



TRUESIGHT LOSS REPORT



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CORN ROW GUIDANCE

Corn growers throughout North America have been enjoying the benefits of row guidance on their combines for nearly a decade. They have experienced improved harvest efficiency and increased productivity - especially in challenging harvest conditions. Accurate row guidance can significantly improve material flow and feeding into the header, reduce snout damage, and increase harvest speeds in down corn. And, of course, automatic row guidance reduces operator fatigue, freeing him to focus on other important machine functions. However, many growers ask, "Does corn row guidance pay?"

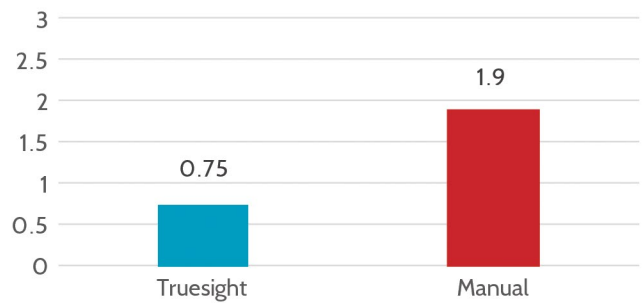
A series of tests were done using Headsight's Truesight row guidance system to answer that question.

AUTOMATIC VS MANUAL STEERING

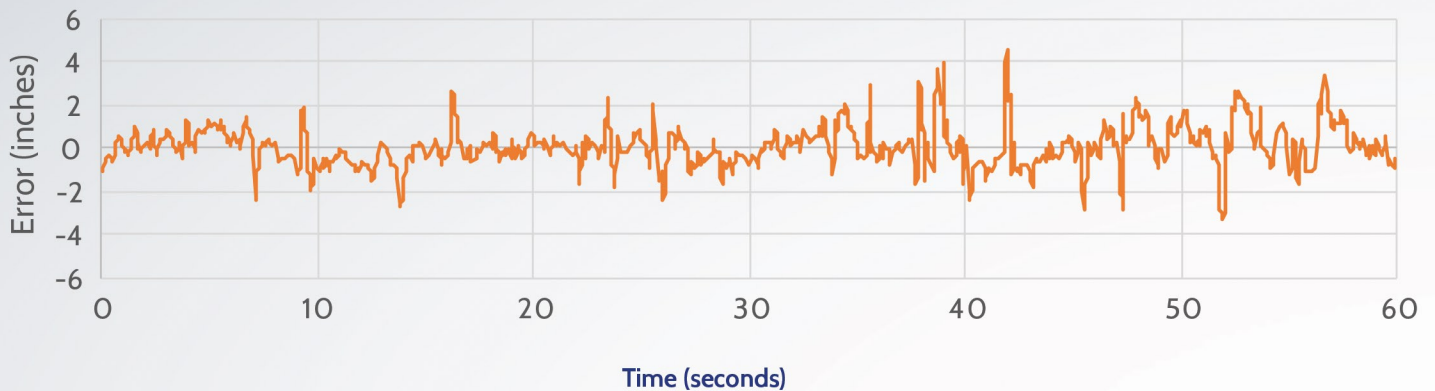
First, data was collected to establish if there was a difference in performance between Truesight and the abilities of an experienced combine operator. There was some variation between field conditions and operators tested, but the trend was clear. Truesight had a standard deviation of 0.5" to 1" (average error from the center of the row), while manual steering resulted in a standard deviation of 1.9".

To illustrate this, the next two plots show position data collected on back-to-back passes in the same field. Truesight is more stable, and if more often near 0" error.

Average Error (in)



Truesight Guidance
(0.9" std dev)



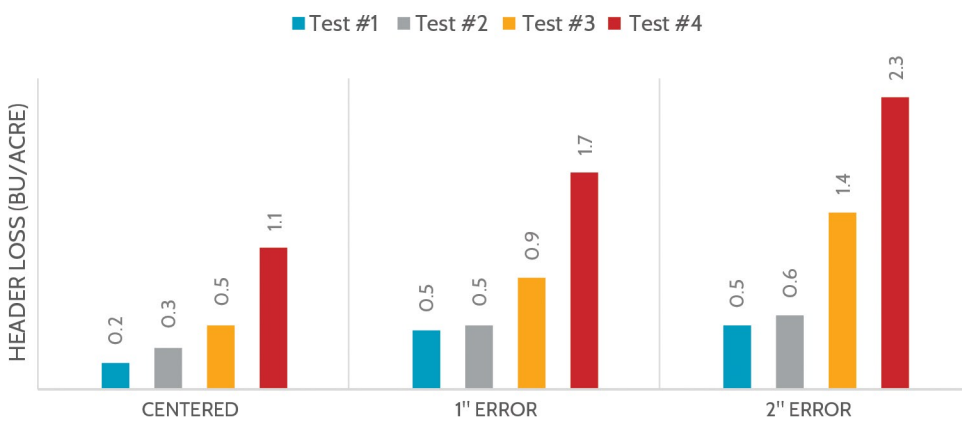


HEADER LOSS

Additional tests were conducted in typical mid-October northern Indiana harvest conditions to determine the effect of row guidance on header loss. All combine and header settings except for row guidance were set by the machine operator. John Deere, Case/IH, and Geringhoff headers were represented. The harvested moisture ranged from 24% (Test 1) to 17% (Test 4).

