

Field Crop Budgets For 2014

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Field Crop Budgets For 2014

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Introduction and Disclaimer

The 2014 Tennessee Row Crop Budgets were developed to assist producers and other agricultural decision makers to evaluate the returns of different row cropping alternatives. The budgets developed use production alternatives, management strategies, machinery, and inputs that are commonly utilized in row crop production in Tennessee. Given the diverse nature of row crop production in the state it is impossible to account for all possible production scenarios and circumstances. As such, this guide should be utilized to assist decision makers in their annual planning efforts. To develop a custom budget for a specific field or operation interested parties are strongly encouraged to use the University of Tennessee Extension's Excel based spreadsheet available on line at: <http://economics.ag.utk.edu/crop.html>. The spreadsheet uses the same format as the budgets contained in this document, however it allows the user to change yields, input quantities, input prices, machinery costs, and add additional costs that are specific to a field or enterprise. This allows users to adjust for region and site specific production methodology and input selections.

This publication and the accompanying Excel spreadsheet contain short-term planning budgets for canola, corn, cotton, grain sorghum, soybean, and wheat enterprises. These budgets should be used for short-run or annual plans developed for 2014, as significant changes may occur from year to year in production methods and input and output prices. Center pivot irrigation budgets for corn, soybean, and cotton were added this year due to increasing use in Tennessee. Canola was added as a winter crop due to rising interest in the southern middle portion of the state.

The fertilizer recommendations in the crop budgets are generally for soils that have a medium soil test. Farmers should have their soils tested in order to get maximum return for money spent for fertilizer. As crop programs are planned, the fertilizer applications can be adjusted to the soil test recommendations.

Disclaimer: Significant variability in inputs, prices, and production methods exist in the production of row crops. The information contained in this document relies on estimates and assumptions that are specific to Tennessee row crop production. These budgets should not be construed as a reflection of all circumstances across the state as significant regional variability will occur. To improve the accuracy users are encouraged to use inputs, prices, and processes that are utilized on their specific farms in budget calculations.

Trade Names, Herbicides, Insecticides, and Pesticide Caution

Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others which may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product.

The herbicide and insecticide programs used in these budgets are based on UT Extension publications titled "2013 Weed Control Manual for Tennessee" (PB1580) and "2013 Insect Control Recommendations for Field Crops" (PB1768). Pesticides recommended in the

publication were registered for the prescribed uses when this manual was printed. Pesticide registrations are continuously being reviewed. Should registration of a recommended pesticide be canceled, it will no longer be recommended by The University of Tennessee.

In order to protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

No direct government program benefits are included in the budgets. Adjust the estimates as appropriate.

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2014 Non-Irrigated Corn Budget (No-Till)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
			<u>Gross Revenue (\$/Acre)</u>		
Corn ¹	Bu	150	\$4.34	\$651.00	_____
			Total Revenue	\$651.00	_____
Variable Expenses					
Seed ^{2,3}	Thous.	30	\$3.13	\$93.75	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$147.70	\$147.70	_____
Chemical (Table 2.) ^{3,4}	Acre	1	\$68.13	\$68.13	_____
Crop Scout or Consultant	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.)	Acre	1	\$15.67	\$15.67	_____
Fuel, Oil & Filter (Table 3.)	Acre	1	\$28.79	\$28.79	_____
Operator Labor (Table 3.)	Acre	1	\$7.81	\$7.81	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	150	\$0.00	\$0.00	_____
Cash Rent ⁵	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ⁶	Acre	1	\$12.52	\$12.52	_____
Operating Interest ⁷	%	\$463.37	6.00%	\$13.90	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$477.28	_____
			Return above Variable Expenses	\$173.72	_____
Fixed Expenses					
Machinery ⁸					
Capital Recovery (Table 3.)	Acre	1	\$44.59	\$44.59	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			Total Fixed Expenses	\$59.59	_____
			Return Above All Specified Expenses	\$114.13	_____

Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
100	\$4.77	\$5.37
110	\$4.34	\$4.88
120	\$3.98	\$4.47
130	\$3.67	\$4.13
140	\$3.41	\$3.83
150	\$3.18	\$3.58
160	\$2.98	\$3.36
170	\$2.81	\$3.16
180	\$2.65	\$2.98
190	\$2.51	\$2.83
200	\$2.39	\$2.68

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$3.09	154	174
\$3.34	143	161
\$3.59	133	150
\$3.84	124	140
\$4.09	117	131
\$4.34	110	124
\$4.59	104	117
\$4.84	99	111
\$5.09	94	105
\$5.34	89	101
\$5.59	85	96

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	170	\$0.48	\$81.60	_____
Phosphorous	P ₂ O ₅	70	\$0.37	\$25.90	_____
Potassium	K ₂ O	70	\$0.41	\$28.70	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Other		0	\$0.00	\$0.00	_____
Total				\$147.70	_____

Table 2. Chemicals^{3,4}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides ³	Burndown	Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
	Pre-Emerge	Atrazine 4L	qt.	1	1	\$3.50	\$3.50	_____
		Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$4.88	\$17.57	_____
		Atrazine 4L	qt.	1	1.5	\$3.50	\$5.25	_____
Insecticides	Post Harvest	Gramoxone SL	oz.	1	48	\$0.24	\$11.52	_____
		Valor	oz.	1	2	\$5.31	\$10.62	_____
Fungicides ⁴						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Total							\$68.13	_____

Table 3. Machinery⁸

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Harvest	Combine	Corn Head	8-row	\$19.46	\$7.60	\$13.43	\$2.62	\$43.11	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Total				\$44.59	\$15.67	\$28.79	\$7.81	\$96.86	_____

FOOTNOTES

- 1) Corn price was estimated as the average of the September and December 2014 futures price on December 30, 2013 (\$4.52/bu) plus estimated harvest basis of \$-0.18.
- 2) Assumes a bag of seed costs \$250 and contains 80,000 seeds (\$3.13/thousand seeds). Seeding rate of 30,000 seeds/acre. Seed treatment is included in the price.
- 3) Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 4) A foliar fungicide application may be used in some cropping systems at a cost of \$15/acre plus application cost. Cost will vary depending on the fungicide used and the application rate.
- 5) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 6) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of corn in Tennessee for the previous production year.
- 7) Operating interest is assumed to be charged on half of all variable expenses.
- 8) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.

2014 Non-Irrigated Corn Budget (Conventional Tillage)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
Corn ¹	Bu	150	\$4.34	\$651.00	_____
Total Revenue				\$651.00	_____
Variable Expenses					
Seed ^{2,3}	Thous.	30	\$3.13	\$93.75	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$147.70	\$147.70	_____
Chemical (Table 2.) ^{3, 4}	Acre	1	\$58.06	\$58.06	_____
Crop Scout or Consultant	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.)	Acre	1	\$21.41	\$21.41	_____
Fuel, Oil, & Filter (Table 3.)	Acre	1	\$36.67	\$36.67	_____
Operator Labor (Table 3.)	Acre	1	\$10.38	\$10.38	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	150	\$0.00	\$0.00	_____
Cash Rent ⁵	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ⁶	Acre	1	\$12.52	\$12.52	_____
Operating Interest ⁷	%	\$469.49	6.00%	\$14.08	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
Total Variable Expenses				\$483.57	_____
Return above Variable Expenses				\$167.43	_____
Fixed Expenses					
Machinery ⁸					
Capital Recovery (Table 3.)	Acre	1	\$51.02	\$51.02	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
Total Fixed Expenses				\$66.02	_____
Return Above All Specified Expenses				\$101.41	_____

Breakeven Price for Selected Yield

<u>Yield</u> <u>(bu)</u>	<u>Variable Cost</u> <u>(\$/bu)</u>	<u>Total Specified Cost</u> <u>(\$/bu)</u>
100	\$4.84	\$5.50
110	\$4.40	\$5.00
120	\$4.03	\$4.58
130	\$3.72	\$4.23
140	\$3.45	\$3.93
150	\$3.22	\$3.66
160	\$3.02	\$3.43
170	\$2.84	\$3.23
180	\$2.69	\$3.05
190	\$2.55	\$2.89
200	\$2.42	\$2.75

Breakeven Yield for Selected Price

<u>Price</u> <u>(\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost</u> <u>(bu)</u>
\$3.09	156	178
\$3.34	145	165
\$3.59	135	153
\$3.84	126	143
\$4.09	118	134
\$4.34	111	127
\$4.59	105	120
\$4.84	100	114
\$5.09	95	108
\$5.34	91	103
\$5.59	87	98

Table 1. Fertilizer & Lime

	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	170	\$0.48	\$81.60	_____
Phosphorous	P ₂ O ₅	70	\$0.37	\$25.90	_____
Potassium	K ₂ O	70	\$0.41	\$28.70	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Other		0	\$0.00	\$0.00	_____
Total				\$147.70	_____

Table 2. Chemicals ^{3,4}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides ³	Pre-Emerge	Atrazine 4L	qt.	1	1	\$3.50	\$3.50	_____
		Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$4.88	\$17.57	_____
		Atrazine 4L	qt.	1	1.5	\$3.50	\$5.25	_____
Post Harvest		Gramoxone SL	oz.	1	48	\$0.24	\$11.52	_____
		Valor	oz.	1	2	\$5.31	\$10.62	_____
Insecticides						\$0.00	\$0.00	_____
Fungicides ⁴						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Total							\$58.06	_____

Table 3. Machinery ⁸

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.89	\$2.80	\$3.60	\$1.14	\$10.43	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.34	\$1.60	\$2.98	\$0.95	\$7.87	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Harvest	Combine	Corn Head	8-row	\$19.46	\$7.60	\$13.43	\$2.62	\$43.11	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Total				\$51.02	\$21.41	\$36.67	\$10.38	\$119.48	_____

FOOTNOTES

- 1) Corn price was estimated as the average of the September and December 2014 futures price on December 30, 2013 (\$4.52/bu) plus estimated harvest basis \$-0.18.
- 2) Assumes a bag of seed costs \$250 and contains 80,000 seeds (\$3.13/thousand seeds). Seeding rate of 30,000 seeds/acre. Seed treatment is included in the price.
- 3) Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 4) A foliar fungicide application may be used in some cropping systems at a cost of \$15/acre plus application cost. Cost will vary depending on the fungicide used and the application rate.
- 5) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 6) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of corn in Tennessee for the previous production year.
- 7) Operating interest is assumed to be charged on half of all variable expenses.
- 8) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.

