

Department of Agricultural and Resource Economics

FIELD CROP BUDGETS FOR 2019

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Introduction and Disclaimer

The 2019 Tennessee Field Crop Budgets were developed to assist producers and other agricultural decision-makers in evaluating 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 University of Tennessee Extension's Excel-based spreadsheet available online at 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 2019, 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 "2019 Weed Control Manual for Tennessee" (PB1580) and "2018 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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2019 Corn, No-Till, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue				Gross Revenue (\$/Acre)	
Corn ¹	Bu	160	\$4.00	\$640.00	_____
				Total Revenue	\$640.00
Variable Expenses					
Seed ^{2,3}	Thous.	32	\$2.97	\$95.00	_____
Fertilizer & Lime (Table 1) ⁴	Acre	1	\$157.28	\$157.28	_____
Chemical (Table 2) ^{3,5}	Acre	1	\$41.53	\$41.53	_____
Crop Scout or Consultant	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3)	Acre	1	\$31.43	\$31.43	_____
Fuel, Oil & Filter (Table 3)	Acre	1	\$13.67	\$13.67	_____
Operator Labor (Table 3)	Acre	1	\$7.98	\$7.98	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	160	\$0.00	\$0.00	_____
Cash Rent ⁶	Acre	1	\$95.00	\$95.00	_____
Crop Insurance ⁷	Acre	1	\$11.88	\$11.88	_____
Operating Interest ⁸	%	\$462.77	6.00%	\$13.88	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses	\$476.65
				Return above Variable Expenses	\$163.35
Fixed Expenses					
Machinery ⁹					
Capital Recovery (Table 3)	Acre	1	\$49.26	\$49.26	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
				Total Fixed Expenses	\$64.26
				Return Above All Specified Expenses	\$99.09

Breakeven Price for Selected Yield

<u>Yield (bu)</u>	<u>Variable Cost (\$/bu)</u>	<u>Total Specified Cost (\$/bu)</u>
110	\$4.33	\$4.92
120	\$3.97	\$4.51
130	\$3.67	\$4.16
140	\$3.40	\$3.86
150	\$3.18	\$3.61
160	\$2.98	\$3.38
170	\$2.80	\$3.18
180	\$2.65	\$3.01
190	\$2.51	\$2.85
200	\$2.38	\$2.70
210	\$2.27	\$2.58

Breakeven Yield for Selected Price

<u>Price (\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost (bu)</u>
\$2.75	173	197
\$3.00	159	180
\$3.25	147	166
\$3.50	136	155
\$3.75	127	144
\$4.00	119	135
\$4.25	112	127
\$4.50	106	120
\$4.75	100	114
\$5.00	95	108
\$5.25	91	103

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting	60	\$0.44	\$26.54	_____
	UAN 32 - Side dress	120	\$0.48	\$57.00	_____
Phosphorous	P ₂ O ₅	70	\$0.42	\$29.61	_____
	K ₂ O	70	\$0.32	\$22.23	_____
Sulfur		10	\$0.69	\$6.90	_____
Lime ⁴	Limestone	1,000	\$30.00	\$15.00	_____
Total				\$157.28	_____

Table 2. Chemicals ^{3,5}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides ³	Burndown	Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
	Pre-Emerge	Atrazine	qt.	1	1	\$2.98	\$2.98	_____
		Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$4.95	\$17.82	_____
		Atrazine	qt.	1	1.5	\$2.98	\$4.47	_____
		Surfactant	\$/acre	3	1	\$1.50	\$4.50	_____
Insecticides						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Fungicides ⁵						\$0.00	\$0.00	_____
Total							\$41.53	_____

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Table 3. Machinery ⁹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Harvest	Combine	Corn Head	8-row	\$20.26	\$20.27	\$7.33	\$2.39	\$50.26	_____
Haul	Tractor, 215 hp	Grain Cart	800 bu	\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$7.68	\$1.25	\$0.79	\$1.76	\$11.48	_____
Other							\$0.00	\$0.00	_____
Other							\$0.00	\$0.00	_____
Total				\$49.26	\$31.43	\$13.67	\$7.98	\$102.34	_____

FOOTNOTES

- 1) Corn price was estimated using weighted average futures prices from September 2019 to July 2020, adjusted by average monthly basis in Tennessee. Corn yield is the predicted 2019 linear trend line yield for corn in Tennessee, using state average yields from 1980-2018.
- 2) Assumes a bag of seed costs \$238 and contains 80,000 seeds (\$2.97/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) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application.
- 5) A foliar fungicide application may be used in some cropping systems at a cost of \$15 to \$20 per acre. Cost will vary depending on the fungicide used, the application rate, and method of application.
- 6) Cash rental rates are the 2018 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.
- 7) 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.
- 8) Operating interest is assumed to be charged on half of all variable expenses.
- 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.

2019 Corn, Conventional Tillage, Non-Irrigated Budget

	Unit	Quantity	Price	Total	Your Farm
Revenue					
			Gross Revenue (\$/Acre)		
Corn ¹	Bu	160	\$4.00	\$640.00	_____
			Total Revenue	\$640.00	_____
Variable Expenses					
Seed ^{2,3}	Thous.	32	\$2.97	\$95.00	_____
Fertilizer & Lime (Table 1) ⁴	Acre	1	\$157.28	\$157.28	_____
Chemical (Table 2) ^{3,5}	Acre	1	\$35.65	\$35.65	_____
Crop Scout or Consultant	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3)	Acre	1	\$39.96	\$39.96	_____
Fuel, Oil, & Filter (Table 3)	Acre	1	\$19.90	\$19.90	_____
Operator Labor (Table 3)	Acre	1	\$12.21	\$12.21	_____
Machinery Rental	Acre	1	\$0.00	\$0.00	_____
Custom Work	Acre	1	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	160	\$0.00	\$0.00	_____
Cash Rent ⁶	Acre	1	\$95.00	\$95.00	_____
Crop Insurance ⁷	Acre	1	\$11.88	\$11.88	_____
Operating Interest ⁸	%	\$475.87	6.00%	\$14.28	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$490.15	_____
			Return above Variable Expenses	\$149.85	_____
Fixed Expenses					
Machinery ⁹					
Capital Recovery (Table 3)	Acre	1	\$54.48	\$54.48	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			Total Fixed Expenses	\$69.48	_____
			Return Above All Specified Expenses	\$80.37	_____

Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
110	\$4.46	\$5.09
120	\$4.08	\$4.66
130	\$3.77	\$4.30
140	\$3.50	\$4.00
150	\$3.27	\$3.73
160	\$3.06	\$3.50
170	\$2.88	\$3.29
180	\$2.72	\$3.11
190	\$2.58	\$2.95
200	\$2.45	\$2.80
210	\$2.33	\$2.66

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$2.75	178	204
\$3.00	163	187
\$3.25	151	172
\$3.50	140	160
\$3.75	131	149
\$4.00	123	140
\$4.25	115	132
\$4.50	109	124
\$4.75	103	118
\$5.00	98	112
\$5.25	93	107

Table 1. Fertilizer & Lime

	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting	60	\$0.44	\$26.54	_____
	UAN 32 - Side dress	120	\$0.48	\$57.00	_____
Phosphorous	P ₂ O ₅	70	\$0.42	\$29.61	_____
	K ₂ O	70	\$0.32	\$22.23	_____
Sulfur		10	\$0.69	\$6.90	_____
Lime ⁴	Limestone	1,000	\$30.00	\$15.00	_____
Total				\$157.28	_____

Table 2. Chemicals ^{3,5}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides ³	Pre-Emerge	Atrazine	qt.	1	1	\$2.98	\$2.98	_____
		Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$4.95	\$17.82	_____
		Atrazine	qt.	1	1.5	\$2.98	\$4.47	_____
		Surfactant	\$/acre	3	1	\$1.50	\$4.50	_____
Insecticides						\$0.00	\$0.00	_____
Fungicides ⁵						\$0.00	\$0.00	_____
Total						\$0.00	\$0.00	_____
							\$35.65	_____

Table 3. Machinery ⁹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.13	\$2.86	\$2.47	\$1.68	\$9.15	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.18	\$3.20	\$1.99	\$1.36	\$10.72	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.68	\$2.77	\$2.08	\$1.42	\$8.94	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Corn Head	8-row	\$20.26	\$20.27	\$7.33	\$2.39	\$50.26	_____
Haul	Tractor, 215 hp	Grain Cart	800 bu	\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$7.68	\$1.25	\$0.79	\$1.76	\$11.48	_____
Other							\$0.00	\$0.00	_____
Other							\$0.00	\$0.00	_____
Total				\$54.48	\$39.96	\$19.90	\$12.21	\$126.54	_____

FOOTNOTES

- 1) Corn price was estimated using weighted average futures prices from September 2019 to July 2020, adjusted by average monthly basis in Tennessee. Corn yield is the predicted 2019 linear trend line yield for corn in Tennessee, using state average yields from 1980-2018.
- 2) Assumes a bag of seed costs \$238 and contains 80,000 seeds (\$2.97/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) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application.
- 5) A foliar fungicide application may be used in some cropping systems at a cost of \$15 to \$20 per acre. Cost will vary depending on the fungicide used, the application rate, and method of application.
- 6) Cash rental rates are the 2018 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.
- 7) 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.
- 8) Operating interest is assumed to be charged on half of all variable expenses.
- 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.

