

Cost of Producing, Harvesting and Marketing Field Grown Tomatoes in the Southeastern United States

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Budgeting Program Developed By:

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This budget presents the estimated costs of producing and harvesting tomatoes in the Southeastern United States. The cost estimates are presented on a per acre basis. It was also assumed that the management would be near optimal and that all currently recommended practices by the Agricultural Extension Service would be followed.

This budget is only a guide and is not meant to be a substitute for growers calculating their own costs and estimating their own breakeven yields. Costs vary from grower to grower due to market conditions, labor supply, age and condition of the machinery and equipment, managerial skill, and many other factors. Since every situation is different, it is recommended that every grower estimate their individual production, harvesting and marketing costs based on their own production techniques, price expectations, local supply of labor, and market situation.

It is also recommended that growers develop a marketing plan and have a marketing strategy before investing in a commercial operation. Production of high value produce is a risky business and the risk increases without a stable marketing outlet. In extreme cases, growers have experienced financial losses when they were not able to find a suitable market outlet and/or when they did not meet the buyer's expectations.

The spray schedule in this budget is based on a typical year, however, as any grower knows, each year is different and therefore your pests and means of control will likely vary from what is listed. Mention of a product or vendor does not constitute a guarantee or warranty of the product, nor does it imply recommendation of one product over another. Other products may be suitable depending on soils, weather conditions, farm history, and pest pressures.

The values in the blue cells of the spreadsheets with red tabs are input values that users can either accept or replace with their own estimates. The values in all other cells are calculated based on the inputted values. Users can receive a quick estimate of their costs and returns by entering their own estimates for the selected "key" values displayed in blue cells in the *Assumptions* worksheet, while *those who would like more detailed estimates can fill in the blue cells in the Machinery, Materials, Labor, and/or ProductionSequence* worksheets.

KEY ASSUMPTIONS FOR ESTIMATING TOMATO PRODUCTION COSTS AND RETURNS

Marketing Assumptions:

Projected Base Yields	96,646	lbs/acre
Marketable		
Percent of Base Yield	80.0%	
Pounds	77,317	
25 lb Boxes	3,093	
Jumbo and XL fruit	33,301	34.5%
Large fruit	24,748	25.6%
Medium and small fruit	19,078	19.7%
Culled		
Percent of Base Yield	20.0%	
Pounds	19,329	
Market Prices \$/25 lb Box		
Jumbo and XL fruit	\$9.50	
Large fruit	\$8.15	
Medium and small fruit	\$7.00	
Culled Fruit		
\$/Pound	\$0.00	

Selected Input prices:

Production Labor		
Owner Expense		
Base Wage	\$14.00	\$/hour
Total Business Expense	\$15.72	\$/hour
Employee Expense		
Base Wage	\$7.50	\$/hour
Total Business Expense	\$8.47	\$/hour
Harvest Labor Cost	\$3.00	\$/25lb box
Gasoline price	\$3.50	\$/gal
Diesel price	\$3.95	\$/gal
Loan Interest Rate	7.00%	
Insurance Rate	0.80%	
Tax Rate	0.80%	

Fuel and Lubricant Costs

Machinery and Vehicle by Fuel Type	Estimated Fuel Price (\$/gal)	Estimated Fuel Used per Hour (gals)	Lubricants as a Percent of Fuel Cost	Estimated Average Mileage per Gallon	Estimated Average Speed	Estimated Fuel Cost/Hour	Estimated Lubricant Cost/Hour	Total Estimated Fuel & Lube Cost/Hour
Tractor 30 hp (D)	\$3.95	1.500	2.00%			\$5.93	\$0.12	\$6.04
Tractor 60 hp (D)	\$3.95	2.500	2.00%			\$9.88	\$0.20	\$10.07
Utility Vehicle (G)	\$3.95	0.375	2.00%			\$1.48	\$0.03	\$1.51
1/2 Ton Pickup (G)	\$3.50		2.00%	15.0	50.0	\$11.67	\$0.23	\$11.90

ESTIMATED TOMATO PRODUCTION COSTS PER ACRE
 (Marketable Yield = 77,317 pounds, or 3,093 25lb boxes)