2014 Irrigated Corn Budget (No-Till)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue				Gross Revenue (\$/Acre)	
Corn ¹	Bu	225	\$4.34	\$976.50	_____
			Total Revenue	\$976.50	_____
Variable Expenses					
Seed ^{2,3}	Thous.	34	\$3.13	\$106.25	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$196.90	\$196.90	_____
Chemical (Table 2.) ^{3,4}	Acre	1	\$68.13	\$68.13	_____
Crop Scout	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.)	Acre	1	\$15.67	\$15.67	_____
Fuel, Oil & Filter (Table 3.)	Acre	1	\$28.79	\$28.79	_____
Operator Labor (Table 3.)	Acre	1	\$7.81	\$7.81	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	225	\$0.00	\$0.00	_____
Irrigation Energy Cost (Diesel)	Ac-In	7.2	\$7.20	\$51.84	_____
Irrigation System R&M	Acre	1	\$10.88	\$10.88	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ⁵	Acre	1	\$160.00	\$160.00	_____
Crop Insurance ⁶	Acre	1	\$12.52	\$12.52	_____
Operating Interest ⁷	%	\$658.79	6.00%	\$19.76	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$678.56	_____
			Return Above Variable Expenses	\$297.94	_____
Fixed Expenses					
Machinery ⁸					
Capital Recovery (Table 3.)	Acre	1	\$44.59	\$44.59	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) ⁹	Acre	1	\$87.81	\$87.81	_____
Other Fixed Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor ¹⁰	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			Total Fixed Expenses	\$162.40	_____
			Return Above All Specified Expenses	\$135.54	_____

Breakeven Price For Selected Yield

<u>Yield</u> (bu)	<u>Variable Cost</u> (\$/bu)	<u>Total Specified Cost</u> (\$/bu)
175	\$3.88	\$4.81
185	\$3.67	\$4.55
195	\$3.48	\$4.31
205	\$3.31	\$4.10
215	\$3.16	\$3.91
225	\$3.02	\$3.74
235	\$2.89	\$3.58
245	\$2.77	\$3.43
255	\$2.66	\$3.30
265	\$2.56	\$3.17
275	\$2.47	\$3.06

Breakeven Yield for Selected Price

<u>Price</u> (\$/bu)	<u>Variable Cost (bu)</u>	<u>Total Specified Cost</u> (bu)
\$3.09	220	272
\$3.34	203	252
\$3.59	189	234
\$3.84	177	219
\$4.09	166	206
\$4.34	156	194
\$4.59	148	183
\$4.84	140	174
\$5.09	133	165
\$5.34	127	157
\$5.59	121	150

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	240	\$0.48	\$115.20	_____
Phosphorous	P ₂ O ₅	90	\$0.37	\$33.30	_____
Potassium	K ₂ O	90	\$0.41	\$36.90	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Other		0	\$0.00	\$0.00	_____
Total				\$196.90	_____

Table 2. Chemicals ^{3,4}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides ³	Burndown	Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
	Pre-Emerge	Atrazine 4L	qt.	1	1	\$3.50	\$3.50	_____
		Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$4.88	\$17.57	_____
Insecticides	Post Harvest	Atrazine 4L	qt.	1	1.5	\$3.50	\$5.25	_____
		Gramoxone SL	oz.	1	48	\$0.24	\$11.52	_____
		Valor	oz.	1	2	\$5.31	\$10.62	_____
Fungicides ⁴						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Total							\$68.13	_____

Table 3. Machinery ⁸

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Harvest	Combine	Corn Head	8-row	\$19.46	\$7.60	\$13.43	\$2.62	\$43.11	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Total				\$44.59	\$15.67	\$28.79	\$7.81	\$96.86	_____

FOOTNOTES

- 1) Corn price was estimated as the average of the September and December 2014 futures price on December 30, 2013 (\$4.52/bu) plus estimated harvest basis \$-0.18.
- 2) Assumes a bag of seed costs \$250 and contains 80,000 seeds (\$3.13/thousand seeds). Seeding rate of 34,000 seeds/acre. Seed treatment is included in the price.
- 3) Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 4) A foliar fungicide application may be used in some cropping systems at a cost of \$15/acre plus application cost. Cost will vary depending on the fungicide used and the application rate.
- 5) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 6) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of corn in Tennessee for the previous production year.
- 7) Operating interest is assumed to be charged on half of all variable expenses.
- 8) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 9) Irrigation costs are estimated using the following assumptions: Purchase price and installation cost of \$80,000; Useful Life of 20 years; and an irrigated acreage of 125 acres. Irrigation rates should be adjusted to meet commodity and farm specific applications.
- 10) Management labor for irrigated acreage is assumed to be double that of dryland acres.

2014 Non-Irrigated Soybean Budget (No-Till)

	Unit	Quantity	Price	Total	Your Farm
Revenue					
Soybeans ¹	Bu	45	\$11.57	\$520.65	
				Gross Revenue (\$/Acre)	
				Total Revenue	\$520.65
Variable Expenses ²					
Seed ³	Thous.	140	\$0.36	\$50.40	
Fertilizer & Lime (Table 1.) ⁴	Acre	1	\$35.30	\$35.30	
Chemical (Table 2.) ^{5,6,7,8,9,10}	Acre	1	\$118.29	\$118.29	
Crop Scout	Acre	1	\$0.00	\$0.00	
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$14.17	\$14.17	
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$25.91	\$25.91	
Operator Labor (Table 3.) ¹¹	Acre	1	\$7.38	\$7.38	
Machinery Rental	Acre	0	\$0.00	\$0.00	
Custom Work	Acre	0	\$0.00	\$0.00	
Drying (Fuel/Electric)	Bu	45	\$0.00	\$0.00	
Cash Rent ¹²	Acre	1	\$89.00	\$89.00	
Crop Insurance ¹³	Acre	1	\$10.14	\$10.14	
Operating Interest ¹⁴	%	\$350.59	6.00%	\$10.52	
Other Variable Costs	Acre	1	\$0.00	\$0.00	
				Total Variable Expenses	\$361.11
				Return Above Variable Expenses	\$159.54
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$47.99	\$47.99	
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	
Property Taxes	Acre	1	\$0.00	\$0.00	
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	
Management Labor	Acre	1	\$15.00	\$15.00	
Other Fixed Costs	Acre	1	\$0.00	\$0.00	
				Total Fixed Expenses	\$62.99
				Return Above All Specified Expenses	\$96.55

Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
25	\$14.44	\$16.96
30	\$12.04	\$14.14
35	\$10.32	\$12.12
40	\$9.03	\$10.60
45	\$8.02	\$9.42
50	\$7.22	\$8.48
55	\$6.57	\$7.71
60	\$6.02	\$7.07
65	\$5.56	\$6.52

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$9.57	38	44
\$10.07	36	42
\$10.57	34	40
\$11.07	33	38
\$11.57	31	37
\$12.07	30	35
\$12.57	29	34
\$13.07	28	32
\$13.57	27	31

Table 1. Fertilizer & Lime ⁴

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	0	\$0.48	\$0.00	_____
Phosphorous	P ₂ O ₅	20	\$0.37	\$7.40	_____
Potassium	K ₂ O	40	\$0.41	\$16.40	_____
Lime ⁴	Limestone	1,000	\$0.012	\$11.50	_____
Other		0	\$0.00	\$0.00	_____
Total				\$35.30	_____

Table 2. Chemicals ^{5,6,7,8,9,10}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup Ready Power Max	qt.	1	1	\$5.25	\$5.25	_____
		Clarity	oz.	1	8	\$0.44	\$3.52	_____
		Valor	oz.	1	2	\$5.31	\$10.62	_____
	Pre-Emerge	Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
		Boundary	pt.	1	2	\$9.75	\$19.50	_____
Post-Emerge		Flexstar GT	pt.	1	3	\$4.20	\$12.60	_____
		Cobra	oz.	1	12	\$1.40	\$16.80	_____
	Post-Emerge	Roundup Power Max	qt.	1	1	\$5.25	\$5.25	_____
Insecticides			acre	1	1	\$7.00	\$7.00	_____
Insecticide/Fungicides		Seed Treatment	acre	1	1	\$10.75	\$10.75	_____
Fungicides			acre	1	1	\$17.40	\$17.40	_____
Total							\$118.29	_____