As can be seen from the figure below, for a given row position error, there were significant variations in header loss between test conditions. These variations are due to machine settings, hybrid characteristics, field conditions, and harvest moisture.

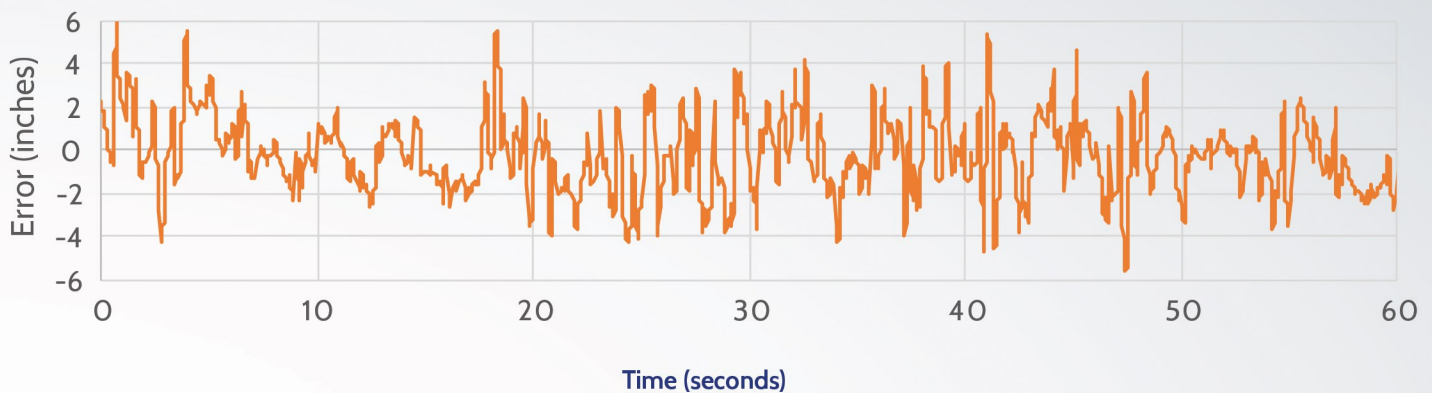
HEADER LOSS VS FIELD VARIABLES



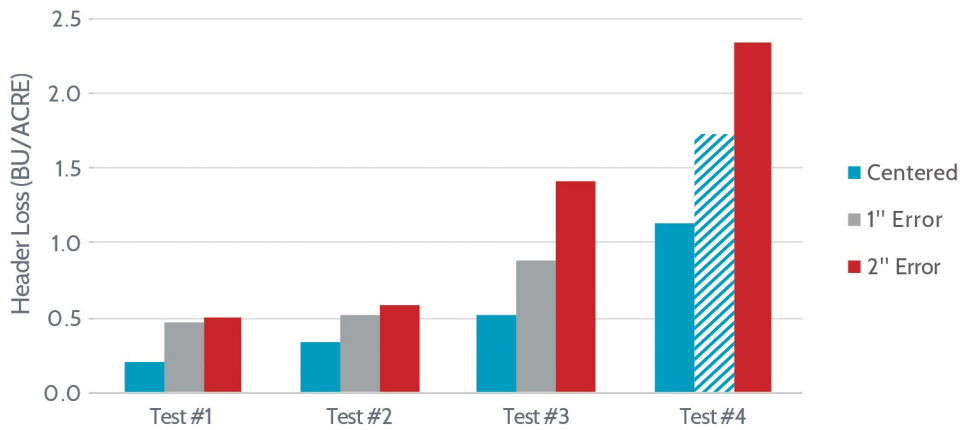
The effects of row position error are more obvious when the data is grouped by test condition. As can be seen in the chart, the header loss in these tests more than doubled with only 2" of error from being centered on the row. As expected, the increase in header loss was more significant in the dryer harvest conditions (test #4).

The harvested moisture ranged from 24% (Test 1) to 17% (Test 4).

Manual Steering (1.7" std dev)



HEADER LOSS VS ROW POSITION



From these results, an average operator error of 1" cost 0.3 bu/ac average, with a 2" error averaging a loss of 0.7 bu/ac. During testing, it was note that errors above 3-5" resulted in significant butt shelling and ear loss. These effects caused header loss values to be over 5 bu/acre in tests with greater guidance errors.

CONCLUSION

Using automatic row guidance reduces the positioning errors while harvesting. This results in reducing both kernel and ear loss at the header. A typical corn grower could capture an additional 0.3-0.7 bu/acre in harvested yield compared to manually steering by adding combine row guidance. Using 1500 acres of corn and a \$3.70 corn price, the payback would be \$1500-\$3700 annually.

In addition to reducing loss and the resulting monetary benefit, Truesight helps to decrease operator fatigue while increasing productivity and efficiency. Also, improvements to feeding in down corn and reductions in butt shelling have been documented.

Contact Headsight for more information on the value of Truesight row guidance and the name of your area dealer.



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