

Field Crop Budgets For 2015

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Field Crop Budgets For 2015

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Introduction and Disclaimer

The 2015 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 2015, as significant changes may occur from year-to-year in production methods and input and output prices. For the second year, center-pivot irrigation budgets for corn, soybean, and cotton were included.

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 "2015 Weed Control Manual for Tennessee" (PB1580) and "2014 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 commodity program payments are assumed in the 2015 row crop budgets. Payments should be added at the user's discretion.

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2015 Non-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	150	\$4.26	\$639.00	_____
			Total Revenue	\$639.00	_____
Variable Expenses					
Seed ^{2,3}	Thous.	30	\$3.13	\$93.75	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$161.10	\$161.10	_____
Chemical (Table 2.) ^{3,4}	Acre	1	\$83.92	\$83.92	_____
Crop Scout or Consultant	Acre	1	\$5.50	\$5.50	_____
Repair & Maintenance (Table 3.)	Acre	1	\$20.74	\$20.74	_____
Fuel, Oil & Filter (Table 3.)	Acre	1	\$15.61	\$15.61	_____
Operator Labor (Table 3.)	Acre	1	\$5.68	\$5.68	_____
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	\$98.00	\$98.00	_____
Crop Insurance ⁶	Acre	1	\$13.86	\$13.86	_____
Operating Interest ⁷	%	\$498.16	6.00%	\$14.94	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$513.11	_____
			Return above Variable Expenses	\$125.89	_____
Fixed Expenses					
Machinery ⁸					
Capital Recovery (Table 3.)	Acre	1	\$56.10	\$56.10	_____
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	\$71.10	_____
			Return Above All Specified Expenses	\$54.79	_____

Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
100	\$5.13	\$5.84
110	\$4.66	\$5.31
120	\$4.28	\$4.87
130	\$3.95	\$4.49
140	\$3.67	\$4.17
150	\$3.42	\$3.89
160	\$3.21	\$3.65
170	\$3.02	\$3.44
180	\$2.85	\$3.25
190	\$2.70	\$3.07
200	\$2.57	\$2.92

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$3.01	170	194
\$3.26	157	179
\$3.51	146	166
\$3.76	136	155
\$4.01	128	146
\$4.26	120	137
\$4.51	114	130
\$4.76	108	123
\$5.01	102	117
\$5.26	98	111
\$5.51	93	106

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	170	\$0.53	\$90.10	_____
Phosphorous	P ₂ O ₅	70	\$0.40	\$28.00	_____
Potassium	K ₂ O	70	\$0.40	\$28.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$161.10	_____

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	\$0.29	\$11.60	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
	Pre-Emerge	Atrazine 4L	qt.	1	1	\$3.98	\$3.98	_____
		Gramoxone SL	oz.	1	40	\$0.29	\$11.60	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$6.71	\$24.16	_____
		Atrazine 4L	qt.	1	1.5	\$3.98	\$5.97	_____
	Post Harvest	Gramoxone SL	oz.	1	48	\$0.29	\$13.92	_____
		Valor	oz.	1	2	\$6.11	\$12.22	_____
Insecticides						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Fungicides ⁴						\$0.00	\$0.00	_____
Total							\$83.92	_____

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	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Harvest	Combine	Corn Head	8-row	\$13.30	\$13.13	\$7.42	\$1.62	\$35.47	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Total				\$56.10	\$20.74	\$15.61	\$5.68	\$98.14	_____

FOOTNOTES

- 1) Corn price was estimated as the average of the September and December 2015 futures price on December 29, 2014 (\$4.36/bu) plus estimated harvest basis of \$-0.10.
- 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 2014 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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.

2015 Non-Irrigated Corn Budget (Conventional Tillage)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue				Gross Revenue (\$/Acre)	
Corn ¹	Bu	150	\$4.26	\$639.00	_____
			Total Revenue	\$639.00	_____
Variable Expenses					
Seed ^{2,3}	Thous.	30	\$3.13	\$93.75	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$161.10	\$161.10	_____
Chemical (Table 2.) ^{3, 4}	Acre	1	\$71.85	\$71.85	_____
Crop Scout or Consultant	Acre	1	\$5.50	\$5.50	_____
Repair & Maintenance (Table 3.)	Acre	1	\$27.80	\$27.80	_____
Fuel, Oil, & Filter (Table 3.)	Acre	1	\$21.91	\$21.91	_____
Operator Labor (Table 3.)	Acre	1	\$8.55	\$8.55	_____
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	\$98.00	\$98.00	_____
Crop Insurance ⁶	Acre	1	\$13.86	\$13.86	_____
Operating Interest ⁷	%	\$502.32	6.00%	\$15.07	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$517.39	_____
			Return above Variable Expenses	\$121.61	_____
Fixed Expenses					
Machinery ⁸					
Capital Recovery (Table 3.)	Acre	1	\$57.77	\$57.77	_____
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	\$72.77	_____
			Return Above All Specified Expenses	\$48.85	_____

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	\$5.17	\$5.90
110	\$4.70	\$5.37
120	\$4.31	\$4.92
130	\$3.98	\$4.54
140	\$3.70	\$4.22
150	\$3.45	\$3.93
160	\$3.23	\$3.69
170	\$3.04	\$3.47
180	\$2.87	\$3.28
190	\$2.72	\$3.11
200	\$2.59	\$2.95

Breakeven Yield for Selected Price

<u>Price</u> <u>(\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost</u> <u>(bu)</u>
\$3.01	172	196
\$3.26	159	181
\$3.51	147	168
\$3.76	138	157
\$4.01	129	147
\$4.26	121	139
\$4.51	115	131
\$4.76	109	124
\$5.01	103	118
\$5.26	98	112
\$5.51	94	107

Table 1. Fertilizer & Lime

	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	170	\$0.53	\$90.10	_____
Phosphorous	P ₂ O ₅	70	\$0.40	\$28.00	_____
Potassium	K ₂ O	70	\$0.40	\$28.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$161.10	_____

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	\$3.98	\$3.98	_____
		Gramoxone SL	oz.	1	40	\$0.29	\$11.60	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$6.71	\$24.16	_____
		Atrazine 4L	qt.	1	1.5	\$3.98	\$5.97	_____
Insecticides	Post Harvest	Gramoxone SL	oz.	1	48	\$0.29	\$13.92	_____
		Valor	oz.	1	2	\$6.11	\$12.22	_____
Fungicides ⁴						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Total							\$71.85	_____

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'	\$1.90	\$2.38	\$2.50	\$1.14	\$7.92	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.43	\$2.21	\$2.11	\$0.96	\$7.71	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	Combine	Corn Head	8-row	\$13.30	\$13.13	\$7.42	\$1.62	\$35.47	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Total				\$57.77	\$27.80	\$21.91	\$8.55	\$116.03	_____

FOOTNOTES

- 1) Corn price was estimated as the average of the September and December 2015 futures price on December 29, 2014 (\$4.36/bu) plus estimated harvest basis of \$-0.10.
- 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 2014 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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.

