



## Appendix 2

**Table A1. Sensitivity analysis for the medium cost ST option, changing the acres on which the implement is used (rows), the hours it is operated until it is sold (columns), and the inflation rate.**

480 hours until trade-in represents 20 years of 24 hours of annual use. Costs represent total cost per acre (ownership and operating) for the ST implement and associated power unit and were determined using machdata.xlsx (Lazarus 2014). Please see the Materials and Methods section and Appendix 1 for the assumptions used in this analysis.

Annual acres of use	Annual hours of use	-----Hours to trade in-----								
		240	480	720	240	480	720	240	480	720
		-----0% inflation-----			-----1.5% inflation-----			-----3% inflation-----		
100	12	\$24.60	\$21.10	\$19.50	\$25.30	\$23.40	\$23.40	\$25.90	\$26.40	\$29.50
150	18	\$22.20	\$19.10	\$17.90	\$22.40	\$20.40	\$20.20	\$22.60	\$21.90	\$23.20
200	24	\$20.80	\$18.00	\$16.90	\$20.90	\$18.80	\$18.50	\$21.00	\$19.80	\$20.40
300	36	\$19.30	\$16.80	\$15.80	\$19.30	\$17.20	\$16.80	\$19.30	\$17.70	\$17.80
400	48	\$18.50	\$16.10	\$15.20	\$18.40	\$16.40	\$15.90	\$18.40	\$16.70	\$16.50

**Table A2. Partial budget for different weed management scenarios.**

Standard practice of our farmer cooperators was to use one PRE herbicide application and occasionally (about 10% of the time) to use a POST application as well. Scenario 1 posits that an additional POST application of bentazon is used on all acreage in addition to the 10% that would be sprayed in a typical year. This increased weed-management associated costs by \$29.60 relative to the standard practice. In Scenario 2, in which one rogue weeding is used, weed-management associated costs increased by \$54. We assume that these measures are used proactively before weeds cause yield loss, so we assume no change in revenue. These additional costs represent reduced profits. If these tactics increased yield, increased revenues would result and the net economic returns would change.

	add one POST application	add one hand weeding		add one POST application	add one hand weeding
<b>Additional revenue</b>	-----\$/acre-----		<b>Additional costs</b>	-----\$/acre-----	
none	0	0	POST herbicides (\$23.50/acre)	\$23.50	\$0
			herbicide pass (\$6.10/acre)	\$6.10	\$0
			hand weeding (\$54/person/acre)	\$0.00	\$54.00
<b>SUBTOTAL</b>	0	0		\$29.60	\$54.00
<b>Reduced costs</b>			<b>Reduced revenue</b>		
none	0	0	None	0	0
<b>SUBTOTAL</b>	0	0		0	0