

# Field Crop Budgets For 2018

## **Field Crop Budgets For 2018**

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## TABLE OF CONTENTS

Introduction and Disclaimer	1
<b>Budgets</b>	
Corn, No-Till, Non-Irrigated, 155 Bushels/Acre Yield	3
Corn, Conventional Tillage, Non-Irrigated, 155 Bushels/Acre Yield	6
Corn, No-Till, Irrigated, 225 Bushels/Acre Yield	9
Soybeans, No-Till, Non-Irrigated, 45 Bushels/Acre Yield	12
Soybeans, No-Till, Irrigated, 60 Bushels/Acre Yield	15
Wheat/Soybeans Double Cropped, Non-Irrigated, 70 Bushels/Acre Yield and 40 Bushel/Acre Yield	18
Wheat, Conventional Tillage, Non-Irrigated, 70 Bushels/Acre Yield	21
Cotton, No-Till, Non-Irrigated, 990 lbs/Acre Yield	24
Cotton, Conventional Tillage, Non-Irrigated, 990 lbs/Acre Yield	27
Cotton, No-Till, Irrigated, 1,100 lbs/Acre Yield	30
Grain Sorghum, No-Till, Non-Irrigated, 90 Bushels/Acre Yield	33
Grain Sorghum, Conventional Tillage, Non-Irrigated, 90 Bushels/Acre Yield	36
Canola, Conventional Tillage, Non-Irrigated, 50 Bushels/Acre Yield	39

## **Appendices**

<b>Appendix 1:</b> Input Summary Tables	42
<b>Appendix 2:</b> Field Operations Table	47
<b>Appendix 3:</b> Budget Summary	48

## **Introduction and Disclaimer**

The 2018 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 online at: <https://ag.tennessee.edu/arec/Pages/budgets.aspx>. 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 2018, as significant changes may occur from year to year in production methods and input and output prices.

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 that 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 "2018 Weed Control Manual for Tennessee" (PB1580) and "2017 Insect and Plant Disease Control Manual" (PB1690). 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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## 2018 Corn, No-Till, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>					
			<b>Gross Revenue (\$/Acre)</b>		
Corn <sup>1</sup>	Bu	155	\$3.73	\$578.15	_____
			<b>Total Revenue</b>	<b>\$578.15</b>	_____
<b>Variable Expenses</b>					
Seed <sup>2,3</sup>	Thous.	32	\$3.03	\$97.00	_____
Fertilizer & Lime (Table 1)	Acre	1	\$134.71	\$134.71	_____
Chemical (Table 2) <sup>3,4</sup>	Acre	1	\$49.01	\$49.01	_____
Crop Scout or Consultant	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3)	Acre	1	\$21.31	\$21.31	_____
Fuel, Oil & Filter (Table 3)	Acre	1	\$12.89	\$12.89	_____
Operator Labor (Table 3)	Acre	1	\$7.14	\$7.14	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	155	\$0.00	\$0.00	_____
Cash Rent <sup>5</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>6</sup>	Acre	1	\$11.95	\$11.95	_____
Operating Interest <sup>7</sup>	%	\$438.00	6.00%	\$13.14	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$451.14</b>	_____
			<b>Return above Variable Expenses</b>	<b>\$127.01</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>8</sup>					
Capital Recovery (Table 3)	Acre	1	\$42.29	\$42.29	_____
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	_____
			<b>Total Fixed Expenses</b>	<b>\$57.29</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>\$69.73</b>	_____

### Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
105	\$4.30	\$4.84
115	\$3.92	\$4.42
125	\$3.61	\$4.07
135	\$3.34	\$3.77
145	\$3.11	\$3.51
<b>155</b>	<b>\$2.91</b>	<b>\$3.28</b>
165	\$2.73	\$3.08
175	\$2.58	\$2.91
185	\$2.44	\$2.75
195	\$2.31	\$2.61
205	\$2.20	\$2.48

### Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$2.48	182	205
\$2.73	165	186
\$2.98	151	171
\$3.23	140	157
\$3.48	130	146
<b>\$3.73</b>	<b>121</b>	<b>136</b>
\$3.98	113	128
\$4.23	107	120
\$4.48	101	113
\$4.73	95	107
\$4.98	91	102





**FOOTNOTES**

- 1) Corn price was estimated using weighted average futures prices from September 2018 to July 2019 on December 29, 2017, adjusted by average monthly basis in Tennessee. Corn yield is the predicted 2018 linear trend line yield for corn in Tennessee using state average yields from 1980-2017.
- 2) Assumes a bag of seed costs \$242 and contains 80,000 seeds (\$3.03/thousand seeds). Seeding rate of 32,000 seeds/acre. Seed treatment is included in the price.
- 3) Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available. Substantial variation in prices for seed, chemical, and fertilizer exist based on quantity purchased, product purchased, and location of purchase.
- 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 2017 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 provided is the average premium paid per insured acre of corn in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 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.

## 2018 Corn, Conventional Tillage, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>					
			<b>Gross Revenue (\$/Acre)</b>		
Corn <sup>1</sup>	Bu	155	\$3.73	\$578.15	_____
			<b>Total Revenue</b>	<b>\$578.15</b>	_____
<b>Variable Expenses</b>					
Seed <sup>2,3</sup>	Thous.	32	\$3.03	\$97.00	_____
Fertilizer & Lime (Table 1)	Acre	1	\$134.71	\$134.71	_____
Chemical (Table 2) <sup>3,4</sup>	Acre	1	\$41.28	\$41.28	_____
Crop Scout or Consultant	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3)	Acre	1	\$28.25	\$28.25	_____
Fuel, Oil, & Filter (Table 3)	Acre	1	\$18.31	\$18.31	_____
Operator Labor (Table 3)	Acre	1	\$11.05	\$11.05	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	155	\$0.00	\$0.00	_____
Cash Rent <sup>5</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>6</sup>	Acre	1	\$11.95	\$11.95	_____
Operating Interest <sup>7</sup>	%	\$446.54	6.00%	\$13.40	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$459.94</b>	_____
			<b>Return above Variable Expenses</b>	<b>\$118.21</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>8</sup>					
Capital Recovery (Table 3)	Acre	1	\$47.00	\$47.00	_____
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	_____
			<b>Total Fixed Expenses</b>	<b>\$62.00</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>\$56.21</b>	_____

### Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
105	\$4.38	\$4.97
115	\$4.00	\$4.54
125	\$3.68	\$4.18
135	\$3.41	\$3.87
145	\$3.17	\$3.60
<b>155</b>	<b>\$2.97</b>	<b>\$3.37</b>
165	\$2.79	\$3.16
175	\$2.63	\$2.98
185	\$2.49	\$2.82
195	\$2.36	\$2.68
205	\$2.24	\$2.55

### Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$2.48	185	210
\$2.73	168	191
\$2.98	154	175
\$3.23	142	162
\$3.48	132	150
<b>\$3.73</b>	<b>123</b>	<b>140</b>
\$3.98	116	131
\$4.23	109	123
\$4.48	103	117
\$4.73	97	110
\$4.98	92	105

Table 1. Fertilizer & Lime

	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting	60	\$0.37	\$22.04	_____
	UAN 32 - Sidedress	110	\$0.43	\$46.75	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	70	\$0.44	\$30.96	_____
Potassium	K <sub>2</sub> O	70	\$0.29	\$19.95	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Total				\$134.71	_____

Table 2. Chemicals<sup>3,4</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides <sup>3</sup>	Pre-Emerge	Atrazine	qt.	1	1	\$3.98	\$3.98	_____
		Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
	Post-Emerge	Halex	pt.	1	3.6	\$6.70	\$24.13	_____
		Atrazine	qt.	1	1.5	\$3.98	\$5.97	_____
Insecticides						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Fungicides <sup>4</sup>						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Total							\$41.28	_____

Table 3. Machinery<sup>8</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$1.95	\$2.38	\$2.15	\$1.56	\$8.05	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.60	\$2.59	\$1.73	\$1.26	\$10.18	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.50	\$2.21	\$1.81	\$1.31	\$7.84	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.68	\$3.71	\$1.48	\$1.07	\$12.94	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Combine	Corn Head	8-row	\$13.57	\$13.13	\$6.38	\$2.21	\$35.29	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Other								\$0.00	_____
Other								\$0.00	_____
Total				\$47.00	\$28.25	\$18.31	\$11.05	\$104.61	_____

**FOOTNOTES**

- 1) Corn price was estimated using weighted average futures prices from September 2018 to July 2019 on December 29, 2017, adjusted by average monthly basis in Tennessee. Corn yield is the predicted 2018 linear trend line yield for corn in Tennessee using state average yields from 1980-2017.
- 2) Assumes a bag of seed costs \$242 and contains 80,000 seeds (\$3.03/thousand seeds). Seeding rate of 32,000 seeds/acre. Seed treatment is included in the price.
- 3) Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available. Substantial variation in prices for seed, chemical, and fertilizer exist based on quantity purchased, product purchased, and location of purchase.
- 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 2017 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 provided is the average premium paid per insured acre of corn in Tennessee for the previous production year as reported by USDA RMA's
- 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.