Month	Type of Operation	Equipment Costs	Materials Costs	Labor Costs	Total Costs	Your Costs
February						
	Attend Grower Meetings	0.00	250.00	40.68	290.68	
Total February		\$0.00	\$250.00	\$40.68	\$290.68	
March						
	Plow Field	16.72	0.00	11.19	27.91	
	Disc Field	8.83	0.00	5.59	14.42	
	Subsoil Field	20.29	0.00	15.25	35.55	
Total March		\$45.84	\$0.00	\$32.04	\$77.87	
April						
	Preplant Fertilizer	10.53	127.50	7.63	145.66	
	Assemble Irrigation System	12.08	0.00	84.75	96.83	
	Bedding and Fumigation	204.91	990.00	30.51	1,225.41	
Total April		\$227.51	\$1,117.50	\$122.89	\$1,467.90	
May						
	Purchase Plugs	0.00	550.00	8.47	558.47	
	Fertilize Plugs	0.11	0.83	8.47	9.42	
	Transplant Plugs	53.46	0.00	40.68	94.14	
	Replant 2%	0.00	11.00	8.47	19.47	
	Drip Irrigation	580.79	210.60	525.45	1,316.83	
	Staking	0.00	550.00	52.50	602.50	
	String x2	0.00	9.90	34.80	44.70	
	Prune	0.00	0.00	47.85	47.85	
	Weekly Sprays	38.85	266.43	22.37	327.65	
	Post-Emergent Herbicide	7.75	13.78	5.59	27.11	
Total May		\$680.95	\$1,612.54	\$754.67	\$3,048.16	
June						
	Drip Irrigation	562.05	210.60	508.50	1,281.15	
	Weekly Sprays	38.85	312.05	22.37	373.27	
	Post-Emergent Herbicide	7.75	17.75	5.59	31.08	
Total June		\$608.64	\$540.40	\$536.46	\$1,685.50	
July						
	Drip Irrigation	580.79	210.60	525.45	1,316.83	
	Weekly Sprays	38.85	150.55	22.37	211.76	
	Harvest	0.00	0.00	9,278.02	9,278.02	
Total July		\$619.63	\$361.15	\$9,825.84	\$10,806.61	
October						
	Remove Plastic	46.64	0.00	152.55	199.19	
	Dispose Plastic	16.15	0.00	10.17	26.32	
	Disk Field	16.05	0.00	10.17	26.22	
	Apply Lime	0.00	55.00	0.00	55.00	
	Plant Rye for Cover Crop	16.99	17.00	10.17	44.16	
Total October		\$95.83	\$72.00	\$183.06	\$350.89	
Annual Administrative Costs						
	Real Estate Taxes	0.00	16.00	0.00	16.00	
	Management Fee	0.00	10.00	0.00	10.00	
	Net Land Rent	0.00	100.00	0.00	100.00	
	Miscellaneous	0.00	35.00	0.00	35.00	
	Internet service	0.00	40.00	0.00	40.00	
	Overhead (Utilities, legal fees, etc.)	0.00	25.00	0.00	25.00	
Total Annual Administrative Costs		\$0.00	\$226.00	\$0.00	\$226.00	
Seasonal Costs						
	1/2 Ton Pick-up	32.30	0.00	20.34	52.64	
	Operating Capital	0.00	70.00	0.00	70.00	
Total Seasonal Costs		\$32.30	\$70.00	\$20.34	\$122.64	
TOTAL ANNUAL COSTS		\$2,310.71	\$4,249.58	\$11,515.96	\$18,076.25	

ESTIMATED TOMATO PRODUCTION COSTS PER ACRE SUMMARY

Month	Equipment Costs	Material Costs	Labor Costs	Total Costs	Percent Total	Your Costs
(----- Dollars per Acre -----)						
January	0.00	0.00	0.00	0.00	0.00%	_____
February	0.00	250.00	40.68	290.68	1.61%	_____
March	45.84	0.00	32.04	77.87	0.43%	_____
April	227.51	1,117.50	122.89	1,467.90	8.12%	_____
May	680.95	1,612.54	754.67	3,048.16	16.86%	_____
June	608.64	540.40	536.46	1,685.50	9.32%	_____
July	619.63	361.15	9,825.84	10,806.61	59.78%	_____
August	0.00	0.00	0.00	0.00	0.00%	_____
September	0.00	0.00	0.00	0.00	0.00%	_____
October	95.83	72.00	183.06	350.89	1.94%	_____
November	0.00	0.00	0.00	0.00	0.00%	_____
December	0.00	0.00	0.00	0.00	0.00%	_____
Annual Charges	0.00	226.00	0.00	226.00	1.25%	_____
Seasonal Charges	32.30	70.00	20.34	122.64	0.68%	_____
Total per Year	\$2,310.71	\$4,249.58	\$11,515.96	\$18,076.25	100.00%	_____