2019 Corn, No-Till, Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue			Gross Revenue (\$/Acre)		
Corn ¹	Bu	225	\$4.00	\$900.00	_____
		Total Revenue	\$900.00		_____
Variable Expenses					
Seed ^{2,3}	Thous.	36	\$2.97	\$106.88	_____
Fertilizer & Lime (Table 1) ⁴	Acre	1	\$197.59	\$197.59	_____
Chemical (Table 2) ^{3,5}	Acre	1	\$41.53	\$41.53	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3)	Acre	1	\$34.50	\$34.50	_____
Fuel, Oil & Filter (Table 3)	Acre	1	\$15.80	\$15.80	_____
Operator Labor (Table 3)	Acre	1	\$9.92	\$9.92	_____
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	\$4.53	\$31.71	_____
Irrigation System R&M & Labor	Ac-In	7	\$2.22	\$15.54	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ⁶	Acre	1	\$165.00	\$165.00	_____
Crop Insurance ⁷	Acre	1	\$11.88	\$11.88	_____
Operating Interest ⁸	%	\$639.34	6.00%	\$19.18	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
		Total Variable Expenses	\$658.52		_____
		Return Above Variable Expenses	\$241.48		_____
Fixed Expenses					
Machinery ⁹					
Capital Recovery (Table 3)	Acre	1	\$54.26	\$54.26	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) ¹⁰	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 ¹¹	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
		Total Fixed Expenses	\$170.50		_____
		Return Above All Specified Expenses	\$70.98		_____

Breakeven Price for Selected Yield		
Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
175	\$3.76	\$4.74
185	\$3.56	\$4.48
195	\$3.38	\$4.25
205	\$3.21	\$4.04
215	\$3.06	\$3.86
225	\$2.93	\$3.68
235	\$2.80	\$3.53
245	\$2.69	\$3.38
255	\$2.58	\$3.25
265	\$2.48	\$3.13
275	\$2.39	\$3.01

Breakeven Yield for Selected Price		
Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$2.75	239	301
\$3.00	220	276
\$3.25	203	255
\$3.50	188	237
\$3.75	176	221
\$4.00	165	207
\$4.25	155	195
\$4.50	146	184
\$4.75	139	175
\$5.00	132	166
\$5.25	125	158

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting	80	\$0.44	\$35.39	_____
	UAN 32 - Side dress	160	\$0.48	\$76.00	_____
Phosphorous	P ₂ O ₅	90	\$0.40	\$35.72	_____
Potassium	K ₂ O	90	\$0.32	\$28.58	_____
Sulfur		10	\$0.69	\$6.90	_____
Lime ⁴	Limestone	1,000	\$30.00	\$15.00	_____
Total				\$197.59	_____

Table 2. Chemicals ^{3,5}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides ³	Burndown	Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
	Pre-Emerge	Atrazine	qt.	1	1	\$2.98	\$2.98	_____
		Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
	Post-Emerge	Halex GT	pt.	1	3.6	\$4.95	\$17.82	_____
		Atrazine	qt.	1	1.5	\$2.98	\$4.47	_____
Insecticides		Surfactant	pt.	3	1	\$1.50	\$4.50	_____
						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Fungicides ⁵						\$0.00	\$0.00	_____
						\$0.00	\$0.00	_____
Total							\$41.53	_____

Table 3. Machinery ⁹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Harvest	Combine	Corn Head	8-row	\$20.26	\$20.27	\$7.33	\$2.39	\$50.26	_____
Haul	Tractor, 215 hp	Grain Cart	800 bu	\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$10.80	\$1.76	\$1.11	\$2.48	\$16.14	_____
Other								_____	_____
Total				\$54.26	\$34.50	\$15.80	\$9.92	\$114.48	_____

FOOTNOTES

- 1) Corn price was estimated using weighted average futures prices from September 2019 to July 2020, adjusted by average monthly basis in Tennessee. Corn yield is the predicted 2019 linear trend line yield for corn in Tennessee, using state average yields from 1980-2018.
- 2) Assumes a bag of seed costs \$238 and contains 80,000 seeds (\$2.97/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) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application.
- 5) A foliar fungicide application may be used in some cropping systems at a cost of \$15 to \$20 per acre. Cost will vary depending on the fungicide used, the application rate, and method of application.
- 6) Cash rental rates are the 2018 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.
- 7) 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.
- 8) Operating interest is assumed to be charged on half of all variable expenses.
- 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) 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.
- 11) Management labor for irrigated acreage is assumed to be double that of dryland acres.

2019 Soybean, No-Till, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
			Gross Revenue (\$/Acre)		
Soybeans ¹	Bu	50	\$9.35	\$467.50	_____
			Total Revenue	\$467.50	_____
Variable Expenses ²					
Seed	Thous.	140	\$0.40	\$56.00	_____
Fertilizer & Lime (Table 1) ³	Acre	1	\$46.74	\$46.74	_____
Chemical (Table 2) ^{4,5,6,7,8}	Acre	1	\$75.67	\$75.67	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) ⁹	Acre	1	\$25.47	\$25.47	_____
Fuel, Oil & Filter (Table 3) ⁹	Acre	1	\$11.94	\$11.94	_____
Operator Labor (Table 3) ⁹	Acre	1	\$6.64	\$6.64	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	50	\$0.00	\$0.00	_____
Cash Rent ¹⁰	Acre	1	\$95.00	\$95.00	_____
Crop Insurance ¹¹	Acre	1	\$7.79	\$7.79	_____
Operating Interest ¹²	%	\$334.24	6.00%	\$10.03	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$344.27	_____
			Return Above Variable Expenses	\$123.23	_____
Fixed Expenses					
Machinery ⁹					_____
Capital Recovery (Table 3)	Acre	1	\$49.59	\$49.59	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			Total Fixed Expenses	\$64.59	_____
			Return Above All Specified Expenses	\$58.64	_____

Breakeven Price for Selected Yield

<u>Yield (bu)</u>	<u>Variable Cost (\$/bu)</u>	<u>Total Specified Cost (\$/bu)</u>
30	\$11.48	\$13.63
35	\$9.84	\$11.68
40	\$8.61	\$10.22
45	\$7.65	\$9.09
50	\$6.89	\$8.18
55	\$6.26	\$7.43
60	\$5.74	\$6.81
65	\$5.30	\$6.29
70	\$4.92	\$5.84

Breakeven Yield for Selected Price

<u>Price (\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost (bu)</u>
\$7.35	47	56
\$7.85	44	52
\$8.35	41	49
\$8.85	39	46
\$9.35	37	44
\$9.85	35	42
\$10.35	33	40
\$10.85	32	38
\$11.35	30	36

Table 1. Fertilizer & Lime ³

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen		0	\$0.00	\$0.00	_____
Phosphorous	P ₂ O ₅	30	\$0.42	\$12.69	_____
Potassium	K ₂ O	60	\$0.32	\$19.05	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$46.74	_____

Table 2. Chemicals ^{4,5,6,7,8}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$4.88	\$4.88	_____
		Valor	oz.	1	2	\$3.76	\$7.52	_____
	Pre-Emerge	Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
		Prefix	qt.	1	1	\$9.27	\$9.27	_____
Post-Emerge		Engenia	oz	1	12	\$0.69	\$8.24	_____
		Flexstar	pt.	1	1	\$3.48	\$3.48	_____
		Surfactant	\$/acre	3	1	\$1.50	\$4.50	_____
						\$0.00	\$0.00	_____
Insecticide/Fungicide		Seed Treatment	acre	1	1	\$0.00	\$0.00	_____
Insecticides	Foliar	Foliar	acre	1	1	\$10.00	\$10.00	_____
Fungicides		Foliar	acre	1	1	\$7.50	\$7.50	_____
						\$14.40	\$14.40	_____
Total							\$75.67	_____

Table 3. Machinery ⁹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Pre-Emerge	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Post-Emerge	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Post-Emerge	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fungicide	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Grain Head	30 ft	\$14.84	\$14.64	\$5.50	\$1.79	\$36.77	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$5.91	\$0.32	\$0.25	\$0.55	\$7.03	_____
Total				\$49.59	\$25.47	\$11.94	\$6.64	\$93.63	_____

FOOTNOTES

- 1) Soybean price was estimated using weighted average futures prices from November 2019 to August 2020, adjusted by average monthly basis in Tennessee. Soybean yield is the predicted 2019 linear trend line yield for soybeans in Tennessee, using state average yields from 1980-2018.
- 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. Application costs included.
- 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 during the growing season 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 2019 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 2018 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.

