

## iSQAPER Master Student Research Information

### Research Title

The yields of major crops in response to soil pH

### Abstract

Soil acidification in China's croplands is ubiquitous, resulting in decline in the crop yields, which is a serious issue for food security. However, the quantitative relationship between soil acidification and crop productivity is unclear. In this study, several acidic soils with very low pH values were selected and different pH were adjusted by lime added, then wheat and maize were planted, respectively. By these laboratory cultivations, combining with long-term field experiments (long-term fertilization network and long-term soil quality monitoring sites) in Southern China (main acidic soil areas), the curves of soil pH-yield of wheat and maize could be constructed and soil pH threshold value (lime adjustment target) as well as change rate ( $\Delta\text{yield}/\Delta\text{pH}$ ) for given crop production would be obtained.

### Objectives of the research

Determining the quantitative relationship between crop yield and soil pH, then obtaining soil pH threshold and change rate of  $\Delta\text{yield}/\Delta\text{pH}$ . Our study would help to practical management for high crop yields and low environmental cost in acidic soils such as lime application.

### iSQAPER Study Site / Work Package

Soil acidification areas in Southern China.

### Partners in this research

Professor Minggang Xu, Professor Shilin Wen, Doctor Shiwei Zhou

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