## 2018 Corn, No-Till, Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>			<b>Gross Revenue (\$/Acre)</b>		
Corn <sup>1</sup>	Bu	225	\$3.73	\$839.25	_____
		<b>Total Revenue</b>	<b>\$839.25</b>		_____
<b>Variable Expenses</b>					
Seed <sup>2,3</sup>	Thous.	36	\$3.03	\$109.13	_____
Fertilizer & Lime (Table 1)	Acre	1	\$164.38	\$164.38	_____
Chemical (Table 2) <sup>3,4</sup>	Acre	1	\$49.19	\$49.19	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3)	Acre	1	\$21.31	\$21.31	_____
Fuel, Oil & Filter (Table 3)	Acre	1	\$12.89	\$12.89	_____
Operator Labor (Table 3)	Acre	1	\$7.14	\$7.14	_____
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	\$4.35	\$30.45	_____
Irrigation System R&M & Labor	Ac-In	7	\$2.28	\$15.96	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent <sup>5</sup>	Acre	1	\$170.00	\$170.00	_____
Crop Insurance <sup>6</sup>	Acre	1	\$11.95	\$11.95	_____
Operating Interest <sup>7</sup>	%	\$601.38	6.00%	\$18.04	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
		<b>Total Variable Expenses</b>	<b>\$619.42</b>		_____
		<b>Return Above Variable Expenses</b>	<b>\$219.83</b>		_____
<b>Fixed Expenses</b>					
Machinery <sup>8</sup>					
Capital Recovery (Table 3)	Acre	1	\$42.29	\$42.29	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) <sup>9</sup>	Acre	1	\$86.24	\$86.24	_____
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 <sup>10</sup>	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
		<b>Total Fixed Expenses</b>	<b>\$158.53</b>		_____
		<b>Return Above All Specified Expenses</b>	<b>\$61.30</b>		_____

### Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
175	\$3.54	\$4.45
185	\$3.35	\$4.21
195	\$3.18	\$3.99
205	\$3.02	\$3.79
215	\$2.88	\$3.62
<b>225</b>	<b>\$2.75</b>	<b>\$3.46</b>
235	\$2.64	\$3.31
245	\$2.53	\$3.18
255	\$2.43	\$3.05
265	\$2.34	\$2.94
275	\$2.25	\$2.83

### Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$2.48	250	314
\$2.73	227	285
\$2.98	208	261
\$3.23	192	241
\$3.48	178	224
<b>\$3.73</b>	<b>166</b>	<b>209</b>
\$3.98	156	195
\$4.23	146	184
\$4.48	138	174
\$4.73	131	164
\$4.98	124	156

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting	80	\$0.37	\$29.39	_____
	UAN 32 - Sidedress	150	\$0.43	\$63.75	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	90	\$0.34	\$30.59	_____
Potassium	K <sub>2</sub> O	90	\$0.29	\$25.65	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Total				\$164.38	_____

Table 2. Chemicals <sup>3,4</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides <sup>3</sup>	Burndown	Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
		Surfactant	pt.	1	0.2	\$3.52	\$0.70	_____
	Pre-Emerge	Atrazine	qt.	1	1	\$3.98	\$3.98	_____
		Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
	Post-Emerge	Halex	pt.	1	3.6	\$6.70	\$24.13	_____
Atrazine		qt.	1	1.5	\$3.98	\$5.97	_____	
Insecticides						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Fungicides <sup>4</sup>						\$0.00	\$0.00	_____
Total							\$49.19	_____

Table 3. Machinery <sup>8</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.68	\$3.71	\$1.48	\$1.07	\$12.94	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Harvest	Combine	Corn Head	8-row	\$13.57	\$13.13	\$6.38	\$2.21	\$35.29	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Other									_____
Other									_____
Total				\$42.29	\$21.31	\$12.89	\$7.14	\$83.62	_____

**FOOTNOTES**

- 1) Corn price was estimated using weighted average futures prices from September 2018 to July 2019 on December 29, 2017, adjusted by average monthly basis in Tennessee. Corn yield is the predicted 2018 linear trend line yield for corn in Tennessee using state average yields from 1980-2017.
- 2) Assumes a bag of seed costs \$242 and contains 80,000 seeds (\$3.03/thousand seeds). Seeding rate of 36,000 seeds/acre. Seed treatment is included in the price.
- 3) Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available. Substantial variation in prices for seed, chemical, and fertilizer exist based on quantity purchased, product purchased, and location of purchase.
- 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 2017 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 provided is the average premium paid per insured acre of corn in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 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.
- 9) Center-pivot 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.

## 2018 Soybean, No-Till, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>				<b>Gross Revenue (\$/Acre)</b>	
Soybeans <sup>1</sup>	Bu	45	\$9.80	\$441.00	
			<b>Total Revenue</b>	<b>\$441.00</b>	
<b>Variable Expenses <sup>2</sup></b>					
Seed	Thous.	140	\$0.38	\$53.75	
Fertilizer & Lime (Table 1) <sup>3</sup>	Acre	1	\$35.25	\$35.25	
Chemical (Table 2) <sup>4,5,6,7,8</sup>	Acre	1	\$72.66	\$72.66	
Crop Scout	Acre	1	\$9.00	\$9.00	
Repair & Maintenance (Table 3) <sup>9</sup>	Acre	1	\$18.46	\$18.46	
Fuel, Oil & Filter (Table 3) <sup>9</sup>	Acre	1	\$11.84	\$11.84	
Operator Labor (Table 3) <sup>9</sup>	Acre	1	\$7.02	\$7.02	
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 <sup>10</sup>	Acre	1	\$95.00	\$95.00	
Crop Insurance <sup>11</sup>	Acre	1	\$9.34	\$9.34	
Operating Interest <sup>12</sup>	%	\$312.31	6.00%	\$9.37	
Other Variable Costs	Acre	1	\$0.00	\$0.00	
			<b>Total Variable Expenses</b>	<b>\$321.68</b>	
			<b>Return Above Variable Expenses</b>	<b>\$119.32</b>	
<b>Fixed Expenses</b>					
Machinery <sup>9</sup>					
Capital Recovery (Table 3)	Acre	1	\$48.74	\$48.74	
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	
			<b>Total Fixed Expenses</b>	<b>\$63.74</b>	
			<b>Return Above All Specified Expenses</b>	<b>\$55.57</b>	

### 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>
25	\$12.87	\$15.42
30	\$10.72	\$12.85
35	\$9.19	\$11.01
40	\$8.04	\$9.64
<b>45</b>	<b>\$7.15</b>	<b>\$8.57</b>
50	\$6.43	\$7.71
55	\$5.85	\$7.01
60	\$5.36	\$6.42
65	\$4.95	\$5.93

### Breakeven Yield for Selected Price

<u>Price</u> <u>(\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost (bu)</u>
\$7.80	41	49
\$8.30	39	46
\$8.80	37	44
\$9.30	35	41
<b>\$9.80</b>	<b>33</b>	<b>39</b>
\$10.30	31	37
\$10.80	30	36
\$11.30	28	34
\$11.80	27	33



Table 1. Fertilizer & Lime <sup>3</sup>

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen		0	\$0.00	\$0.00	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	20	\$0.44	\$8.85	_____
Potassium	K <sub>2</sub> O	40	\$0.29	\$11.40	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$35.25	_____

Table 2. Chemicals <sup>4,5,6,7,8</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$5.00	\$5.00	_____
		Valor	oz.	1	2	\$2.71	\$5.42	_____
	Pre-Emerge	Engenia	oz.	1	12	\$0.64	\$7.73	_____
		Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
		Prefix	qt.	1	1	\$10.59	\$10.59	_____
Post-Emerge		Engenia	oz	1	12	\$0.64	\$7.73	_____
		Flexstar	pt.	1	1	\$3.48	\$3.48	_____
		Other				\$0.00	\$0.00	_____
		Other		0	0	\$0.00	\$0.00	_____
		Seed Treatment	acre	1	1	\$8.50	\$8.50	_____
Insecticide/Fungicide								
Insecticides	Foliar	Foliar	acre	1	1	\$5.00	\$5.00	_____
Fungicides		Foliar	acre	1	1	\$12.00	\$12.00	_____
Total							\$72.66	_____

Table 3. Machinery <sup>9</sup>

Fertilize	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.68	\$3.71	\$1.48	\$1.07	\$12.94	_____
	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Pre-Emerge	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Post-Emerge	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Post-Emerge	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fungicide	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Combine	Grain Head	30 ft	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Total				\$48.74	\$18.46	\$11.84	\$7.02	\$86.06	_____

**FOOTNOTES**

- 1) Soybean price was estimated using weighted average futures prices from November 2018 to August 2019 on December 29, 2017, adjusted by average monthly basis in Tennessee. Soybean yield is the predicted 2018 linear trend line yield for soybeans in Tennessee using state average yields from 1980-2017.
- 2) Assumes a normal crop rotation with minimal weed infestation. A continuous soybean system may require additional expenses for chemicals and/or land preparation.
- 3) Assumes 2 tons of lime applied every four years.
- 4) Seed treatments, such as some nematicide treatments, are optional and costs vary depending on product used.
- 5) Weed control chemicals should be selected for specific weed or grass problems that are present. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 6) Three low-volatility Dicamba formulations are approved for use in Tennessee Xtendimax, Engenia, and Fexapan. Follow all labels and state and national regulations when using all chemicals.
- 7) Alternative weed control options are available in the University of Tennessee 2018 Weed Control Manual for Tennessee.
- 8) Generic chemicals may be a cost-effective option. Contact your chemical supplier, qualified consultant, or weed control specialist.
- 9) 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.
- 10) Cash rental rates are the 2017 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.
- 11) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate provided is the average premium paid per insured acre of soybeans in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 12) Operating interest is assumed to be charged on half of all variable expenses.