ESTIMATED LABOR PER ACRE SUMMARY

Month	Labor (Hours)	Percent Total	Your Estimate
January	0.00	0.00%	_____
February	4.80	0.13%	_____
March	3.78	0.10%	_____
April	14.50	0.40%	_____
May	334.10	9.28%	_____
June	63.30	1.76%	_____
July	3,157.31	87.66%	_____
August	0.00	0.00%	_____
September	0.00	0.00%	_____
October	21.60	0.60%	_____
November	0.00	0.00%	_____
December	0.00	0.00%	_____
Seasonal Charges	2.40	0.07%	_____
Total per Year	3,601.79	100.00%	_____

Estimated Returns per Acre for Commercial Tomato Production

Yield (Lbs/Acre)	Sale Price (\$/Lb)	Gross Revenue	Annual Production Costs			Total Production Costs (\$/A)	Net Returns (\$/A)
			Equipment	Materials	Labor		
			----- Dollars per Acre -----				
96,646		\$26,064	\$2,311	\$4,250	\$11,516	\$18,076	\$7,988
77,317							
33,301	\$0.380	\$12,654					
24,748	\$0.326	\$8,068					
19,078	\$0.280	\$5,342					
19,329	\$0.000	\$0					

Estimated Costs of Owning and Operating the Machinery and Equipment Required for the Production of Tomatoes

Machinery Description		Purchase Price	Salvage Value	Years of Life	Annual Hours of Use	Annual Depreciation	Capital Recovery	Interest	Insurance	Taxes	Total Ownership Cost / Year	Repair & Maintenance Cost	Annual Fuel & Lubricant Costs	Total Annual Operating Costs	Estimated Annual Total Cost/Yr	Machinery Description	Fixed Cost/Hr	Variable Cost/Hr	Total Cost/Hr	
Tractor, 60hp	60 HP	24,400	5,379.47	20	500	951.03	531.70	1,042.28	119.12	119.12	1,280.52	366.00	5,036.250	5,402.250	6,682.767	Tractor, 60hp	2.561	10.805	13.366	
Boom Sprayer 1	55 gal	750	165.35	12	100	48.72	17.32	32.04	3.66	3.66	39.36	32.50	-	32.500	71.860	Boom Sprayer 1	0.394	0.325	0.719	
PTO Blast Sprayer 1	110 gal	6,000	429.00	12	125	464.25	61.82	225.02	25.72	25.72	276.45	260.00	-	260.000	536.447	PTO Blast Sprayer 1	2.212	2.080	4.292	
Plastic Mulch Lifter		2,000	440.94	15	75	103.94	44.88	85.43	9.76	9.76	104.96	58.67	-	58.667	163.627	Plastic Mulch Lifter	1.399	0.782	2.182	
7' Tine Chisel Plow	7'	3,000	288.00	15	125	180.80	34.96	115.08	13.15	13.15	141.38	88.00	-	88.000	229.384	7' Tine Chisel Plow	1.131	0.704	1.835	
9' Disc	2 row - 40"/row	5,000	480.00	15	125	301.33	58.27	191.80	21.92	21.92	235.64	100.00	-	100.000	335.640	9' Disc	1.885	0.800	2.685	
Subsoiler		300	30.00	15	125	18.00	3.60	11.55	1.32	1.32	14.19	6.00	-	6.000	20.190	Subsoiler	0.114	0.048	0.162	
Rotary Spreader		1,000	100.00	15	100	60.00	12.00	38.50	4.40	4.40	47.30	20.00	-	20.000	67.300	Rotary Spreader	0.473	0.200	0.673	
Grain Drill		5,000	1,102.35	15	100	259.84	112.20	213.58	24.41	24.41	262.40	100.00	-	100.000	362.401	Grain Drill	2.624	1.000	3.624	
Rototiller		3,500	771.65	15	100	181.89	78.54	149.51	17.09	17.09	183.68	70.00	-	70.000	253.681	Rototiller	1.837	0.700	2.537	
Utility Trailer	single axle	2,000	440.94	15	100	103.94	44.88	85.43	9.76	9.76	104.96	40.00	-	40.000	144.960	Utility Trailer	1.050	0.400	1.450	
Plastic Layer / Fumigator	-	7,000	1,543.29	20	10	272.84	152.54	299.02	34.17	34.17	367.36	182.00	-	182.000	549.361	Plastic Layer / Fumigator	36.736	18.200	54.936	
Fumigation Rig (modified)		7,000	100.00	20	10	345.00	26.25	248.50	28.40	28.40	305.30	182.00	-	182.000	487.300	Fumigation Rig (modified)	30.530	18.200	48.730	
Fertilizer Injector	400	400	89.63	10	150	31.04	9.62	17.14	1.96	1.96	21.05	12.00	-	12.000	33.054	Fertilizer Injector	0.140	0.080	0.220	
Fertilizer Injector (modified)		800	176.38	20	40	31.18	17.43	34.17	3.91	3.91	41.98	12.00	-	12.000	53.984	Fertilizer Injector (modified)	1.050	0.300	1.350	
Drip Irrigation Syst. & Pump**	-	13,275	-	10	150	1,327.50	66.38	464.63	53.10	53.10	570.83	301.25	500.000	801.250	1,372.075	Drip Irrigation Syst. & Pump**	3.806	5.342	9.147	
Vehicle Description		Purchase Price	Salvage Value	Years of Life	Annual Hours of Use	Annual Depreciation	Capital Recovery	Interest	Insurance	Taxes	Total Ownership Cost / Year	Repair & Maintenance Cost	Annual Fuel & Lubricant Costs	Total Annual Operating Costs	Estimated Annual Total Cost/Yr	Vehicle Description	Fixed Cost/Hr	Variable Cost/Hr	Total Cost/Hr	
1/2 Ton Pickup	-	25,000	5,000	10	24,000			1,050.00	120.00	120.00	1,290.00	750.00	5,712.000	6,462.000	7,752.000	1/2 Ton Pickup	0.054	0.269	0.323	
Total Annual Cost to Farm Business											5,287.37			13,828.67	19,116.03					