2019 Soybean, No-Till, Irrigated Budget

	Unit	Quantity	Price	Total	Your Farm
Revenue					
			Gross Revenue (\$/Acre)		
Soybeans ¹	Bu	65	\$9.35	\$607.75	_____
			Total Revenue	\$607.75	_____
Variable Expenses ²					
Seed	Thous.	140	\$0.40	\$56.00	_____
Fertilizer & Lime (Table 1) ³	Acre	1	\$57.32	\$57.32	_____
Chemical (Table 2) ^{4,5,6,7,8}	Acre	1	\$75.67	\$75.67	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) ⁹	Acre	1	\$25.54	\$25.54	_____
Fuel, Oil & Filter (Table 3) ⁹	Acre	1	\$11.99	\$11.99	_____
Operator Labor (Table 3) ⁹	Acre	1	\$6.75	\$6.75	_____
Machinery Rental	Acre	0	\$0.00	\$0.00	_____
Custom Work	Acre	0	\$0.00	\$0.00	_____
Drying (Fuel/Electric)	Bu	65	\$0.00	\$0.00	_____
Irrigation Energy Cost (Diesel)	Ac-In	4.5	\$4.53	\$20.39	_____
Irrigation System R&M & Labor	Ac-In	4.5	\$2.22	\$9.99	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Cash Rent ¹⁰	Acre	1	\$165.00	\$165.00	_____
Crop Insurance ¹¹	Acre	1	\$7.79	\$7.79	_____
Operating Interest ¹²	%	\$445.42	6.00%	\$13.36	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
			Total Variable Expenses	\$458.78	_____
			Return Above Variable Expenses	\$148.97	_____
Fixed Expenses					
Machinery ⁹					
Capital Recovery (Table 3)	Acre	1	\$50.77	\$50.77	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) ¹³	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 ¹⁴	Acre	2	\$15.00	\$30.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			Total Fixed Expenses	\$167.01	_____
			Return Above All Specified Expenses	-\$18.04	_____

Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
45	\$10.20	\$13.91
50	\$9.18	\$12.52
55	\$8.34	\$11.38
60	\$7.65	\$10.43
65	\$7.06	\$9.63
70	\$6.55	\$8.94
75	\$6.12	\$8.34
80	\$5.73	\$7.82
85	\$5.40	\$7.36

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$7.35	62	85
\$7.85	58	80
\$8.35	55	75
\$8.85	52	71
\$9.35	49	67
\$9.85	47	64
\$10.35	44	60
\$10.85	42	58
\$11.35	40	55

Table 1. Fertilizer & Lime ³

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	0	\$0.44	\$0.00	_____
Phosphorous	P ₂ O ₅	40	\$0.42	\$16.92	_____
Potassium	K ₂ O	80	\$0.32	\$25.40	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$57.32	_____

Table 2. Chemicals ^{4,5,6,7,8}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$4.88	\$4.88	_____
		Valor	oz.	1	2	\$3.76	\$7.52	_____
	Pre-Emerge	Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
		Prefix	qt.	1	1	\$9.27	\$9.27	_____
Post-Emerge		Engenia	oz	1	12	\$0.69	\$8.24	_____
		Flexstar	pt.	1	1	\$3.48	\$3.48	_____
		Surfactant	\$/acre	3	1	\$1.50	\$4.50	_____
		Other				\$0.00	\$0.00	_____
Insecticide/Fungicide		Seed Treatment	acre	1	1	\$10.00	\$10.00	_____
Insecticides	Foliar	Foliar	acre	1	1	\$7.50	\$7.50	_____
Fungicides		Foliar	acre	1	1	\$14.40	\$14.40	_____
Total							\$75.67	_____

Table 3. Machinery ⁹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Pre-Emerge	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Post-Emerge	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Post-Emerge	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fungicide	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Grain Head	30 ft	\$14.84	\$14.64	\$5.50	\$1.79	\$36.77	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$7.09	\$0.38	\$0.30	\$0.66	\$8.44	_____
Total				\$50.77	\$25.54	\$11.99	\$6.75	\$95.04	_____

FOOTNOTES

- 1) Soybean price was estimated using weighted average futures prices from November 2019 to August 2020, adjusted by average monthly basis in Tennessee. Soybean yield is the predicted 2019 linear trend line yield for soybeans in Tennessee, using state average yields from 1980-2018.
- 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. Application costs included.
- 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 during the growing season 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 2019 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 2018 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.

2019 Wheat/Soybean Double Cropped, Non-Irrigated Budget

	Unit	Quantity	Price	Total	Your Farm
Revenue					
			Gross Revenue (\$/Acre)		
Soybeans ¹	Bu	40	\$9.35	\$374.00	_____
Wheat ²	Bu	70	\$5.20	\$364.00	_____
		Total Revenue		\$738.00	_____
Variable Expenses					
Seed, Soybeans ³	Thous.	140	\$0.40	\$56.00	_____
Seed, Wheat ³	Bu	2.5	\$16.50	\$41.25	_____
Fertilizer & Lime (Table 1)	Acre	1	\$105.95	\$105.95	_____
Chemical (Table 2) ^{4,5,6,7,8,9,10,11}	Acre	1	\$113.61	\$113.61	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) ¹²	Acre	1	\$59.38	\$59.38	_____
Fuel, Oil & Filter (Table 3) ¹²	Acre	1	\$27.10	\$27.10	_____
Operator Labor (Table 3) ¹²	Acre	1	\$15.61	\$15.61	_____
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 ¹³	Acre	1	\$95.00	\$95.00	_____
Crop Insurance ¹⁴	Acre	1	\$13.70	\$13.70	_____
Operating Interest ¹⁵	%	\$536.59	6.00%	\$16.10	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
		Total Variable Expenses		\$552.69	_____
		Return Above Variable Expenses		\$185.31	_____
Fixed Expenses					
Machinery ¹²					_____
Capital Recovery (Table 3)	Acre	1	\$98.69	\$98.69	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
		Total Fixed Expenses		\$113.69	_____
		Return Above All Specified Expenses		\$71.61	_____

Breakeven Price for Selected Soybean Yield ¹⁶

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
20	\$13.82	\$16.66
25	\$11.05	\$13.33
30	\$9.21	\$11.11
35	\$7.90	\$9.52
40	\$6.91	\$8.33
45	\$6.14	\$7.40
50	\$5.53	\$6.66
55	\$5.02	\$6.06
60	\$4.61	\$5.55

Breakeven Yield for Selected Soybean Price ¹⁶

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$7.35	38	45
\$7.85	35	42
\$8.35	33	40
\$8.85	31	38
\$9.35	30	36
\$9.85	28	34
\$10.35	27	32
\$10.85	25	31
\$11.35	24	29

Breakeven Price for Selected Wheat Yield ¹⁶

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
50	\$5.53	\$6.66
55	\$5.02	\$6.06
60	\$4.61	\$5.55
65	\$4.25	\$5.13
70	\$3.95	\$4.76
75	\$3.68	\$4.44
80	\$3.45	\$4.16
85	\$3.25	\$3.92
90	\$3.07	\$3.70

Breakeven Yield for Selected Wheat Price ¹⁶

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$3.20	86	104
\$3.70	75	90
\$4.20	66	79
\$4.70	59	71
\$5.20	53	64
\$5.70	48	58
\$6.20	45	54
\$6.70	41	50
\$7.20	38	46

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting/Fall	30	\$0.44	\$13.27	_____
	UAN 32 - Post-Emerge/Spring	70	\$0.48	\$33.25	_____
Phosphorous	P ₂ O ₅	60	\$0.42	\$25.38	_____
	Potassium	60	\$0.32	\$19.05	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Total				\$105.95	_____

Table 2. Chemicals ^{4,5,6,7,8,9,10,11}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides- Wheat	Burndown	Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
		Roundup	qt.	1	1	\$4.88	\$4.88	_____
	Post-Emerge	Harmony	oz.	1	0.75	\$9.51	\$7.13	_____
		Metribuzin	oz.	1	3	\$0.98	\$2.95	_____
Herbicides- Soybeans	Pre-Emerge	Surfactant	\$/acre	2	1	\$1.50	\$3.00	_____
		Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
	Post-Emerge	Prefix	qt.	1	1	\$9.27	\$9.27	_____
		Engenia	oz	1	12	\$0.69	\$8.24	_____
Seed Treatment		Flexstar	pt.	1	1	\$3.48	\$3.48	_____
		Surfactant	\$/acre	2	1	\$1.50	\$3.00	_____
		Wheat-seed treatment	acre	1	1	\$12.00	\$12.00	_____
		Soybeans-seed treatment	acre	1	1	\$10.00	\$10.00	_____
Insecticides		Wheat-Foliar	acre	1	1	\$3.50	\$3.50	_____
		Soybeans-Foliar	acre	1	1	\$7.50	\$7.50	_____
Fungicides		Soybeans-Foliar	acre	1	1	\$14.40	\$14.40	_____
		Wheat-foliar	acre	1	1	\$12.50	\$12.50	_____
Total							\$113.61	_____