2015 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	\$4.26	\$958.50	_____
			Total Revenue	\$958.50	_____
Variable Expenses					
Seed ^{2,3}	Thous.	34	\$3.13	\$106.25	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$214.20	\$214.20	_____
Chemical (Table 2.) ^{3,4}	Acre	1	\$83.92	\$83.92	_____
Crop Scout	Acre	1	\$5.50	\$5.50	_____
Repair & Maintenance (Table 3.)	Acre	1	\$20.74	\$20.74	_____
Fuel, Oil & Filter (Table 3.)	Acre	1	\$15.61	\$15.61	_____
Operator Labor (Table 3.)	Acre	1	\$5.68	\$5.68	_____
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	\$5.00	\$36.00	_____
Irrigation System R&M	Acre	1	\$10.88	\$10.88	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ⁵	Acre	1	\$165.00	\$165.00	_____
Crop Insurance ⁶	Acre	1	\$13.86	\$13.86	_____
Operating Interest ⁷	%	\$677.64	6.00%	\$20.33	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$697.97	_____
			Return Above Variable Expenses	\$260.53	_____
Fixed Expenses					
Machinery ⁸					
Capital Recovery (Table 3.)	Acre	1	\$56.10	\$56.10	_____
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	\$173.91	_____
			Return Above All Specified Expenses	\$86.61	_____

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>
175	\$3.99	\$4.98
185	\$3.77	\$4.71
195	\$3.58	\$4.47
205	\$3.40	\$4.25
215	\$3.25	\$4.06
225	\$3.10	\$3.88
235	\$2.97	\$3.71
245	\$2.85	\$3.56
255	\$2.74	\$3.42
265	\$2.63	\$3.29
275	\$2.54	\$3.17

Breakeven Yield for Selected Price

<u>Price</u> <u>(\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost</u> <u>(bu)</u>
\$3.01	232	290
\$3.26	214	267
\$3.51	199	248
\$3.76	186	232
\$4.01	174	217
\$4.26	164	205
\$4.51	155	193
\$4.76	147	183
\$5.01	139	174
\$5.26	133	166
\$5.51	127	158

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	240	\$0.53	\$127.20	_____
Phosphorous	P ₂ O ₅	90	\$0.40	\$36.00	_____
Potassium	K ₂ O	90	\$0.40	\$36.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$214.20	_____

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	\$0.29	\$11.60	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
	Pre-Emerge	Atrazine 4L	qt.	1	1	\$3.98	\$3.98	_____
		Gramoxone SL	oz.	1	40	\$0.29	\$11.60	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$6.71	\$24.16	_____
Insecticides	Post Harvest	Atrazine 4L	qt.	1	1.5	\$3.98	\$5.97	_____
		Gramoxone SL	oz.	1	48	\$0.29	\$13.92	_____
		Valor	oz.	1	2	\$6.11	\$12.22	_____
Fungicides ⁴						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Total							\$83.92	_____

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	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Harvest	Combine	Corn Head	8-row	\$13.30	\$13.13	\$7.42	\$1.62	\$35.47	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Total				\$56.10	\$20.74	\$15.61	\$5.68	\$98.14	_____

FOOTNOTES

- 1) Corn price was estimated as the average of the September and December 2015 futures price on December 29, 2014 (\$4.36/bu) plus estimated harvest basis of \$-0.10.
- 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 2014 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 Excel version of the budgets and modify the Machinery Assumptions Table or use 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.

2015 Non-Irrigated Soybean Budget (No-Till)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue				Gross Revenue (\$/Acre)	
Soybeans ¹	Bu	45	\$10.35	\$465.75	_____
			Total Revenue	\$465.75	_____
Variable Expenses ²					
Seed ³	Thous.	140	\$0.36	\$50.40	_____
Fertilizer & Lime (Table 1.) ⁴	Acre	1	\$39.00	\$39.00	_____
Chemical (Table 2.) ^{5,6,7,8,9,10}	Acre	1	\$130.28	\$130.28	_____
Crop Scout	Acre	1	\$5.50	\$5.50	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$17.54	\$17.54	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$14.08	\$14.08	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$5.43	\$5.43	_____
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	\$98.00	\$98.00	_____
Crop Insurance ¹³	Acre	1	\$9.66	\$9.66	_____
Operating Interest ¹⁴	%	\$369.88	6.00%	\$11.10	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$380.98	_____
			Return Above Variable Expenses	\$84.77	_____
Fixed Expenses					
Machinery ¹¹					_____
Capital Recovery (Table 3.)	Acre	1	\$61.06	\$61.06	_____
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	\$76.06	_____
			Return Above All Specified Expenses	\$8.71	_____

Breakeven Price For Selected Yield

<u>Yield (bu)</u>	<u>Variable Cost (\$/bu)</u>	<u>Total Specified Cost (\$/bu)</u>
25	\$15.24	\$18.28
30	\$12.70	\$15.23
35	\$10.89	\$13.06
40	\$9.52	\$11.43
45	\$8.47	\$10.16
50	\$7.62	\$9.14
55	\$6.93	\$8.31
60	\$6.35	\$7.62
65	\$5.86	\$7.03

Breakeven Yield for Selected Price

<u>Price (\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost (bu)</u>
\$8.35	46	55
\$8.85	43	52
\$9.35	41	49
\$9.85	39	46
\$10.35	37	44
\$10.85	35	42
\$11.35	34	40
\$11.85	32	39
\$12.35	31	37

Table 1. Fertilizer & Lime ⁴

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	0	\$0.53	\$0.00	_____
Phosphorous	P ₂ O ₅	20	\$0.40	\$8.00	_____
Potassium	K ₂ O	40	\$0.40	\$16.00	_____
Lime ⁴	Limestone	1,000	\$0.015	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$39.00	_____

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 Power Max	qt.	1	1	\$5.70	\$5.70	_____
		Clarity 4EC	oz.	1	8	\$0.72	\$5.76	_____
		Valor	oz.	1	2	\$6.11	\$12.22	_____
	Pre-Emerge	Gramoxone SL	oz.	1	40	\$0.29	\$11.60	_____
		Boundary	pt.	1	2	\$10.26	\$20.52	_____
Post-Emerge		Flexstar GT	pt.	1	3	\$4.93	\$14.79	_____
		Cobra	oz.	1	12	\$1.57	\$18.84	_____
		Roundup Power Max	qt.	1	1	\$5.70	\$5.70	_____
Insecticides	Post-Emerge		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							\$130.28	_____

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	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Harvest	Combine	Grain Head	30 ft	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$61.06	\$17.54	\$14.08	\$5.43	\$98.11	_____

FOOTNOTES

- 1) Soybean price is the November 2015 futures price, as of December 29, 2014, plus average 2014 harvest basis of \$0.02.
- 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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2014 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.