## 2018 Soybean, No-Till, Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>				<b>Gross Revenue (\$/Acre)</b>	
Soybeans <sup>1</sup>	Bu	60	\$9.80	\$588.00	_____
			<b>Total Revenue</b>	<b>\$588.00</b>	_____
<b>Variable Expenses <sup>2</sup></b>					
Seed	Thous.	140	\$0.38	\$53.75	_____
Fertilizer & Lime (Table 1) <sup>3</sup>	Acre	1	\$35.25	\$35.25	_____
Chemical (Table 2) <sup>4,5,6,7,8</sup>	Acre	1	\$72.66	\$72.66	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) <sup>9</sup>	Acre	1	\$18.46	\$18.46	_____
Fuel, Oil & Filter (Table 3) <sup>9</sup>	Acre	1	\$11.84	\$11.84	_____
Operator Labor (Table 3) <sup>9</sup>	Acre	1	\$7.02	\$7.02	_____
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	4.5	\$4.35	\$19.58	_____
Irrigation System R&M & Labor	Ac-In	4.5	\$2.28	\$10.26	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent <sup>10</sup>	Acre	1	\$170.00	\$170.00	_____
Crop Insurance <sup>11</sup>	Acre	1	\$9.34	\$9.34	_____
Operating Interest <sup>12</sup>	%	\$417.15	6.00%	\$12.51	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$429.66</b>	_____
			<b>Return Above Variable Expenses</b>	<b>\$158.34</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>9</sup>					
Capital Recovery (Table 3)	Acre	1	\$48.74	\$48.74	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) <sup>13</sup>	Acre	1	\$86.24	\$86.24	_____
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 <sup>14</sup>	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Fixed Expenses</b>	<b>\$164.98</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>-\$6.65</b>	_____

### Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
40	\$10.74	\$14.87
45	\$9.55	\$13.21
50	\$8.59	\$11.89
55	\$7.81	\$10.81
<b>60</b>	<b>\$7.16</b>	<b>\$9.91</b>
65	\$6.61	\$9.15
70	\$6.14	\$8.49
75	\$5.73	\$7.93
80	\$5.37	\$7.43

### Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$7.80	55	76
\$8.30	52	72
\$8.80	49	68
\$9.30	46	64
<b>\$9.80</b>	<b>44</b>	<b>61</b>
\$10.30	42	58
\$10.80	40	55
\$11.30	38	53
\$11.80	36	50

Table 1. Fertilizer & Lime <sup>3</sup>

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	0	\$0.37	\$0.00	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	20	\$0.44	\$8.85	_____
Potassium	K <sub>2</sub> O	40	\$0.29	\$11.40	_____
Lime <sup>4</sup>	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$35.25	_____

Table 2. Chemicals <sup>4,5,6,7,8</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$5.00	\$5.00	_____
		Valor	oz.	1	2	\$2.71	\$5.42	_____
	Pre-Emerge	Engenia	oz.	1	12	\$0.64	\$7.73	_____
		Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
		Prefix	qt.	1	1	\$10.59	\$10.59	_____
Post-Emerge		Engenia	oz	1	12	\$0.64	\$7.73	_____
		Flexstar	pt.	1	1	\$3.48	\$3.48	_____
		Other				\$0.00	\$0.00	_____
Insecticide/Fungicide		Seed Treatment	acre	1	1	\$8.50	\$8.50	_____
Insecticides	Foliar	Foliar	acre	1	1	\$5.00	\$5.00	_____
Fungicides		Foliar	acre	1	1	\$12.00	\$12.00	_____
Total							\$72.66	_____

Table 3. Machinery <sup>9</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Burndown	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.68	\$3.71	\$1.48	\$1.07	\$12.94	_____
Pre-Emerge	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Post-Emerge	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Post-Emerge	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fungicide	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Combine	Grain Head	30 ft	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Total				\$48.74	\$18.46	\$11.84	\$7.02	\$86.06	_____

## **FOOTNOTES**

- 1) Soybean price was estimated using weighted average futures prices from November 2018 to August 2019 on December 29, 2017, adjusted by average monthly basis in Tennessee. Soybean yield is the predicted 2018 linear trend line yield for soybeans in Tennessee using state average yields from 1980-2017.
- 2) Assumes a normal crop rotation with minimal weed infestation. A continuous soybean system may require additional expenses for chemicals and/or land preparation.
- 3) Assumes 2 tons of lime applied every four years.
- 4) Seed treatments, such as some nematicide treatments, are optional and costs vary depending on product used.
- 5) Weed control chemicals should be selected for specific weed or grass problems that are present. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 6) Three low-volatility Dicamba formulations are approved for use in Tennessee Xtendimax, Engenia, and Fexapan. Follow all labels state and national regulations when using all chemicals.
- 7) Alternative weed control options are available in the University of Tennessee 2018 Weed Control Manual for Tennessee.
- 8) Generic chemicals may be a cost-effective option. Contact your chemical supplier, qualified consultant, or weed control specialist.
- 9) 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.
- 10) Cash rental rates are the 2017 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.
- 11) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate provided is the average premium paid per insured acre of soybeans in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 12) Operating interest is assumed to be charged on half of all variable expenses.
- 13) Center-pivot 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.
- 14) Management labor for irrigated acreage is assumed to be double that of dryland acres.

## 2018 Wheat/Soybean Double Cropped, Non-Irrigated Budget

	Unit	Quantity	Price	Total	Your Farm
<b>Revenue</b>					
			<b>Gross Revenue (\$/Acre)</b>		
Soybeans <sup>1</sup>	Bu	40	\$9.80	\$392.00	_____
Wheat <sup>2</sup>	Bu	70	\$4.42	\$309.40	_____
			<b>Total Revenue</b>	<b>\$701.40</b>	_____
<b>Variable Expenses</b>					
Seed, Soybeans <sup>3</sup>	Thous.	140	\$0.38	\$53.75	_____
Seed, Wheat <sup>3</sup>	Bu	2.5	\$16.50	\$41.25	_____
Fertilizer & Lime (Table 1)	Acre	1	\$99.41	\$99.41	_____
Chemical (Table 2) <sup>4,5,6,7,8,9,10,11</sup>	Acre	1	\$106.16	\$106.16	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) <sup>12</sup>	Acre	1	\$42.82	\$42.82	_____
Fuel, Oil & Filter (Table 3) <sup>12</sup>	Acre	1	\$26.40	\$26.40	_____
Operator Labor (Table 3) <sup>12</sup>	Acre	1	\$15.99	\$15.99	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	40	\$0.00	\$0.00	_____
Cash Rent <sup>13</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>14</sup>	Acre	1	\$15.40	\$15.40	_____
Operating Interest <sup>15</sup>	%	\$505.18	6.00%	\$15.16	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$520.34</b>	_____
			<b>Return Above Variable Expenses</b>	<b>\$181.06</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>11</sup>					_____
Capital Recovery (Table 3)	Acre	1	\$95.91	\$95.91	_____
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	_____
			<b>Total Fixed Expenses</b>	<b>\$110.91</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>\$70.15</b>	_____

### Breakeven Price for Selected Soybean Yield <sup>16</sup>

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
20	\$13.01	\$15.78
25	\$10.41	\$12.62
30	\$8.67	\$10.52
35	\$7.43	\$9.02
<b>40</b>	<b>\$6.50</b>	<b>\$7.89</b>
45	\$5.78	\$7.01
50	\$5.20	\$6.31
55	\$4.73	\$5.74
60	\$4.34	\$5.26

### Breakeven Yield for Selected Soybean Price <sup>16</sup>

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$7.80	33	40
\$8.30	31	38
\$8.80	30	36
\$9.30	28	34
<b>\$9.80</b>	<b>27</b>	<b>32</b>
\$10.30	25	31
\$10.80	24	29
\$11.30	23	28
\$11.80	22	27

### Breakeven Price for Selected Wheat Yield <sup>16</sup>

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
50	\$5.20	\$6.31
55	\$4.73	\$5.74
60	\$4.34	\$5.26
65	\$4.00	\$4.86
<b>70</b>	<b>\$3.72</b>	<b>\$4.51</b>
75	\$3.47	\$4.21
80	\$3.25	\$3.95
85	\$3.06	\$3.71
90	\$2.89	\$3.51

### Breakeven Yield for Selected Wheat Price <sup>16</sup>

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$2.42	108	130
\$2.92	89	108
\$3.42	76	92
\$3.92	66	81
<b>\$4.42</b>	<b>59</b>	<b>71</b>
\$4.92	53	64
\$5.42	48	58
\$5.92	44	53
\$6.42	41	49

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting/Fall	30	\$0.37	\$11.02	_____
	UAN 32 - Post-Emerge/Spring	70	\$0.43	\$29.75	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	60	\$0.44	\$26.54	_____
	Potassium	60	\$0.29	\$17.10	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Total				\$99.41	_____

Table 2. Chemicals <sup>4,5,6,7&9,10,11</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides- Wheat	Burndown	Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
		Roundup	qt.	1	1	\$5.00	\$5.00	_____
	Post-Emerge	Harmony	oz.	1	0.75	\$14.03	\$10.52	_____
		Metribuzin	oz.	1	3	\$0.86	\$2.58	_____
Herbicides- Soybeans	Pre-Emerge	Surfactant	pt.	1	0.1	\$3.52	\$0.35	_____
		Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
	Post-Emerge	Prefix	qt.	1	1	\$10.59	\$10.59	_____
		Engenia	oz	1	12	\$0.64	\$7.73	_____
Seed Treatment		Flexstar	pt.	1	1	\$3.48	\$3.48	_____
		Other				\$0.00	\$0.00	_____
		Wheat-seed treatment	acre	1	1	\$11.00	\$11.00	_____
		Soybeans-seed treatment	acre	1	1	\$8.50	\$8.50	_____
Insecticides		Wheat-Foliar	acre	1	1	\$3.00	\$3.00	_____
		Soybeans-Foliar	acre	1	1	\$5.00	\$5.00	_____
Fungicides		Soybeans-Foliar	acre	1	1	\$12.00	\$12.00	_____
		Wheat-foliar	acre	1	1	\$12.00	\$12.00	_____
Total							\$106.16	_____

Table 3. Machinery <sup>12</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.60	\$2.59	\$1.73	\$1.26	\$10.18	_____
Burndown	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.84	\$7.26	\$2.74	\$1.99	\$16.83	_____
Fertilize	SP Boom Sprayer		900#	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fungicide	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Insect Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Combine	Grain Head	30 ft	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.68	\$3.71	\$1.48	\$1.07	\$12.94	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fungicide	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Combine	Grain Head	30 ft	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Total				\$95.91	\$42.82	\$26.40	\$15.99	\$181.12	_____

