

TABLE 15.1. Partial budget example for adopting no-till in a cotton production system

ADDED RETURNS		per acre	REDUCED RETURNS		per acre
50 pounds per acre yield at \$0.70 per pound		\$35			
<i>Total Added Return</i>		\$35	<i>Total Reduced Return</i>		\$0
REDUCED COSTS			ADDED COSTS		
Eliminate one disking		\$10	Cover crop		\$10
Eliminate one deep tillage		\$12	Plant cover crop		\$8
			Herbicides		\$8
			Spray herbicide		\$5
			Annual planter cost per acre per year		\$14.59
<i>Total Reduced Costs</i>		\$22	<i>Total Added Costs</i>		\$45.59
(1) TOTAL ADDED RETURN AND REDUCED COST		\$57	(2) TOTAL REDUCED RETURNS AND ADDED COSTS		\$45.59
NET CHANGE IN RETURNS (1) minus (2) equals \$11.41 per acre or \$4,564 total per year.					

TABLE 15.2. Online enterprise crop budgets by state

STATE	WEBSITE ADDRESS
Multi-state	https://agrisk.umn.edu/Budgets
Georgia ¹	www.caes.uga.edu/departments/ag-econ/extension/budgets.html
Alabama	www.aces.edu/agriculture/business-management/budgets
Florida ¹	http://svaec.ifas.ufl.edu/featured-3-menus/extension/agricultural-economics/north-florida-enterprise-budgets
Mississippi	www.agecon.msstate.edu/whatwedo/budgets.asp
Tennessee ¹	https://ag.tennessee.edu/arec/Pages/budgets.aspx
South Carolina ¹	www.clemson.edu/extension/agribusiness/enterprise-budgets.html
North Carolina ¹	https://ag-econ.ncsu.edu/extension/budgets

¹ Denotes states that publish crop enterprise budgets for both conventional and conservation-tillage practices.

TABLE 15.3. Strip-till irrigated cotton enterprise budget, 2010

Expected Yield (pounds per acre) 1,100			Expected Price (per pound) \$0.67		
Variable cost	Unit	No. of units	Price per unit	Cost per acre	Your cost
Land rent	Acre	1			
Crop insurance	Acre	1	11	11	
Boll Weevil Eradication Program (BWEP)	Acre	1	1	1	
Seed and tech fee	Bag	0.171	500	85.56	
Lime and spreading	Ton	0.33	32.50	10.73	
<i>Fertilizers¹</i>					
Nitrogen	Pounds	90	0.45	40.50	
Phosphate (P ₂ O ₅)	Pounds	70	0.25	17.50	
Potash (K ₂ O)	Pounds	70	0.50	35	
Chicken litter	Ton		35		
Boron	Pounds	0.5	5.40	2.70	
<i>Weed controls²</i>					
Pre-plant	Acre	1	9.40	9.40	
At planting or pre-emergence	Acre	1	21.22	21.22	
Post-emergence	Acre	1	14.45	14.45	
Post-emergence (direct or hood)	Acre	1	12.59	12.59	
Hand weeding	Acre	1			
<i>Insect control</i>					
In-furrow	Pounds	3.5	3	10.50	
Spray (worms)	Application	1			
Spray (stink bugs, other)	Application	2	4.25	8.90	
Scouting	Acre	1	10	10	
Nematicide	Acre	1			
Plant growth regulator	Ounce	16	0.11	1.76	
Boll opener and defoliant	Acre	1	14.44	14.44	
Custom work	Acre	1			
<i>Machinery and equipment</i>					
Fuel and lube ¹	Gallon	11.12	2.50	27.80	
Repair and maintenance	Acre	1	19.61	19.61	
Irrigation	Application	7	9	63	
Labor	Hours	1.98	11	21.78	
Custom harvest	Acre	1			

Expected Yield (pounds per acre) 1,100

Expected Price (per pound) \$0.67

Variable cost	Unit	No. of units	Price per unit	Cost per acre	Your cost
<i>Machinery and equipment</i>					
Interest on operating (6 months)	439.44	0.5	7.25 percent	15.93	
<i>Ginning and warehousing</i>					
Ginning	Pounds	1,100	0.08	88	
Storage and warehousing	Bale	2.2	10.50	23.10	
Promotions, boards, classing	Bale	2.2	5.77	12.69	
Cottonseed (gin turnout: 39 percent)	Ton	0.72	120	-86.31	
Total variable costs				\$492.85	
Net return above variable cost				\$244.15	
Fixed Cost					
Tractors and sprayer	Acre	1	31.56	31.56	
Equipment/implements	Acre	1	8.93	8.93	
Picker/Boll Buggy/module builder	Acre	1	53.09	53.09	
Irrigation	Acre	1	100	100	
Owned land charge	Acre				
Miscellaneous overhead	Percent of variable costs	\$492.85	5 percent	24.64	
Management	Percent of variable costs	\$492.85	5 percent	24.64	
Total fixed costs				\$242.86	
Total cost				\$735.71	
Net return				\$1.29	

¹Fertilizer and fuel prices as of December 2009. All costs are subject to change.

