John Deere AutoSteer

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Objective:

•To test the pass to pass accuracy of the John Deere StarFire II guidance system.

• Determine the static accuracy, or signal drift of the StarFire II receiver.

• Determine if StarFire II is suitable for strip till and bedded crop applications where exact placement of agronomic inputs is required.

How AutoTrack works:

Determine working width and enter into the GreenStar system.
•Set first pass (A-B line, track 0) on the GreenStar display.
• System "draws" parallel lines in relation to track 0.
•Align the vehicle with the desired track as indicated by the GreenStar display.
•Press "RESUME" on the command arm seat, let go of the steering wheel

StarFire Receiver

Advantages of AutoTrack:

•Reduced overlap of implements and sprayers.

•Less operator fatigue.

•Cover more acres/hour

•Operate at faster field speeds.

Allows operator to closely monitor machine functions

How StarFire II works:

• The StarFire receiver picks up a signal from at least 3 orbiting satellites.

• The mobile processor triangulates its position based on multiple satellite signals.

• The GreenStar display provides information to the operator as well as the vehicle, as to its position.

Factors that contribute to AutoSteer accuracy:

GPS Signal Accuracy +
Implement Setup +
Vehicle Setup +
Field/Soil Conditions

AutoTrack System Accuracy

Results of Testing:

- When using AutoSteer with StarFire II, pass to pass accuracy averaged +/- 3.5 inches for all tests

- Static Accuracy, or signal drift averaged 7.96 inches over the 200 foot course.

- Heading shifted .59 degrees in a south direction in two weeks time.

Conclusions:

- AutoSteer guided with StarFire II signal increases productivity, decreases operator fatigue, and optimizes implement productivity

- StarFire RTK is required for applications where repeatability is required over long periods of time.