Table 3. Machinery ¹²

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.18	\$3.20	\$1.99	\$1.36	\$10.72	_____
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.80	\$10.63	\$3.15	\$2.15	\$20.73	_____
Fertilize	SP Boom Sprayer		900#	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fungicide	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Insect Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Grain Head	30 ft	\$14.84	\$14.64	\$5.50	\$1.79	\$36.77	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$6.17	\$0.43	\$0.35	\$0.77	\$7.72	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fungicide	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Grain Head	30 ft	\$14.84	\$14.64	\$5.50	\$1.79	\$36.77	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$5.91	\$0.32	\$0.25	\$0.55	\$7.03	_____
Total				\$98.69	\$59.38	\$27.10	\$15.61	\$200.78	_____

FOOTNOTES

- 1) Soybean price was estimated using weighted average futures prices from November 2019 to August 2020, adjusted by average monthly basis in Tennessee. Soybean yield is the predicted 2019 linear trend line yield for soybeans in Tennessee, using state average yields from 1980-2018.
- 2) Wheat price was estimated using weighted average futures prices from July 2019 to May 2020, adjusted by average monthly basis in Tennessee. Wheat yield is the predicted 2019 linear trend line yield for wheat in Tennessee, using state average yields from 1980-2018. 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 during the growing season 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 2018 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 \$5.20/bu. When estimating wheat breakeven, soybean yield and price are held constant at 40 bu/acre and \$9.35/bu.

2019 Canola/Soybean Double Cropped, Non-Irrigated Budget

	Unit	Quantity	Price	Total	Your Farm
Revenue					
			Gross Revenue (\$/Acre)		
Soybeans ¹	Bu	40	\$9.35	\$374.00	
Canola ²	Bu	50	\$8.00	\$400.00	
			Total Revenue	\$774.00	
Variable Expenses					
Seed, Soybeans ³	Thous.	140	\$0.40	\$56.00	
Seed, Canola ³	Thous.	220	\$0.15	\$34.00	
Fertilizer & Lime (Table 1)	Acre	1	\$177.77	\$177.77	
Chemical (Table 2) ^{4,5,6,7,8,9,10,11}	Acre	1	\$108.17	\$108.17	
Crop Scout	Acre	1	\$9.00	\$9.00	
Repair & Maintenance (Table 3) ¹²	Acre	1	\$59.27	\$59.27	
Fuel, Oil & Filter (Table 3) ¹²	Acre	1	\$27.00	\$27.00	
Operator Labor (Table 3) ¹²	Acre	1	\$15.39	\$15.39	
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 ¹³	Acre	1	\$95.00	\$95.00	
Crop Insurance ¹⁴	Acre	1	\$13.70	\$13.70	
Operating Interest ¹⁵	%	\$595.30	6.00%	\$17.86	
Other Variable Costs	Acre	1	\$0.00	\$0.00	
			Total Variable Expenses	\$613.16	
			Return Above Variable Expenses	\$160.84	
Fixed Expenses					
Machinery ¹²					
Capital Recovery (Table 3)	Acre	1	\$98.43	\$98.43	
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	
Property Taxes	Acre	1	\$0.00	\$0.00	
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	
Management Labor ¹⁶	Acre	2	\$15.00	\$30.00	
Other Fixed Costs	Acre	1	\$0.00	\$0.00	
			Total Fixed Expenses	\$128.43	
			Return Above All Specified Expenses	\$32.41	

Breakeven Price for Selected Soybean Yield ¹⁷

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
20	\$15.33	\$18.54
25	\$12.26	\$14.83
30	\$10.22	\$12.36
35	\$8.76	\$10.59
40	\$7.66	\$9.27
45	\$6.81	\$8.24
50	\$6.13	\$7.42
55	\$5.57	\$6.74
60	\$5.11	\$6.18

Breakeven Yield for Selected Soybean Price ¹⁷

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$7.35	42	50
\$7.85	39	47
\$8.35	37	44
\$8.85	35	42
\$9.35	33	40
\$9.85	31	38
\$10.35	30	36
\$10.85	28	34
\$11.35	27	33

Breakeven Price for Selected Canola Yield ¹⁷

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
30	\$10.22	\$12.36
35	\$8.76	\$10.59
40	\$7.66	\$9.27
45	\$6.81	\$8.24
50	\$6.13	\$7.42
55	\$5.57	\$6.74
60	\$5.11	\$6.18
65	\$4.72	\$5.70
70	\$4.38	\$5.30

Breakeven Yield for Selected Canola Price ¹⁷

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$6.00	51	62
\$6.50	47	57
\$7.00	44	53
\$7.50	41	49
\$8.00	38	46
\$8.50	36	44
\$9.00	34	41
\$9.50	32	39
\$10.00	31	37

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea - Planting/Fall	80	\$0.44	\$35.39	_____
	UAN 32 - Post-Emerge/Spring	80	\$0.48	\$38.00	_____
Phosphorous	P ₂ O ₅	80	\$0.42	\$33.84	_____
Potassium	K ₂ O	130	\$0.32	\$41.28	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Other	Sulfur	20	\$0.69	\$13.80	_____
Other	Boron	1	\$0.93	\$0.47	_____
Total				\$177.77	_____

Table 2. Chemicals ^{4,5,6,7,8,9,10,11}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides-Canola	Pre-Plant	Treflan	pt.	1	2	\$3.38	\$6.75	_____
	Post-Plant	Roundup	qt.	1	1.25	\$4.88	\$6.10	_____
	Desiccant	Command	pt.	1	0.25	\$14.45	\$3.61	_____
		Reglone	pt.	1	3	\$0.48	\$1.44	_____
Herbicides-Soybeans	Pre-Emerge	Gramoxone SL	oz.	1	40	\$0.00	\$0.00	_____
		Prefix	qt.	1	1	\$0.15	\$5.88	_____
	Post-Emerge	Engenia	oz	1	12	\$9.27	\$9.27	_____
		Flexstar	pt.	1	1	\$0.69	\$8.24	_____
		Surfactant	\$/acre	3	1	\$3.48	\$3.48	_____
Seed Treatment		Soybeans-seed treatment	acre	1	1	\$1.50	\$4.50	_____
Insecticides		Canola	acre	1	1	\$0.00	\$0.00	_____
		Soybeans-Foliar	acre	1	1	\$10.00	\$10.00	_____
Fungicides		Soybeans-Foliar	acre	1	1	\$7.00	\$7.00	_____
		Canola	acre	1	1	\$7.50	\$7.50	_____
			acre	1	1	\$14.40	\$14.40	_____
Total				1	1	\$20.00	\$20.00	_____
						\$108.17		_____

Table 3. Machinery ¹²

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.18	\$3.20	\$1.99	\$1.36	\$10.72	_____
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.80	\$10.63	\$3.15	\$2.15	\$20.73	_____
Fertilize	SP Boom Sprayer		900#	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fungicide	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Insect Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Grain Head	30 ft	\$14.84	\$5.50	\$1.79	\$0.75	\$36.77	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$5.91	\$0.32	\$0.25	\$0.23	\$7.03	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fungicide	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Grain Head	30 ft	\$14.84	\$14.64	\$5.50	\$1.79	\$36.77	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$5.91	\$0.32	\$0.25	\$0.55	\$7.03	_____
Total				\$98.43	\$59.27	\$27.00	\$15.39	\$200.09	_____

FOOTNOTES

- 1) Soybean price was estimated using weighted average futures prices from November 2018 to August 2019, adjusted by average monthly basis in Tennessee. Soybean yield is the predicted 2019 linear trend line yield for soybeans in Tennessee, using state average yields from 1980-2018.
- 2) 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.
- 3) 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. For canola, check with market contractor to determine if additional cost savings are available for products and services.
- 4) 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.
- 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 during the growing season 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 2019 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) Additional costs may be incurred due to specialized equipment required in the handling, hauling and storage of canola. 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 2018 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) Management labor is anticipated to be double what it is for conventional Tennessee row crops.
- 17) Estimated breakeven yields and prices assume that half of variable and total specified costs are incurred for each commodity. When estimating soybean breakeven, canola yield/price are held constant at 40 bu/acre and \$8.00/bu. When estimating canola breakeven, soybean yield and price are held constant at 40 bu/acre and \$9.35/bu.