## **FOOTNOTES**

- 1) Soybean price was estimated using weighted average futures prices from November 2018 to August 2019 on December 29, 2017, adjusted by average monthly basis in Tennessee. Soybean yield is the predicted 2018 linear trend line yield for soybeans in Tennessee using state average yields from 1980-2017.
- 2) Wheat price was estimated using weighted average futures prices from July 2018 to May 2019 on December 29, 2017, adjusted by average monthly basis in Tennessee. Wheat yield is the predicted 2018 linear trend line yield for wheat in Tennessee using state average yields from 1980-2017. 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.
- 3) Seed price includes technology fee.
- 4) Additional seed treatment is to protect against Barley Yellow Dwarf Virus.
- 5) Seed treatments, such as some nematicide treatments, are optional and costs vary depending on product used. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 6) Cost may vary depending on fungicide used and application rate per acre.
- 7) Weed control chemicals should be selected for specific weed or grass problems that are present. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 8) Three low-volatility Dicamba formulations are approved for use in Tennessee Xtendimax, Engenia, and Fexapan. Follow all labels state and national regulations when using all chemicals.
- 9) Alternative weed control options are available in the University of Tennessee 2018 Weed Control Manual for Tennessee.
- 10) Generic chemicals may be a cost-effective option. Contact your chemical supplier, qualified consultant, or weed control specialist.
- 11) Spraying for stinkbugs may add \$2.50/acre per spraying, plus application expenses.
- 12) 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.
- 13) Cash rental rates are the 2017 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.
- 14) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate provided is the average premiums paid per insured acre of soybeans and wheat in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 15) Operating interest is assumed to be charged on half of all variable expenses.
- 16) 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 70 bu/acre and \$4.42/bu. When estimating wheat breakeven, soybean yield and price are held constant at 40 bu/acre and \$9.80/bu.



## 2018 Wheat, Conventional Tillage, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>			<b>Gross Revenue (\$/Acre)</b>		
Wheat <sup>1</sup>	Bu	70	\$4.42	\$309.40	_____
			<b>Total Revenue</b>	<b>\$309.40</b>	_____
<b>Variable Expenses</b>					
Seed	Bu	2.5	\$16.50	\$41.25	_____
Fertilizer & Lime (Table 1)	Acre	1	\$82.28	\$82.28	_____
Chemical (Table 2) <sup>2,3</sup>	Acre	1	\$51.65	\$51.65	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) <sup>4</sup>	Acre	1	\$24.60	\$24.60	_____
Fuel, Oil & Filter (Table 3) <sup>4</sup>	Acre	1	\$14.84	\$14.84	_____
Operator Labor (Table 3) <sup>4</sup>	Acre	1	\$9.19	\$9.19	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	70	\$0.00	\$0.00	_____
Cash Rent <sup>5</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>6</sup>	Acre	1	\$6.06	\$6.06	_____
Operating Interest <sup>7</sup>	%	\$333.87	6.00%	\$10.02	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$343.89</b>	_____
			<b>Return Above Variable Expenses</b>	<b>-\$34.49</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>4</sup>					
Capital Recovery (Table 3)	Acre	1	\$51.50	\$51.50	_____
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	_____
			<b>Total Fixed Expenses</b>	<b>\$66.50</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>-\$100.99</b>	_____

### Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
50	\$6.88	\$8.21
55	\$6.25	\$7.46
60	\$5.73	\$6.84
65	\$5.29	\$6.31
<b>70</b>	<b>\$4.91</b>	<b>\$5.86</b>
75	\$4.59	\$5.47
80	\$4.30	\$5.13
85	\$4.05	\$4.83
90	\$3.82	\$4.56

### Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$3.42	101	120
\$3.67	94	112
\$3.92	88	105
\$4.17	82	98
<b>\$4.42</b>	<b>78</b>	<b>93</b>
\$4.67	74	88
\$4.92	70	83
\$5.17	67	79
\$5.42	63	76

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting/Fall	30	\$0.37	\$11.02	_____
	UAN 32 - Post-Emerge/Spring	70	\$0.43	\$29.75	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	40	\$0.44	\$17.69	_____
	K <sub>2</sub> O	20	\$0.29	\$5.70	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Sulfur	Sulfur	10	\$0.31	\$3.11	_____
Total				\$82.28	_____

Table 2. Chemicals<sup>2,3</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
		Roundup	qt.	1	1	\$5.00	\$5.00	_____
	Post-Emerge	Harmony	oz.	1	0.75	\$14.03	\$10.52	_____
		Metribuzin	oz.	1	3	\$0.86	\$2.58	_____
		Surfactant	pt.	1	0.1	\$3.52	\$0.35	_____
		Other				\$0.00	\$0.00	_____
Seed Treatment		Seed Treatment	acre	1	1	\$11.00	\$11.00	_____
Insecticides		Foliar	acre	1	1	\$3.00	\$3.00	_____
Fungicides		Foliar	acre	1	1	\$12.00	\$12.00	_____
		Other				\$0.00	\$0.00	_____
Total							\$51.65	_____

Table 3. Machinery<sup>4</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.60	\$2.59	\$1.73	\$1.26	\$10.18	_____
Burndown	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.84	\$7.26	\$2.74	\$1.99	\$16.83	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fertilize	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fungicide	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Insecticide	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Combine	Grain Head	30 ft	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Total				\$51.50	\$24.60	\$14.84	\$9.19	\$100.14	_____

## **FOOTNOTES**

- 1) Wheat price was estimated using weighted average futures prices from July 2018 to May 2019 on December 29, 2017, adjusted by average monthly basis in Tennessee. Wheat yield is the predicted 2018 linear trend line yield for wheat in Tennessee using state average yields from 1980-2017. 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) Seed treatment is to protect against Barley Yellow Dwarf virus.
- 3) Cost may vary depending on fungicide used and application rate per acre. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 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.
- 5) Cash rental rates are the 2017 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 provided is the average premium paid per insured acre of wheat in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 7) Operating interest is assumed to be charged on half of all variable expenses.

## 2018 Cotton, No-Till, Non-Irrigated Budget

	Unit	Quantity	Price	Total	Your Farm
<b>Revenue</b>					
Cotton <sup>1,2,3</sup>	lb	990	\$0.73	\$722.70	_____
				<b>Gross Revenue (\$/Acre)</b>	
				<b>Total Revenue</b>	<b>\$722.70</b>
<b>Variable Expenses</b>					
Seed <sup>4</sup>	Thous.	45	\$2.24	\$100.58	_____
Wrap <sup>5</sup>	lb	990	\$0.02	\$19.80	_____
Fertilizer & Lime (Table 1)	Acre	1	\$94.01	\$94.01	_____
Chemical (Table 2) <sup>6,7,8,9</sup>	Acre	1	\$129.84	\$129.84	_____
Crop Scout	Acre	1	\$10.00	\$10.00	_____
Repair & Maintenance (Table 3) <sup>10</sup>	Acre	1	\$24.11	\$24.11	_____
Fuel, Oil & Filter (Table 3) <sup>10</sup>	Acre	1	\$18.01	\$18.01	_____
Operator Labor (Table 3) <sup>10</sup>	Acre	1	\$9.50	\$9.50	_____
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 <sup>11</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>12</sup>	Acre	1	\$10.61	\$10.61	_____
Operating Interest <sup>13</sup>	%	\$511.46	6.00%	\$15.34	_____
Other Variable Costs	Acre	0	\$0.00	\$0.00	_____
				<b>Total Variable Expenses</b>	<b>\$526.81</b>
				<b>Return Above Variable Expenses</b>	<b>\$195.89</b>
<b>Fixed Expenses</b>					
Machinery <sup>11</sup>					
Capital Recovery (Table 3)	Acre	1	\$118.76	\$118.76	_____
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	_____
				<b>Total Fixed Expenses</b>	<b>\$133.76</b>
				<b>Return Above All Specified Expenses</b>	<b>\$62.14</b>

### Breakeven Price for Selected Yield

Yield (lb)	Variable Cost (\$/lb)	Total Specified Cost (\$/lb)
740	\$0.71	\$0.89
790	\$0.67	\$0.84
840	\$0.63	\$0.79
890	\$0.59	\$0.74
940	\$0.56	\$0.70
<b>990</b>	<b>\$0.53</b>	<b>\$0.67</b>
1,040	\$0.51	\$0.64
1,090	\$0.48	\$0.61
1,140	\$0.46	\$0.58
1,190	\$0.44	\$0.56
1,240	\$0.42	\$0.53

### Breakeven Yield for Selected Price

Price (\$/lb)	Variable Cost (lb)	Total Specified Cost (lb)
\$0.48	1,098	1,376
\$0.53	994	1,246
\$0.58	908	1,139
\$0.63	836	1,049
\$0.68	775	971
<b>\$0.73</b>	<b>722</b>	<b>905</b>
\$0.78	675	847
\$0.83	635	796
\$0.88	599	751
\$0.93	566	710
\$0.98	538	674

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	80	\$0.37	\$29.39	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	60	\$0.34	\$20.39	_____
Potassium	K <sub>2</sub> O	90	\$0.29	\$25.65	_____
Sulfur		10	\$0.31	\$3.11	_____
Boron		0.5	\$0.93	\$0.47	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$94.01	_____

Table 2. Chemicals<sup>6,7,8,9</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$5.00	\$5.00	_____
		Engenia	oz.	1	12	\$0.64	\$7.73	_____
	Pre-Emerge	Cotoran	pt.	1	2	\$5.00	\$10.00	_____
		Caparol	pt.	1	2	\$4.40	\$8.80	_____
		Gramaxone	oz.	1	32	\$0.18	\$5.76	_____
	Post-Emerge	Liberty	oz.	1	26	\$0.40	\$10.40	_____
		Roundup	qt.	1	1	\$5.00	\$5.00	_____
		Sequence	pt.	1	2.5	\$3.25	\$8.13	_____
		Other				\$0.00	\$0.00	_____
		Other				\$0.00	\$0.00	_____
Growth Regulator	Defoliant	Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
		Defoliant	oz.	1	12	\$0.45	\$5.40	_____
	Boll Opener	Ethephon	oz.	1	32	\$0.16	\$5.12	_____
	Insecticides	Seed Treatment	acre	1	1	\$9.00	\$9.00	_____
		In-Season	acre	1	1	\$40.00	\$40.00	_____
Fungicides		Seed Treatment	acre	1	1	\$7.50	\$7.50	_____
Total							\$129.84	_____