2015 Irrigated Soybean Budget (No-Till)

	Unit	Quantity	Price	Total	Your Farm
Revenue					
Soybeans ¹	Bu	60	\$10.35	\$621.00	_____
				Gross Revenue (\$/Acre)	
				Total Revenue	\$621.00
Variable Expenses ²					
Seed ³	Thous.	140	\$0.36	\$50.40	_____
Fertilizer & Lime (Table 1.) ⁴	Acre	1	\$39.00	\$39.00	_____
Chemical (Table 2.) ^{5,6,7,8,9,10}	Acre	1	\$130.28	\$130.28	_____
Crop Scout	Acre	1	\$5.50	\$5.50	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$17.54	\$17.54	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$14.08	\$14.08	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$5.43	\$5.43	_____
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	\$5.00	\$36.00	_____
Irrigation System R&M	Acre	1	\$10.88	\$10.88	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ¹²	Acre	1	\$165.00	\$165.00	_____
Crop Insurance ¹³	Acre	1	\$9.66	\$9.66	_____
Operating Interest ¹⁴	%	\$483.76	6.00%	\$14.51	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses	\$498.28
				Return Above Variable Expenses	\$122.72
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$61.06	\$61.06	_____
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	\$178.87
				Return Above All Specified Expenses	-\$56.15

Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
40	\$12.46	\$16.93
45	\$11.07	\$15.05
50	\$9.97	\$13.54
55	\$9.06	\$12.31
60	\$8.30	\$11.29
65	\$7.67	\$10.42
70	\$7.12	\$9.67
75	\$6.64	\$9.03
80	\$6.23	\$8.46

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$8.35	60	81
\$8.85	56	77
\$9.35	53	72
\$9.85	51	69
\$10.35	48	65
\$10.85	46	62
\$11.35	44	60
\$11.85	42	57
\$12.35	40	55

Table 1. Fertilizer & Lime ⁴

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	0	\$0.53	\$0.00	_____
Phosphorous	P ₂ O ₅	20	\$0.40	\$8.00	_____
Potassium	K ₂ O	40	\$0.40	\$16.00	_____
Lime ⁴	Limestone	0.5	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$39.00	_____

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 Power Max	qt.	1	1	\$5.70	\$5.70	_____
		Clarity 4EC	oz.	1	8	\$0.72	\$5.76	_____
	Pre-Emerge	Valor	oz.	1	2	\$6.11	\$12.22	_____
		Gramoxone SL	oz.	1	40	\$0.29	\$11.60	_____
	Post-Emerge	Boundary	pt.	1	2	\$10.26	\$20.52	_____
Post-Emerge	Flexstar GT	Cobra	pt.	1	3	\$4.93	\$14.79	_____
			oz.	1	12	\$1.57	\$18.84	_____
	Roundup Power Max		qt.	1	1	\$5.70	\$5.70	_____
Insecticides		Seed Treatment	acre	1	1	\$7.00	\$7.00	_____
Insecticide/Fungicides			acre	1	1	\$10.75	\$10.75	_____
Fungicides			acre	1	1	\$17.40	\$17.40	_____
Total				1			\$130.28	_____

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	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Harvest	Combine	Grain Head	30 ft	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$61.06	\$17.54	\$14.08	\$5.43	\$98.11	_____

FOOTNOTES

- 1) Soybean price is the November 2015 futures price, as of December 29, 2014, plus average 2014 harvest basis of \$0.02.
- 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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2014 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.

2015 Non-Irrigated Wheat & Soybean DC Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
			Gross Revenue (\$/Acre)		
Soybeans ¹	Bu	35	\$10.35	\$362.25	
Wheat ²	Bu	60	\$6.09	\$365.40	
			Total Revenue	\$727.65	
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	\$117.40	\$117.40	
Chemical (Table 2.) ^{5,6,7,8,9,10}	Acre	1	\$110.88	\$110.88	
Crop Scout	Acre	1	\$5.50	\$5.50	
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$43.93	\$43.93	
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$33.51	\$33.51	
Operator Labor (Table 3.) ¹¹	Acre	1	\$13.26	\$13.26	
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	\$98.00	\$98.00	
Crop Insurance ¹³	Acre	1	\$17.07	\$17.07	
Operating Interest ¹⁴	%	\$533.14	6.00%	\$15.99	
Other Variable Costs	Acre	1	\$0.00	\$0.00	
			Total Variable Expenses	\$549.14	
			Return Above Variable Expenses	\$178.51	
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$92.07	\$92.07	
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	\$107.07	
			Return Above All Specified Expenses	\$71.44	

Breakeven Price For Selected Soybean Yield ¹⁵

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
15	\$18.30	\$21.87
20	\$13.73	\$16.41
25	\$10.98	\$13.12
30	\$9.15	\$10.94
35	\$7.84	\$9.37
40	\$6.86	\$8.20
45	\$6.10	\$7.29
50	\$5.49	\$6.56
55	\$4.99	\$5.97

Breakeven Yield for Selected Soybean Price ¹⁵

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$8.35	33	39
\$8.85	31	37
\$9.35	29	35
\$9.85	28	33
\$10.35	27	32
\$10.85	25	30
\$11.35	24	29
\$11.85	23	28
\$12.35	22	27

Breakeven Price For Selected Wheat Yield ¹⁵

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
40	\$6.86	\$8.20
45	\$6.10	\$7.29
50	\$5.49	\$6.56
55	\$4.99	\$5.97
60	\$4.58	\$5.47
65	\$4.22	\$5.05
70	\$3.92	\$4.69
75	\$3.66	\$4.37
80	\$3.43	\$4.10

Breakeven Yield for Selected Wheat Price ¹⁵

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$4.09	67	80
\$4.59	60	71
\$5.09	54	64
\$5.59	49	59
\$6.09	45	54
\$6.59	42	50
\$7.09	39	46
\$7.59	36	43
\$8.09	34	41

Table 1. Fertilizer & Lime ⁴

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Ammonium Nitrate	80	\$0.68	\$54.40	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$24.00	_____
Potassium	K ₂ O	60	\$0.40	\$24.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$117.40	_____

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	\$0.29	\$11.60	_____
		Metribuzin	oz.	1	4	\$0.86	\$3.44	_____
	Post-Emerge	Roundup Power Max	qt.	1	1	\$5.70	\$5.70	_____
Herbicides- Wheat		Flexstar GT	pt.	1	3	\$4.93	\$14.79	_____
		Harmony Extra	oz.	1	0.5	\$14.03	\$7.02	_____
		Axial XL	oz.	1	16.4	\$1.07	\$17.55	_____
		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	_____
							\$110.88	_____
Total								_____

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'	\$1.90	\$2.38	\$2.50	\$1.14	\$7.92	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01	_____
Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$2.73	\$3.00	\$2.79	\$1.28	\$9.80	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.69	\$7.26	\$3.19	\$1.46	\$16.60	_____
Topdress	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Fungicide	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	Combine	Grain Head	30 ft	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	Combine	Grain Head	30 ft	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$92.07	\$43.93	\$33.51	\$13.26	\$182.77	_____

FOOTNOTES

- 1) Soybean price is the November 2015 futures price, as of December 29, 2014, plus average 2014 harvest basis of \$0.02.
- 2) Wheat Price is the July 2015 Futures Price on December 29, 2014 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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2014 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 \$6.09/bu. When estimating wheat breakeven soybean yield and price are held constant at 35 bu/acre and \$10.35/bu.

