Evaluation of E-Z Steer Auto Steer Technology for Field Crop Production

Ottawa-Carleton Soil & Crop Improvement Association

Major Grant Project 2005

Purpose:

To evaluate the New EZ-Steer (auto-steer) technology for efficiency and operator satisfaction in cereal/soybean planting with a 9m (30') no-till air-drill, corn planting with a 40-76cm (16 – 30") row crop planter, cutting hay with a haybine, 18m (60') sprayer and 9m (30') combine header. Efficiency was measured by comparing the spacing of the "guess" rows or over-lap as compared to foam markers or planter hydraulic extension markers. This technology can also be utilized for spreading manure and commercial fertilizer.

Methods:

The Ottawa-Carleton Soil & Crop Improvement Association leased the E-Z Steer equipment for the season and several local farmers tried the E-Z Steer on their own tractor or combine. The equipment was mounted by the Jordan & Morley Wallace sales representative and each co-operator was given instructions on how to operator the E-Z Steer system.

Results:

The following are responses from some of the co-operators involved in this project:

Equipment used with the E-Z Steer, # of rows, width, etc.?

- Disc-bine 3.2m (10.5 feet) (a)
- 6.1m (20') disc, 12 row corn planter, air cart with 9.1m (30') toolbar (b)
- 16 row corn planter- 76 cm (30") (c)
- 9.1m (30') No-till Drill (d)
- Combine with 9.1m (30') flex head (e)
- Combine – 9.1m (30') (f)
- 4.6m (15') Sunflower drill (g)

How operator friendly was the E-Z Steer?

- The system was very user friendly
- Very friendly
- It was extremely easy to understand and operate, with minimal training or reading of manual
- 8 on scale of 10 (g)

Did you feel you had enough explanation to use the E-Z Steer?

- It was a try as you go experiment
- Yes
- Yes, it was explained while operating for the first time
- Needed more time to get (cooperator had it only for short time)
- Very accurate where the E-Z Steer was started in the right place, but not where it took a little distance before it got back in-line (gradual taper) (g)

How accurate was the E-Z Steer? (ie. how much overlap or area misses)

- The system was very accurate, the auto steer guided me closer then I would have cut using the disc-bine (a)
- From 15 cm (6")overlap to 15 cm (6")missed (b)

- On the corn planter we had a lot of good results, however on rolling terrain it would be out by more than 30cm (12”). But for the most part it worked well on the planter.(c)
- We did not have as much success with the drill, as the tractor was an articulated steer and we found it to be very jerky and the misses and overlaps were at times out by 90 cm (36”). I think the antenna needs to be mounted in a better location when using articulated tractors.(d)
- We had little success the day it was on our combine, just did not seem to be close at all. Not sure what was going on. Could have something to do with the lower speed.(e)
- No overlap or misses (f).

How would the E-Z Steer benefit you on your farm?

- It would ensure that rows are straighter. It would decrease operator tiredness. It would maximize the time spent doing a job.
- It allows planting without markers. Able to watch equipment, monitors, use cell phone take notes without getting off marker line
- Much less tired at end of day.
- Much easier to work at night
- It allows you to multi task while in the tractor, ie. Making phone calls to order fertilizer, etc. A lot less fatigue at the end of a planting day.
- Planting & combining
- Reduce operator fatigue
- Correct angle to existing crop
- Straight planting, save using markers

How would you rate your satisfaction on scale 1 to 5; (1 poor & 5 great)

- Without other system to compare to , a 4
- 4
- Rates about a 4 on the planter tractor
- 4 - more benefits to newer model “Contour Land”

Advantages:

- The precision that the equipment allows an operator to repeat fieldwork
- More accuracy means less time spent doing the fieldwork, less fuel, chemicals are used
- More advantages on larger field
- Makes straight rows, even if hard to see end of field
- Good for finishing off the field where you go around and around
- Don’t need to concentrate on marker lines
- Can be moved from machine to machine
- Once familiar with the unit, easy to operator
- Handy with the remote for activation

Disadvantages:

- Cost of equipment would need to be justified over large number of acres
- Tricky in tight areas or short rows
- Distraction on finding next path
- Small screen
- Can loose satellite signal
- Have to reset E-Z Steer if leave field for a length of time
- Raised buttons on remote would make it easier to know if E-Z Steer is activated
- Price!!

Summary:

Generally the system worked well although adjustments were needed for some pieces of equipment. The cost of the E-Z Steer unit makes it hard to justify on most operations.

Communications:

The E-Z Steer was demonstrated at the Ottawa-Carleton SCIA twilight meeting in July 2005 and a PowerPoint presentation was made at the Ottawa-Carleton SCIA Annual Meeting in December 20005. The project summary will also be included in the Ottawa-Rideau Regional SCIA newsletter in January 2006 and a PowerPoint presentation will be made at the Ontario Soil & Crop Improvement Association – Annual Meeting.

Next Steps:

Application of this technology may be incorporated with variable manure application equipment to map field application rate with location in the field. Field maps of manure application can be used for record keeping and monitoring.

Acknowledgements:

Thank you to the project co-operators who tried out the E-Z Steer unit on their farms. Thank you also to Jordan & Morley Wallace, GPS Ontario, for E-Z Steer unit installation and operator instruction and the Ontario Soil & Crop Improvement Association for funding this project.

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