

Chlorophytum rhizosphere, a suitable environment for electroactive biofilm development

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Description

The electroactivity of *Chlorophytum* rhizospheric soil using imposed potential chronoamperometry and a characteristic cyclic voltammetry was demonstrated in the present work. Five different polarizations were tested: -0.3 , -0.155 , 0 , $+0.155$, and $+0.3$ V/SCE. The current density had stabilized around -0.0068 mA/m² and -0.03 mA/m² at -0.155 and -0.3 V/SCE, respectively. However, at 0 , $+0.155$, and $+0.3$ V/SCE, a current density had reached respectively 1.46 A/m², 1.48 A/m², and 0.6 A/m². The potential $+0.155$ V/SCE seemed to better stimulate the electrogenic bacteria activity of the *Chlorophytum* rhizosphere. Different bacterial strains had formed electroactive biofilms in response to different electrode polarizations. The *Chlorophytum* rhizosphere electroactivity has depended on strict anaerobes as well as facultative anaerobic bacteria under anaerobic conditions. Furthermore, the