



**University of Kentucky**

College of Agriculture, Food and Environment

Department of Plant and Soil Sciences

### **Ph.D. Graduate Student Assistantship**

A Ph.D. position is available at the University of Kentucky, Department of Plant and Soil Sciences, with focus in ecophysiology of corn yield potential and management of water and nitrogen inputs. The transformation from rainfed to irrigated water management in some of the agricultural areas in the US would greatly narrow the yield gap between potential and attainable yields in order to meet an increasing food demand under conditions of climate change. For agricultural regions in Kentucky and nearby states with large acreage potentially transformed to irrigation, a preemptive approach in the evaluation of corn yield potential and an optimized management of water and nitrogen is essential for the sustainable development of these agricultural areas.

The department has a strong record on corn agronomic, physiology and crop modeling research. The new field trials for this project will focus on understanding the interaction between irrigation management variables (e.g. irrigation efficiency, intensity, leaching fraction) and nitrogen fertilizer rates for a range of soil types. Emphasis will be given to nitrogen and irrigation decision tools that can successfully reproduce and anticipate these interactions for developing effective management tools. The applicant will conduct interdisciplinary research that will include the study of corn yield physiological responses across different environments in Kentucky, estimation of crop evapotranspiration and water balance, evaluation of different nitrogen fertilizer decision tools, and monitoring of soil inorganic nitrogen and nitrogen balance. The use of crop modeling tools will be encouraged depending on the applicant interests.

Applicants should have a MS with focus in agronomy, irrigation technology, agroclimatology, crop physiology, nutrient management, crop modeling, or related field. Prior experience in irrigated field experiments and/or nitrogen fertilizer decisions tools for corn is desired.

This position will be co-advised by Dr. Chad Lee and Dr. Montserrat Salmeron. To apply, please send a CV, academic transcripts and a cover letter to [Chad.Lee@uky.edu](mailto:Chad.Lee@uky.edu) and [msalmeron@uky.edu](mailto:msalmeron@uky.edu). The anticipated start date for this scholarship is January to March 2017. The Ph.D. stipends at University of Kentucky are competitive with other land grant institutions and pay will be increased based on experience and fit for the position.