2015 Wheat Budget (Conventional Tillage)

	Unit	Quantity	Price	Total	Your Farm
Revenue					
Wheat ¹	Bu	60	\$6.09	\$365.40	_____
				Total Revenue	\$365.40
Variable Expenses					
Seed ²	Bu	2	\$21.60	\$43.20	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$93.40	\$93.40	_____
Chemical (Table 2.) ^{2,3}	Acre	1	\$95.29	\$95.29	_____
Crop Scout	Acre	1	\$5.50	\$5.50	_____
Repair & Maintenance (Table 3.) ⁴	Acre	1	\$28.01	\$28.01	_____
Fuel, Oil & Filter (Table 3.) ⁴	Acre	1	\$21.53	\$21.53	_____
Operator Labor (Table 3.) ⁴	Acre	1	\$8.82	\$8.82	_____
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	\$98.00	\$98.00	_____
Crop Insurance ⁶	Acre	1	\$7.41	\$7.41	_____
Operating Interest ⁷	%	\$401.17	6.00%	\$12.03	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses	\$413.20
				Return Above Variable Expenses	-\$47.80
Fixed Expenses					
Machinery ⁴					
Capital Recovery (Table 3.)	Acre	1	\$53.80	\$53.80	_____
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	\$68.80
				Return Above All Specified Expenses	-\$116.60

Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
40	\$10.33	\$12.05
45	\$9.18	\$10.71
50	\$8.26	\$9.64
55	\$7.51	\$8.76
60	\$6.89	\$8.03
65	\$6.36	\$7.42
70	\$5.90	\$6.89
75	\$5.51	\$6.43
80	\$5.17	\$6.03

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$5.09	81	95
\$5.34	77	90
\$5.59	74	86
\$5.84	71	83
\$6.09	68	79
\$6.34	65	76
\$6.59	63	73
\$6.84	60	70
\$7.09	58	68

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Ammonium Nitrate	80	\$0.68	\$54.40	_____
Phosphorous	P ₂ O ₅	40	\$0.40	\$16.00	_____
Potassium	K ² O	20	\$0.40	\$8.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$93.40	_____

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	\$0.29	\$13.92	_____
		Sharpen	oz.	1	2	\$5.86	\$11.72	_____
	Pre-Emerge	Finesse	oz.	1	0.5	\$16.70	\$8.35	_____
		Roundup Power Max	qt.	1	1	\$5.70	\$5.70	_____
	Post-Emerge	Harmony Extra	oz.	1	0.5	\$14.03	\$7.02	_____
		Axial XL	oz.	1	16.4	\$1.07	\$17.55	_____
Insecticides		Surfactant	pt.	1	0.1	\$2.38	\$0.24	_____
		Seed Treatment	acre	1	1	\$5.00	\$5.00	_____
		Seed Treatment	acre	1	1	\$8.40	\$8.40	_____
Fungicides		Foliar	acre	1	1	\$17.40	\$17.40	_____
Total							\$95.29	_____

Table 3. Machinery⁴

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$1.90	\$2.38	\$2.50	\$1.14	\$7.92	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.43	\$2.21	\$2.11	\$0.96	\$7.71	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.69	\$7.26	\$3.19	\$1.46	\$16.60	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Harvest	Combine	Grain Head	30 ft	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$53.80	\$28.01	\$21.53	\$8.82	\$112.17	_____

FOOTNOTES

- 1) Wheat Price is the July 2015 Futures Price on December 29, 2014 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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 5) Cash rental rates are the 2014 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.

2015 Non-Irrigated Cotton Budget (No-Till)

	Unit	Quantity	Price	Total	Your Farm
Revenue					
Cotton ^{1,2,3}	lb	875	\$0.65	\$572.60	_____
				Gross Revenue (\$/Acre)	
				Total Revenue	\$572.60
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	\$120.07	\$120.07	_____
Chemical (Table 2.) ^{6,7,8,9,10}	Acre	1	\$158.16	\$158.16	_____
Crop Scout	Acre	1	\$9.50	\$9.50	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$17.64	\$17.64	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$25.78	\$25.78	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$9.87	\$9.87	_____
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	\$98.00	\$98.00	_____
Crop Insurance ¹³	Acre	1	\$9.76	\$9.76	_____
Operating Interest ¹⁴	%	\$543.61	6.00%	\$16.31	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses	\$559.92
				Return Above Variable Expenses	\$12.68
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$127.28	\$127.28	_____
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	\$142.28
				Return Above All Specified Expenses	-\$129.60

Breakeven Price For Selected Yield

Yield (lb)	Variable Cost (\$/lb)	Total Specified Cost (\$/lb)
625	\$0.90	\$1.12
675	\$0.83	\$1.04
725	\$0.77	\$0.97
775	\$0.72	\$0.91
825	\$0.68	\$0.85
875	\$0.64	\$0.80
925	\$0.61	\$0.76
975	\$0.57	\$0.72
1,025	\$0.55	\$0.69
1,075	\$0.52	\$0.65
1,125	\$0.50	\$0.62

Breakeven Yield for Selected Price

Price (\$/lb)	Variable Cost (lb)	Total Specified Cost (lb)
\$0.40	1,385	1,736
\$0.45	1,232	1,545
\$0.50	1,110	1,392
\$0.55	1,010	1,267
\$0.60	926	1,162
\$0.65	856	1,073
\$0.70	795	997
\$0.75	742	931
\$0.80	696	873
\$0.85	655	822
\$0.90	619	776

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	80	\$0.53	\$42.40	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$24.00	_____
Potassium	K ₂ O	90	\$0.40	\$36.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Boron		0.5	\$5.33	\$2.67	_____
Total				\$120.07	_____

