



Effects of Tillage Practices on Crop Productivity and CO₂ Emissions

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Message from the Guest Editors

Tillage practices in agriculture significantly impact both crop productivity and CO₂ emissions. Traditional tillage methods have been found to reduce soil organic matter and increase erosion, leading to higher CO₂ emissions.

Conversely, conservation tillage practices help to enhance water retention and maintain higher levels of soil organic carbon. These practices not only contribute to lower CO₂ emissions but also improve soil health, which can lead to enhanced crop yields.

The strategic adoption of reduced tillage practices is viewed as a dual-benefit approach: optimizing agricultural output while mitigating climate change impacts. In light of this, the integration of sustainable tillage practices is essential for reducing the agricultural sector's carbon footprint and enhancing crop productivity.

Incorporating these tillage strategies is part of a broader set of climate change adaptation and mitigation measures necessary for sustainable agriculture. Collectively, these strategies not only support the reduction in GHG emissions but also bolster agricultural productivity to meet the increasing global food demand amid changing climatic conditions.





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