Table 3. Machinery ¹¹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Harvest	Combine	Grain Head	30 ft	\$20.11	\$5.36	\$8.95	\$1.75	\$36.17	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$47.99	\$14.17	\$25.91	\$7.38	\$95.45	_____

FOOTNOTES

- 1) Soybean price is the November 2014 futures price, as of December 30, 2013, plus average 2013 harvest basis of \$-0.01.
- 2) Assumes a normal crop rotation with minimum weed infestation. A continuous soybean system may require additional expenses for chemicals and/or land preparation.
- 3) Seed price includes technology fee.
- 4) Assumes 2 tons of lime applied every 4 years.
- 5) Seed treatments such as some nematicide treatments are optional and costs vary depending on product used.
- 6) Weed control chemicals should be selected for specific weed or grass problems which are present. Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 7) The addition of Dicamba @ 8oz./acre is necessary to manage Glyphosate resistant horseweed. This adds an additional \$5.50/acre to the burndown spray cost.
- 8) Due to prevalence of Glyphosate resistant weeds, if weeds are not controlled, hand chopping may be necessary.
- 9) For an alternate control, use Gramoxone SL @1.25 quarts/acre plus a surfactant.
- 10) Several other versions of Glyphosate, the active ingredient in Roundup Power Max are available. Check label for concentration rates and registration on Roundup Ready Soybeans.
- 11) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 13) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of soybeans in Tennessee for the previous production year.
- 14) Operating interest is assumed to be charged on half of all variable expenses.
- 15) Irrigation costs are estimated using the following assumptions: Purchase price and installation cost of \$80,000; Useful Life of 20 years; and an irrigated acreage of 125 acres. Irrigation rates should be adjusted to meet commodity and farm specific applications.
- 16) Management labor for irrigated acreage is assumed to be double that of dryland acres.

2014 Irrigated Soybean Budget (No-Till)

	Unit	Quantity	Price	Total	Your Farm
Revenue					
Soybeans ¹	Bu	60	\$11.57	\$694.20	_____
				Gross Revenue (\$/Acre)	
				Total Revenue	\$694.20
Variable Expenses ²					
Seed ³	Thous.	140	\$0.36	\$50.40	_____
Fertilizer & Lime (Table 1.) ⁴	Acre	1	\$35.30	\$35.30	_____
Chemical (Table 2.) ^{5,6,7,8,9,10}	Acre	1	\$118.29	\$118.29	_____
Crop Scout	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$14.17	\$14.17	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$25.91	\$25.91	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$7.38	\$7.38	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	60	\$0.00	\$0.00	_____
Irrigation Energy Cost (Diesel)	Ac-In	7.2	\$7.20	\$51.84	_____
Irrigation System R&M	Acre	1	\$10.88	\$10.88	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ¹²	Acre	1	\$160.00	\$160.00	_____
Crop Insurance ¹³	Acre	1	\$10.14	\$10.14	_____
Operating Interest ¹⁴	%	\$484.31	6.00%	\$14.53	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses	\$498.84
				Return Above Variable Expenses	\$195.36
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$47.99	\$47.99	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) ¹⁵	Acre	1	\$87.81	\$87.81	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor ¹⁶	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
				Total Fixed Expenses	\$165.80
				Return Above All Specified Expenses	\$29.56

Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
40	\$12.47	\$16.62
45	\$11.09	\$14.77
50	\$9.98	\$13.29
55	\$9.07	\$12.08
60	\$8.31	\$11.08
65	\$7.67	\$10.23
70	\$7.13	\$9.49
75	\$6.65	\$8.86
80	\$6.24	\$8.31

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$9.57	52	69
\$10.07	50	66
\$10.57	47	63
\$11.07	45	60
\$11.57	43	57
\$12.07	41	55
\$12.57	40	53
\$13.07	38	51
\$13.57	37	49

Table 1. Fertilizer & Lime ⁴

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	0	\$0.48	\$0.00	_____
Phosphorous	P ₂ O ₅	20	\$0.37	\$7.40	_____
Potassium	K ₂ O	40	\$0.41	\$16.40	_____
Lime ⁴	Limestone	0.5	\$23.00	\$11.50	_____
Other		0	\$0.00	\$0.00	_____
Total				\$35.30	_____

Table 2. Chemicals ^{5,6,7,8,9,10}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup Ready Power Max	qt.	1	1	\$5.25	\$5.25	_____
		Clarity	oz.	1	8	\$0.44	\$3.52	_____
	Pre-Emerge	Valor	oz.	1	2	\$5.31	\$10.62	_____
		Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
Post-Emerge	Boundary	Flexstar GT	pt.	1	2	\$9.75	\$19.50	_____
			pt.	1	3	\$4.20	\$12.60	_____
	Post-Emerge	Cobra	oz.	1	12	\$1.40	\$16.80	_____
Insecticides	Roundup Power Max		qt.	1	1	\$5.25	\$5.25	_____
			acre	1	1	\$7.00	\$7.00	_____
	Seed Treatment		acre	1	1	\$10.75	\$10.75	_____
Insecticide/Fungicides			acre	1	1	\$17.40	\$17.40	_____
Fungicides								_____
Total							\$118.29	_____

Table 3. Machinery ¹¹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Harvest	Combine	Grain Head	30 ft	\$20.11	\$5.36	\$8.95	\$1.75	\$36.17	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$47.99	\$14.17	\$25.91	\$7.38	\$95.45	_____

FOOTNOTES

- 1) Soybean price is the November 2014 futures price, as of December 30, 2013, plus average 2013 harvest basis of \$-0.01.
- 2) Assumes a normal crop rotation with minimum weed infestation. A continuous soybean system may require additional expenses for chemicals and/or land preparation.
- 3) Seed price includes technology fee.
- 4) Assumes 2 tons of lime applied every 4 years.
- 5) Seed treatments such as some nematicide treatments are optional and costs vary depending on product used.
- 6) Weed control chemicals should be selected for specific weed or grass problems which are present. Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 7) The addition of Dicamba @ 8oz./acre is necessary to manage Glyphosate resistant horseweed. This adds an additional \$5.50/acre to the burndown spray cost.
- 8) Due to prevalence of Glyphosate resistant weeds, if weeds are not controlled, hand chopping may be necessary.
- 9) For an alternate control, use Gramoxone SL @1.25 quarts/acre plus a surfactant.
- 10) Several other versions of Glyphosate, the active ingredient in Roundup Power Max are available. Check label for concentration rates and registration on Roundup Ready Soybeans.
- 11) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 13) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of soybeans in Tennessee for the previous production year.
- 14) Operating interest is assumed to be charged on half of all variable expenses.
- 15) Irrigation costs are estimated using the following assumptions: Purchase price and installation cost of \$80,000; Useful Life of 20 years; and an irrigated acreage of 125 acres. Irrigation rates should be adjusted to meet commodity and farm specific applications.
- 16) Management labor for irrigated acreage is assumed to be double that of dryland acres.

2014 Non-Irrigated Wheat & Soybean DC Budget

	Unit	Quantity	Price	Total	Your Farm
Revenue					
Soybeans ¹	Bu	35	\$11.57	\$404.95	_____
Wheat ²	Bu	60	\$6.06	\$363.60	_____
		Total Revenue		\$768.55	_____
Variable Expenses ³					
Seed, Soybeans ⁴	Thous.	140	\$0.36	\$50.40	_____
Seed, Wheat	Bu	2	\$21.60	\$43.20	_____
Fertilizer & Lime (Table 1.) ⁴	Acre	1	\$110.30	\$110.30	_____
Chemical (Table 2.) ^{5,6,7,8,9,10}	Acre	1	\$103.57	\$103.57	_____
Crop Scout	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$37.12	\$37.12	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$53.83	\$53.83	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$15.74	\$15.74	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	35	\$0.00	\$0.00	_____
Cash Rent ¹²	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ¹³	Acre	1	\$20.72	\$20.72	_____
Operating Interest ¹⁴	%	\$523.87	6.00%	\$15.72	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
		Total Variable Expenses		\$539.59	_____
		Return Above Variable Expenses		\$228.96	_____
Fixed Expenses					
Machinery ¹¹					_____
Capital Recovery (Table 3.)	Acre	1	\$91.77	\$91.77	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
		Total Fixed Expenses		\$106.77	_____
		Return Above All Specified Expenses		\$122.19	_____

Breakeven Price For Selected Soybean Yield ¹⁵		
Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
15	\$17.99	\$21.55
20	\$13.49	\$16.16
25	\$10.79	\$12.93
30	\$8.99	\$10.77
35	\$7.71	\$9.23
40	\$6.74	\$8.08
45	\$6.00	\$7.18
50	\$5.40	\$6.46
55	\$4.91	\$5.88

Breakeven Yield for Selected Soybean Price ¹⁵		
Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$9.57	28	34
\$10.07	27	32
\$10.57	26	31
\$11.07	24	29
\$11.57	23	28
\$12.07	22	27
\$12.57	21	26
\$13.07	21	25
\$13.57	20	24

Breakeven Price For Selected Wheat Yield ¹⁵		
Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
40	\$6.74	\$8.08
45	\$6.00	\$7.18
50	\$5.40	\$6.46
55	\$4.91	\$5.88
60	\$4.50	\$5.39
65	\$4.15	\$4.97
70	\$3.85	\$4.62
75	\$3.60	\$4.31
80	\$3.37	\$4.04

