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Why do we have to apply engineered biofilms to ecosystems and the environment?

Gamini Seneviratne^{1*}

¹National Institute of Fundamental Studies, Kandy 20000, Sri Lanka

Abstract: Industrial and green revolutions with the scientific and technological advancement started to cause a chemical (stoichiometric) imbalance in nature, which has led to biochemical and biodiversity imbalances. This in turn has caused to an ecosystem imbalance due to degradation of complex network interactions, eventually collapsing sustainability of managed ecosystems, in particular. It has now been shown however that, biofilm-exuded biochemicals (BFBCs) developed in vitro can reverse these imbalances, thus achieving ecosystem balance and reinstated sustainability via re-established stoichiometric balance, and hence biodiversity balance. This applies for managed and natural ecosystems, including human body ecosystem for better health. The mechanism behind this process is that, degraded biochemical cycles in all living organisms of the degraded ecosystems and the ecosystems per se are triggered by the BFBCs which supply ecologically important, diverse biochemicals with reactive sites (functional groups) that were lost with the human interventions. By now, this theory has been proven in over 150,000 hectares of agroecosystems has already been started.

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