Table 3. Machinery<sup>10</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$3.61	\$3.68	\$2.29	\$1.66	\$11.23	_____
Burndown	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Plant	Tractor, 215 hp	Planter	12-row	\$7.50	\$3.76	\$1.97	\$1.43	\$14.66	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer	90'	\$7.78	\$1.07	\$0.55	\$0.40	\$9.79	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Picker/Module Builder (Round)		6-row	\$61.93	\$11.45	\$7.98	\$2.11	\$83.47	_____
Harvest	Tractor, 215 hp	Module Handler		\$1.51	\$0.17	\$1.45	\$1.05	\$4.19	_____
Other				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	_____
Total				\$118.76	\$24.11	\$18.01	\$9.50	\$170.38	_____

## **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) Seed cost varies by variety and seed size. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 5) Bale wrap is estimated at \$0.02 per lb of lint.
- 6) Chemical applications will vary tremendously based on weed, disease, and insect infestation. Always follow product labels and consult a qualified professional before applying chemicals. Significant variation in chemical costs between location and product exist.
- 7) In-season per-acre cost includes boll weevil eradication fees and chemical expenses for control of plant bugs, bollworm, and other insect pests. Additional sprays may be necessary for specific insects.
- 8) Do not tank mix Dual Magnum and Liberty when applying on Widestrike cotton.
- 9) Use alternative chemicals on non-Liberty tolerant cotton varieties.
- 10) 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.
- 11) Cash rental rates are the 2017 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.
- 12) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate provided is the average premium paid per insured acre of cotton in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 13) Operating interest is assumed to be charged on half of all variable expenses.

## 2018 Cotton, Conventional Tillage, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>				<b>Gross Revenue (\$/Acre)</b>	
Cotton <sup>1,2,3</sup>	lb	990	\$0.73	\$722.70	_____
			<b>Total Revenue</b>	<b>\$722.70</b>	_____
<b>Variable Expenses</b>					
Seed <sup>4</sup>	Thous.	45	\$2.24	\$100.58	_____
Wrap <sup>5</sup>	lb	990	\$0.02	\$19.80	_____
Fertilizer & Lime (Table 1)	Acre	1	\$94.01	\$94.01	_____
Chemical (Table 2) <sup>6,7,8,9</sup>	Acre	1	\$117.10	\$117.10	_____
Crop Scout	Acre	1	\$10.00	\$10.00	_____
Repair & Maintenance (Table 3) <sup>10</sup>	Acre	1	\$31.84	\$31.84	_____
Fuel, Oil & Filter (Table 3) <sup>10</sup>	Acre	1	\$24.02	\$24.02	_____
Operator Labor (Table 3) <sup>10</sup>	Acre	1	\$13.84	\$13.84	_____
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 <sup>11</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>12</sup>	Acre	1	\$10.61	\$10.61	_____
Operating Interest <sup>13</sup>	%	\$516.81	6.00%	\$15.50	_____
Other Variable Costs	Acre	0	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$532.31</b>	_____
			<b>Return Above Variable Expenses</b>	<b>\$190.39</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>10</sup>					
Capital Recovery (Table 3)	Acre	1	\$123.78	\$123.78	_____
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	_____
			<b>Total Fixed Expenses</b>	<b>\$138.78</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>\$51.61</b>	_____

### Breakeven Price for Selected Yield

<u>Yield (lb)</u>	<u>Variable Cost (\$/lb)</u>	<u>Total Specified Cost (\$/lb)</u>
740	\$0.72	\$0.91
790	\$0.67	\$0.85
840	\$0.63	\$0.80
890	\$0.60	\$0.75
940	\$0.57	\$0.71
<b>990</b>	<b>\$0.54</b>	<b>\$0.68</b>
1,040	\$0.51	\$0.65
1,090	\$0.49	\$0.62
1,140	\$0.47	\$0.59
1,190	\$0.45	\$0.56
1,240	\$0.43	\$0.54

### Breakeven Yield for Selected Price

<u>Price (\$/lb)</u>	<u>Variable Cost (lb)</u>	<u>Total Specified Cost (lb)</u>
\$0.48	1,109	1,398
\$0.53	1,004	1,266
\$0.58	918	1,157
\$0.63	845	1,065
\$0.68	783	987
<b>\$0.73</b>	<b>729</b>	<b>919</b>
\$0.78	682	860
\$0.83	641	809
\$0.88	605	763
\$0.93	572	722
\$0.98	543	685

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	80	\$0.37	\$29.39	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	60	\$0.34	\$20.39	_____
Potassium	K <sub>2</sub> O	90	\$0.29	\$25.65	_____
Sulfur		10	\$0.31	\$3.11	_____
Boron		0.5	\$0.93	\$0.47	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$94.01	_____

Table 2. Chemicals <sup>6,7,8,9</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Pre-Emerge	Cotoran	pt.	1	2	\$5.00	\$10.00	_____
		Caparol	pt.	1	2	\$4.40	\$8.80	_____
	Post-Emerge	Gramaxone	oz.	1	32	\$0.18	\$5.76	_____
		Liberty	oz.	1	26	\$0.40	\$10.40	_____
		Roundup	qt.	1	1	\$5.00	\$5.00	_____
Growth Regulator		Sequence	pt.	1	2.5	\$3.25	\$8.13	_____
		Other				\$0.00	\$0.00	_____
		Other				\$0.00	\$0.00	_____
		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
		Defoliant	oz.	1	12	\$0.45	\$5.40	_____
	Boll Opener	Ethephon	oz.	1	32	\$0.16	\$5.12	_____
		Seed Treatment	acre	1	1	\$9.00	\$9.00	_____
		Insecticides	acre	1	1	\$40.00	\$40.00	_____
	Fungicides	In-Season	acre	1	1			_____
		Seed Treatment	acre	1	1	\$7.50	\$7.50	_____
Total							\$117.10	_____

Table 3. Machinery <sup>10</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$3.61	\$3.68	\$2.29	\$1.66	\$11.23	_____
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$1.95	\$2.38	\$2.15	\$1.56	\$8.05	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.60	\$2.59	\$1.73	\$1.26	\$10.18	_____
Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$2.81	\$3.00	\$2.40	\$1.74	\$9.95	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Plant	Tractor, 215 hp	Planter	12-row	\$7.50	\$3.76	\$1.97	\$1.43	\$14.66	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer		\$7.78	\$1.07	\$0.55	\$0.40	\$9.79	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Picker/Module Builder (Round)		6-row	\$61.93	\$11.45	\$7.98	\$2.11	\$83.47	_____
Harvest	Tractor, 215 hp	Module Handler		\$1.51	\$0.17	\$1.45	\$1.05	\$4.19	_____
Other				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	_____
Total				\$123.78	\$31.84	\$24.02	\$13.84	\$193.48	_____



## **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) Seed cost varies by variety and seed size. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 5) Bale wrap is estimated at \$0.02 per lb of lint.
- 6) Chemical applications will vary tremendously based on weed, disease, and insect infestation. Always follow product labels and consult a qualified professional before applying chemicals. Significant variation in chemical costs between location and product exist.
- 7) In-season per-acre cost includes boll weevil eradication fees and chemical expenses for control of plant bugs, bollworm, and other insect pests. Additional sprays may be necessary for specific insects.
- 8) Do not tank mix Dual Magnum and Liberty when applying on Widestrike cotton.
- 9) Use alternative chemicals on non-Liberty tolerant cotton varieties.
- 10) 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.
- 11) Cash rental rates are the 2017 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.
- 12) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate provided is the average premium paid per insured acre of cotton in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 13) Operating interest is assumed to be charged on half of all variable expenses.

## 2018 Cotton, No-Till, Irrigated Budget

	Unit	Quantity	Price	Total	Your Farm
<b>Revenue</b>					
			<b>Gross Revenue (\$/Acre)</b>		
Cotton <sup>1,2,3</sup>	lb	1,100	\$0.73	\$803.00	_____
			<b>Total Revenue</b>	<b>\$803.00</b>	_____
<b>Variable Expenses</b>					
Seed <sup>4</sup>	Thous.	45	\$2.24	\$100.58	_____
Wrap <sup>5</sup>	lb	1,100	\$0.02	\$22.00	_____
Fertilizer & Lime (Table 1)	Acre	1	\$97.68	\$97.68	_____
Chemical (Table 2) <sup>6,7,8,9</sup>	Acre	1	\$129.84	\$129.84	_____
Crop Scout	Acre	1	\$10.00	\$10.00	_____
Repair & Maintenance (Table 3) <sup>10</sup>	Acre	1	\$24.11	\$24.11	_____
Fuel, Oil & Filter (Table 3) <sup>10</sup>	Acre	1	\$18.01	\$18.01	_____
Operator Labor (Table 3) <sup>10</sup>	Acre	1	\$9.50	\$9.50	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Irrigation Energy Cost	Ac-In	6	\$4.35	\$26.10	_____
Irrigation System R&M	Ac-In	6	\$2.28	\$13.68	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent <sup>11</sup>	Acre	1	\$170.00	\$170.00	_____
Crop Insurance <sup>12</sup>	Acre	1	\$10.61	\$10.61	_____
Operating Interest <sup>13</sup>	%	\$632.12	6.00%	\$18.96	_____
Other Variable Costs	Acre	0	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$651.08</b>	_____
			<b>Return Above Variable Expenses</b>	<b>\$151.92</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>10</sup>					
Capital Recovery (Table 3)	Acre	1	\$118.76	\$118.76	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) <sup>14</sup>	Acre	1	\$86.24	\$86.24	_____
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 <sup>15</sup>	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Fixed Expenses</b>	<b>\$235.00</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>-\$83.08</b>	_____