Costs of Materials Used in Tomato Production

Material	Rate/ Acre	Unit	Cost/ Unit	Cost/ Acre	Cost/ Acre	Annual Cost
Fumigant						
Chloropicrin	150.00	lbs	\$3.25	\$487.50		\$487.50
Total Fumigants						\$487.50
Fertilizers & Nutrients						
10-20-10	750.00	lbs	\$0.17	\$127.50		\$127.50
20-20-20	1.00	lbs	\$0.83	\$0.83		\$0.83
Calcium nitrate (applied daily, monthly rate)	336.96	lbs	\$0.25	\$84.24	3.00	\$252.72
Potassium nitrate (applied daily, monthly rate)	168.48	lbs	\$0.75	\$126.36	3.00	\$379.08
Total Fertilizers & Nutrients						\$760.13
Herbicides						
Paraquat	1.50	pt	\$5.25	\$7.88	2.00	\$15.75
Sencor	0.50	lbs	\$11.80	\$5.90		\$5.90
Poast	1.00	pt	\$9.87	\$9.87		\$9.87
Total Herbicides						\$31.52
Insecticides						
Thrips Spintor	6.00	oz	\$5.250	\$31.50	3.00	\$94.50
Aphid Dimethoate	0.75	pt	\$5.850	\$4.39		\$4.39
Fruit Worm Asana	6.00	oz	\$0.71	\$4.26	8.00	\$34.08
Total Insecticides						\$132.97
Fungicides						
Early Blight Quadris	6.00	oz	\$2.71	\$16.26	4.00	\$65.04
Early Blight Bravo Ultrex	1.50	lbs	\$8.17	\$12.26	4.00	\$49.02
Late Blight Maneb	2.00	lbs	\$7.00	\$14.00	4.00	\$56.00
Late Blight Actiguard	1.00	oz	\$50.00	\$50.00	6.00	\$300.00
Bacterial Kocide 101	3.00	lbs	\$5.25	\$15.75	8.00	\$126.00
Total Fungicides						\$596.06
General						
Tomato Plugs	5.50	1,000	\$100.00	\$550.00		
Tomato Plugs to replant (2%)	0.11	1,000	\$100.00	\$11.00		
Plastic film	3.50	2400' roll	\$105.00	\$367.50		
Drip tape	1.50	6000ft	\$135.00	\$202.50		
String	3.00	box	\$3.30	\$9.90		
Stakes	2,750.00	each	\$0.20	\$550.00		
Rye Seeds (cover crop)	1.00	bushel	\$17.00	\$17.00		
Annual Grower Meeting	1.00	each	\$250.00	\$250.00		
Custom Lime Application	1.00	ton	\$55.00	\$55.00		
Total General				\$2,012.90		
Harvest Labor						
Picking Labor		25 lb box	\$3.000			
Annual Administrative & Seasonal Costs						
Real Estate Taxes		acre	\$16.000			
Management Fee		acre	\$10.000			
Net Land Rent		acre	\$100.000			
Miscellaneous		acre	\$35.000			
Internet Service		acre	\$40.000			
Utilities, Legal, Accounting, Etc.		acre	\$25.000			
Operating Capital		acre	\$70.000			

