



Enhancing Soil Organic Carbon Sequestration in Agriculture: Plans and Policies

G. K. Dinesh, M. Sinduja, B. Priyanka, V. Sathya, S. Karthika, Ram Swaroop Meena, and Shiv Prasad

Abstract

Soil organic carbon (SOC) is a vital factor that positively affects soil fertility, agricultural production, and food security. However, current farming practices, intensive tillage, increasing global warming, and climate change have created a risk of losses of SOC, affecting food supply. Therefore, various management strategies to build soil carbon accumulation and sequestration have been continuously adopted. Net soil carbon sequestration on agricultural lands has the potential to offset 4% of yearly worldwide human-induced greenhouse gas emissions for the remainder of the century, making a significant contribution to reaching the Paris Agreement's emissions reduction objectives. It is also pledged to adopt various plans and policies for building SOC in agriculture. By 2030, a carbon sink of 2.5–3 billion tons of CO₂ equivalent must be created. A package like this would contain restrictions to limit soil carbon loss and encourage sustainable development and “win-win” solutions to current issues and many other climate change risks.

G. K. Dinesh · S. Prasad (✉)

Division of Environment Science, ICAR-Indian Agricultural Research Institute, New Delhi, India

M. Sinduja · S. Karthika

Department of Environmental Sciences, Tamil Nadu Agricultural University, Coimbatore, India

B. Priyanka

Department of Environmental Science, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, India

V. Sathya

National Agro Foundation, Anna University National Agro Foundation, Chennai, India

R. S. Meena

Department of Agronomy, Banaras Hindu University, Varanasi, India

e-mail: meenars@bhu.ac.in