Breakeven Yield for Selected Wheat Price ¹⁵		
Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$4.06	66	80
\$4.56	59	71
\$5.06	53	64
\$5.56	49	58
\$6.06	45	53
\$6.56	41	49
\$7.06	38	46
\$7.56	36	43
\$8.06	33	40

Table 1. Fertilizer & Lime ⁴

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Ammonium Nitrate	80	\$0.65	\$52.00	_____
Phosphorous	P ₂ O ₅	60	\$0.37	\$22.20	_____
Potassium	K ₂ O	60	\$0.41	\$24.60	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Other		0	\$0.00	\$0.00	_____
Total				\$110.30	_____

Table 2. Chemicals ^{5,6,7,8,9,10}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides-Soybeans	Burndown	Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
		Metribuzin	oz.	1	4	\$0.99	\$3.96	_____
	Post-Emerge	Roundup Power Max	qt.	1	1	\$5.25	\$5.25	_____
Herbicides-Wheat		Flexstar GT	pt.	1	3	\$4.20	\$12.60	_____
		Harmony Extra	oz.	1	0.5	\$11.25	\$5.63	_____
		Axial	oz.	1	16.4	\$0.96	\$15.74	_____
		Surfactant	pt.	1	0.1	\$2.38	\$0.24	_____
Insecticides		Wheat-seed treatment	acre	1	1	\$5.00	\$5.00	_____
		Soybeans	acre	1	1	\$7.00	\$7.00	_____
Fungicides		Soybeans	acre	1	1	\$17.40	\$17.40	_____
		Soybeans-seed treatment	acre	1	1	\$3.75	\$3.75	_____
		Wheat-foliar	acre	1	1	\$17.40	\$17.40	_____
							\$103.57	_____

Table 3. Machinery ¹¹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.89	\$2.80	\$3.60	\$1.14	\$10.43	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85	_____
Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$3.70	\$4.64	\$4.02	\$1.28	\$13.64	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$6.70	\$6.80	\$4.59	\$1.46	\$19.55	_____
Topdress	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Fungicide	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Harvest	Combine	Grain Head	30 ft	\$20.11	\$5.36	\$8.95	\$1.75	\$36.17	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Harvest	Combine	Grain Head	30 ft	\$20.11	\$5.36	\$8.95	\$1.75	\$36.17	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$91.77	\$37.12	\$53.83	\$15.74	\$198.46	_____

FOOTNOTES

- 1) Soybean price is the November 2014 futures price, as of December 30, 2013, plus average 2013 harvest basis of \$-0.01.
- 2) Wheat Price is the July 2014 Futures Price on December 30, 2013 less an estimated basis of \$0.15.
- 3) Spraying for stinkbugs may add \$2.50/acre per spraying plus application expenses.
- 4) Seed price includes technology fee.
- 5) Additional seed treatment is to protect against Barley Yellow Dwarf Virus.
- 6) Seed treatments such as some nematicide treatments are optional and costs vary depending on product used. Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 7) Several other versions of Glyphosate, the active ingredient in Roundup Original Max are available. Check label for concentration rates and registration on Roundup Ready Soybeans.
- 8) Due to prevalence of Glyphosate resistant weeds, if weeds are not controlled, hand chopping may be necessary.
- 9) Cost may vary depending on fungicide used and application rate per acre.
- 10) If using Liberty Link soybeans, replace Flexstar GT with Liberty herbicide.
- 11) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 13) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of soybeans and wheat in Tennessee for the previous production year.
- 14) Operating interest is assumed to be charged on half of all variable expenses.
- 15) Estimated breakeven yields and prices assume that half of variable and total specified costs are incurred for each commodity. When estimating soybean breakeven wheat yield/price are held constant at 60 bu/acre and \$6.06/bu. When estimating wheat breakeven soybean yield and price are held constant at 35 bu/acre and \$11.57/bu.

2014 Wheat Budget (Conventional Tillage)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
Wheat ¹	Bu	60	\$6.06	\$363.60	_____
Total Revenue				\$363.60	_____
Variable Expenses					
Seed ²	Bu	2	\$21.60	\$43.20	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$86.50	\$86.50	_____
Chemical (Table 2.) ^{2,3}	Acre	1	\$87.50	\$87.50	_____
Crop Scout	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.) ⁴	Acre	1	\$22.61	\$22.61	_____
Fuel, Oil & Filter (Table 3.) ⁴	Acre	1	\$34.31	\$34.31	_____
Operator Labor (Table 3.) ⁴	Acre	1	\$10.18	\$10.18	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	60	\$0.00	\$0.00	_____
Cash Rent ⁵	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ⁶	Acre	1	\$10.57	\$10.57	_____
Operating Interest ⁷	%	\$383.87	6.00%	\$11.52	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
Total Variable Expenses				\$395.39	_____
Return Above Variable Expenses				-\$31.79	_____
Fixed Expenses					
Machinery ⁴					
Capital Recovery (Table 3.)	Acre	1	\$52.11	\$52.11	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
Total Fixed Expenses				\$67.11	_____
Return Above All Specified Expenses				-\$98.90	_____

Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
40	\$9.88	\$11.56
45	\$8.79	\$10.28
50	\$7.91	\$9.25
55	\$7.19	\$8.41
60	\$6.59	\$7.71
65	\$6.08	\$7.12
70	\$5.65	\$6.61
75	\$5.27	\$6.17
80	\$4.94	\$5.78

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$5.06	78	91
\$5.31	74	87
\$5.56	71	83
\$5.81	68	80
\$6.06	65	76
\$6.31	63	73
\$6.56	60	71
\$6.81	58	68
\$7.06	56	66

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Ammonium Nitrate	80	\$0.65	\$52.00	_____
Phosphorous	P ₂ O ₅	40	\$0.37	\$14.80	_____
Potassium	K ² O	20	\$0.41	\$8.20	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Other		0	\$0.00	\$0.00	_____
Total				\$86.50	_____

Table 2. Chemicals^{2,3}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Gramoxone SL	oz.	1	48	\$0.24	\$11.52	_____
		Sharpen	oz.	1	2	\$5.16	\$10.32	_____
	Pre-Emerge	Finesse	oz.	1	0.5	\$16.00	\$8.00	_____
		Roundup Power Max	qt.	1	1	\$5.25	\$5.25	_____
	Post-Emerge	Harmony Extra	oz.	1	0.5	\$11.25	\$5.63	_____
		Axial	oz.	1	16.4	\$0.96	\$15.74	_____
Insecticides		Surfactant	pt.	1	0.1	\$2.38	\$0.24	_____
		Seed Treatment	acre	1	1	\$5.00	\$5.00	_____
Fungicides		Seed Treatment	acre	1	1	\$8.40	\$8.40	_____
Fungicides		Foliar	acre	1	1	\$17.40	\$17.40	_____
Total							\$87.50	_____

Table 3. Machinery⁴

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	_____
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.89	\$2.80	\$3.60	\$1.14	\$10.43	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.34	\$1.60	\$2.98	\$0.95	\$7.87	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$6.70	\$6.80	\$4.59	\$1.46	\$19.55	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Harvest	Combine	Grain Head	30 ft	\$20.11	\$5.36	\$8.95	\$1.75	\$36.17	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$52.11	\$22.61	\$34.31	\$10.18	\$119.21	_____

FOOTNOTES

- 1) Wheat Price is the July 2014 Futures Price on December 30, 2013 less an estimated basis of 0.15. If a market for straw is available, add an appropriate amount to return to land, management, and risk, based on the expected yield and price of the straw, less harvest and marketing costs.
- 2) Additional seed treatment is to protect against Barley Yellow Dwarf virus.
- 3) Cost may vary depending on fungicide used and application rate per acre.
- 4) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 5) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 6) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of wheat in Tennessee for the previous production year.
- 7) Operating interest is assumed to be charged on half of all variable expenses.

2014 Non-Irrigated Cotton Budget (No-Till)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
Cotton ^{1,2,3}	lb	875	\$0.77	\$673.75	_____
		Total Revenue		\$673.75	_____
Variable Expenses					
Seed ⁴	Thous.	48.15	\$0.67	\$32.26	_____
Tech Fee ⁵	Thous.	48.15	\$1.30	\$62.59	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$111.80	\$111.80	_____
Chemical (Table 2.) ^{6,7,8,9,10}	Acre	1	\$146.01	\$146.01	_____
Crop Scout	Acre	1	\$9.50	\$9.50	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$32.80	\$32.80	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$53.62	\$53.62	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$14.34	\$14.34	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Other Transportation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ¹²	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ¹³	Acre	1	\$10.27	\$10.27	_____
Operating Interest ¹⁴	%	\$562.18	6.00%	\$16.87	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
		Total Variable Expenses		\$579.05	_____
		Return Above Variable Expenses		\$94.70	_____
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$69.99	\$69.99	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
		Total Fixed Expenses		\$84.99	_____
		Return Above All Specified Expenses		\$9.71	_____

Breakeven Price For Selected Yield

<u>Yield (lb)</u>	<u>Variable Cost (\$/lb)</u>	<u>Total Specified Cost (\$/lb)</u>
625	\$0.93	\$1.06
675	\$0.86	\$0.98
725	\$0.80	\$0.92
775	\$0.75	\$0.86
825	\$0.70	\$0.80
875	\$0.66	\$0.76
925	\$0.63	\$0.72
975	\$0.59	\$0.68
1,025	\$0.56	\$0.65
1,075	\$0.54	\$0.62
1,125	\$0.51	\$0.59

