

Title: Evaluation of Precision Guidance Systems to Determine Benefits for On-farm Applications

Objective: Traditional application methods will be compared to applications utilizing precision guidance systems to determine efficiency and profitability of guidance systems for Alabama farmers.

Project: This project will be conducted utilizing commercially available precision guidance systems. The guidance systems will utilize the WAAS GPS correction signal and feature last-pass-guidance, color screens and as-applied mapping. Due to decreased costs for guidance systems, these products are now more economically feasible for a wide variety of users. These systems are most frequently used for spraying and fertilizer applications and provide 4" - 12" pass-to-pass accuracy.

Procedures:

- Guidance systems will be distributed to each Agronomy REA in the state who wishes to participate in the project. *(Dec. 2008)*
- The REA will identify a grower from their region who is interested in GPS guidance and install the guidance system on their spray and/or spread equipment. *(Spring 2009)*
- The grower will make applications (pesticide, fertilizer, etc.) on 3 to 5 of their fields during the growing season (choose fields of average shape and size for their farm). One application for each field should be made using traditional application methods (foam markers, flags, horizon markers, etc.) and one application for each field should be made utilizing the GPS-enabled guidance system.
- REA's will be provided a USB setup with project information which will be uploaded to the EZ Guide 500 prior to application. (This will help the grower and REA keep track of which fields were used for documentation).
- The **GPS guidance MUST be turned ON and the COVERAGE LOGGING feature turned ON for EVERY application** including those using traditional application methods. This will provide coverage information for each method so that comparisons in overlap, acreage covered, and application timing can be made.
- REA's will fill out the provided information sheet for each grower to document size and type of operation, type of applications made (spraying, fertilizer,

etc.), crops grown and type of equipment that the guidance system is installed on for the project.

- REA's will download data from the EZ Guide 500 using a USB jump drive. Either the jump drive will be mailed to Amy Winstead at TVREC; or data will be copied from the USB drive and emailed to winstat@aces.edu.
- Project will be completed through the 2009 and 2010 growing seasons.