



Announcement for MSc Thesis

“Interactive effects of phosphorus and living mulch on fruit quality of chili pepper (*Capsicum annuum* L.) in a tropical soil”

Vegetable production in tropical regions is largely constrained by access to fertilizer and water. Humid tropical soils are highly weathered; thus, crop nutrient availability is relatively low. Mineral fertilizers are usually not affordable by subsistence-oriented farmers, leading to widespread nutrient deficiency in smallholder vegetable crop production.

Legume living mulches are cover crops, grown to provide living ground cover throughout the growing season of cash crops. They have potentials to improve soil fertility through symbiotic nitrogen fixation and soil phosphorus mobilization. Meanwhile, legumes also require a sufficient amount of phosphorus for root development and symbiotic nitrogen fixation, which is an energy driven process. Therefore, legume living mulches have the advantages to improve nutrient availability for vegetable crops in tropical soils while there are also possible trade-offs between legume living mulches and vegetable crops through nutrient and water competition.



Fig 1. Chili pepper grown with *Arachis pintoi* living mulch

Chili pepper (*Capsicum annuum* L.) is a popular vegetable; it is used as spice and vegetable in various cuisines. Fruits of chili pepper contain diverse bioactive compounds and essential nutrients that imply positive nutritional values for human. In the present study, we aim to evaluate the interactive effects of different phosphorus applications and *Arachis pintoi* living mulch on yield and fruit quality of chili pepper. The experimental site is located in Cambodia. Leaf tissue and fruit samples will be collected and analyzed at the Division Quality of Plant Products of the Department of Crop Sciences, University of Goettingen. We expect to begin sample analyses in April 2020.

This project can host a master’s thesis. Master’s students are invited to express the interests through a one-page discussion on “the influences of phosphorus on nutritional quality of vegetables”.

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