Breakeven Yield for Selected Price

<u>Price (\$/lb)</u>	<u>Variable Cost (lb)</u>	<u>Total Specified Cost (lb)</u>
\$0.52	1,114	1,277
\$0.57	1,016	1,165
\$0.62	934	1,071
\$0.67	864	991
\$0.72	804	922
\$0.77	752	862
\$0.82	706	810
\$0.87	666	763
\$0.92	629	722
\$0.97	597	685
\$1.02	568	651

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	80	\$0.48	\$38.40	_____
Phosphorous	P ₂ O ₅	60	\$0.37	\$22.20	_____
Potassium	K ₂ O	90	\$0.41	\$36.90	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Boron		0.5	\$5.60	\$2.80	_____
Total				\$111.80	_____

Table 2. Chemicals^{6,7,8,9,10}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup Power Max	qt.	1	1	\$5.25	\$5.25	_____
	Burndown	Clarity	oz.	1	8	\$0.44	\$3.52	_____
	Pre-Emerge	Cotoran 4L	pt.	1	2	\$6.00	\$12.00	_____
	Over The Top	Roundup Power Max	qt.	1	1	\$5.25	\$5.25	_____
	Over The Top	Dual Magnum	pt.	1	1	\$4.50	\$4.50	_____
		Liberty	oz.	2	29	\$0.62	\$35.96	_____
	Hooded Sprayer	Gramoxone SL	oz.	1	32	\$0.24	\$7.68	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
		Valor	oz.	1	1	\$5.31	\$5.31	_____
	Growth Regulator	Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
Defoliant			oz.	1	12	\$0.54	\$6.48	_____
Boll Opener		Ethephon	oz.	1	32	\$0.19	\$6.08	_____
Insecticides		Seed Treatment	acre	1	1	\$9.00	\$9.00	_____
		In-Season	acre	1	1	\$35.00	\$35.00	_____
Fungicides		Seed Treatment	acre	1	1	\$7.50	\$7.50	_____
Total							\$146.01	_____

Table 3. Machinery¹¹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$2.62	\$3.20	\$4.79	\$1.52	\$12.13	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Plant	Tractor, 215 hp	Planter	12-row	\$4.90	\$2.54	\$2.60	\$0.83	\$10.87	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer		\$2.62	\$3.20	\$4.79	\$1.52	\$12.13	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Harvest	SP Cotton Picker			\$21.54	\$13.96	\$12.83	\$1.55	\$49.88	_____
Haul-Boll Buggy	Tractor, 215 hp	Boll Buggy		\$5.42	\$1.34	\$4.06	\$1.61	\$12.43	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$6.10	\$1.45	\$5.36	\$1.70	\$14.61	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$6.10	\$1.45	\$5.36	\$1.70	\$14.61	_____
Total				\$69.99	\$32.80	\$53.62	\$14.34	\$170.75	_____

FOOTNOTES

- 1) Most ginning arrangements provide producers cottonseed revenue net ginning costs.
- 2) A second harvest may add as much as \$25/acre to variable costs.
- 3) Cotton price estimate includes the loan rate plus an estimated loan equity payment and seed and hauling allowance.
- 4) Assumes 3.5 seeds per foot. Seed cost varies per variety and seed size. Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 5) Tech fees had not been set at time of printing and are estimates.
- 6) Additional sprays may be necessary for specific insects.
- 7) In-season per acre cost includes boll weevil eradication fees and chemical expenses for control of plant bugs, bollworm, and other insect pests.
- 8) Due to prevalence of Glyphosate resistant weeds, if weeds are not controlled, hand chopping may be necessary.
- 9) Do not tank mix dual magnum and liberty when applying on widestrike cotton.
- 10) Use alternative chemicals on non-liberty tolerant cotton varieties.
- 11) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 13) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of cotton in Tennessee for the previous production year.
- 14) Operating interest is assumed to be charged on half of all variable expenses.

2014 Non-Irrigated Cotton Budget (Conventional Tillage)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
Cotton ^{1,2,3}	lb	850	\$0.77	\$654.50	_____
Total Revenue				\$654.50	_____
Variable Expenses					
Seed ⁴	Thous.	48.15	\$0.67	\$32.26	_____
Tech Fee ⁵	Thous.	48.15	\$1.30	\$62.59	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$111.80	\$111.80	_____
Chemical (Table 2.) ^{6,7,8,9,10}	Acre	1	\$137.24	\$137.24	_____
Crop Scout	Acre	1	\$9.50	\$9.50	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$42.07	\$42.07	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$63.14	\$63.14	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$17.53	\$17.53	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Other Transportation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ¹²	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ¹³	Acre	1	\$10.27	\$10.27	_____
Operating Interest ¹⁴	%	\$575.39	6.00%	\$17.26	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
Total Variable Expenses				\$592.65	_____
Return Above Variable Expenses				\$61.85	_____
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$88.44	\$88.44	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
Total Fixed Expenses				\$103.44	_____
Return Above All Specified Expenses				-\$41.59	_____

Breakeven Price For Selected Yield

<u>Yield (lb)</u>	<u>Variable Cost (\$/lb)</u>	<u>Total Specified Cost (\$/lb)</u>
600	\$0.99	\$1.16
650	\$0.91	\$1.07
700	\$0.85	\$0.99
750	\$0.79	\$0.93
800	\$0.74	\$0.87
850	\$0.70	\$0.82
900	\$0.66	\$0.77
950	\$0.62	\$0.73
1,000	\$0.59	\$0.70
1,050	\$0.56	\$0.66
1,100	\$0.54	\$0.63

Breakeven Yield for Selected Price

<u>Price (\$/lb)</u>	<u>Variable Cost (lb)</u>	<u>Total Specified Cost (lb)</u>
\$0.52	1,140	1,339
\$0.57	1,040	1,221
\$0.62	956	1,123
\$0.67	885	1,039
\$0.72	823	967
\$0.77	770	904
\$0.82	723	849
\$0.87	681	800
\$0.92	644	757
\$0.97	611	718
\$1.02	581	682

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	80	\$0.48	\$38.40	_____
Phosphorous	P ₂ O ₅	60	\$0.37	\$22.20	_____
Potassium	K ₂ O	90	\$0.41	\$36.90	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Boron		0.5	\$5.60	\$2.80	_____
Total				\$111.80	_____

Table 2. Chemicals^{6,7,8,9,10}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Pre-Emerge	Cotoran 4L	pt.	1	2	\$6.00	\$12.00	_____
	Over The Top	Roundup Power Max	qt.	1	1	\$5.25	\$5.25	_____
	Over The Top	Dual Magnum	pt.	1	1	\$4.50	\$4.50	_____
		Liberty	oz.	2	29	\$0.62	\$35.96	_____
Hooded Sprayer		Gramoxone SL	oz.	1	32	\$0.24	\$7.68	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
		Valor	oz.	1	1	\$5.31	\$5.31	_____
		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
Growth Regulator			oz.	1	12	\$0.54	\$6.48	_____
Defoliant		Ethephon	oz.	1	32	\$0.19	\$6.08	_____
Boll Opener		Seed Treatment	acre	1	1	\$9.00	\$9.00	_____
Insecticides		In-Season	acre	1	1	\$35.00	\$35.00	_____
Fungicides		Seed Treatment	acre	1	1	\$7.50	\$7.50	_____
Total							\$137.24	_____

Table 3. Machinery¹¹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$2.62	\$3.20	\$4.79	\$1.52	\$12.13	_____
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.89	\$2.80	\$3.60	\$1.14	\$10.43	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85	_____
Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$3.70	\$4.64	\$4.02	\$1.28	\$13.64	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Plant	Tractor, 215 hp	Planter	12-row	\$4.90	\$2.54	\$2.60	\$0.83	\$10.87	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer	90'	\$6.58	\$0.87	\$0.89	\$0.45	\$8.79	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Apply Mepex	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Apply Mepex	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Defoliant/Boll Ope	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Harvest	SP Cotton Picker			\$21.54	\$13.96	\$12.83	\$1.55	\$49.88	_____
Haul-Boll Buggy	Tractor, 215 hp	Boll Buggy		\$5.42	\$1.34	\$4.06	\$1.61	\$12.43	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$6.10	\$1.45	\$5.36	\$1.70	\$14.61	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$6.10	\$1.45	\$5.36	\$1.70	\$14.61	_____
Total				\$88.44	\$42.07	\$63.14	\$17.53	\$211.18	_____

FOOTNOTES

- 1) Most ginning arrangements provide producers cottonseed revenue net ginning costs.
- 2) A second harvest may add as much as \$25/acre to variable costs.
- 3) Cotton price estimate includes the loan rate plus an estimated loan equity payment and seed and hauling allowance.
- 4) Assumes 3.5 seeds per foot. Seed cost varies per variety and seed size. Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 5) Tech fees had not been set at time of printing and are estimates.
- 6) Additional sprays may be necessary for specific insects.
- 7) In-season per acre cost includes boll weevil eradication fees and chemical expenses for control of plant bugs, bollworm, and other insect pests.
- 8) Due to prevalence of Glyphosate resistant weeds, if weeds are not controlled, hand chopping may be necessary.
- 9) Do not tank mix dual magnum and liberty when applying on widestrike cotton.
- 10) Use alternative chemicals on non-liberty tolerant cotton varieties.
- 11) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 13) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of cotton in Tennessee for the previous production year.
- 14) Operating interest is assumed to be charged on half of all variable expenses.

