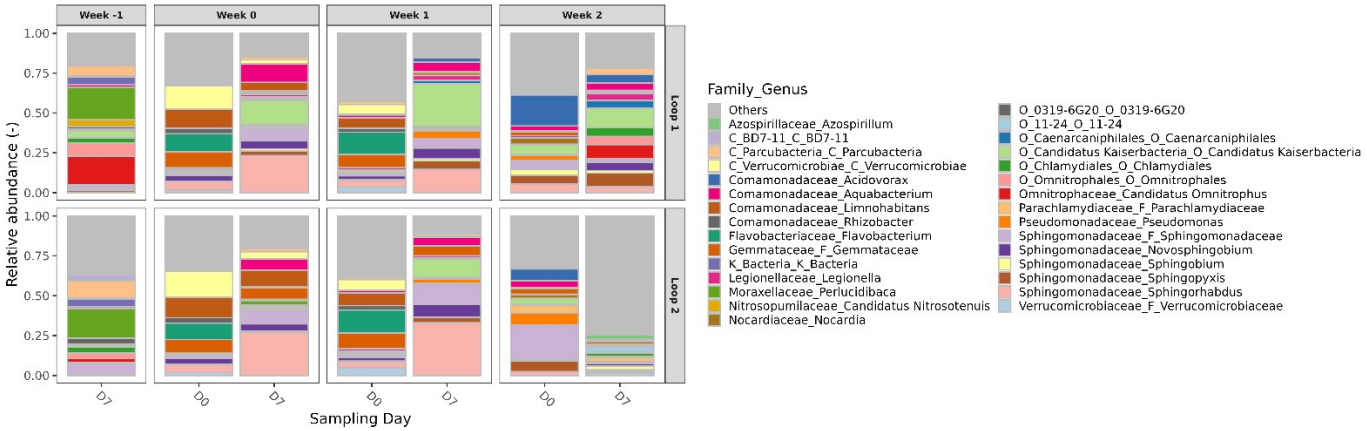

Figure S2: Relative abundance of the top 30 microbial taxa over time in the bulk in the two experimental loops during experiment I. Each stacked bar represents the composition of microbial family and genus at each sampling day (D0, D7) within a given week of the experiment. Less abundant taxa are grouped under "Others." Colors indicate different taxa at the family–genus level, as shown in the legend.

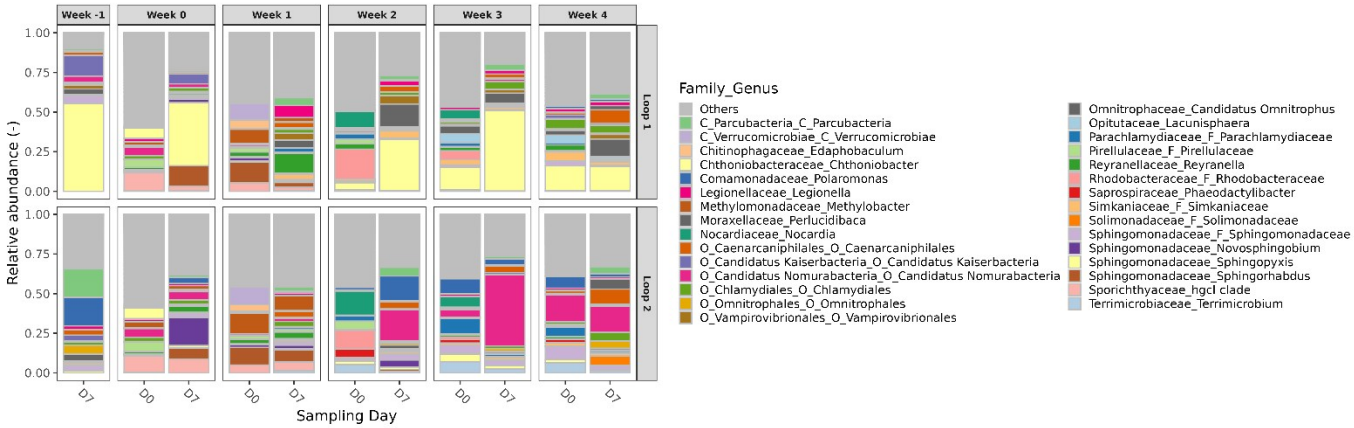

Figure S3: Relative abundance of the top 30 microbial taxa over time in the bulk the two experimental loops during experiment II. Each stacked bar represents the composition of microbial family and genus at each sampling day (D0, D7) within a given week of the experiment. Less abundant taxa are grouped under "Others." Colors indicate different taxa at the family–genus level, as shown in the legend.

