Special Issue

Effect of Fertilizer Application on Greenhouse Gas Emissions and Soil Carbon Sequestration

Message from the Guest Editor

Reducing farmland greenhouse gases and enhancing soil carbon sequestration are essential means of mitigating climate change. The overuse of chemical fertilizers has led to a significant increase in the GHG emissions. Fertilizer management practices are suggested as techniques able to enhance the efficiency of fertilizer use and mitigate GHG emissions. Relevant practices include, but are not limited to, the following: The replacement of inorganic fertilizers with organic fertilizers partially, thus improving soil quality. The application of nitrification inhibitors in order to significantly reduce the emission of greenhouse gases. The development of biofertilizers that enrich and optimize the structure of the soil microbial community, and improve soil fertility. The application of straw-returning and no-tillage measures can increase the content of organic carbon in the soil content. In addition, the fertilization method, fertilization time, water and fertilizer integration, etc., all have an important impact on farmland GHG emissions.

In this Special Issue, we aim to exchange knowledge on farmland GHG emissions under different fertilizer management practices.

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