

**SMALL PLOT EVALUATION
OF A COTTON YIELD MONITOR
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The application of precision agriculture to cotton production has been very limited due to the lack of a suitable yield monitor. A yield monitor and global positioning system (GPS) combination with appropriate mapping software would allow for development of a map of the field to quantify varietal performance very quickly and identify both productive and non-productive areas. Armed with this information, the producer could seek to identify limiting variables such as drainage problems, fertility, pH, or even disease problems and attempt to correct the problem. A commercial cotton yield monitor was recently introduced to the cotton industry by the Zycom corporation. The monitor consists of one or more sensors, a control box with GPS receiver, GPS antennae, and data recording device. Each sensor consists of two parts, an infrared light emitting device and detector for detecting transmitted and reflected light. Holes are cut out and sensors are mounted at the top of the cotton chute in an opposing configuration. In order to evaluate the accuracy of the yield monitor, the system was mounted to a spindle-type plot picker with sensors on both chutes of a single picker head. The GPS component, and therefore the mapping capabilities, were not evaluated. Cotton research plots were harvested and monitor values recorded from a single harvesting head. Seedcotton was saved from each plot and weighed for comparison to the yield monitor values. Actual weights correlated very closely ($r=0.99$) to yield monitor values. The total weight of all plots was 429.8 pounds and the yield monitor estimate for the total was 432.3 pounds. Preliminary evaluation of this yield monitor looked very promising and suggests that the missing link for the application of precision agriculture to cotton production is now available.

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