2019 Cotton, No-Till, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
			Gross Revenue (\$/Acre)		
Cotton ^{1,2,3}	lb	1,000	\$0.76	\$760.00	_____
			Total Revenue	\$760.00	_____
Variable Expenses					
Seed ⁴	Thous.	45	\$2.24	\$100.58	_____
Wrap ⁵	lb	1,000	\$0.02	\$20.00	_____
Fertilizer & Lime (Table 1) ⁶	Acre	1	\$110.14	\$110.14	_____
Chemical (Table 2) ^{7,8}	Acre	1	\$137.70	\$137.70	_____
Crop Scout	Acre	1	\$10.00	\$10.00	_____
Repair & Maintenance (Table 3) ⁹	Acre	1	\$38.51	\$38.51	_____
Fuel, Oil & Filter (Table 3) ⁹	Acre	1	\$20.70	\$20.70	_____
Operator Labor (Table 3) ⁹	Acre	1	\$10.26	\$10.26	_____
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 ¹⁰	Acre	1	\$95.00	\$95.00	_____
Crop Insurance ¹¹	Acre	1	\$9.23	\$9.23	_____
Operating Interest ¹²	%	\$552.13	6.00%	\$16.56	_____
Other Variable Costs	Acre	0	\$0.00	\$0.00	_____
			Total Variable Expenses	\$568.69	_____
			Return Above Variable Expenses	\$191.31	_____
Fixed Expenses					
Machinery ⁹					
Capital Recovery (Table 3)	Acre	1	\$95.34	\$95.34	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			Total Fixed Expenses	\$110.34	_____
			Return Above All Specified Expenses	\$80.96	_____

Breakeven Price for Selected Yield

<u>Yield (lb)</u>	<u>Variable Cost (\$/lb)</u>	<u>Total Specified Cost (\$/lb)</u>
750	\$0.76	\$0.91
800	\$0.71	\$0.85
850	\$0.67	\$0.80
900	\$0.63	\$0.75
950	\$0.60	\$0.71
1,000	\$0.57	\$0.68
1,050	\$0.54	\$0.65
1,100	\$0.52	\$0.62
1,150	\$0.49	\$0.59
1,200	\$0.47	\$0.57
1,250	\$0.45	\$0.54

Breakeven Yield for Selected Price

<u>Price (\$/lb)</u>	<u>Variable Cost (lb)</u>	<u>Total Specified Cost (lb)</u>
\$0.51	1,115	1,331
\$0.56	1,016	1,213
\$0.61	932	1,113
\$0.66	862	1,029
\$0.71	801	956
\$0.76	748	893
\$0.81	702	838
\$0.86	661	790
\$0.91	625	746
\$0.96	592	707
\$1.01	563	672

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	80	\$0.44	\$35.39	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$23.81	_____
Potassium	K ₂ O	90	\$0.32	\$28.58	_____
Sulfur		10	\$0.69	\$6.90	_____
Boron		0.5	\$0.93	\$0.47	_____
Lime ⁶	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$110.14	_____

Table 2. Chemicals^{7,8}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$4.88	\$4.88	_____
		Engenia	oz.	1	12	\$0.69	\$8.24	_____
	Pre-Emerge	Cotoran	pt.	1	2	\$5.60	\$11.20	_____
		Caparol	pt.	1	2	\$3.90	\$7.80	_____
		Gramaxone SL	oz.	1	32	\$0.15	\$4.70	_____
Post-Emerge		Liberty	oz.	1	26	\$0.47	\$12.33	_____
		Roundup	qt.	1	1	\$4.88	\$4.88	_____
	Sequence		pt.	1	2.5	\$4.50	\$11.25	_____
		Surfactant	\$/acre	3	1	\$1.50	\$0.00	_____
	Other					\$0.00	\$0.00	_____
Growth Regulator		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
Defoliant		Defoliant	oz.	1	12	\$0.15	\$1.80	_____
Boll Opener		Ethephon	oz.	1	32	\$0.16	\$5.12	_____
Insecticides		Seed Treatment	acre	1	1	\$10.00	\$10.00	_____
		In-Season	acre	1	1	\$45.00	\$45.00	_____
Fungicides		Seed Treatment	acre	1	1	\$8.50	\$8.50	_____
Total							\$137.70	_____

Table 3. Machinery⁹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$3.17	\$5.26	\$2.63	\$1.79	\$12.84	_____
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Plant	Tractor, 215 hp	Planter	12-row	\$5.66	\$5.66	\$2.26	\$1.54	\$15.12	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer		\$5.43	\$1.28	\$0.63	\$0.43	\$7.77	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Picker/Module Builder (Round)		6-row	\$48.32	\$21.34	\$9.17	\$2.28	\$81.10	_____
Harvest	Tractor, 215 hp	Module Handler		\$0.79	\$0.00	\$1.67	\$1.14	\$3.60	_____
Other				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	_____
Total				\$95.34	\$38.51	\$20.70	\$10.26	\$164.81	_____

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. Cotton yield is the predicted 2019 linear trend line yield for cotton in Tennessee, using state average yields from 1980-2018.
- 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) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application.
- 7) 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.
- 8) 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.
- 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 2018 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 cotton 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.

2019 Cotton, Conventional Tillage, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue			<u>Gross Revenue (\$/Acre)</u>		
Cotton ^{1,2,3}	lb	1,000	\$0.76	\$760.00	_____
			Total Revenue	\$760.00	_____
Variable Expenses					
Seed ⁴	Thous.	45	\$2.24	\$100.58	_____
Wrap ⁵	lb	1,000	\$0.02	\$20.00	_____
Fertilizer & Lime (Table 1) ⁶	Acre	1	\$110.14	\$110.14	_____
Chemical (Table 2) ^{7,8}	Acre	1	\$129.08	\$129.08	_____
Crop Scout	Acre	1	\$10.00	\$10.00	_____
Repair & Maintenance (Table 3) ⁹	Acre	1	\$47.89	\$47.89	_____
Fuel, Oil & Filter (Table 3) ⁹	Acre	1	\$27.60	\$27.60	_____
Operator Labor (Table 3) ⁹	Acre	1	\$14.95	\$14.95	_____
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 ¹⁰	Acre	1	\$95.00	\$95.00	_____
Crop Insurance ¹¹	Acre	1	\$9.23	\$9.23	_____
Operating Interest ¹²	%	\$564.48	6.00%	\$16.93	_____
Other Variable Costs	Acre	0	\$0.00	\$0.00	_____
			Total Variable Expenses	\$581.41	_____
			Return Above Variable Expenses	\$178.59	_____
Fixed Expenses					
Machinery ⁹					
Capital Recovery (Table 3)	Acre	1	\$100.80	\$100.80	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
			Total Fixed Expenses	\$115.80	_____
			Return Above All Specified Expenses	\$62.79	_____

Breakeven Price for Selected Yield

Yield (lb)	Variable Cost (\$/lb)	Total Specified Cost (\$/lb)
750	\$0.78	\$0.93
800	\$0.73	\$0.87
850	\$0.68	\$0.82
900	\$0.65	\$0.77
950	\$0.61	\$0.73
1,000	\$0.58	\$0.70
1,050	\$0.55	\$0.66
1,100	\$0.53	\$0.63
1,150	\$0.51	\$0.61
1,200	\$0.48	\$0.58
1,250	\$0.47	\$0.56

Breakeven Yield for Selected Price

Price (\$/lb)	Variable Cost (lb)	Total Specified Cost (lb)
\$0.51	1,140	1,367
\$0.56	1,038	1,245
\$0.61	953	1,143
\$0.66	881	1,056
\$0.71	819	982
\$0.76	765	917
\$0.81	718	861
\$0.86	676	811
\$0.91	639	766
\$0.96	606	726
\$1.01	576	690

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	80	\$0.44	\$35.39	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$23.81	_____
Potassium	K ₂ O	90	\$0.32	\$28.58	_____
Sulfur		10	\$0.69	\$6.90	_____
Boron		0.5	\$0.93	\$0.47	_____
Lime ⁶	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$110.14	_____

Table 2. Chemicals ^{7,8}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Pre-Emerge	Cotoran	pt.	1	2	\$5.60	\$11.20	_____
		Caparol	pt.	1	2	\$3.90	\$7.80	_____
		Gramaxone SL	oz.	1	32	\$0.15	\$4.70	_____
	Post-Emerge	Liberty	oz.	1	26	\$0.47	\$12.33	_____
		Roundup	qt.	1	1	\$4.88	\$4.88	_____
		Sequence	pt.	1	2.5	\$4.50	\$11.25	_____
Growth Regulator	Defoliant	Surfactant	\$/acre	3	1	\$1.50	\$4.50	_____
		Other				\$0.00	\$0.00	_____
		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
	Boll Opener	Ethephon	oz.	1	12	\$0.15	\$1.80	_____
		Seed Treatment	oz.	1	32	\$0.16	\$5.12	_____
		Insecticides	acre	1	1	\$10.00	\$10.00	_____
	Fungicides	In-Season	acre	1	1	\$45.00	\$45.00	_____
		Seed Treatment	acre	1	1	\$8.50	\$8.50	_____

	Total						\$129.08	_____

Table 3. Machinery ⁹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$3.17	\$5.26	\$2.63	\$1.79	\$12.84	_____
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.13	\$2.86	\$2.47	\$1.68	\$9.15	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.18	\$3.20	\$1.99	\$1.36	\$10.72	_____
Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$2.91	\$3.61	\$2.76	\$1.88	\$11.16	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Plant	Tractor, 215 hp	Planter	12-row	\$5.66	\$5.66	\$2.26	\$1.54	\$15.12	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer		\$5.43	\$1.28	\$0.63	\$0.43	\$7.77	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Picker/Module Builder (Round)		6-row	\$48.32	\$21.34	\$9.17	\$2.28	\$81.10	_____
Harvest	Tractor, 215 hp	Module Handler		\$0.79	\$0.00	\$1.67	\$1.14	\$3.60	_____
Other				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	_____
Total				\$100.80	\$47.89	\$27.60	\$14.95	\$191.23	_____

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. Cotton yield is the predicted 2019 linear trend line yield for cotton in Tennessee using, state average yields from 1980-2018.
- 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) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application.
- 7) 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.
- 8) 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.
- 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 2018 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 cotton 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.