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	\$5.70	\$5.70	_____
	Burndown	Clarity 4EC	oz.	1	8	\$0.72	\$5.76	_____
	Pre-Emerge	Cotoran 4L	pt.	1	2	\$5.00	\$10.00	_____
	Over The Top	Roundup Power Max	qt.	1	1	\$5.70	\$5.70	_____
	Over The Top	Dual Magnum	pt.	1	1	\$15.97	\$15.97	_____
	Hooded Sprayer	Liberty 280 SL	oz.	2	29	\$0.57	\$33.06	_____
		Gramoxone SL	oz.	1	32	\$0.29	\$9.28	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
		Valor	oz.	1	1	\$6.11	\$6.11	_____
		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
Growth Regulator						\$0.55	\$6.60	_____
Defoliant						\$0.19	\$6.00	_____
Boll Opener		Ethephon	oz.	1	32	\$9.00	\$9.00	_____
Insecticides		Seed Treatment	acre	1	1	\$35.00	\$35.00	_____
		In-Season	acre	1	1	\$7.50	\$7.50	_____
Fungicides		Seed Treatment	acre	1	1			_____
Total							\$158.16	_____

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'	\$4.42	\$3.16	\$2.66	\$1.22	\$11.46	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Plant	Tractor, 215 hp	Planter	12-row	\$9.86	\$3.09	\$2.29	\$1.05	\$16.28	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer		\$10.65	\$1.01	\$0.64	\$0.29	\$12.59	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	SP Cotton Picker			\$35.00	\$4.63	\$8.35	\$1.82	\$49.80	_____
Haul-Boll Buggy	Tractor, 215 hp	Boll Buggy		\$4.83	\$0.92	\$2.79	\$1.28	\$9.82	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$5.42	\$0.96	\$2.49	\$1.14	\$10.01	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$5.42	\$0.96	\$2.49	\$1.14	\$10.01	_____
Total				\$127.28	\$17.64	\$25.78	\$9.87	\$180.56	_____

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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2014 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.

2015 Non-Irrigated Cotton Budget (Conventional Tillage)

	Unit	Quantity	Price	Total	Your Farm
Revenue					
Cotton ^{1,2,3}	lb	850	\$0.65	\$556.24	_____
				Gross Revenue (\$/Acre)	
				Total Revenue	\$556.24
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	\$120.07	\$120.07	_____
Chemical (Table 2.) ^{6,7,8,9,10}	Acre	1	\$146.70	\$146.70	_____
Crop Scout	Acre	1	\$9.50	\$9.50	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$28.20	\$28.20	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$35.10	\$35.10	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$14.13	\$14.13	_____
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	\$98.00	\$98.00	_____
Crop Insurance ¹³	Acre	1	\$9.76	\$9.76	_____
Operating Interest ¹⁴	%	\$556.30	6.00%	\$16.69	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses	\$572.99
				Return Above Variable Expenses	-\$16.75
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$140.87	\$140.87	_____
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	\$155.87
				Return Above All Specified Expenses	-\$172.62

Breakeven Price For Selected Yield

Yield (lb)	Variable Cost (\$/lb)	Total Specified Cost (\$/lb)
600	\$0.95	\$1.21
650	\$0.88	\$1.12
700	\$0.82	\$1.04
750	\$0.76	\$0.97
800	\$0.72	\$0.91
850	\$0.67	\$0.86
900	\$0.64	\$0.81
950	\$0.60	\$0.77
1,000	\$0.57	\$0.73
1,050	\$0.55	\$0.69
1,100	\$0.52	\$0.66

Breakeven Yield for Selected Price

Price (\$/lb)	Variable Cost (lb)	Total Specified Cost (lb)
\$0.40	1,417	1,802
\$0.45	1,261	1,604
\$0.50	1,136	1,445
\$0.55	1,034	1,315
\$0.60	948	1,206
\$0.65	876	1,114
\$0.70	813	1,035
\$0.75	760	966
\$0.80	712	906
\$0.85	671	853
\$0.90	634	806

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	80	\$0.53	\$42.40	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$24.00	_____
Potassium	K ₂ O	90	\$0.40	\$36.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Boron		0.5	\$5.33	\$2.67	_____
Total				\$120.07	_____

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	\$5.00	\$10.00	_____
	Over The Top	Roundup Power Max	qt.	1	1	\$5.70	\$5.70	_____
	Over The Top	Dual Magnum	pt.	1	1	\$15.97	\$15.97	_____
	Hooded Sprayer	Liberty 280 SL	oz.	2	29	\$0.57	\$33.06	_____
		Gramoxone SL	oz.	1	32	\$0.29	\$9.28	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
		Valor	oz.	1	1	\$6.11	\$6.11	_____
		Growth Regulator	Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00
	Defoliant		oz.	1	12	\$0.55	\$6.60	_____
Boll Opener	oz.		1	32	\$0.19	\$6.00	_____	
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							\$146.70	_____

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'	\$4.42	\$3.16	\$2.66	\$1.22	\$11.46	_____
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$1.90	\$2.38	\$2.50	\$1.14	\$7.92	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01	_____
Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$2.73	\$3.00	\$2.79	\$1.28	\$9.80	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Plant	Tractor, 215 hp	Planter	12-row	\$9.86	\$3.09	\$2.29	\$1.05	\$16.28	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer	90'	\$10.65	\$1.01	\$0.64	\$0.29	\$12.59	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Apply Mepex	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Apply Mepex	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Defoliant/Boll Ope	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	SP Cotton Picker			\$35.00	\$4.63	\$8.35	\$1.82	\$49.80	_____
Haul-Boll Buggy	Tractor, 215 hp	Boll Buggy		\$4.83	\$0.92	\$2.79	\$1.28	\$9.82	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$5.42	\$0.96	\$2.49	\$1.14	\$10.01	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$5.42	\$0.96	\$2.49	\$1.14	\$10.01	_____
Total				\$140.87	\$28.20	\$35.10	\$14.13	\$218.30	_____

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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2014 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.

2015 Irrigated Cotton Budget (No-Till)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
			Gross Revenue (\$/Acre)		
Cotton ^{1,2,3}	lb	1,100	\$0.65	\$719.84	_____
			Total Revenue	\$719.84	_____
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	\$125.37	\$125.37	_____
Chemical (Table 2.) ^{6,7,8,9,10}	Acre	1	\$158.16	\$158.16	_____
Crop Scout	Acre	1	\$9.50	\$9.50	_____
Repair & Maintenance (Table 3.) ¹¹	Acre	1	\$19.79	\$19.79	_____
Fuel, Oil & Filter (Table 3.) ¹¹	Acre	1	\$27.80	\$27.80	_____
Operator Labor (Table 3.) ¹¹	Acre	1	\$10.79	\$10.79	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Irrigation Energy Cost	Ac-In	7.2	\$5.00	\$36.00	_____
Irrigation System R&M	Acre	1	\$10.88	\$10.88	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ¹²	Acre	1	\$165.00	\$165.00	_____
Crop Insurance ¹³	Acre	1	\$9.76	\$9.76	_____
Operating Interest ¹⁴	%	\$667.89	6.00%	\$20.04	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$687.93	_____
			Return Above Variable Expenses	\$31.91	_____
Fixed Expenses					
Machinery ¹¹					
Capital Recovery (Table 3.)	Acre	1	\$121.05	\$121.05	_____
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	\$238.86	_____
			Return Above All Specified Expenses	-\$206.95	_____

