

2021 Soybean, No-Till, Irrigated Budget

	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Total</u>	<u>Your Farm</u>
Revenue ¹					
	Gross Revenue (\$/Acre)				
Soybeans	Bu/acre	65	\$10.90	\$708.50	_____
Government Payments	\$/acre	1	\$0.00	\$0.00	_____
Other Revenue	\$/acre	1	\$0.00	\$0.00	_____
		Total Revenue	\$708.50		_____
Variable Expenses					
Seed	Thous.	150	\$0.40	\$60.00	_____
Fertilizer & Lime (Table 1) ²	Acre	1	\$56.31	\$56.31	_____
Chemical (Table 2) ³	Acre	1	\$81.15	\$81.15	_____
Crop Scout or Consultant	Acre	1	\$10.00	\$10.00	_____
Repair & Maintenance (Table 3) ⁴	Acre	1	\$29.78	\$29.78	_____
Fuel, Oil & Filter (Table 3) ⁴	Acre	1	\$10.16	\$10.16	_____
Operator Labor (Table 3) ⁴	Acre	1	\$7.20	\$7.20	_____
Crop Insurance ⁵	Acre	1	\$6.77	\$6.77	_____
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 ⁶	Ac-In	4.5	\$4.90	\$22.05	_____
Irrigation System R&M & Labor ⁶	Ac-In	4.5	\$2.25	\$10.13	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Other	Acre	1	\$0.00	\$0.00	_____
Other	Acre	1	\$0.00	\$0.00	_____
Operating Interest ⁷	%	\$293.56	4.65%	\$6.83	_____
		Total Variable Expenses	\$300.38		_____
		Return Above Variable Expenses	\$408.12		_____
Fixed Expenses					
Machinery ⁴					
Capital Recovery (Table 3)	Acre	1	\$84.00	\$84.00	_____
Other Fixed Machinery Costs	Acre	1	\$0.00	\$0.00	_____
Capital Recovery (Irrigation Equipment) ⁶	Acre	1	\$102.00	\$102.00	_____
Other Irrigation Costs	Acre	1	\$0.00	\$0.00	_____
Property Taxes	Acre	1	\$0.00	\$0.00	_____
Cash Rent ⁸	Acre	1	\$185.00	\$185.00	_____
Insurance (Non-Machinery)	Acre	1	\$0.00	\$0.00	_____
Management Labor ⁹	Acre	1	\$18.00	\$36.00	_____
Other	Acre	1	\$0.00	\$0.00	_____
		Total Fixed Expenses	\$407.00		_____
		Total Expenses	\$707.38		_____
		Return Above Specified Expenses	\$1.12		_____

Breakeven Price for Selected Yield

Yield (bu)	Variable Cost (\$/bu)	Total Specified Cost (\$/bu)
45	\$6.68	\$15.72
50	\$6.01	\$14.15
55	\$5.46	\$12.86
60	\$5.01	\$11.79
65	\$4.62	\$10.88
70	\$4.29	\$10.11
75	\$4.01	\$9.43
80	\$3.75	\$8.84
85	\$3.53	\$8.32

Breakeven Yield for Selected Price

Price (\$/bu)	Variable Cost (bu)	Total Specified Cost (bu)
\$8.90	34	79
\$9.40	32	75
\$9.90	30	71
\$10.40	29	68
\$10.90	28	65
\$11.40	26	62
\$11.90	25	59
\$12.40	24	57
\$12.90	23	55