### Breakeven Price for Selected Yield

Yield (lb)	Variable Cost (\$/lb)	Total Specified Cost (\$/lb)
850	\$0.77	\$1.04
900	\$0.72	\$0.98
950	\$0.69	\$0.93
1,000	\$0.65	\$0.89
1,050	\$0.62	\$0.84
<b>1,100</b>	<b>\$0.59</b>	<b>\$0.81</b>
1,150	\$0.57	\$0.77
1,200	\$0.54	\$0.74
1,250	\$0.52	\$0.71
1,300	\$0.50	\$0.68
1,350	\$0.48	\$0.66

### Breakeven Yield for Selected Price

Price (\$/lb)	Variable Cost (lb)	Total Specified Cost (lb)
\$0.48	1,356	1,846
\$0.53	1,228	1,672
\$0.58	1,123	1,528
\$0.63	1,033	1,406
\$0.68	957	1,303
<b>\$0.73</b>	<b>892</b>	<b>1,214</b>
\$0.78	835	1,136
\$0.83	784	1,068
\$0.88	740	1,007
\$0.93	700	953
\$0.98	664	904

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.37	\$33.07	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	60	\$0.34	\$20.39	_____
Potassium	K <sub>2</sub> O	90	\$0.29	\$25.65	_____
Sulfur		10	\$0.31	\$3.11	_____
Boron		0.5	\$0.93	\$0.47	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$97.68	_____

Table 2. Chemicals <sup>6,7,8,9</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$5.00	\$5.00	_____
		Engenia	oz.	1	12	\$0.64	\$7.73	_____
	Pre-Emerge	Cotoran	pt.	1	2	\$5.00	\$10.00	_____
		Caparol	pt.	1	2	\$4.40	\$8.80	_____
		Gramaxone	oz.	1	32	\$0.18	\$5.76	_____
		Liberty	oz.	1	26	\$0.40	\$10.40	_____
	Post-Emerge	Roundup	qt.	1	1	\$5.00	\$5.00	_____
		Sequence	pt.	1	2.5	\$3.25	\$8.13	_____
		Other				\$0.00	\$0.00	_____
		Other				\$0.00	\$0.00	_____
Growth Regulator		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
Defoliant			oz.	1	12	\$0.45	\$5.40	_____
Boll Opener		Ethephon	oz.	1	32	\$0.16	\$5.12	_____
Insecticides		Seed Treatment	acre	1	1	\$9.00	\$9.00	_____
		In-Season	acre	1	1	\$40.00	\$40.00	_____
Fungicides		Seed Treatment	acre	1	1	\$7.50	\$7.50	_____
Total							\$129.84	_____

Table 3. Machinery <sup>10</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$3.61	\$3.68	\$2.29	\$1.66	\$11.23	_____
Burndown	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Plant	Tractor, 215 hp	Planter	12-row	\$7.50	\$3.76	\$1.97	\$1.43	\$14.66	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer		\$7.78	\$1.07	\$0.55	\$0.40	\$9.79	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Picker/Module Builder (Round)		6-row	\$61.93	\$11.45	\$7.98	\$2.11	\$83.47	_____
Harvest	Tractor, 215 hp	Module Handler		\$1.51	\$0.17	\$1.45	\$1.05	\$4.19	_____
Other				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	_____
Total				\$118.76	\$24.11	\$18.01	\$9.50	\$170.38	_____

## **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) Seed cost varies by variety and seed size. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 5) Bale wrap is estimated at \$0.02 per lb of lint.
- 6) Chemical applications will vary tremendously based on weed, disease, and insect infestation. Always follow product labels and consult a qualified professional before applying chemicals. Significant variation in chemical costs between location and product exist.
- 7) In-season per-acre cost includes boll weevil eradication fees and chemical expenses for control of plant bugs, bollworm, and other insect pests. Additional sprays may be necessary for specific insects.
- 8) Do not tank mix Dual Magnum and Liberty when applying on Widestrike cotton.
- 9) Use alternative chemicals on non-Liberty tolerant cotton varieties.
- 10) 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.
- 11) Cash rental rates are the 2017 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.
- 12) Crop insurance is an estimate and will vary by policy, county, and coverage election. The estimate provided is the average premium paid per insured acre of cotton in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 13) Operating interest is assumed to be charged on half of all variable expenses.
- 14) Center-pivot 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.
- 15) Management labor for irrigated acreage is assumed to be double that of dryland acres.

## 2018 Grain Sorghum, No-Till, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>					
			<u>Gross Revenue (\$/Acre)</u>		
Grain Sorghum <sup>1</sup>	Bu	90	\$3.63	\$326.70	_____
			<b>Total Revenue</b>	<b>\$326.70</b>	_____
<b>Variable Expenses</b>					
Seed <sup>2</sup>	Thous.	85	\$0.20	\$16.76	_____
Fertilizer & Lime (Table 1)	Acre	1	\$85.56	\$85.56	_____
Chemical (Table 2) <sup>3</sup>	Acre	1	\$78.57	\$78.57	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) <sup>4</sup>	Acre	1	\$18.46	\$18.46	_____
Fuel, Oil & Filter (Table 3) <sup>4</sup>	Acre	1	\$11.84	\$11.84	_____
Operator Labor (Table 3) <sup>4</sup>	Acre	1	\$7.02	\$7.02	_____
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 <sup>5</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>6</sup>	Acre	1	\$4.49	\$4.49	_____
Operating Interest <sup>7</sup>	%	\$326.69	6.00%	\$9.80	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$336.49</b>	_____
			<b>Return Above Variable Expenses</b>	<b>-\$9.79</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>4</sup>					
Capital Recovery (Table 3)	Acre	1	\$48.74	\$48.74	_____
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	_____
			<b>Total Fixed Expenses</b>	<b>\$63.74</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>-\$73.54</b>	_____

### 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	\$4.81	\$5.72
75	\$4.49	\$5.34
80	\$4.21	\$5.00
85	\$3.96	\$4.71
<b>90</b>	<b>\$3.74</b>	<b>\$4.45</b>
95	\$3.54	\$4.21
100	\$3.36	\$4.00
105	\$3.20	\$3.81
110	\$3.06	\$3.64

### Breakeven Yield for Selected Price

<u>Price</u> <u>(\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost</u> <u>(bu)</u>
\$3.43	98	117
\$3.48	97	115
\$3.53	95	113
\$3.58	94	112
<b>\$3.63</b>	<b>93</b>	<b>110</b>
\$3.68	91	109
\$3.73	90	107
\$3.78	89	106
\$3.83	88	105

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.37	\$33.07	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	60	\$0.34	\$20.39	_____
Potassium	K <sub>2</sub> O	60	\$0.29	\$17.10	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$85.56	_____

Table 2. Chemicals<sup>3</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Gramoxone	oz.	1	40	\$0.18	\$7.20	_____
		Surfactant	pt.	1	0.2	\$3.52	\$0.70	_____
	Pre-Emerge	Bicep II Magnum	qt.	1	2.1	\$12.62	\$26.50	_____
Insecticides	Post-Emerge	Surfactant	pt.	1	0.2	\$3.52	\$0.70	_____
		Atrazine	qt.	1	2	\$3.98	\$7.96	_____
		Crop Oil	pt.	1	2	\$3.25	\$6.50	_____
	Insecticides	Seed Treatment	acre	1	1	\$8.00	\$8.00	_____
		Foliar	acre	1	1	\$10.00	\$10.00	_____
		Foliar (Aphids)	acre	1	1	\$11.00	\$11.00	_____
Total							\$78.57	_____

Table 3. Machinery<sup>4</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.68	\$3.71	\$1.48	\$1.07	\$12.94	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Insecticide	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Insecticide	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Combine	Grain Head	30'	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Total				\$48.74	\$18.46	\$11.84	\$7.02	\$86.06	_____

## **FOOTNOTES**

- 1) Sorghum price is estimated at 10 cents under the price of corn.
- 2) Seed cost includes fungicide treatment. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 3) Do not use Bicep II Mangum unless you plant seed that has been safened with Concep seed safener. 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. Late-planted sorghum is susceptible to sorghum midge and must be scouted for possible treatment. An insecticide application for sugarcane aphids in addition to an insecticide application for other pests is assumed.
- 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.
- 5) Cash rental rates are the 2017 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 provided is the average premium paid per insured acre of grain sorghum in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 7) Operating interest is assumed to be charged on half of all variable expenses.

## 2018 Grain Sorghum, Conventional Tillage, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>				<b>Gross Revenue (\$/Acre)</b>	
Grain Sorghum <sup>1</sup>	Bu	90	\$3.63	\$326.70	_____
				<b>Total Revenue \$326.70</b>	_____
<b>Variable Expenses</b>					
Seed <sup>2</sup>	Thous.	85	\$0.20	\$16.76	_____
Fertilizer & Lime (Table 1)	Acre	1	\$85.56	\$85.56	_____
Chemical (Table 2) <sup>3</sup>	Acre	1	\$70.67	\$70.67	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) <sup>4</sup>	Acre	1	\$25.40	\$25.40	_____
Fuel, Oil & Filter (Table 3) <sup>4</sup>	Acre	1	\$17.26	\$17.26	_____
Operator Labor (Table 3) <sup>4</sup>	Acre	1	\$10.93	\$10.93	_____
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 <sup>5</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>6</sup>	Acre	1	\$4.49	\$4.49	_____
Operating Interest <sup>7</sup>	%	\$335.06	6.00%	\$10.05	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				<b>Total Variable Expenses \$345.12</b>	_____
				<b>Return Above Variable Expenses -\$18.42</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>4</sup>					
Capital Recovery (Table 3)	Acre	1	\$53.46	\$53.46	_____
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	_____
				<b>Total Fixed Expenses \$68.46</b>	_____
				<b>Return Above All Specified Expenses -\$86.87</b>	_____

### Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
70	\$4.93	\$5.91
75	\$4.60	\$5.51
80	\$4.31	\$5.17
85	\$4.06	\$4.87
<b>90</b>	<b>\$3.83</b>	<b>\$4.60</b>
95	\$3.63	\$4.35
100	\$3.45	\$4.14
105	\$3.29	\$3.94
110	\$3.14	\$3.76

### Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$3.43	101	121
\$3.48	99	119
\$3.53	98	117
\$3.58	96	116
<b>\$3.63</b>	<b>95</b>	<b>114</b>
\$3.68	94	112
\$3.73	93	111
\$3.78	91	109
\$3.83	90	108



Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.37	\$33.07	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	60	\$0.34	\$20.39	_____
Potassium	K <sub>2</sub> O	60	\$0.29	\$17.10	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$85.56	_____

Table 2. Chemicals<sup>3</sup>

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	_____
		Surfactant	pt.	1	0.2	\$3.52	\$0.70	_____
Insecticides	Post-Emerge	Atrazine	qt.	1	2	\$3.98	\$7.96	_____
		Crop Oil	pt.	1	2	\$3.25	\$6.50	_____
	Seed Treatment	acre	1	1	\$8.00	\$8.00	_____	
	Foliar	acre	1	1	\$10.00	\$10.00	_____	
	Foliar (Aphids)	acre	1	1	\$11.00	\$11.00	_____	
	Total						\$70.67	_____

Table 3. Machinery<sup>4</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$1.95	\$2.38	\$2.15	\$1.56	\$8.05	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.60	\$2.59	\$1.73	\$1.26	\$10.18	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.50	\$2.21	\$1.81	\$1.31	\$7.84	_____
Plant	Tractor, 215 hp	Planter	16-row	\$6.68	\$3.71	\$1.48	\$1.07	\$12.94	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Weed Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Insect Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Insect Control	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	Combine	Grain Head	30'	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
Haul	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Total				\$53.46	\$25.40	\$17.26	\$10.93	\$107.05	_____

## **FOOTNOTES**

- 1) Sorghum price is estimated at 10 cents under the price of corn.
- 2) Seed cost includes fungicide treatment. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available.
- 3) 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. Late-planted sorghum is susceptible to sorghum midge and must be scouted for possible treatment. An insecticide application for sugarcane aphids in addition to an insecticide application for other pests is assumed.
- 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.
- 5) Cash rental rates are the 2017 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 provided is the average premium paid per insured acre of grain sorghum in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 7) Operating interest is assumed to be charged on half of all variable expenses.

## 2018 Canola, Conventional Tillage, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
<b>Revenue</b>				<b>Gross Revenue (\$/Acre)</b>	
Canola <sup>1</sup>	Bu	50	\$8.10	\$405.00	_____
			<b>Total Revenue</b>	<b>\$405.00</b>	_____
<b>Variable Expenses</b>					
Seed <sup>2</sup>	Thous.	220	\$0.15	\$34.00	_____
Fertilizer & Lime (Table 1)	Acre	1	\$152.90	\$152.90	_____
Chemical (Table 2) <sup>3</sup>	Acre	1	\$50.80	\$50.80	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) <sup>4</sup>	Acre	1	\$24.60	\$24.60	_____
Fuel, Oil & Filter (Table 3) <sup>4</sup>	Acre	1	\$14.84	\$14.84	_____
Operator Labor (Table 3) <sup>4</sup>	Acre	1	\$9.19	\$9.19	_____
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 <sup>5</sup>	Acre	1	\$95.00	\$95.00	_____
Crop Insurance <sup>6</sup>	Acre	1	\$12.24	\$12.24	_____
Operating Interest <sup>7</sup>	%	\$402.58	6.00%	\$12.08	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			<b>Total Variable Expenses</b>	<b>\$414.66</b>	_____
			<b>Return Above Variable Expenses</b>	<b>-\$9.66</b>	_____
<b>Fixed Expenses</b>					
Machinery <sup>4</sup>					
Capital Recovery (Table 3)	Acre	1	\$51.50	\$51.50	_____
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 <sup>8</sup>	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs <sup>9</sup>	Acre	1	\$0.00	\$0.00	_____
			<b>Total Fixed Expenses</b>	<b>\$81.50</b>	_____
			<b>Return Above All Specified Expenses</b>	<b>-\$91.16</b>	_____

### Breakeven Price For Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
30	\$13.82	\$16.54
35	\$11.85	\$14.18
40	\$10.37	\$12.40
45	\$9.21	\$11.03
<b>50</b>	<b>\$8.29</b>	<b>\$9.92</b>
55	\$7.54	\$9.02
60	\$6.91	\$8.27
65	\$6.38	\$7.63
70	\$5.92	\$7.09

### Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$7.10	58	70
\$7.35	56	68
\$7.60	55	65
\$7.85	53	63
<b>\$8.10</b>	<b>51</b>	<b>61</b>
\$8.35	50	59
\$8.60	48	58
\$8.85	47	56
\$9.10	46	55

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	160	\$0.37	\$58.78	_____
Phosphorous	P <sub>2</sub> O <sub>5</sub>	80	\$0.44	\$35.38	_____
Potassium	K <sub>2</sub> O	130	\$0.29	\$37.05	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other	Sulfur	20	\$0.31	\$6.22	_____
Other	Boron	0.5	\$0.93	\$0.47	_____
Total				\$152.90	_____

Table 2. Chemicals<sup>3</sup>

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Pre-plant	Treflan	pt.	1	2	\$3.38	\$6.75	_____
	Post-planting	Roundup	pt.	2	3	\$5.00	\$15.00	_____
	Desiccant	Command	pt.	1	0.25	\$14.45	\$3.61	_____
		Reglone	pt.	1	3	\$0.48	\$1.44	_____
		Other				\$0.00	\$0.00	_____
Insecticides		Other				\$0.00	\$0.00	_____
Fungicides		Seed Treatment	acre	1	1	\$5.00	\$5.00	_____
		Foliar	acre	1	1	\$19.00	\$19.00	_____
Total							\$50.80	_____

Table 3. Machinery<sup>4</sup>

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Fall/Winter	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
	Tractor, 215 hp	Tandem Disk	29'	\$4.60	\$2.59	\$1.73	\$1.26	\$10.18	_____
	Tractor, 215 hp	Grain Drill	20 ft	\$4.84	\$7.26	\$2.74	\$1.99	\$16.83	_____
	Tractor, 215 hp	Fertilizer Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44	_____
Winter/Spring	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
Harvest	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07	_____
	Combine	Grain Head	30 ft	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58	_____
	Tractor, 215 hp	Grain Cart		\$2.37	\$1.06	\$0.96	\$0.70	\$5.08	_____
	Semi Tractor/Trailer		800 bu	\$4.94	\$0.65	\$1.67	\$1.38	\$8.64	_____
Other									_____
Total				\$51.50	\$24.60	\$14.84	\$9.19	\$100.14	_____

## **FOOTNOTES**

- 1) 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, as limited buyers are available. Counter party risk is a major concern for small acreage crops. Canola yields vary tremendously across the state. Depending on growing conditions and management practices yields may range from 30-80 bu/acre.
- 2) Seed cost varies by seed provider, variety, and seeding rate. Check with farm suppliers for rebates, discounts, and incentives for seed and chemicals. Substantial cost savings may be available. Check with market contractor to determine if additional cost savings are available for products and services.
- 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 for canola in Tennessee, 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.
- 5) Cash rental rates are the 2017 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 provided is the average premium paid per insured acre of canola in Tennessee for the previous production year as reported by USDA RMA's Summary of Business Report.
- 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 due to specialized equipment required in the handling, hauling, and storage of canola.

# Appendix 1: Input Summary Table

<b><u>Commodity Prices Received by Producers</u></b>		
Corn	\$3.73	bu
Soybeans	\$9.80	bu
Wheat	\$4.42	bu
Cotton	\$0.73	lb
Grain Sorghum	\$3.63	bu
Canola	\$8.10	bu
<b><u>Fuel, Interest Rates, and Labor Costs</u></b>		
Diesel Fuel (\$/gal)	\$2.15	\$/gal
Electricity (\$/Kwh)	\$0.078	\$/Kwh
Operator Labor (\$/hr)	\$13.50	\$/hr
Management Labor (\$/hr)	\$15.00	\$/hr
Operating Interest (%)	6.00%	%
Fixed Capital Interest (%)	5.50%	%
<b><u>Crop Scout, Consulting, Cash Rent, and Crop Insurance</u></b>		
Crop Scout / Consulting Fee	\$9.00	acre
Crop Scouting-Cotton	\$10.00	acre
Drying (\$/bu)	\$0.00	bu
Irrigated Crop Land Cash Rent	\$170.00	acre
Non-Irrigated Crop Land Cash Rent	\$95.00	acre
Crop Insurance-Corn	\$11.95	acre
Crop Insurance-Soybean	\$9.34	acre
Crop Insurance-Wheat	\$6.06	acre
Crop Insurance-Cotton	\$10.61	acre
Crop Insurance-Grain Sorghum	\$4.49	acre
Crop Insurance-Canola	\$12.24	acre
<b><u>Property Taxes, Non-Machinery Insurance, and Management Labor</u></b>		
Property Taxes	\$0.00	\$/acre
Insurance (non-machinery and non-crop)	\$0.00	\$/acre
Management Labor	\$15.00	\$/acre
<b><u>Seed</u></b>		
Corn	\$3.03	\$/Thousand Seeds
Soybean	\$0.38	\$/Thousand Seeds
Canola	\$0.15	\$/Thousand Seeds
Wheat	\$16.50	\$/bu
Cotton	\$2.24	\$/Thousand Seeds
Grain Sorghum	\$0.20	\$/Thousand Seeds

<b><u>Fertilizer</u></b>		
Urea	\$0.37	\$/lb
Ammonium Nitrate	\$0.48	\$/lb
UAN 28%	\$0.39	\$/lb
UAN 32%	\$0.43	\$/lb
P <sub>2</sub> O <sub>5</sub>	\$0.44	\$/lb
DAP (18-46-0)	\$0.34	\$/lb
K <sub>2</sub> O - Potash	\$0.29	\$/lb
Lime	\$30.00	\$/ton
Boron	\$0.93	\$/lb
Elemental Sulfur	\$0.31	\$/lb