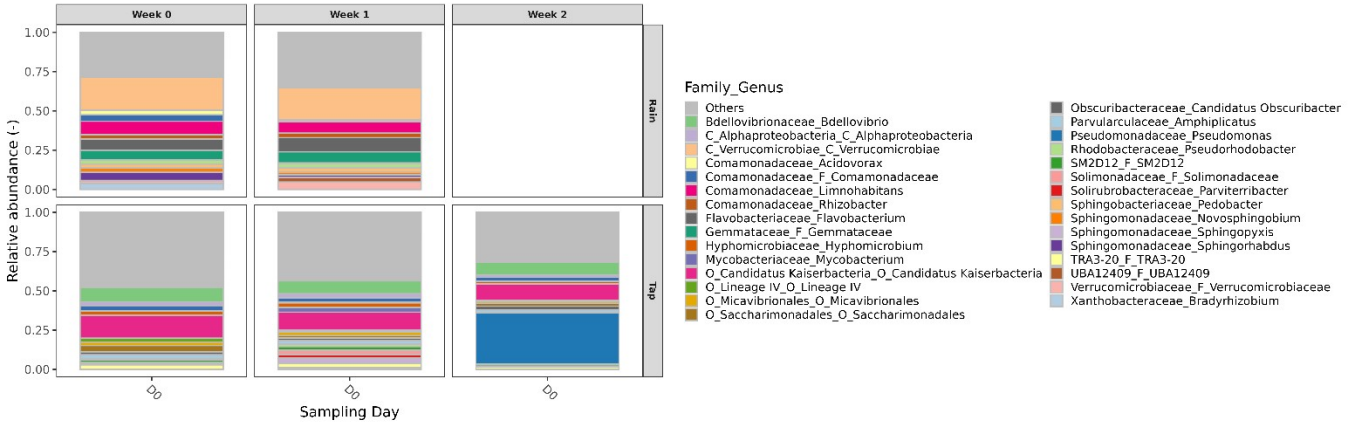

Figure S4: Relative abundance of the top 30 microbial taxa over time in the rain and tap water that was used to generate the rain-tap water mixture for experiment I. Each stacked bar represents the composition of microbial family and genus at each sampling day (D0, D7) within a given week of the experiment. Less abundant taxa are grouped under "Others." Colors indicate different taxa at the family–genus level, as shown in the legend.

