

Walkley-Black Recovery Factor to Reassess Soil Organic Matter: Indo-Gangetic Plains and Black Soil Region of India Case Studies

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Maintenance of soil organic carbon (SOC) stock is important for monitoring soil health, which appears to be fragile in view of the reported climatic changes due to global warming in tropical countries such as India. This requires accurate and reproducible measurement of SOC. The wet-digestion technique following the Walkley-Black (WB) method to determine SOC has been used throughout the world in soil science, agronomy, and environmental science laboratories. WB suggested a universal correction factor to convert organic carbon to calculate exact quantity of organic carbon present in soil assuming 77% recovery of SOC. We understand that such a blanket recommendation may not hold well in different bioclimatic systems and for soils representing various depths. We present corrected Walkley-Black recovery factors (WBRF) for different bioclimates and soil depths in two food-growing zones in India.

Keywords Bioclimatic system, climate change, corrected Walkley-Black recovery factor, soil depth, Walkley-Black method