𝑁 = number of species in mixed-species community

growth of species i in mono-species conditions

expected relative biofilm growth of species i in mixed-species conditions, which is its proportion inoculated

observed relative growth of species i in mixed-species

= deviation from expected relative growth of species i in mixed-species conditions

This biodiversity effect measures how inter-species interactions differ from intra-species interactions based on the difference between the observed multi-species biofilm productivity and an expected value derived from the productivity in mono-species biofilms. The biodiversity effect is the sum of the selection effect and the complementarity effect .