2019 Cotton, No-Till, Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
			Gross Revenue (\$/Acre)		
Cotton ^{1,2,3}	lb	1,150	\$0.76	\$874.00	
			Total Revenue	\$874.00	
Variable Expenses					
Seed ⁴	Thous.	45	\$2.24	\$100.58	
Wrap ⁵	lb	1,150	\$0.02	\$23.00	
Fertilizer & Lime (Table 1) ⁶	Acre	1	\$114.57	\$114.57	
Chemical (Table 2) ^{7,8}	Acre	1	\$142.20	\$142.20	
Crop Scout	Acre	1	\$10.00	\$10.00	
Repair & Maintenance (Table 3) ⁹	Acre	1	\$38.51	\$38.51	
Fuel, Oil & Filter (Table 3) ⁹	Acre	1	\$20.70	\$20.70	
Operator Labor (Table 3) ⁹	Acre	1	\$10.26	\$10.26	
Machinery Rental	Acre	1	\$0.00	\$0.00	
Custom Work	Acre	1	\$0.00	\$0.00	
Irrigation Energy Cost	Ac-In	6	\$4.53	\$27.18	
Irrigation System R&M	Ac-In	6	\$2.22	\$13.32	
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	
Cash Rent ¹⁰	Acre	1	\$165.00	\$165.00	
Crop Insurance ¹¹	Acre	1	\$9.23	\$9.23	
Operating Interest ¹²	%	\$674.55	6.00%	\$20.24	
Other Variable Costs	Acre	0	\$0.00	\$0.00	
			Total Variable Expenses	\$694.79	
			Return Above Variable Expenses	\$179.21	
Fixed Expenses					
Machinery ⁹					
Capital Recovery (Table 3)	Acre	1	\$95.34	\$95.34	
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	
Capital Recovery (Irrigation Equipment) ¹³	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 ¹⁴	Acre	2	\$15.00	\$30.00	
Other Fixed Costs	Acre	1	\$0.00	\$0.00	
			Total Fixed Expenses	\$211.58	
			Return Above All Specified Expenses	-\$32.37	

Breakeven Price for Selected Yield

<u>Yield (lb)</u>	<u>Variable Cost (\$/lb)</u>	<u>Total Specified Cost (\$/lb)</u>
900	\$0.77	\$1.01
950	\$0.73	\$0.95
1,000	\$0.69	\$0.91
1,050	\$0.66	\$0.86
1,100	\$0.63	\$0.82
1,150	\$0.60	\$0.79
1,200	\$0.58	\$0.76
1,250	\$0.56	\$0.73
1,300	\$0.53	\$0.70
1,350	\$0.51	\$0.67
1,400	\$0.50	\$0.65

Breakeven Yield for Selected Price

<u>Price (\$/lb)</u>	<u>Variable Cost (lb)</u>	<u>Total Specified Cost (lb)</u>
\$0.51	1,362	1,777
\$0.56	1,241	1,619
\$0.61	1,139	1,486
\$0.66	1,053	1,373
\$0.71	979	1,277
\$0.76	914	1,193
\$0.81	858	1,119
\$0.86	808	1,054
\$0.91	764	996
\$0.96	724	944
\$1.01	688	897

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.44	\$39.82	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$23.81	_____
Potassium	K ₂ O	90	\$0.32	\$28.58	_____
Sulfur		10	\$0.69	\$6.90	_____
Boron		0.5	\$0.93	\$0.47	_____
Lime ⁶	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$114.57	_____

Table 2. Chemicals^{7,8}

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$4.88	\$4.88	_____
		Engenia	oz.	1	12	\$0.69	\$8.24	_____
	Pre-Emerge	Cotoran	pt.	1	2	\$5.60	\$11.20	_____
		Caparol	pt.	1	2	\$3.90	\$7.80	_____
		Gramaxone SL	oz.	1	32	\$0.15	\$4.70	_____
Post-Emerge		Liberty	oz.	1	26	\$0.47	\$12.33	_____
		Roundup	qt.	1	1	\$4.88	\$4.88	_____
		Sequence	pt.	1	2.5	\$4.50	\$11.25	_____
		Surfactant	\$/acre	3	1	\$1.50	\$4.50	_____
		Other				\$0.00	\$0.00	_____
Growth Regulator		Mepex (Mepiquat Chloride)	pt.	1	2	\$1.00	\$2.00	_____
Defoliant			oz.	1	12	\$0.15	\$1.80	_____
Boll Opener		Ethephon	oz.	1	32	\$0.16	\$5.12	_____
Insecticides		Seed Treatment	acre	1	1	\$10.00	\$10.00	_____
		In-Season	acre	1	1	\$45.00	\$45.00	_____
Fungicides		Seed Treatment	acre	1	1	\$8.50	\$8.50	_____
Total							\$142.20	_____

Table 3. Machinery⁹

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$3.17	\$5.26	\$2.63	\$1.79	\$12.84	_____
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Plant	Tractor, 215 hp	Planter	12-row	\$5.66	\$5.66	\$2.26	\$1.54	\$15.12	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	Tractor, 215 hp	Hooded Sprayer		\$5.43	\$1.28	\$0.63	\$0.43	\$7.77	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Picker/Module Builder (Round)		6-row	\$48.32	\$21.34	\$9.17	\$2.28	\$81.10	_____
Harvest	Tractor, 215 hp	Module Handler		\$0.79	\$0.00	\$1.67	\$1.14	\$3.60	_____
Other				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	_____
Total				\$95.34	\$38.51	\$20.70	\$10.26	\$164.81	_____

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. Cotton yield is the predicted 2019 linear trend line yield for cotton in Tennessee, using state average yields from 1980-2018.
- 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) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application.
- 7) 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.
- 8) 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.
- 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 2018 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 cotton 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.

2019 Grain Sorghum, No-Till, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue				Gross Revenue (\$/Acre)	
Grain Sorghum ¹	Bu	90	\$3.90	\$351.00	_____
				Total Revenue \$351.00	_____
Variable Expenses					
Seed ²	Thous.	85	\$0.20	\$16.76	_____
Fertilizer & Lime (Table 1) ³	Acre	1	\$97.68	\$97.68	_____
Chemical (Table 2) ⁴	Acre	1	\$85.84	\$85.84	_____
Crop Scout	Acre	1	\$9.00	\$9.00	_____
Repair & Maintenance (Table 3) ⁵	Acre	1	\$25.71	\$25.71	_____
Fuel, Oil & Filter (Table 3) ⁵	Acre	1	\$12.13	\$12.13	_____
Operator Labor (Table 3) ⁵	Acre	1	\$7.08	\$7.08	_____
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 ⁶	Acre	1	\$95.00	\$95.00	_____
Crop Insurance ⁷	Acre	1	\$3.92	\$3.92	_____
Operating Interest ⁸	%	\$353.11	6.00%	\$10.59	_____
Other Variable Costs	Acre	1	\$0.00	\$0.00	_____
				Total Variable Expenses \$363.70	_____
				Return Above Variable Expenses -\$12.70	_____
Fixed Expenses					
Machinery ⁵					
Capital Recovery (Table 3)	Acre	1	\$51.62	\$51.62	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor	Acre	1	\$15.00	\$15.00	_____
Other Fixed Costs	Acre	1	\$0.00	\$0.00	_____
				Total Fixed Expenses \$66.62	_____
				Return Above All Specified Expenses -\$79.32	_____