<b><u>Fungicide Treatments</u></b>		
Tilt	\$5.00	\$/oz.
Soybean-Foliar	\$12.00	\$/acre
Soybean-Seed Treatment	\$3.75	\$/acre
Cotton-Seed Treatment	\$7.50	\$/acre
Wheat-Seed Treatment	\$8.40	\$/acre
Wheat-Foliar	\$12.00	\$/acre
Crop Oil Concentrate	\$3.25	\$/pint
Canola	\$19.00	\$/acre
Corn-Foliar	\$15.00	\$/acre
Surfactant	\$3.52	\$/pint

<b><u>Insecticide Treatments</u></b>		
Soybean -Foliar	\$5.00	\$/acre
Grain Sorghum-Foliar	\$10.00	\$/acre
Grain Sorghum-Seed Treatment	\$8.00	\$/acre
Grain Sorghum (Sugar Cane Aphid)	\$11.00	\$/acre
Soybean-Seed Treatment	\$8.50	\$/acre
Cotton-Seed Treatment	\$9.00	\$/acre
Cotton-Foliar	\$40.00	\$/acre
Wheat-Seed Treatment	\$11.00	\$/acre
Wheat- Foliar	\$3.00	\$/acre
Maintenance Fee (Boll Weevil Eradication)	\$1.50	\$/acre
Canola	\$5.00	\$/acre

<b><u>Herbicides</u></b>		
	<b><u>Price/Unit</u></b>	<b><u>Unit</u></b>
2, 4-D	\$2.22	\$/pt.
Accent Q	\$32.81	\$/oz.
Aim EQ	\$8.12	\$/oz.
Assure II	\$0.96	\$/oz.
Atrazine	\$3.98	\$/qt.
Authority First	\$5.37	\$/oz.
Authority MTZ	\$1.36	\$/oz.
Authority XL	\$3.89	\$/oz.
Axial XL	\$1.07	\$/oz.
Axiom	\$1.86	\$/oz.
Banvel	\$7.00	\$/pt.
Basagran	\$13.53	\$/pt.
Beacon 75 WDG	\$36.70	\$/oz.
Bicep II Magnum	\$12.62	\$/qt.
Boll Opener (Ethephon)	\$0.16	\$/oz.
Boundary	\$10.26	\$/pt.
Buctril 4EC	\$18.59	\$/pt.
Butyrac 200	\$5.23	\$/pt.
Cadet	\$12.63	\$/oz.
Callisto	\$1.43	\$/oz.
Canopy DF	\$2.56	\$/oz.
Canopy EX	\$8.20	\$/oz.
Caparol	\$4.40	\$/pt.
Cinch ATZ	\$12.48	\$/qt.
Clarity 4EC	\$11.48	\$/pt.
Classic	\$17.00	\$/oz.
Cobra	\$1.57	\$/oz.
Command 3ME	\$14.45	\$/pt.
Cotoran	\$5.00	\$/pt.
Cotton Pro	\$4.39	\$/pt.
Crossbow	\$12.25	\$/qt.
Defoliant	\$0.45	\$/oz.
Degree	\$5.00	\$/pt.
Degree Xtra	\$11.52	\$/qt.
Desiccant	\$17.50	acre
Devrinol 2E	\$9.31	\$/qt.
Devrinol 50DF	\$9.05	\$/lb.
Dicamba	\$0.35	\$/oz.
Direx 4L	\$4.06	\$/pt.
Distinct DF	\$2.32	\$/oz.
Domain	\$12.97	\$/lb.

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<b><u>Herbicides</u></b>		
Dual Magnum	\$15.97	\$/pt.
Dual II Magnum	\$16.98	\$/pt.
Engenia	\$0.64	\$/oz.
Envive	\$5.23	\$/oz.
Envoke	\$98.58	\$/oz.
Eptam	\$5.83	\$/pt.
Extreme	\$3.39	\$/pt.
Fexapan	\$0.43	\$/oz.
Fierce	\$6.14	\$/oz.
Finesse	\$6.70	\$/oz.
FirstRate	\$41.82	\$/oz.
Firstshot SG	\$8.62	\$/oz.
Flexstar	\$3.48	\$/pt.
Forefront R & P	\$7.43	\$/pt.
Frontrow	\$22.21	\$/oz.
Fusilade DX	\$1.35	\$/oz.
Gly-4 Plus	\$10.19	\$/qt.
Goal 2XL	\$10.21	\$/pt.
Gramoxone SL	\$0.18	\$/oz.
Grazon P + D	\$4.31	\$/pt.
Guardsman Max	\$14.80	\$/qt.
Halex GT	\$6.70	\$/pt.
Harmony Extra	\$14.03	\$/oz.
Harness	\$14.51	\$/pt.
Harness Xtra	\$13.76	\$/qt.
Hoelon 3EC	\$9.02	\$/pt.
Hornet	\$4.83	\$/oz.
Instigate	\$2.84	\$/oz.
Leadoff	\$8.50	\$/oz.
Liberty	\$0.40	\$/oz.
Mepex (Mepiquat Chloride)	\$1.00	\$/pt.
Metribuzin	\$0.86	\$/oz.
Outlook	\$1.01	\$/oz.
Permit	\$20.67	\$/oz.
Poast/Poast Plus	\$12.54	\$/pt.
Prefix	\$10.59	\$/qt.
Prowl H2O	\$4.54	\$/pt.
Pursuit	\$3.40	\$/oz.
Python WPG	\$14.12	\$/oz.
Raptor	\$4.28	\$/oz.
Realm Q	\$4.93	\$/oz.
Reflex	\$16.80	\$/pt.
Reglone	\$0.48	\$/pt.
Resource	\$1.79	\$/oz.

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<u>Herbicides</u>		
Roundup	\$5.00	\$/qt.
Scepter	\$4.80	\$/oz.
Select Max	\$0.83	\$/oz.
Sequence	\$3.25	\$/pt.
Sharpen	\$5.86	\$/oz.
Steadfast Q	\$12.07	\$/oz.
Storm	\$11.18	\$/pt.
Surfactant	\$3.52	\$/pt.
Treflan	\$3.38	\$/pt.
Ultra Blazer	\$9.85	\$/pt.
Valor	\$2.71	\$/oz.
Verdict	\$1.75	\$/oz.
Warrant	\$4.43	\$/pt.
Xtendimax with VaporGrip	\$0.43	\$/oz.

## Field Operations

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'	\$1.95	\$2.38	\$2.15	\$1.56	\$8.05
	Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.60	\$2.59	\$1.73	\$1.26	\$10.18
	Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.50	\$2.21	\$1.81	\$1.31	\$7.84
	Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$2.81	\$3.00	\$2.40	\$1.74	\$9.95
	Plant	Tractor, 215 hp	Planter	16-row	\$6.68	\$3.71	\$1.48	\$1.07	\$12.94
	Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.84	\$7.26	\$2.74	\$1.99	\$16.83
	Fertilize	Tractor, 215 hp	Fertilizer Spreader	900#	\$1.70	\$2.03	\$1.57	\$1.14	\$6.44
	Spray	SP Boom Sprayer		90'	\$4.34	\$0.24	\$0.28	\$0.21	\$5.07
	Harvest	Combine	Corn Head	8-row	\$13.57	\$13.13	\$6.38	\$2.21	\$35.29
	Harvest	Combine	Grain Head	30 ft	\$11.34	\$9.80	\$4.79	\$1.66	\$27.58
Cotton	Haul	Tractor, 215 hp	Grain Cart	800 bu	\$2.37	\$1.06	\$0.96	\$0.70	\$5.08
	Haul	Semi Tractor/Trailer			\$4.94	\$0.65	\$1.67	\$1.38	\$8.64
	Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$3.61	\$3.68	\$2.29	\$1.66	\$11.23
	Plant	Tractor, 215 hp	Planter	12-row	\$7.50	\$3.76	\$1.97	\$1.43	\$14.66
	Weed Control	Tractor, 215 hp	Hooded Sprayer	90	\$7.78	\$1.07	\$0.55	\$0.40	\$9.79
	Harvest	SP Cotton Picker		6-row	\$24.49	\$6.16	\$7.18	\$2.49	\$40.31
	Harvest	Tractor, 215 hp	Boll Buggy		\$3.83	\$0.99	\$2.40	\$1.74	\$8.97
	Harvest	Tractor, 215 hp	Module Builder	32'	\$4.22	\$1.03	\$2.14	\$1.55	\$8.95
	Harvest	Picker/Module Builder (Round)		6-row	\$61.93	\$11.45	\$7.98	\$2.11	\$83.47
	Harvest	Tractor, 215 hp	Module Handler		\$1.51	\$0.17	\$1.45	\$1.05	\$4.19

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	\$578.15	\$452.17	\$57.29	\$68.70
Corn CT Non-Irr	\$578.15	\$460.97	\$62.00	\$55.18
Corn Irr	\$839.25	\$620.45	\$158.53	\$60.27
Soybeans NT Non-Irr	\$441.00	\$327.86	\$63.74	\$49.39
Soybeans Irr	\$588.00	\$435.84	\$164.98	(\$12.83)
Wheat & Soybean DC	\$701.40	\$526.52	\$110.91	\$63.97
Wheat	\$309.40	\$340.69	\$66.50	(\$97.80)
Cotton CT	\$722.70	\$533.34	\$138.78	\$50.58
Cotton NT	\$722.70	\$527.84	\$133.76	\$61.11
Cotton IRR	\$803.00	\$652.11	\$235.00	(\$84.11)
G. Sorghum NT	\$326.70	\$337.52	\$63.74	(\$74.57)
G. Sorghum CT	\$326.70	\$346.15	\$68.46	(\$87.90)
Canola	\$405.00	\$407.24	\$81.50	(\$83.75)



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