Breakeven Price For Selected Yield

Yield (lb)	Total Specified Cost	
	Variable Cost (\$/lb)	(\$/lb)
850	\$0.81	\$1.09
900	\$0.76	\$1.03
950	\$0.72	\$0.98
1,000	\$0.69	\$0.93
1,050	\$0.66	\$0.88
1,100	\$0.63	\$0.84
1,150	\$0.60	\$0.81
1,200	\$0.57	\$0.77
1,250	\$0.55	\$0.74
1,300	\$0.53	\$0.71
1,350	\$0.51	\$0.69

Breakeven Yield for Selected Price

Price (\$/lb)	Total Specified Cost	
	Variable Cost (lb)	(lb)
\$0.40	1,701	2,292
\$0.45	1,514	2,040
\$0.50	1,364	1,837
\$0.55	1,241	1,672
\$0.60	1,138	1,533
\$0.65	1,051	1,416
\$0.70	977	1,316
\$0.75	912	1,229
\$0.80	855	1,152
\$0.85	805	1,085
\$0.90	761	1,025

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.53	\$47.70	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$24.00	_____
Potassium	K ₂ O	90	\$0.40	\$36.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Boron		0.5	\$5.33	\$2.67	_____
Total				\$125.37	_____

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	\$5.70	\$5.70	_____
	Burndown	Clarity EC	oz.	1	8	\$0.72	\$5.76	_____
	Pre-Emerge	Cotoran 4L	pt.	1	2	\$5.00	\$10.00	_____
	Over The Top	Roundup Power Max	qt.	1	1	\$5.70	\$5.70	_____
	Over The Top	Dual Magnum	pt.	1	1	\$15.97	\$15.97	_____
Hooded Sprayer		Liberty 280 SL	oz.	2	29	\$0.57	\$33.06	_____
		Gramoxone SL	oz.	1	32	\$0.29	\$9.28	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
		Valor	oz.	1	1	\$6.11	\$6.11	_____
		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
Growth Regulator			oz.	1	12	\$0.55	\$6.60	_____
Defoliant		Ethephon	oz.	1	32	\$0.19	\$6.00	_____
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							\$158.16	_____

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'	\$4.42	\$3.16	\$2.66	\$1.22	\$11.46	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Plant	Tractor, 215 hp	Planter	12-row	\$9.86	\$3.09	\$2.29	\$1.05	\$16.28	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer	900#	\$4.42	\$3.16	\$2.66	\$1.22	\$11.46	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	90'	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	SP Cotton Picker			\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Haul-Boll Buggy	Tractor, 215 hp	Boll Buggy		\$35.00	\$4.63	\$8.35	\$1.82	\$49.80	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$4.83	\$0.92	\$2.79	\$1.28	\$9.82	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$5.42	\$0.96	\$2.49	\$1.14	\$10.01	_____
Module Builder	Tractor, 215 hp	Module Builder	32'	\$5.42	\$0.96	\$2.49	\$1.14	\$10.01	_____
Total				\$121.05	\$19.79	\$27.80	\$10.79	\$179.43	_____

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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 12) Cash rental rates are the 2014 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.

2015 Grain Sorghum Budget (No-Till)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue				Gross Revenue (\$/Acre)	
Grain Sorghum ¹	Bu	90	\$4.20	\$378.00	_____
				Total Revenue \$378.00	_____
Variable Expenses					
Seed	lb	6	\$2.92	\$17.52	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$102.70	\$102.70	_____
Chemical (Table 2.) ²	Acre	1	\$61.87	\$61.87	_____
Crop Scout	Acre	1	\$5.50	\$5.50	_____
Repair & Maintenance (Table 3.) ³	Acre	1	\$17.41	\$17.41	_____
Fuel, Oil & Filter (Table 3.) ³	Acre	1	\$13.76	\$13.76	_____
Operator Labor (Table 3.) ³	Acre	1	\$5.27	\$5.27	_____
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	\$98.00	\$98.00	_____
Crop Insurance ⁵	Acre	1	\$3.56	\$3.56	_____
Operating Interest ⁶	%	\$325.59	6.00%	\$9.77	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses \$335.36	_____
				Return Above Variable Expenses \$42.64	_____
Fixed Expenses					
Machinery ³					
Capital Recovery (Table 3.)	Acre	1	\$53.92	\$53.92	_____
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 \$68.92	_____
				Return Above All Specified Expenses -\$26.27	_____

Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
70	\$4.79	\$5.78
75	\$4.47	\$5.39
80	\$4.19	\$5.05
85	\$3.95	\$4.76
90	\$3.73	\$4.49
95	\$3.53	\$4.26
100	\$3.35	\$4.04
105	\$3.19	\$3.85
110	\$3.05	\$3.68

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$4.00	84	101
\$4.05	83	100
\$4.10	82	99
\$4.15	81	97
\$4.20	80	96
\$4.25	79	95
\$4.30	78	94
\$4.35	77	93
\$4.40	76	92

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.53	\$47.70	_____
Phosphorous	P ₂ O ₅	50	\$0.40	\$20.00	_____
Potassium	K ₂ O	50	\$0.40	\$20.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$102.70	_____

Table 2. Chemicals²

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Gramoxone SL	oz.	1	40	\$0.29	\$11.60	_____
		Surfactant	pt.	1	0.2	\$2.38	\$0.48	_____
	Pre-Emerge	Bicep II Magnum	qt.	1	2.1	\$12.62	\$26.50	_____
		Atrazine 4L	oz.	1	11.84	\$0.12	\$1.42	_____
Insecticides	Post-Emerge	Crop Oil	pt.	1	2	\$3.25	\$6.50	_____
		Atrazine 4L	qt.	1	1	\$3.98	\$3.98	_____
		Seed Treatment	acre	1	1	\$4.80	\$4.80	_____
		Foliar	acre	1	1	\$6.59	\$6.59	_____
Fungicides						\$0.00	\$0.00	_____
Total							\$61.87	_____

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	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Burndown	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Insecticide	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	Combine	Grain Head	30'	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$53.92	\$17.41	\$13.76	\$5.27	\$90.36	_____

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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 4) Cash rental rates are the 2014 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.