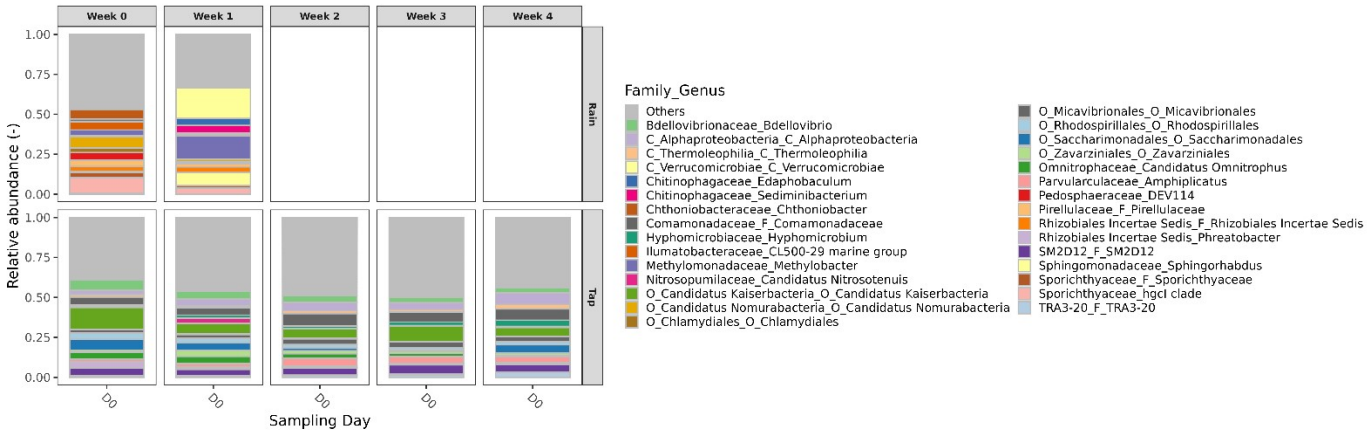

Figure S5: Relative abundance of the top 30 microbial taxa over time in the rain and tap water that was used to generate the rain-tap water mixture for experiment I. Each stacked bar represents the composition of microbial family and genus at each sampling day (D0, D7) within a given week of the experiment. Less abundant taxa are grouped under "Others." Colors indicate different taxa at the family–genus level, as shown in the legend.

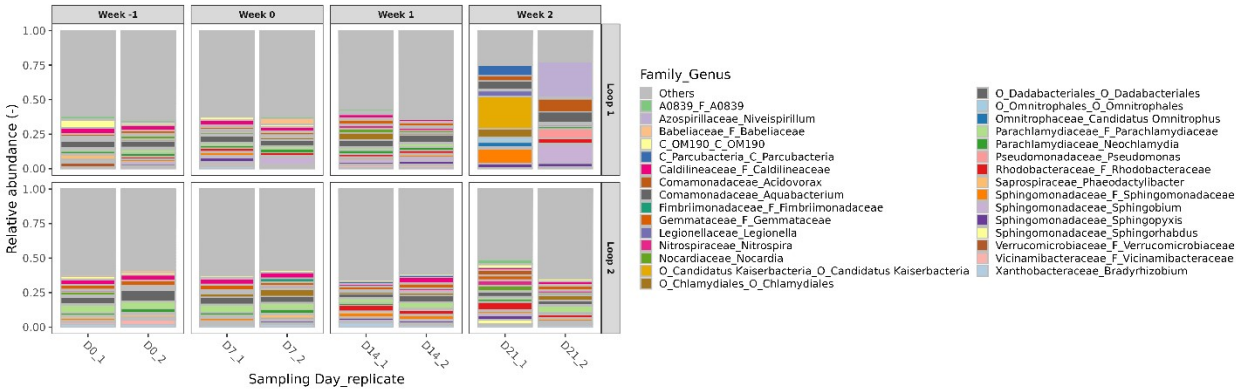

Figure S6: Relative abundance of the top 30 microbial taxa over time in the biofilm over time in each biological replicate for Loop 1 and Loop 2 in experiment I. Each stacked bar represents the composition of microbial family and genus at each sampling day (D0, D7) within a given week of the experiment. Less abundant taxa are grouped under "Others." Colors indicate different taxa at the family–genus level, as shown in the legend.