2014 Irrigated Cotton Budget (No-Till)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
Cotton ^{1,2,3}	lb	1,100	\$0.77	\$847.00	_____
		Total Revenue	\$847.00		_____
Variable Expenses					
Seed ⁴	Thous.	48.15	\$0.67	\$32.26	_____
Tech Fee ⁵	Thous.	48.15	\$1.30	\$62.59	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$116.60	\$116.60	_____
Chemical (Table 2.) ^{6,7,8,9,10}	Acre	1	\$146.01	\$146.01	_____
Crop Scout	Acre	1	\$9.50	\$9.50	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$32.80	\$32.80	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$53.62	\$53.62	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$14.34	\$14.34	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Irrigation Energy Cost	Ac-In	7.2	\$7.20	\$51.84	_____
Irrigation System R&M	Acre	1	\$10.88	\$10.88	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ¹²	Acre	1	\$160.00	\$160.00	_____
Crop Insurance ¹³	Acre	1	\$10.27	\$10.27	_____
Operating Interest ¹⁴	%	\$700.70	6.00%	\$21.02	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
		Total Variable Expenses	\$721.72		_____
		Return Above Variable Expenses	\$125.28		_____
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$69.99	\$69.99	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) ¹⁵	Acre	1	\$87.81	\$87.81	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor ¹⁶	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
		Total Fixed Expenses	\$187.80		_____
		Return Above All Specified Expenses	-\$62.52		_____

Breakeven Price For Selected Yield

Yield (lb)	Total Specified Cost	
	Variable Cost (\$/lb)	(\$/lb)
850	\$0.85	\$1.07
900	\$0.80	\$1.01
950	\$0.76	\$0.96
1,000	\$0.72	\$0.91
1,050	\$0.69	\$0.87
1,100	\$0.66	\$0.83
1,150	\$0.63	\$0.79
1,200	\$0.60	\$0.76
1,250	\$0.58	\$0.73
1,300	\$0.56	\$0.70
1,350	\$0.53	\$0.67

Breakeven Yield for Selected Price

Price (\$/lb)	Total Specified Cost	
	Variable Cost (lb)	(lb)
\$0.52	1,388	1,749
\$0.57	1,266	1,596
\$0.62	1,164	1,467
\$0.67	1,077	1,357
\$0.72	1,002	1,263
\$0.77	937	1,181
\$0.82	880	1,109
\$0.87	830	1,045
\$0.92	784	989
\$0.97	744	938
\$1.02	708	892

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.48	\$43.20	_____
Phosphorous	P ₂ O ₅	60	\$0.37	\$22.20	_____
Potassium	K ₂ O	90	\$0.41	\$36.90	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Boron		0.5	\$5.60	\$2.80	_____
Total				\$116.60	_____

Table 2. Chemicals^{6,7,8,9,10}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup Power Max	qt.	1	1	\$5.25	\$5.25	_____
	Burndown	Clarity	oz.	1	8	\$0.44	\$3.52	_____
	Pre-Emerge	Cotoran 4L	pt.	1	2	\$6.00	\$12.00	_____
	Over The Top	Roundup Power Max	qt.	1	1	\$5.25	\$5.25	_____
	Over The Top	Dual Magnum	pt.	1	1	\$4.50	\$4.50	_____
Hooded Sprayer		Liberty	oz.	2	29	\$0.62	\$35.96	_____
		Gramoxone SL	oz.	1	32	\$0.24	\$7.68	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
		Valor	oz.	1	1	\$5.31	\$5.31	_____
		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
Growth Regulator			oz.	1	12	\$0.54	\$6.48	_____
Defoliant		Ethephon	oz.	1	32	\$0.19	\$6.08	_____
Boll Opener		Seed Treatment	acre	1	1	\$9.00	\$9.00	_____
Insecticides		In-Season	acre	1	1	\$35.00	\$35.00	_____
Fungicides		Seed Treatment	acre	1	1	\$7.50	\$7.50	_____
Total							\$146.01	_____

Table 3. Machinery¹¹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$2.62	\$3.20	\$4.79	\$1.52	\$12.13	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Plant	Tractor, 215 hp	Planter	12-row	\$4.90	\$2.54	\$2.60	\$0.83	\$10.87	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer	900#	\$2.62	\$3.20	\$4.79	\$1.52	\$12.13	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	90'	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Harvest	SP Cotton Picker			\$21.54	\$13.96	\$12.83	\$1.55	\$49.88	_____
Haul-Boll Buggy	Tractor, 215 hp	Boll Buggy		\$5.42	\$1.34	\$4.06	\$1.61	\$12.43	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$6.10	\$1.45	\$5.36	\$1.70	\$14.61	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$6.10	\$1.45	\$5.36	\$1.70	\$14.61	_____
Total				\$69.99	\$32.80	\$53.62	\$14.34	\$170.75	_____

FOOTNOTES

- 1) Most ginning arrangements provide producers cottonseed revenue net ginning costs.
- 2) A second harvest may add as much as \$25/acre to variable costs.
- 3) Cotton price estimate includes the loan rate plus an estimated loan equity payment and seed and hauling allowance.
- 4) Assumes 3.5 seeds per foot. Seed cost varies per variety and seed size. Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 5) Tech fees had not been set at time of printing and are estimates.
- 6) Additional sprays may be necessary for specific insects.
- 7) In-season per acre cost includes boll weevil eradication fees and chemical expenses for control of plant bugs, bollworm, and other insect pests.
- 8) Due to prevalence of Glyphosate resistant weeds, if weeds are not controlled, hand chopping may be necessary.
- 9) Do not tank mix dual magnum and liberty when applying on widestrike cotton.
- 10) Use alternative chemicals on non-liberty tolerant cotton varieties.
- 11) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 13) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of cotton in Tennessee for the previous production year.
- 14) Operating interest is assumed to be charged on half of all variable expenses.
- 15) Irrigation costs are estimated using the following assumptions: Purchase price and installation cost of \$80,000; Useful Life of 20 years; and an irrigated acreage of 125 acres. Irrigation rates should be adjusted to meet commodity and farm specific applications.
- 16) Management labor for irrigated acreage is assumed to be double that of dryland acres.

2014 Grain Sorghum Budget (No-Till)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
Grain Sorghum ¹	Bu	90	\$4.38	\$394.20	_____
				Total Revenue	\$394.20
Variable Expenses					
Seed	lb	6	\$2.00	\$12.00	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$93.70	\$93.70	_____
Chemical (Table 2.) ²	Acre	1	\$52.11	\$52.11	_____
Crop Scout	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.) ³	Acre	1	\$15.67	\$15.67	_____
Fuel, Oil & Filter (Table 3.) ³	Acre	1	\$28.79	\$28.79	_____
Operator Labor (Table 3.) ³	Acre	1	\$7.81	\$7.81	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	90	\$0.00	\$0.00	_____
Cash Rent ⁴	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ⁵	Acre	1	\$4.08	\$4.08	_____
Operating Interest ⁶	%	\$303.16	6.00%	\$9.09	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses	\$312.25
				Return Above Variable Expenses	\$81.95
Fixed Expenses					
Machinery ³					
Capital Recovery (Table 3.)	Acre	1	\$44.59	\$44.59	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
				Total Fixed Expenses	\$59.59
				Return Above All Specified Expenses	\$22.36

Breakeven Price For Selected Yield

<u>Yield</u> <u>(bu)</u>	<u>Variable Cost</u> <u>(\$/bu)</u>	<u>Total Specified Cost</u> <u>(\$/bu)</u>
70	\$4.46	\$5.31
75	\$4.16	\$4.96
80	\$3.90	\$4.65
85	\$3.67	\$4.37
90	\$3.47	\$4.13
95	\$3.29	\$3.91
100	\$3.12	\$3.72
105	\$2.97	\$3.54
110	\$2.84	\$3.38

Breakeven Yield for Selected Price

<u>Price</u> <u>(\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost</u> <u>(bu)</u>
\$4.18	75	89
\$4.23	74	88
\$4.28	73	87
\$4.33	72	86
\$4.38	71	85
\$4.43	70	84
\$4.48	70	83
\$4.53	69	82
\$4.58	68	81

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.48	\$43.20	_____
Phosphorous	P ₂ O ₅	50	\$0.37	\$18.50	_____
Potassium	K ₂ O	50	\$0.41	\$20.50	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Other		0	\$0.00	\$0.00	_____
Total				\$93.70	_____

Table 2. Chemicals²

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Gramoxone SL	oz.	1	40	\$0.24	\$9.60	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
	Pre-Emerge	Bicep II Magnum	qt.	1	2.1	\$10.64	\$22.34	_____
		Atrazine 4L	oz.	1	11.84	\$0.11	\$1.30	_____
Insecticides	Post-Emerge	Crop Oil	pt.	1	2	\$3.25	\$6.50	_____
		Atrazine 4L	qt.	1	1	\$3.50	\$3.50	_____
		Seed Treatment	acre	1	1	\$1.80	\$1.80	_____
		Foliar	acre	1	1	\$6.59	\$6.59	_____
Fungicides						\$0.00	\$0.00	_____
Total							\$52.11	_____

Table 3. Machinery³

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	_____
Burndown	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Insecticide	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Harvest	Combine	Corn Head	8-row	\$19.46	\$7.60	\$13.43	\$2.62	\$43.11	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$44.59	\$15.67	\$28.79	\$7.81	\$96.86	_____

FOOTNOTES

- 1) Late planted sorghum is susceptible to sorghum midge and must be scouted for possible treatment.
- 2) Do not use Dual Mangum unless you plant seed that has been safened with Concep or Screen. Do not use Lariat, Bullet, or Lasso Pre unless you plant seed that has been safened with a seed safener containing the active ingredient Flurzole.
- 3) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 4) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 5) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of grain sorghum in Tennessee for the previous production year.
- 6) Operating interest is assumed to be charged on half of all variable expenses.