FOOTNOTES

- 1) Soybean price was estimated using weighted average futures prices from November 2021 to August 2022, adjusted by average monthly basis in Tennessee. Soybean yield is the predicted 2021 linear trend line yield for soybeans in Tennessee, adjusted for irrigation practices, using state average yields from 2000-2020.
- 2) Lime is assumed to be applied once every four years at a rate of 2 tons per acre. Includes the cost of application. Fertilizer quantities and prices are shown in elemental lb. Check with farm suppliers for rebates, discounts and incentives for fertilizers, 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.
- 3) Assumes a normal crop rotation with minimal weed infestation. A continuous soybean system may require additional expenses for chemicals and/or land preparation. Weed control chemicals should be selected for specific weed or grass problems that are present. Generic chemicals may be a cost-effective option. Contact your chemical supplier, qualified consultant or weed control specialist. Alternative weed control options are available in the University of Tennessee Weed Control Manual for Tennessee. Follow all labels, state and national regulations when using all chemicals. Check with farm suppliers for rebates, discounts and incentives for seed and chemicals. Substantial cost savings may be available. Seed treatments, such as some nematicide treatments, are optional and costs vary depending on product
- 4) Machinery expenses will vary dramatically by operation, financial resources and land base. The machinery cost estimates provided in Table 3 are provided as an estimate of cost of ownership and operation for specified pieces of machinery that would be available to a "representative" row-crop farm in Tennessee. To estimate machinery costs for a specific set of equipment, interested parties can utilize the Excel version of the budgets and modify the Machinery Assumptions Table.
- 5) 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 soybean in Tennessee for the previous production year, as reported by USDA RMA's Summary of Business Report.
- 6) Center-pivot irrigation costs are estimated using the following assumptions: purchase price and installation cost of \$85,000; useful life of 20 years; and an irrigated acreage of 125 acres. Well depth and energy source will dramatically impact irrigation costs. Irrigation rates should be adjusted to meet commodity- and farm-specific applications.
- 7) Operating interest is assumed to be charged on half of all variable expenses.
- 8) Cash rental rates are the 2020 USDA-NASS reported cash rental rates for irrigated cropland in Tennessee. Substantial differences may exist in cash rental rates reported by NASS and the prevailing rate in your location.
- 9) Management labor for irrigated acreage is assumed to be double that of dryland acres.

Table 1. Fertilizer & Lime²

Fertilizer	Description	Quantity (lbs)	Price (\$)	Total (\$/Acre)	Your Farm (\$/Acre)
Nitrogen	Urea	0	\$0.39	\$0.00	_____
Phosphorous	P ₂ O ₅	40	\$0.37	\$14.85	_____
Potassium	K ₂ O	80	\$0.29	\$22.80	_____
Lime	Limestone	1,000	\$30.00	\$15.00	_____
Boron		7	\$0.55	\$3.67	_____
Manganese		20	\$0.00	\$0.00	_____
Other		0	\$0.00	\$0.00	_____
Total				\$56.31	_____

Table 2. Chemicals³

Chemical	Function	Description	Unit	Number of Apps.	Quantity	Price	Total (\$/Acre)	Your Farm (\$/Acre)
Herbicides	Burndown	Roundup	qt.	1	1	\$5.69	\$5.69	_____
	Pre-Emerge	Gramoxone SL	oz.	1	40	\$0.28	\$11.20	_____
	Post-Emerge	Prefix	qt.	1	1	\$14.63	\$14.63	_____
		Engenia	oz.	1	12.8	\$0.64	\$8.19	_____
		Flexstar	pt.	1	1	\$4.94	\$4.94	_____
		Surfactant	\$/acre	3	1	\$1.50	\$4.50	_____
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	\$14.50	\$14.50	_____
		Other		0	0	\$0.00	\$0.00	_____
		Other		0	0	\$0.00	\$0.00	_____
		Other		0	0	\$0.00	\$0.00	_____
		Other		0	0	\$0.00	\$0.00	_____
Total						\$0.00	\$81.15	_____

Table 3. Machinery⁴

	Power Unit	Implement	Size	Capital Recovery	Repairs & Maintenance	Fuel, Oil & Filter	Labor	Total	Your Farm (\$/Acre)
Burndown	SP Boom Sprayer		90'	\$7.45	\$0.27	\$0.26	\$0.25	\$8.23	_____
Fertilize	Tractor, 215 hp	Fertilize Spreader		\$4.21	\$1.53	\$1.70	\$1.35	\$8.79	_____
Plant	Tractor, 215 hp	Planter	16-row	\$13.54	\$2.82	\$1.60	\$1.27	\$19.22	_____
Pre-Emerge	SP Boom Sprayer		90'	\$7.45	\$0.27	\$0.26	\$0.25	\$8.23	_____
Post-Emerge	SP Boom Sprayer		90'	\$7.45	\$0.27	\$0.26	\$0.25	\$8.23	_____
Post-Emerge	SP Boom Sprayer		90'	\$7.45	\$0.27	\$0.26	\$0.25	\$8.23	_____
Fungicide	SP Boom Sprayer		90'	\$7.45	\$0.27	\$0.26	\$0.25	\$8.23	_____
Harvest	Combine	Grain Head	30 ft	\$22.48	\$23.14	\$4.45	\$1.96	\$52.03	_____
Haul	Tractor, 215 hp	Grain Cart	800 bu	\$5.63	\$0.76	\$1.04	\$0.83	\$8.26	_____
Haul	Semi Tractor/Trailer			\$8.35	\$0.45	\$0.35	\$0.78	\$9.93	_____
Other				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	_____
Other				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	_____
Total				\$84.00	\$29.78	\$10.16	\$7.20	\$139.38	_____