2015 Grain Sorghum Budget (Conventional Tillage)

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue			Gross Revenue (\$/Acre)		
Grain Sorghum ¹	Bu	90	\$4.20	\$378.00	
Total Revenue				\$378.00	
Variable Expenses					
Seed	lb	6	\$2.92	\$17.52	
Fertilizer & Lime (Table 1.)	Acre	1	\$102.70	\$102.70	
Chemical (Table 2.) ²	Acre	1	\$41.87	\$41.87	
Crop Scout	Acre	1	\$5.50	\$5.50	
Repair & Maintenance (Table 3.) ³	Acre	1	\$24.34	\$24.34	
Fuel, Oil & Filter (Table 3.) ³	Acre	1	\$19.74	\$19.74	
Operator Labor (Table 3.) ³	Acre	1	\$7.99	\$7.99	
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	\$98.00	\$98.00	
Crop Insurance ⁵	Acre	1	\$3.56	\$3.56	
Operating Interest ⁶	%	\$321.22	6.00%	\$9.64	
Other Variable Costs	Acre	1	\$0.00	\$0.00	
Total Variable Expenses				\$330.86	
Return Above Variable Expenses				\$47.14	
Fixed Expenses					
Machinery ³					
Capital Recovery (Table 3.)	Acre	1	\$48.43	\$48.43	
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				\$63.43	
Return Above All Specified Expenses				-\$16.29	

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	\$4.73	\$5.63
75	\$4.41	\$5.26
80	\$4.14	\$4.93
85	\$3.89	\$4.64
90	\$3.68	\$4.38
95	\$3.48	\$4.15
100	\$3.31	\$3.94
105	\$3.15	\$3.76
110	\$3.01	\$3.58

Breakeven Yield for Selected Price

<u>Price</u> <u>(\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost</u> <u>(bu)</u>
\$4.00	83	99
\$4.05	82	97
\$4.10	81	96
\$4.15	80	95
\$4.20	79	94
\$4.25	78	93
\$4.30	77	92
\$4.35	76	91
\$4.40	75	90

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.53	\$47.70	_____
Phosphorous	P ₂ O ₅	50	\$0.40	\$20.00	_____
Potassium	K ₂ O	50	\$0.40	\$20.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$102.70	_____

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	\$12.62	\$26.50	_____
	Post-Emerge	Atrazine 4L	qt.	1	1	\$3.98	\$3.98	_____
Insecticides		Seed Treatment	acre	1	1	\$4.80	\$4.80	_____
		Foliar	acre	1	1	\$6.59	\$6.59	_____
Fungicides						\$0.00	\$0.00	_____
Total							\$41.87	_____

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'	\$1.90	\$2.38	\$2.50	\$1.14	\$7.92	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.43	\$2.21	\$2.11	\$0.96	\$7.71	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	Combine	Grain Head	30'	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Total				\$48.43	\$24.34	\$19.74	\$7.99	\$100.50	_____

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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 4) Cash rental rates are the 2014 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.

2015 Canola Budget (Conventional Tillage)

	Unit	Quantity	Price	Total	Your Farm
Revenue					
Canola ¹	Bu	50	\$9.96	\$498.05	_____
				Gross Revenue (\$/Acre)	
				Total Revenue	\$498.05
Variable Expenses					
Seed ²	lbs	5	\$5.50	\$27.50	_____
Fertilizer & Lime (Table 1.)	Acre	1	\$222.33	\$222.33	_____
Chemical (Table 2.) ³	Acre	1	\$31.34	\$31.34	_____
Crop Scout	Acre	1	\$5.50	\$5.50	_____
Repair & Maintenance (Table 3.) ⁴	Acre	1	\$29.65	\$29.65	_____
Fuel, Oil & Filter (Table 3.) ⁴	Acre	1	\$22.59	\$22.59	_____
Operator Labor (Table 3.) ⁴	Acre	1	\$9.31	\$9.31	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	50	\$0.00	\$0.00	_____
Cash Rent ⁵	Acre	1	\$98.00	\$98.00	_____
Crop Insurance ⁶	Acre	1	\$17.61	\$17.61	_____
Operating Interest ⁷	%	\$463.84	6.00%	\$13.92	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses	\$477.75
				Return Above Variable Expenses	\$20.30
Fixed Expenses					
Machinery ⁴					
Capital Recovery (Table 3.)	Acre	1	\$65.77	\$65.77	_____
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 ⁸	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs ⁹	Acre	1	\$0.00	\$0.00	_____
				Total Fixed Expenses	\$95.77
				Return Above All Specified Expenses	-\$75.47

Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
30	\$15.93	\$19.12
35	\$13.65	\$16.39
40	\$11.94	\$14.34
45	\$10.62	\$12.74
50	\$9.56	\$11.47
55	\$8.69	\$10.43
60	\$7.96	\$9.56
65	\$7.35	\$8.82
70	\$6.83	\$8.19

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$8.96	53	64
\$9.21	52	62
\$9.46	50	61
\$9.71	49	59
\$9.96	48	58
\$10.21	47	56
\$10.46	46	55
\$10.71	45	54
\$10.96	44	52

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	180	\$0.53	\$95.40	_____
Phosphorous	P ₂ O ₅	90	\$0.40	\$36.00	_____
Potassium	K ₂ O	145	\$0.40	\$58.00	_____
Lime	Limestone	1,000	\$0.015	\$15.00	_____
Other	Sulfur	35	\$0.36	\$12.60	_____
Other	Boron	1	\$5.33	\$5.33	_____
Total				\$222.33	_____

Table 2. Chemicals³

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Pre-plant	Treflan	pt.	1	1.5	\$5.06	\$7.59	_____
						\$0.00	\$0.00	_____
	Harvest	Reglone	pt.	1	2.6	\$0.00	\$0.00	_____
						\$0.48	\$1.25	_____
Insecticides			acre	1	1	\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Fungicides			acre	1	1	\$15.00	\$15.00	_____
						\$7.50	\$7.50	_____
Total							\$31.34	_____

Table 3. Machinery⁴

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01	_____
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$1.90	\$2.38	\$2.50	\$1.14	\$7.92	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.69	\$7.26	\$3.19	\$1.46	\$16.60	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75	_____
Harvest	Combine	Grain Head	30 ft	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.31	\$1.06	\$1.12	\$0.51	\$4.99	_____
Haul	Semi Tractor/Trailer		800 bu	\$3.79	\$0.31	\$2.25	\$1.30	\$7.65	_____
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$4.42	\$3.16	\$2.66	\$1.22	\$11.46	_____
Total				\$65.77	\$29.65	\$22.59	\$9.31	\$127.33	_____

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 Excel version of the budgets and modify the Machinery Assumptions Table or use the Machinery Cost Calculator on the University of Tennessee Crop Economics Webpage.
- 5) Cash rental rates are the 2014 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

Commodity Prices Received by Producers

Corn	\$4.26	bu
Soybeans	\$10.35	bu
Wheat	\$6.09	bu
Cotton	\$0.65	lb
Cotton-Tech Fee	\$1.30	'000 Seeds
Grain Sorghum	\$4.20	bu
Canola	\$9.96	bu

Fuel, Interest Rates, Pumping, and Labor Costs

Diesel Fuel (\$/gal)	\$2.50	\$/gal
Electricity (\$/Kwh)	\$0.098	\$/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

