iSQAPER Master Student Research Information

Research Title

Driving factors analysis for decline of crop yields during soil acidification

Abstract

Soil acidification in China's croplands is ubiquitous, resulting in decline in the crop yields. During acidification significant changes of soil chemistry, physics, biology and biochemistry occurred, which would directly or indirectly influence crop growth and production. However, it is unclear which factors (changes) driven the decrease in crop yields. Using statistic models such as structural equation model (SEM), this study would distinguish and quantify the major driving factors contributing to the decrease in crop productivity during soil acidification, based on big data in China's croplands from long-term fertilization experiments and long-term soil quality monitoring sites, as well as laboratory cultivation.

Objectives of the research

Distinguishing and quantifying major driving factors from soils contributing to the decline in crop yields during soil acidification. By this, some targeted fertilization and cropping measures could be optimized so that high and sustainable crop yields and low environmental cost in acidic soils such as red soils could be obtained.

iSQAPER Study Site / Work Package

Main acidic soils in Southern China

Partners in this research

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