2014 Grain Sorghum Budget (Conventional Tillage)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
Grain Sorghum ¹	Bu	90	\$4.38	\$394.20	_____
Total Revenue				\$394.20	_____
Variable Expenses					
Seed	lb	6	\$2.00	\$12.00	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$93.70	\$93.70	_____
Chemical (Table 2.) ²	Acre	1	\$34.23	\$34.23	_____
Crop Scout	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.) ³	Acre	1	\$20.67	\$20.67	_____
Fuel, Oil & Filter (Table 3.) ³	Acre	1	\$35.07	\$35.07	_____
Operator Labor (Table 3.) ³	Acre	1	\$9.94	\$9.94	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	90	\$0.00	\$0.00	_____
Cash Rent ⁴	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ⁵	Acre	1	\$4.08	\$4.08	_____
Operating Interest ⁶	%	\$298.69	6.00%	\$8.96	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
Total Variable Expenses				\$307.65	_____
Return Above Variable Expenses				\$86.55	_____
Fixed Expenses					
Machinery ³					
Capital Recovery (Table 3.)	Acre	1	\$48.27	\$48.27	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
Total Fixed Expenses				\$63.27	_____
Return Above All Specified Expenses				\$23.28	_____

Breakeven Price For Selected Yield

<u>Yield</u> <u>(bu)</u>	<u>Variable Cost</u> <u>(\$/bu)</u>	<u>Total Specified Cost</u> <u>(\$/bu)</u>
70	\$4.40	\$5.30
75	\$4.10	\$4.95
80	\$3.85	\$4.64
85	\$3.62	\$4.36
90	\$3.42	\$4.12
95	\$3.24	\$3.90
100	\$3.08	\$3.71
105	\$2.93	\$3.53
110	\$2.80	\$3.37

Breakeven Yield for Selected Price

<u>Price</u> <u>(\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost</u> <u>(bu)</u>
\$4.18	74	89
\$4.23	73	88
\$4.28	72	87
\$4.33	71	86
\$4.38	70	85
\$4.43	69	84
\$4.48	69	83
\$4.53	68	82
\$4.58	67	81

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.48	\$43.20	—
Phosphorous	P ₂ O ₅	50	\$0.37	\$18.50	—
Potassium	K ₂ O	50	\$0.41	\$20.50	—
Lime	Limestone	1,000	\$0.012	\$11.50	—
Other		0	\$0.00	\$0.00	—
Total				\$93.70	—

Table 2. Chemicals²

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Pre-Emerge	Bicep II Magnum	qt.	1	2.1	\$10.64	\$22.34	—
	Post-Emerge	Atrazine 4L	qt.	1	1	\$3.50	\$3.50	—
Insecticides	Seed Treatment	Seed Treatment	acre	1	1	\$1.80	\$1.80	—
		Foliar	acre	1	1	\$6.59	\$6.59	—
Fungicides						\$0.00	\$0.00	—
Total							\$34.23	—

Table 3. Machinery³

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.89	\$2.80	\$3.60	\$1.14	\$10.43	—
Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85	—
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.34	\$1.60	\$2.98	\$0.95	\$7.87	—
Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88	—
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38	—
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	—
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	—
Harvest	Combine	Corn Head	8-row	\$19.46	\$7.60	\$13.43	\$2.62	\$43.11	—
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	—
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	—
Total				\$48.27	\$20.67	\$35.07	\$9.94	\$113.95	—

FOOTNOTES

- 1) Late planted sorghum is susceptible to sorghum midge and must be scouted for possible treatment.
- 2) Do not use Dual Mangum unless you plant seed that has been safened with Concep or Screen. Do not use Lariat, Bullet, or Lasso Pre unless you plant seed that has been safened with a seed safener containing the active ingredient Flurzole.
- 3) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 4) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 5) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of grain sorghum in Tennessee for the previous production year.
- 6) Operating interest is assumed to be charged on half of all variable expenses.

2014 Canola Budget (Conventional Tillage)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
Canola ¹	Bu	50	\$11.60	\$580.00	_____
				Total Revenue	\$580.00
Variable Expenses					
Seed ²	lbs	5	\$5.50	\$27.50	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$208.50	\$208.50	_____
Chemical (Table 2.) ³	Acre	1	\$40.32	\$40.32	_____
Crop Scout	Acre	1	\$0.00	\$0.00	_____
Repair & Maintenance (Table 3.) ⁴	Acre	1	\$26.55	\$26.55	_____
Fuel, Oil & Filter (Table 3.) ⁴	Acre	1	\$37.99	\$37.99	_____
Operator Labor (Table 3.) ⁴	Acre	1	\$11.28	\$11.28	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	50	\$0.04	\$2.00	_____
Cash Rent ⁵	Acre	1	\$89.00	\$89.00	_____
Crop Insurance ⁶	Acre	1	\$16.41	\$16.41	_____
Operating Interest ⁷	%	\$464.55	6.00%	\$13.94	_____
Other Variable Costs	Acre	1	\$5.00	\$5.00	_____
				Total Variable Expenses	\$478.49
				Return Above Variable Expenses	\$101.51
Fixed Expenses					
Machinery ⁴					
Capital Recovery (Table 3.)	Acre	1	\$57.65	\$57.65	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor ⁸	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs ⁹	Acre	1	\$0.00	\$0.00	_____
				Total Fixed Expenses	\$87.65
				Return Above All Specified Expenses	\$13.86

Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
30	\$15.95	\$18.87
35	\$13.67	\$16.18
40	\$11.96	\$14.15
45	\$10.63	\$12.58
50	\$9.57	\$11.32
55	\$8.70	\$10.29
60	\$7.97	\$9.44
65	\$7.36	\$8.71
70	\$6.84	\$8.09

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$10.60	45	53
\$10.85	44	52
\$11.10	43	51
\$11.35	42	50
\$11.60	41	49
\$11.85	40	48
\$12.10	40	47
\$12.35	39	46
\$12.60	38	45

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	180	\$0.48	\$86.40	_____
Phosphorous	P ₂ O ₅	90	\$0.37	\$33.30	_____
Potassium	K ₂ O	145	\$0.41	\$59.45	_____
Lime	Limestone	1,000	\$0.012	\$11.50	_____
Other	Sulfur	35	\$0.35	\$12.25	_____
Other	Boron	1	\$5.60	\$5.60	_____
Total				\$208.50	_____

Table 2. Chemicals³

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Glyphosate	oz.	1	44	\$0.11	\$4.84	_____
		Treflan	pt.	1	1.5	\$2.66	\$3.99	_____
	Pre-Emerge				0	\$0.00	\$0.00	_____
					0	\$0.00	\$0.00	_____
	Post-Emerge	Select	oz.	1	9	\$0.89	\$8.01	_____
		Assure II	oz.	1	8	\$1.06	\$8.48	_____
Insecticides	Post Harvest				0	\$0.00	\$0.00	_____
					1	\$0.00	\$0.00	_____
		Foliar	acre	1	1	\$15.00	\$15.00	_____
Fungicides					0	\$0.00	\$0.00	_____
					0	\$0.00	\$0.00	_____
Total							\$40.32	_____

Table 3. Machinery⁴

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85	_____
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.89	\$2.80	\$3.60	\$1.14	\$10.43	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$6.70	\$6.80	\$4.59	\$1.46	\$19.55	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53	_____
Harvest	Combine	Grain Head	30 ft	\$20.11	\$5.36	\$8.95	\$1.75	\$36.17	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$2.62	\$3.20	\$4.79	\$1.52	\$12.13	_____
Total				\$57.65	\$26.55	\$37.99	\$11.28	\$133.47	_____

FOOTNOTES

- 1) Includes seed treatment. Canola prices will vary across regions. Additionally access to markets in Tennessee may be problematic. Should a producer consider adding canola to their rotation a production contract and/or marketing strategy should be fully explored prior to the planting decision.
- 2) Seed cost varies by variety and seeding rate. Check with farm suppliers for rebates and incentives based on seed variety and herbicides applied.
- 3) Chemical application will vary by region check seed supplier or production specialist for best alternatives. Since only a few herbicides are available for weed control in canola, producers should follow crop production recommendations. Producers should be aware that many chemicals used in the production of other row crops in Tennessee may have a detrimental impact on canola.
- 4) Machinery expenses will vary dramatically by operation, financial resources, and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row crop farm in Tennessee. To estimate machinery costs for a specific set of equipment interested parties can utilize the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 5) Cash rental rates are the 2013 USDA-NASS reported cash rental rates for cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 6) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate above is the average premium paid per insured acre of canola in Tennessee for the previous production year.
- 7) Operating interest is assumed to be charged on half of all variable expenses.
- 8) Management labor is anticipated to be double what it is for conventional Tennessee row crops.
- 9) Additional costs may be incurred do to specialized equipment required in the handling, hauling, and storage of canola.