²Herbicide programs are highly variable. Cost assumes managing Palmer amaranth for glyphosate resistance. Hand weeding may be necessary.

TABLE 15.4. Comparison of corn, cotton and peanut enterprise budgets for conventional and conservation tillage systems based on 2011 University of Georgia Crop Enterprise Budgets in \$ per acre, 2011 [36]

	Corn		Cotton		Peanuts	
	Conv. Till (base)	Strip Till (change in cost) ¹	Conv. Till (base)	Strip Till (change in cost)	Conv. Till (base)	Strip Till (change in cost)
<i>Variable expenses</i>						
Seed	53		77.79	7.77	97.50	
Cover crop seed		24.75		39.36	0	24.75
Fertilizer	116		103.19		52.38	
Herbicide	31.60	5	42.75	4.80	54.45	14.65
Insecticide	0		30.23		54.50	
Fungicide	0		0		41.92	
Adjuvants/inoculants	0		0		7	
Defoliants	0		13		0	
Growth regulators	0		1.38		0	
Drying/ginning ²	41.48		18.03		45.60	
Service fees						
<i>Crop insurance</i>	18.50		22		34.50	
<i>Other fees</i>			0.92		12.45	
Labor	11.18	-2.04	25.48	-3.20	34.23	-5.35
Machinery ³						
<i>Fuel</i>	20.24	-3.72	34.71	-4.83	60.60	-11.47
<i>Repairs/maintenance</i>	14.57	-2.29	22.52	-2.13	42.02	-6.41
Interest on operating capital ⁴	8.62	0.70	12.15	1.36	15.57	0.53
Total variable expenses	\$315.19	\$22.40	\$404.14	\$43.13	\$552.72	\$16.69
<i>Fixed expenses⁵</i>						
Machinery	50.06	-6.66	99.31	-11.75	127.50	-20.17
Overhead/mgmt.	31.52	2.24	40.41	4.31	55.28	1.66
Total fixed expenses	\$81.58	-\$4.42	\$139.72	-\$7.44	\$182.78	-18.51
Total cost of operations	\$396.76	\$17.98	\$543.86	\$35.69	\$735.50	-\$1.82

¹Negative changes are decreases in the costs of production by converting to strip-till.

²Includes cleaning for peanuts and storage/warehousing and promotion/boards/classing for cotton. For cotton, cottonseed is subtracted from the ginning/warehousing costs. Assume yields of 135 bushels per acre for corn, 700 pounds per acre of lint for cotton, and 1.9 tons per acre for peanuts to calculate drying/cleaning/ginning and hauling costs.

³All machinery costs except fuel are represented in repair and maintenance costs.

⁴Interest on operating capital is the opportunity cost of investing the money spent on production into an interest-bearing account earning 6.5 percent interest for the growing season (6 months).

TABLE 15.5. An example of variable costs (per acre) of managing and planting four cover crop varieties in cropping systems using no-till

Variable Costs	Hairy Vetch	Crimson Clover	Rye	Oats
Seed	\$50 ¹	\$34 ²	\$21 ³	\$14 ⁴
Planting ⁵	\$8	\$8	\$8	\$8
Fertilizer ⁶	---	---	\$27–\$47	\$27–\$47
Application ⁵	---	---	\$7–\$14	\$7–\$14
Termination ⁷	----	----	(\$7)–\$0	(\$7)–\$0
Total Variable Cost	\$58	\$42	\$56–\$90	\$49–\$83

¹ Seeding rate at 20 pounds per acre. Seed cost at \$2.50 per pound.

² Seeding rate at 20 pounds per acre. Seed cost at \$1.68 per pound.

³ Seeding rate at 90 pounds per acre. Seed cost at \$0.23 per pound.

⁴ Seeding rate at 90 pounds per acre. Seed cost at \$0.15 per pound.

⁵ Custom rate [22].

⁶ Assume zero pounds of fertilizer applied to legumes to allow nitrogen fixation to begin as early as possible. The lower cost for the grains assumes a single liquid application of 15 pounds of N per acre. The higher cost assumes two liquid applications of 15 pounds of N per acre utilizing 28-0-0 liquid fertilizer [Personal communication, Jeris McMullen, Ag Valley Co-op, Norton, KS. July 18, 2008].

⁷ In no-till, chemical termination of cover crop is done with the same pass that would be done pre-plant. Therefore, no additional cost is assumed. Lower cost (\$7) is combination of mechanical termination (roller/crimper) and ½ rate of herbicide pass. Roller/crimper costs and savings are taken from Mississippi State University crop enterprise budget information (<http://www.agecon.msstate.edu/whatwedo/budgets.asp>) and are adjusted for inflation and energy costs. Herbicide treatment was assumed to be 22 oz. glyphosate, 10 oz. 2,4-D, + surfactant. (Ag Valley Co-Op Agronomist, Norton, KS, July 18, 2008).