Breakeven Price for Selected Yield

<u>Yield (bu)</u>	<u>Variable Cost (\$/bu)</u>	<u>Total Specified Cost (\$/bu)</u>
70	\$5.20	\$6.15
75	\$4.85	\$5.74
80	\$4.55	\$5.38
85	\$4.28	\$5.06
90	\$4.04	\$4.78
95	\$3.83	\$4.53
100	\$3.64	\$4.30
105	\$3.46	\$4.10
110	\$3.31	\$3.91

Breakeven Yield for Selected Price

<u>Price (\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost (bu)</u>
\$3.70	98	116
\$3.75	97	115
\$3.80	96	113
\$3.85	94	112
\$3.90	93	110
\$3.95	92	109
\$4.00	91	108
\$4.05	90	106
\$4.10	89	105

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.44	\$39.82	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$23.81	_____
Potassium	K ₂ O	60	\$0.32	\$19.05	_____
Lime ³	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$97.68	_____

Table 2. Chemicals⁴

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Gramoxone SL	oz.	1	40	\$0.15	\$5.88	_____
		Surfactant	\$/acre	1	3	\$1.50	\$4.50	_____
	Pre-Emerge	Bicep II Magnum	qt.	1	2.1	\$12.62	\$26.50	_____
		Surfactant	pt.	3	1	\$1.50	\$4.50	_____
Insecticides	Post-Emerge	Atrazine	qt.	1	2	\$2.98	\$5.96	_____
		Crop Oil	pt.	1	2	\$3.50	\$7.00	_____
		Seed Treatment	acre	1	1	\$8.50	\$8.50	_____
	Foliar	Foliar	acre	1	1	\$11.00	\$11.00	_____
		Foliar (Aphids)	acre	1	1	\$12.00	\$12.00	_____
							\$85.84	_____

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Table 3. Machinery⁵

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Insecticide	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Insecticide	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Grain Head	30'	\$14.84	\$14.64	\$5.50	\$1.79	\$36.77	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$7.94	\$0.56	\$0.44	\$0.99	\$9.93	_____
Total				\$51.62	\$25.71	\$12.13	\$7.08	\$96.53	_____

FOOTNOTES

- 1) Sorghum price is estimated at 10 cents less than 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) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application.
- 4) An insecticide application for sugarcane aphids in addition to an insecticide application for other pests is assumed. Alternative weed control options are available in the University of Tennessee 2019 Weed Control Manual for Tennessee.
- 5) 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.
- 6) Cash rental rates are the 2018 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.
- 7) 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.
- 8) Operating interest is assumed to be charged on half of all variable expenses.

2019 Grain Sorghum, Conventional Tillage, Non-Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue					
			Gross Revenue (\$/Acre)		
Grain Sorghum ¹	Bu	90	\$3.90	\$351.00	
			Total Revenue	\$351.00	
Variable Expenses					
Seed ²	Thous.	85	\$0.20	\$16.76	
Fertilizer & Lime (Table 1) ³	Acre	1	\$97.68	\$97.68	
Chemical (Table 2) ⁴	Acre	1	\$75.46	\$75.46	
Crop Scout	Acre	1	\$9.00	\$9.00	
Repair & Maintenance (Table 3) ⁵	Acre	1	\$34.24	\$34.24	
Fuel, Oil & Filter (Table 3) ⁵	Acre	1	\$18.35	\$18.35	
Operator Labor (Table 3) ⁵	Acre	1	\$11.30	\$11.30	
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 ⁶	Acre	1	\$95.00	\$95.00	
Crop Insurance ⁷	Acre	1	\$3.92	\$3.92	
Operating Interest ⁸	%	\$361.71	6.00%	\$10.85	
Other Variable Costs	Acre	1	\$0.00	\$0.00	
			Total Variable Expenses	\$372.56	
			Return Above Variable Expenses	-\$21.56	
Fixed Expenses					
Machinery ⁵					
Capital Recovery (Table 3)	Acre	1	\$56.84	\$56.84	
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	
Property Taxes	Acre	1	\$0.00	\$0.00	
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	
Management Labor	Acre	1	\$15.00	\$15.00	
Other Fixed Costs	Acre	1	\$0.00	\$0.00	
			Total Fixed Expenses	\$71.84	
			Return Above All Specified Expenses	-\$93.40	

Breakeven Price for Selected Yield

<u>Yield (bu)</u>	<u>Variable Cost (\$/bu)</u>	<u>Total Specified Cost (\$/bu)</u>
70	\$5.32	\$6.35
75	\$4.97	\$5.93
80	\$4.66	\$5.56
85	\$4.38	\$5.23
90	\$4.14	\$4.94
95	\$3.92	\$4.68
100	\$3.73	\$4.44
105	\$3.55	\$4.23
110	\$3.39	\$4.04

Breakeven Yield for Selected Price

<u>Price (\$/bu)</u>	<u>Variable Cost (bu)</u>	<u>Total Specified Cost (bu)</u>
\$3.70	101	120
\$3.75	99	119
\$3.80	98	117
\$3.85	97	115
\$3.90	96	114
\$3.95	94	113
\$4.00	93	111
\$4.05	92	110
\$4.10	91	108

Table 1. Fertilizer & Lime

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	90	\$0.44	\$39.82	_____
Phosphorous	P ₂ O ₅	60	\$0.40	\$23.81	_____
Potassium	K ₂ O	60	\$0.32	\$19.05	_____
Lime ³	Limestone	1,000	\$30.00	\$15.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$97.68	_____

Table 2. Chemicals ⁴

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	\$/acre	1	3	\$1.50	\$4.50	_____
	Post-Emerge	Atrazine	qt.	1	2	\$2.98	\$5.96	_____
Crop Oil		pt.	1	2	\$3.50	\$7.00	_____	
Insecticides		Seed Treatment	acre	1	1	\$8.50	\$8.50	_____
		Foliar	acre	1	1	\$11.00	\$11.00	_____
		Foliar (Aphids)	acre	1	1	\$12.00	\$12.00	_____
Total							\$75.46	_____

Table 3. Machinery ⁵

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.13	\$2.86	\$2.47	\$1.68	\$9.15	_____
Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.18	\$3.20	\$1.99	\$1.36	\$10.72	_____
Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.68	\$2.77	\$2.08	\$1.42	\$8.94	_____
Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Weed Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Insect Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Insect Control	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61	_____
Harvest	Combine	Grain Head	30'	\$14.84	\$14.64	\$5.50	\$1.79	\$36.77	_____
Haul	Tractor, 215 hp	Grain Cart		\$2.18	\$1.23	\$1.10	\$0.75	\$5.27	_____
Haul	Semi Tractor/Trailer			\$7.94	\$0.56	\$0.44	\$0.99	\$9.93	_____
Total				\$56.84	\$34.24	\$18.35	\$11.30	\$120.74	_____

FOOTNOTES

- 1) Sorghum price is estimated at 10 cents less than 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) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application.
- 4) An insecticide application for sugarcane aphids in addition to an insecticide application for other pests is assumed. Alternative weed control options are available in the University of Tennessee 2019 Weed Control Manual for Tennessee.
- 5) 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.
- 6) Cash rental rates are the 2018 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.
- 7) 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.
- 8) Operating interest is assumed to be charged on half of all variable expenses.

Appendix 1: Input Summary Table

<u>Commodity Prices Received by Producers</u>		
Corn	\$4.00	bu
Soybeans	\$9.35	bu
Wheat	\$5.20	bu
Cotton	\$0.76	lb
Grain Sorghum	\$3.90	bu
Canola	\$8.00	bu
<u>Fuel, Interest Rates and Labor Costs</u>		
Diesel Fuel (\$/gal)	\$2.47	\$/gal
Electricity (\$/Kwh)	\$0.059	\$/Kwh
Operator Labor (\$/hr)	\$14.58	\$/hr
Management Labor (\$/hr)	\$15.00	\$/hr
Operating Interest (%)	6.00%	%
Fixed Capital Interest (%)	5.75%	%
<u>Crop Scout, Consulting, Cash Rent and Crop Insurance</u>		
Crop Scout / Consulting Fee	\$9.00	acre
Crop Scouting-Cotton	\$10.00	acre
Drying (\$/bu)	\$0.00	bu
Irrigated Cropland Cash Rent Non-	\$165.00	acre
Irrigated Cropland Cash Rent Crop	\$95.00	acre
Insurance-Corn	\$11.88	acre
Crop Insurance-Soybean	\$7.79	acre
Crop Insurance-Wheat	\$5.91	acre
Crop Insurance-Cotton	\$9.23	acre
Crop Insurance-Grain Sorghum	\$3.92	acre
Crop Insurance-Canola	\$12.44	acre
<u>Property Taxes, Non-Machinery Insurance and Management Labor</u>		
Property Taxes	\$0.00	\$/acre
Insurance (non-machinery and non-crop)	\$0.00	\$/acre
Management Labor	\$15.00	\$/acre
<u>Seed</u>		
Corn	\$2.97	\$/Thousand Seeds
Soybean	\$0.40	\$/Thousand Seeds
Canola	\$0.15	\$/Thousand Seeds
Wheat	\$16.50	\$/bu
Cotton	\$2.24	\$/Thousand Seeds
Grain Sorghum	\$0.20	\$/Thousand Seeds