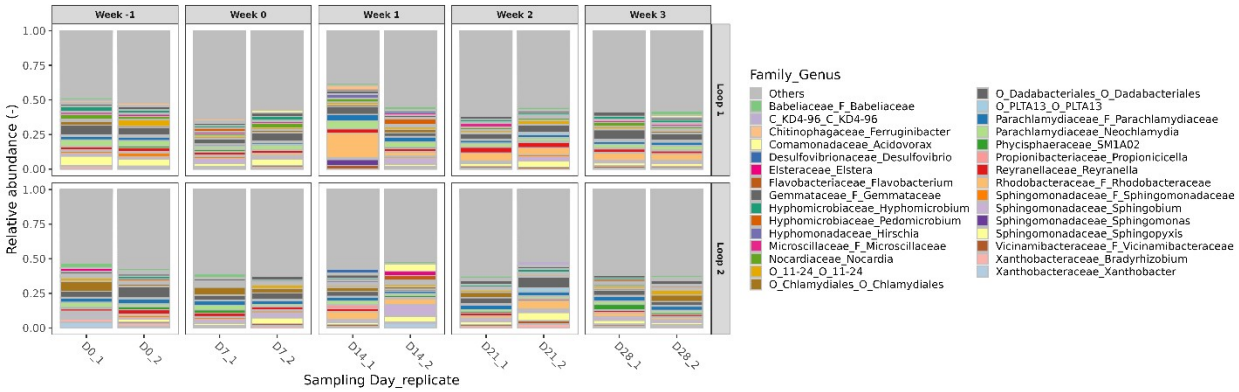

Figure S7: Relative abundance of the top 30 microbial taxa over time in the biofilm over time in each biological replicate for Loop 1 and Loop 2 in experiment II. Each stacked bar represents the composition of microbial family and genus at each sampling day (D0, D7) within a given week of the experiment. Less abundant taxa are grouped under "Others." Colors indicate different taxa at the family–genus level, as shown in the legend.

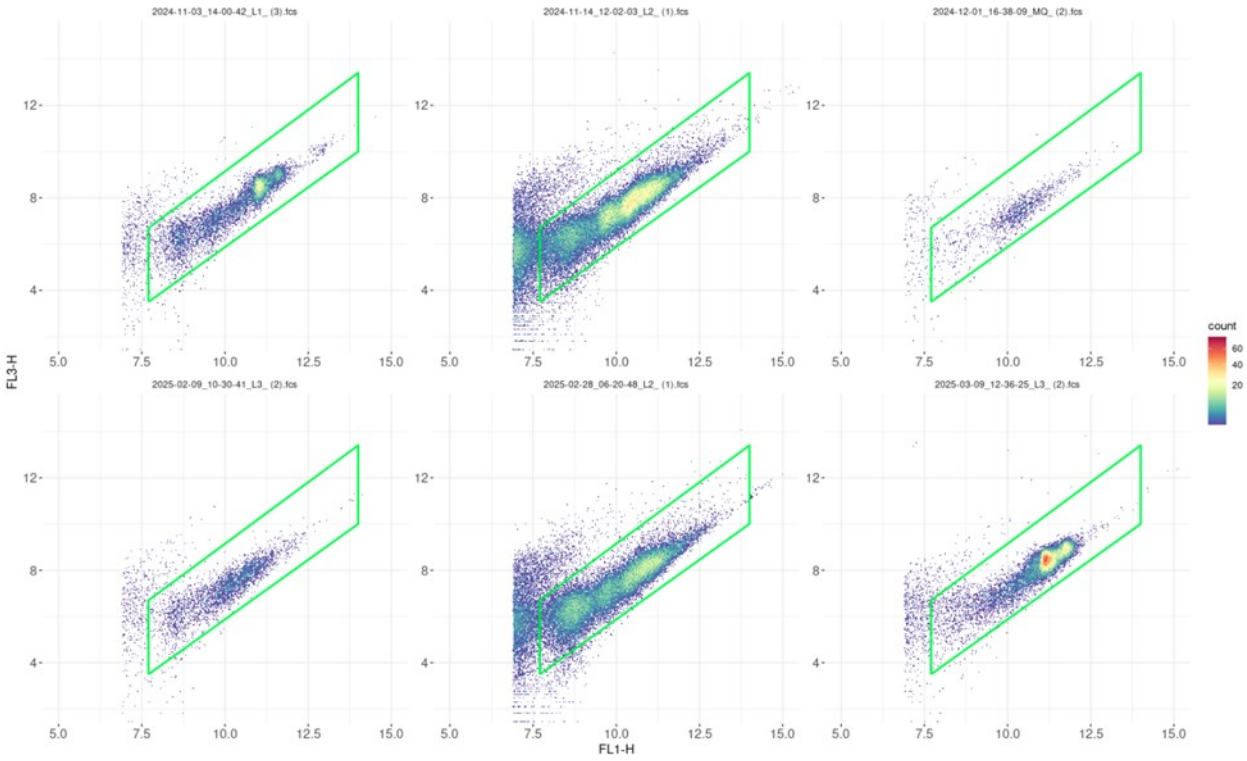

Figure S8: Overview of the gating strategy used to extract the total cell counts of the flow cytometry data.