Appendix 1: Input Summary Tables

<u>Commodity Prices Received by Producers</u>		
Corn	\$4.34	bu
Soybeans	\$11.57	bu
Wheat	\$6.06	bu
Cotton	\$0.77	lb
Cotton-Tech Fee	\$1.30	'000 Seeds
Grain Sorghum	\$4.38	bu
Canola	\$10.41	bu

<u>Fuel, Interest Rates, Pumping, and Labor Costs</u>		
Diesel Fuel (\$/gal)	\$3.60	\$/gal
Electricity (\$/Kwh)	\$0.096	\$/Kwh
Operator Labor (\$/hr)	\$9.90	\$/hr
Management Labor (\$/hr)	\$12.00	\$/hr
Operating Interest (%)	6.00%	%
Fixed Capital Interest (%)	5.00%	%
Pump Lift Distance (Irrigation)	200	ft

<u>Crop Scout, Consulting, Cash Rent, and Crop Insurance</u>		
Crop Scout / Consulting Fee	\$0.00	acre
Crop Scouting-Cotton	\$9.50	acre
Drying (\$/bu)	\$0.00	bu
Irrigated Crop Land Cash Rent	\$160.00	acre
Non-Irrigated Crop Land Cash Rent	\$89.00	acre
Crop Insurance-Corn	\$12.52	acre
Crop Insurance-Soybean	\$10.14	acre
Crop Insurance-Wheat	\$10.57	acre
Crop Insurance-Cotton	\$10.27	acre
Crop Insurance-Grain Sorghum	\$4.08	acre
Crop Insurance-Canola	\$16.41	acre

<u>Property Taxes, Non-Machinery Insurance, and Management Labor</u>		
Property Taxes	\$0.00	\$/acre
Insurance (Non-machinery)	\$0.00	\$/acre
Management Labor	\$15.00	\$/acre

<u>Seed</u>		
Corn	\$3.13	\$/Thousand Seeds
Soybean	\$0.36	\$/Thousand Seeds
Canola	\$5.50	\$/lb
Wheat	\$21.60	\$/bu
Cotton	\$0.67	\$/Thousand Seeds
Grain Sorghum	\$2.00	\$/lb

Appendix 1: Input Summary Tables

<u>Fertilizer</u>		
Urea	\$0.48	\$/lb
Ammonium Nitrate	\$0.65	\$/lb
UAN 28%	\$0.57	\$/lb
UAN 32%	\$0.57	\$/lb
P ₂ O ₅	\$0.37	\$/lb
DAP (8-46-0)	\$0.57	\$/lb
K ₂ O	\$0.41	\$/lb
Lime	\$23.00	\$/ton
Boron	\$5.60	\$/lb
Sulfur	\$0.35	\$/lb

<u>Herbicides</u>		
Atrazine 4#/Gal (oz.)	\$0.11	\$/oz.
Atrazine 4#/Gal (qt.)	\$3.50	\$/qt.
Gramoxone SL (oz.)	\$0.24	\$/oz.
Bicep II Magnum (qt.)	\$10.64	\$/qt.
Roundup Power Max (qt.)	\$5.25	\$/qt.
Harmony Extra (oz.)	\$11.25	\$/oz.
Valor (oz.)	\$5.31	\$/oz.
Flexstar GT (pt.)	\$4.20	\$/pt.
Halex GT (pt.)	\$4.88	\$/pt.
Boundary (pt.)	\$9.75	\$/pt.
Cobra (oz.)	\$1.40	\$/oz.
Liberty (oz.)	\$0.62	\$/oz.
Sharpen (oz.)	\$5.16	\$/oz.
Metribuzin (oz.)	\$0.99	\$/oz.
Axial (oz.)	\$0.96	\$/oz.
Finesse (oz.)	\$16.00	\$/oz.
Clarity (oz.)	\$0.44	\$/oz.
Cotoran (pt.)	\$6.00	\$/pt.
Dual Magnum (pt.)	\$4.50	\$/pt.
Mepex (Mepiquat Chloride) (pt.)	\$1.00	\$/pt.
Defoliant (oz.)	\$0.54	\$/oz.
Boll Opener (Ethephon) (oz.)	\$0.19	\$/oz.
Glysophate	\$0.11	\$/oz.
Treflan	\$2.66	\$/pt.
Select	\$0.89	\$/oz.
Assure	\$1.06	\$/oz.

Appendix 1: Input Summary Tables

<u>Insecticide Treatments</u>		
Soybean	\$7.00	\$/acre
Grain Sorghum-Foliar	\$6.59	\$/acre
Grain Sorghum-seed treatment	\$1.80	\$/acre
Soybean-seed treatment	\$10.75	\$/acre
Cotton-seed treatment	\$9.00	\$/acre
Cotton-seed treatment	\$35.00	\$/acre
Wheat-seed treatment and foliar	\$5.00	\$/acre
Maintenance Fee (boll weevil eradication)	\$1.50	\$/acre
Canola -foliar	\$15.00	\$/acre
<u>Fungicide</u>		
Tilt	\$5.00	\$/oz.
Soybean	\$17.40	\$/acre
Soybean-seed treatment	\$3.75	\$/acre
Cotton-seed treatment	\$7.50	\$/acre
Wheat-seed treatment	\$8.40	\$/acre
Wheat-foliar	\$17.40	\$/acre
Crop Oil Concentrate	\$3.25	\$/pint
Surfactant	\$2.38	\$/pint

Field Operations

Commodity	Process	Power Unit	Implement	Size	Capital Recovery	Repair & Maintenance	Fuel	Labor	Total
All	Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.89	\$2.80	\$3.60	\$1.14	\$10.43
	Disk	Tractor, 215 hp	Tandem Disk	29'	\$3.95	\$2.08	\$2.90	\$0.92	\$9.85
	Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.34	\$1.60	\$2.98	\$0.95	\$7.87
	Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$3.70	\$4.64	\$4.02	\$1.28	\$13.64
	Plant	Tractor, 215 hp	Planter	16-row	\$6.26	\$3.36	\$2.47	\$0.79	\$12.88
	Plant	Tractor, 215 hp	Grain Drill	20 ft	\$6.70	\$6.80	\$4.59	\$1.46	\$19.55
	Fertilize	Tractor, 215 hp	Fertilizer Spreader	900#	\$1.44	\$0.48	\$2.63	\$0.83	\$5.38
	Weed Control	SP Boom Sprayer		90'	\$2.75	\$0.74	\$1.60	\$0.44	\$5.53
	Harvest	Combine	Corn Head	8-row	\$19.46	\$7.60	\$13.43	\$2.62	\$43.11
	Harvest	Combine	Grain Head	30 ft	\$20.11	\$5.36	\$8.95	\$1.75	\$36.17
Cotton	Haul	Tractor, 215 hp	Grain Cart		\$2.64	\$0.96	\$1.61	\$0.51	\$5.72
	Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65
	Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$2.62	\$3.20	\$4.79	\$1.52	\$12.13
	Plant	Tractor, 215 hp	Planter	12-row	\$4.90	\$2.54	\$2.60	\$0.83	\$10.87
	Weed Control	Tractor, 215 hp	Hooded Sprayer		\$6.58	\$0.87	\$0.89	\$0.45	\$8.79
	Harvest	SP Cotton Picker			\$21.54	\$13.96	\$12.83	\$1.55	\$49.88
	Haul-Boll Buggy	Tractor, 215 hp	Boll Buggy		\$5.42	\$1.34	\$4.06	\$1.61	\$12.43
	Module Builder	Tractor, 215 hp	Module Builder	32'	\$6.10	\$1.45	\$5.36	\$1.70	\$14.61

Summary of Revenue, Variable and Fixed Expenses, and Profit or Loss for each Commodity and Production Method

Commodity & Production Process	Revenue (\$/Acre)	Variable Expenses (\$/Acre)	Fixed Expenses (\$/Acre)	Profit (Loss)
Corn NT Non-Irr	\$651.00	\$477.28	\$59.59	\$114.13
Corn CT Non-Irr	\$651.00	\$483.57	\$66.02	\$101.41
Corn Irr	\$976.50	\$678.56	\$162.40	\$135.54
Soybeans NT Non-Irr	\$520.65	\$361.11	\$62.99	\$96.55
Soybeans Irr	\$694.20	\$498.84	\$165.80	\$29.56
Wheat & Soybean DC	\$768.55	\$539.59	\$106.77	\$122.19
Wheat	\$363.60	\$395.39	\$67.11	(\$98.90)
Cotton CT	\$654.50	\$592.65	\$103.44	(\$41.59)
Cotton NT	\$673.75	\$579.05	\$84.99	\$9.71
Cotton IRR	\$847.00	\$721.72	\$187.80	(\$62.52)
G. Sorghum NT	\$394.20	\$312.25	\$59.59	\$22.36
G. Sorghum CT	\$394.20	\$307.65	\$63.27	\$23.28
Canola	\$580.00	\$478.49	\$87.65	\$13.86