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Development and Validation of Incubation Chambers to Manipulate Microbial Dispersal

Microbial dispersal is the process in which microbial communities move across space, away from their parent populations. This process influences the way microbial communities are structured and interact with other communities. A method to physically control and measure dispersal of bacteria was developed and validated using *Escherichia coli*. This method was then applied to microbial communities living in different soil types using novel incubation chamber devices. In order to characterize and determine the change occurring within the communities, the 16S rRNA gene was amplified and sequenced in the microbial communities. Phylogenetic analysis was then conducted to provide the identity and proportion of bacterial species living in the respective microbial communities. This data allowed for the elucidation of microbial community change through the application of the microbial dispersal control method. In future studies, this method could prove practical for applications in measuring the influence of dispersal between different soil types on microbial community structure and function.