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## Soil carbon sequestration in lowland paddy cultivation: a Biofilm biofertilizer approach

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**Abstract:** The amount of carbon (C) added to the atmosphere due to anthropogenic activities is enormous. Consequently, greenhouse effect and climate change have now reached its tipping point. As a global village, even if we are tiring to sequester C with different C farming methods, they have some negative impacts on crop yields. While satisfying food demand to the increasing global population, it is crucial to finding a proper way to remove C from the atmosphere without compromising arable lands and their productivity. In this context, evaluating the potential of paddy soil C sequestration using Biofilm biofertilizer (BFBF) practice and the farmers' conventional practice was the main objective of this study. Paddy soil C sequestration and paddy yields were evaluated during three consecutive seasons. There were significant differences (p<0.05) between those two practices in every season, with average paddy yield and soil C sequestration increases by 23% and 16%, respectively in the BFBF practice over the farmers' conventional practice. Thus, the BFBF application in lowland paddy cultivation can be viewed as an innovative way to store more soil C, and it is suggested as a potential approach contributing to reduce global warming while securing food for the future.

*Keywords:* Biofilm biofertilizer, Mitigation climate change, Paddy Soil carbon sequestration, Sustainable paddy farming