<u>Fertilizer</u>		
Urea	\$0.44	\$/lb
Ammonium Nitrate	\$0.48	\$/lb
UAN 28%	\$0.48	\$/lb
UAN 32%	\$0.48	\$/lb
P2O5	\$0.42	\$/lb
DAP (18-46-0)	\$0.40	\$/lb
K2O - Potash	\$0.32	\$/lb
Lime	\$30.00	\$/ton
Boron	\$0.93	\$/lb
Elemental Sulfur	\$0.69	\$/lb

<u>Fungicide Treatments</u>		
Tilt	\$5.00	\$/oz.
Soybean-Foliar	\$14.40	\$/acre
Soybean-Seed Treatment	\$3.85	\$/acre
Cotton-Seed Treatment	\$8.50	\$/acre
Wheat-Seed Treatment	\$8.75	\$/acre
Wheat-Foliar	\$12.50	\$/acre
Crop Oil Concentrate	\$3.50	\$/pint
Canola	\$20.00	\$/acre
Corn-Foliar	\$14.00	\$/acre
Surfactant	\$3.80	\$/pint

<u>Insecticide Treatments</u>		
Soybean -Foliar	\$7.50	\$/acre
Grain Sorghum-Foliar	\$11.00	\$/acre
Grain Sorghum-Seed Treatment	\$8.50	\$/acre
Grain Sorghum (Sugarcane Aphid)	\$12.00	\$/acre
Soybean-Seed Treatment	\$10.00	\$/acre
Cotton-Seed Treatment	\$10.00	\$/acre
Cotton-Foliar	\$45.00	\$/acre
Wheat-Seed Treatment	\$12.00	\$/acre
Wheat- Foliar	\$3.50	\$/acre
Maintenance Fee (Boll Weevil Eradication)	\$1.50	\$/acre
Canola	\$7.00	\$/acre

<u>Herbicides</u>		
	<u>Price/Unit</u>	<u>Unit</u>
2, 4-D	\$2.22	\$/pt.
Accent Q	\$32.81	\$/oz.
Aim EQ	\$8.12	\$/oz.
Assure II	\$0.96	\$/oz.
Atrazine	\$2.98	\$/qt.
Authority First	\$5.37	\$/oz.
Authority MTZ	\$1.36	\$/oz.
Authority XL	\$3.89	\$/oz.
Axial XL	\$0.96	\$/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	\$3.90	\$/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	\$5.60	\$/pt.
Cotton Pro	\$4.39	\$/pt.
Crossbow	\$12.25	\$/qt.
Defoliant	\$0.15	\$/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.

(continued)

<u>Herbicides</u>		
	<u>Price/Unit</u>	<u>Unit</u>
Dual Magnum	\$15.97	\$/pt.
Dual II Magnum	\$16.98	\$/pt.
Engenia	\$0.69	\$/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	\$0.15	\$/oz.
Grazon P + D	\$4.31	\$/pt.
Guardsman Max	\$14.80	\$/qt.
Halex GT	\$4.95	\$/pt.
Harmony Extra	\$9.51	\$/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	\$0.47	\$/oz.
Mepex (Mepiquat Chloride)	\$1.00	\$/pt.
Metribuzin	\$0.98	\$/oz.
Outlook	\$1.01	\$/oz.
Permit	\$20.67	\$/oz.
Poast/Poast Plus	\$12.54	\$/pt.
Prefix	\$9.27	\$/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.

(continued)

<u>Herbicides</u>		
	<u>Price/Unit</u>	<u>Unit</u>
Roundup	\$4.88	\$/qt.
Scepter	\$4.80	\$/oz.
Select Max	\$0.83	\$/oz.
Sequence	\$4.50	\$/pt.
Sharpen	\$5.86	\$/oz.
Steadfast Q	\$12.07	\$/oz.
Storm	\$11.18	\$/pt.
Surfactant	\$1.50	\$/acre
Treflan	\$3.38	\$/pt.
Ultra Blazer	\$9.85	\$/pt.
Valor	\$3.76	\$/oz.
Verdict	\$1.75	\$/oz.
Warrant	\$4.43	\$/pt.
Xtendimax with VaporGrip	\$0.43	\$/oz.

Appendix 2: Field Operations Table

Field Operations

Commodity	Process	Power Unit	Implement	Size	Capital Recovery	Repair & Maintenance	Fuel	Labor	Total
All	Chisel	Tractor, 215 hp	Chisel Plow	21'	\$2.13	\$2.86	\$2.47	\$1.68	\$9.15
	Disk	Tractor, 215 hp	Tandem Disk	29'	\$4.18	\$3.20	\$1.99	\$1.36	\$10.72
	Prepare Seedbed	Tractor, 215 hp	Do-All	26.5'	\$2.68	\$2.77	\$2.08	\$1.42	\$8.94
	Prepare Seedbed	Tractor, 215 hp	Cultimulcher	20'	\$2.91	\$3.61	\$2.76	\$1.88	\$11.16
	Plant	Tractor, 215 hp	Planter	16-row	\$5.96	\$5.20	\$1.70	\$1.16	\$14.02
	Plant	Tractor, 215 hp	Grain Drill	20 ft	\$4.80	\$10.63	\$3.15	\$2.15	\$20.73
	Fertilize	Tractor, 215 hp	Fertilizer Spreader	900#	\$1.89	\$2.56	\$1.80	\$1.23	\$7.48
	Spray	SP Boom Sprayer		90'	\$3.76	\$0.30	\$0.32	\$0.23	\$4.61
	Harvest	Combine	Corn Head	8-row	\$20.26	\$20.27	\$7.33	\$2.39	\$50.26
	Harvest	Combine	Grain Head	30 ft	\$14.84	\$14.64	\$5.50	\$1.79	\$36.77
	Haul	Tractor, 215 hp	Grain Cart	800 bu	\$2.18	\$1.23	\$1.10	\$0.75	\$5.27
	Haul (soybean)	Semi Tractor/Trailer			\$5.91	\$0.32	\$0.25	\$0.55	\$7.03
	Haul (corn)	Semi Tractor/Trailer			\$7.68	\$1.25	\$0.79	\$1.76	\$11.48
	Haul (wheat)	Semi Tractor/Trailer			\$6.17	\$0.43	\$0.35	\$0.77	\$7.72
	Chop Stalks	Tractor, 215 hp	Rotary Mower	15'	\$3.17	\$5.26	\$2.63	\$1.79	\$12.84
Cotton	Plant	Tractor, 215 hp	Planter	12-row	\$5.66	\$5.66	\$2.26	\$1.54	\$15.12
	Weed Control	Tractor, 215 hp	Hooded Sprayer	90	\$5.43	\$1.28	\$0.63	\$0.43	\$7.77
	Harvest	SP Cotton Picker		6-row	\$16.36	\$9.87	\$8.25	\$2.68	\$37.16
	Harvest	Tractor, 215 hp	Boll Buggy		\$3.22	\$1.20	\$2.76	\$1.88	\$9.06
	Harvest	Tractor, 215 hp	Module Builder	32'	\$3.62	\$1.34	\$2.46	\$1.68	\$9.10
	Harvest	Picker/Module Builder (Round)		6-row	\$48.32	\$21.34	\$9.17	\$2.28	\$81.10
	Harvest	Tractor, 215 hp	Module Handler		\$0.79	\$0.00	\$1.67	\$1.14	\$3.60

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 No-Till, Non-Irrigated	\$640.00	\$476.65	\$64.26	\$99.09
Corn Conventional Tillage, Non-Irrigated	\$640.00	\$490.15	\$69.48	\$80.37
Corn No-Till, Irrigated	\$900.00	\$658.52	\$170.50	\$70.98
Soybeans No-Till, Non-Irrigated	\$467.50	\$344.27	\$64.59	\$58.64
Soybeans, No-Till, Irrigated	\$607.75	\$458.78	\$167.01	(\$18.04)
Wheat & Soybean Double Cropped	\$738.00	\$552.69	\$113.69	\$71.61
Canola & Soybean Double Cropped	\$774.00	\$613.16	\$128.43	\$32.41
Cotton No-Till, Non-Irrigated	\$760.00	\$568.69	\$110.34	\$80.96
Cotton Conventional Tillage, Non-Irrigated	\$760.00	\$581.41	\$115.80	\$62.79
Cotton, No-Till, Irrigated	\$874.00	\$694.79	\$211.58	(\$32.37)
Grain Sorghum, No-Till, Non-Irrigated	\$351.00	\$363.70	\$66.62	(\$79.32)
Grain Sorghum, Conventional Tillage, Non-Irrigated	\$351.00	\$372.56	\$71.84	(\$93.40)



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Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

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