LABOR COST WORKSHEET
(Fill in blue cells as appropriate)

Owner Name Owner - Operation Title: Boss

Required Payroll Expenses:	Employer Costs
1. Wages:	
a. Hrs/Wk: <u>40</u> x Weeks: <u>52</u>	
b. Total Hrs: 2080 x \$/HR: \$14.00	\$29,120.00
2. Employer Share of OASDI: <u>6.20%</u> of first \$90,000	1,805.44
Employer Share of HI: <u>1.45%</u>	422.24
3. Unemployment Insurance	
State <u>1.20%</u> of first \$16,200	194.40
Federal <u>0.80%</u> of first \$7,000	56.00
4. Workman's Compensation Insurance:	
<u>\$3.79</u> per \$100	1103.65
5. Total Required Payroll Expenses: (Lines 1 + 2 + 3 + 4)	\$32,701.73

Fringe Benefits:	
6. Cash Bonuses:	0.00
7. Insurance:	
a. Health	0.00
b. Medical	0.00
c. Life	0.00
d. Dental	0.00
e. Eye Care	0.00
f. Other:	0.00
g. Other	0.00
SUBTOTAL	0.00
8. Retirement Plan:	0.00
9. Uniforms:	0.00
10. Travel Allowance:	0.00
11. Transportation	0.00
12. Tuition Assistance or Continuing Education	0.00
13. Company Vehicle	0.00
14. Other	0.00
15. Other	0.00
16. Other	0.00
17. Other	0.00
18. Total Value of Fringe Benefits: (Lines 6 thru 17)	0.00
19. TOTAL PAYROLL EXPENSES: (Line 5 + 18)	\$32,701.73

20. Paid Hours Not Worked:	
a. Holidays <u>0.0</u> Days x 8 Hours = 0.00 Hrs.	
b. Vacation <u>0.0</u> Days x 8 Hours = 0.00 Hrs.	
c. Sick <u>0.0</u> Days x 8 Hours = 0.00 Hrs.	
21. Total hours paid but not worked:	0.00 Hrs
22. Total Hours on the Job:	2080.00
23. TOTAL COST PER HOUR ON THE JOB: (Line 19/Line 22)	\$15.72

LABOR COST WORKSHEET
(Fill in blue cells as appropriate)

Employee Name: J Doe - Employee Title: Employee

Required Payroll Expenses:	Employer Costs
1. Wages:	
a. Hrs/Wk: <u>40</u> x Weeks: <u>52</u>	
b. Total Hrs: 2080 x \$/HR: \$7.50	\$15,600.00
2. Employer Share of OASDI: <u>6.20%</u> of first \$90,000	967.20
Employer Share of HI: <u>1.45%</u>	226.2
3. Unemployment Insurance	
State <u>1.20%</u> of first \$16,200	187.20
Federal <u>0.80%</u> of first \$7,000	56.00

4. Workman's Compensation Insurance:

\$3.79

per \$100

591.24

5. Total Required Payroll Expenses: (Lines 1 +2 + 3 + 4)

\$17,627.84

Fringe Benefits:

6. Cash Bonuses:

0.00

7. Insurance:

a. Health

0.00

b. Medical

0.00

c. Life

0.00

d. Dental

0.00

e. Eye Care

0.00

f. Other:

0.00

g. Other

0.00

SUBTOTAL

0.00

8. Retirement Plan:

0.00

9. Uniforms:

0.00

10. Travel Allowance:

0.00

11. Transportation

0.00

12. Tuition Assistance or Continuing Education

0.00

13. Company Vehicle

0.00

14. Other

0.00

15. Other

0.00

16. Other

0.00

17. Other

0.00

18. Total Value of Fringe Benefits: (Lines 6 thru 17)

0.00

19. TOTAL PAYROLL EXPENSES: (Line 5 + 18)

\$17,627.84

20. Paid Hours Not Worked:

a. Holidays

0.0

Days x 8 Hours =

0.00

Hrs.

b. Vacation

0.0

Days x 8 Hours =

0.00

Hrs.

c. Sick

0.0

Days x 8 Hours =

0.00

Hrs.

21. Total hours paid but not worked:

0.00

Hrs

22. Total Hours on the Job:

2080.00

23. TOTAL COST PER HOUR ON THE JOB: (Line 19/Line 22)

\$8.47