Crop Scout, Consulting, Cash Rent, and Crop Insurance

Crop Scout / Consulting Fee	\$5.50	acre
Crop Scouting-Cotton	\$9.50	acre
Drying (\$/bu)	\$0.00	bu
Irrigated Crop Land Cash Rent	\$165.00	acre
Non-Irrigated Crop Land Cash Rent	\$98.00	acre
Crop Insurance-Corn	\$13.86	acre
Crop Insurance-Soybean	\$9.66	acre
Crop Insurance-Wheat	\$7.41	acre
Crop Insurance-Cotton	\$9.76	acre
Crop Insurance-Grain Sorghum	\$3.56	acre
Crop Insurance-Canola	\$17.61	acre

Property Taxes, Non-Machinery Insurance, and Management Labor

Property Taxes	\$0.00	\$/acre
Insurance (Non-machinery)	\$0.00	\$/acre
Management Labor	\$15.00	\$/acre

Seed

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	\$2.92	\$/lb

Appendix 1: Input Summary Tables

<u>Fertilizer</u>		
Urea	\$0.53	\$/lb
Ammonium Nitrate	\$0.68	\$/lb
UAN 28%	\$0.58	\$/lb
UAN 32%	\$0.57	\$/lb
P ₂ O ₅	\$0.40	\$/lb
DAP (8-46-0)	\$0.63	\$/lb
K ₂ O	\$0.40	\$/lb
Lime	\$30.00	\$/ton
Boron	\$5.33	\$/lb
Sulfur	\$0.36	\$/lb

<u>Herbicides</u>		
Atrazine 4#/Gal (oz.)	\$0.12	\$/oz.
Atrazine 4#/Gal (qt.)	\$3.98	\$/qt.
Gramoxone SL (oz.)	\$0.29	\$/oz.
Bicep II Magnum (qt.)	\$12.62	\$/qt.
Roundup Power Max (qt.)	\$5.70	\$/qt.
Harmony Extra (oz.)	\$14.03	\$/oz.
Valor (oz.)	\$6.11	\$/oz.
Flexstar GT (pt.)	\$4.93	\$/pt.
Halex GT (pt.)	\$6.71	\$/pt.
Boundary (pt.)	\$10.26	\$/pt.
Cobra (oz.)	\$1.57	\$/oz.
Liberty 280 SL (oz.)	\$0.57	\$/oz.
Sharpen (oz.)	\$5.86	\$/oz.
Metribuzin (oz.)	\$0.86	\$/oz.
Axial XL (oz.)	\$1.07	\$/oz.
Finesse (oz.)	\$16.70	\$/oz.
Clarity 4EC (oz.)	\$0.72	\$/oz.
Cotoran (pt.)	\$5.00	\$/pt.
Dual Magnum (pt.)	\$15.97	\$/pt.
Mepex (Mepiquat Chloride) (pt.)	\$1.00	\$/pt.
Defoliant (oz.)	\$0.55	\$/oz.
Boll Opener (Ethephon) (oz.)	\$0.19	\$/oz.
Glysophate (oz.)	\$0.11	\$/oz.
Treflan (pt.)	\$5.06	\$/pt.
Select Max (oz.)	\$0.83	\$/oz.
Reglone	\$0.48	\$/pt.
Assure II (oz.)	\$0.96	\$/oz.

Appendix 1: Input Summary Tables

<u>Insecticide Treatments</u>		
Soybean	\$7.00	\$/acre
Grain Sorghum-Foliar	\$6.59	\$/acre
Grain Sorghum-seed treatment	\$4.80	\$/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	\$15.00	\$/acre
<u>Fungicides</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
Canola	\$7.50	\$/acre
Surfactant	\$2.38	\$/pint

Appendix 2: Field Operations Table

Commodity	Process	Power Unit	Implement	Size	Capital Recovery	Repair & Maintenance	Fuel	Labor	Total
All	Chisel	Tractor, 215 hp	Chisel Plow	21'	\$1.90	\$2.38	\$2.50	\$1.14	\$7.92
	Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.48	\$2.59	\$2.01	\$0.92	\$10.01
	Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.43	\$2.21	\$2.11	\$0.96	\$7.71
	Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$2.73	\$3.00	\$2.79	\$1.28	\$9.80
	Plant	Tractor, 215 hp	Planter	16-row	\$6.46	\$3.71	\$1.72	\$0.79	\$12.68
	Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.69	\$7.26	\$3.19	\$1.46	\$16.60
	Fertilize	Tractor, 215 hp	Fertilizer Spreader	900#	\$1.65	\$2.03	\$1.82	\$0.83	\$6.34
	Weed Control	SP Boom Sprayer		90'	\$7.15	\$0.13	\$0.32	\$0.16	\$7.75
	Harvest	Combine	Corn Head	8-row	\$13.30	\$13.13	\$7.42	\$1.62	\$35.47
	Harvest	Combine	Grain Head	30 ft	\$11.11	\$9.80	\$5.57	\$1.22	\$27.69
Cotton	Haul	Tractor, 215 hp	Grain Cart	800 bu	\$2.31	\$1.06	\$1.12	\$0.51	\$4.99
	Haul	Semi Tractor/Trailer			\$3.79	\$0.31	\$2.25	\$1.30	\$7.65
	Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$4.42	\$3.16	\$2.66	\$1.22	\$11.46
	Plant	Tractor, 215 hp	Planter	12-row	\$9.86	\$3.09	\$2.29	\$1.05	\$16.28
	Weed Control	Tractor, 215 hp	Hooded Sprayer	90	\$10.65	\$1.01	\$0.64	\$0.29	\$12.59
	Harvest	SP Cotton Picker		6-row	\$35.00	\$4.63	\$8.35	\$1.82	\$49.80
	Haul-Boll Buggy	Tractor, 215 hp	Boll Buggy		\$4.83	\$0.92	\$2.79	\$1.28	\$9.82
	Module Builder	Tractor, 215 hp	Module Builder	32'	\$5.42	\$0.96	\$2.49	\$1.14	\$10.01

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	\$639.00	\$513.11	\$71.10	\$54.79
Corn CT Non-Irr	\$639.00	\$517.39	\$72.77	\$48.85
Corn Irr	\$958.50	\$697.97	\$173.91	\$86.61
Soybeans NT Non-Irr	\$465.75	\$380.98	\$76.06	\$8.71
Soybeans Irr	\$621.00	\$498.28	\$178.87	(\$56.15)
Wheat & Soybean DC	\$727.65	\$549.14	\$107.07	\$71.44
Wheat	\$365.40	\$413.20	\$68.80	(\$116.60)
Cotton CT	\$556.24	\$572.99	\$155.87	(\$172.62)
Cotton NT	\$572.60	\$559.92	\$142.28	(\$129.60)
Cotton IRR	\$719.84	\$687.93	\$238.86	(\$206.95)
G. Sorghum NT	\$378.00	\$335.36	\$68.92	(\$26.27)
G. Sorghum CT	\$378.00	\$330.86	\$63.43	(\$16.29)
Canola	\$498.05	\$477.75	\$95.77	(\$75.47)