Crop production recommendations for precision agriculture from smart decision support systems

Over the coming decades sustainable intensification is a prerequisite for increased food production and food security, it is expected that decision support systems (DSS) based on geodatabases and sensors will play a central role. Recently developed DSS such as CropSAT.se (based on satellite data), Markdata.se (based on a soil database), and Solvi.nu (based on data from drones) are now widely adopted in Swedish crop production. Currently, advice and recommendations to Swedish farmers are based on traditional field trials. In order to take full advantage of new technology for precision agriculture in crop production, it is necessary to combine knowledge from trials with spatial data in geodatabases or from remote or proximal sensing, and transform this into spatially explicit management recommendations. In this project we will focus on methods and strategies to derive recommendation maps by integrating available data with known biological relationships, for example to optimize nitrogen rates across agricultural fields, in order to reach qualitative and quantitative production goals. The project is part of a newly formed research programme: Laboratory for intelligent agricultural decision support systems (LADS) aiming at development of efficient decision support for the future agriculture.

Qualifications

We are seeking a highly motivated and enthusiastic candidate with a bachelor or master’s degree in soil science, or in a field judged equivalent. The candidate must be interested in crop production both from a practical and scientific perspective. It is important with an interest in data management and new technology. Experience in geographic information systems, remote sensing, statistics, programming, and the R package is an advantage. Proficiency in English is a requirement. High weight is given to personal abilities such as capability of working both independently and in collaboration within groups.

Forms for funding or employment

Employment as PhD student