

# MICROCOMPUTER CROP COST AND RETURN GENERATOR

BUDGET AREA..... SOUTHERN QUAY COUNT` Projected 2018  
FARM SIZE..... 1,000.00 ACRES  
IRRIGATION TYPE..... SPRINKLER/DRYLAND  
NUMBER OF CROPS..... 2

VERSION 1.0

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TABLE 1. Acreage Summary, Quay County,  
Projected 2018

BUDGET AREA.....	SOUTHERN QUAY COUNTY
FARM SIZE.....	1,000 ACRES
IRRIGATION TYPE.....	SPRINKLER/DRYLAND
NUMBER OF CROPS.....	2

ACREAGE SUMMARY:	LAND USE (ACRES)	WATER USE	
		AC.IN. PER AC.	TOTAL AC.IN.
WHEAT	607.75	0	0
ARP	0.00		
FLEX IN GRAIN SORGHUM	107.25	0	0
GRAIN SORGHUM	212.50	12	2,550
ARP	0.00		
FLEX IN GRAIN SORGHUM	37.50	12	450
ROADS, HOMESTEAD, FALLOW	35.00		
<b>TOTAL</b>	<b>1,000.00</b>		<b>3,000</b>

TABLE 2. Basic cost information for Southern Quay County,  
Projected 2018

Item			
<b>Labor Wage Rate:</b>			
Equipment operators		\$/hour	\$8.55
General & Irrigators		\$/hour	\$7.50
<b>Purchased Inputs:</b>			
<b>Fertilizer:</b>			
Nitrogen (N)		\$/pound	\$0.31
Phosphate (P205)		\$/pound	\$0.24
<b>Seed:</b>			
Wheat		\$/pound	\$0.44
Grain Sorghum		\$/pound	\$1.32
<b>Energy Costs:</b>			
Diesel fuel		\$/gallon	\$2.70
Gasoline		\$/gallon	\$2.40
Electricity (Farmers Elec Coop)		cents/KwHr	8.27
LP Gas		\$/gallon	\$2.75
Employee Liability Insurance		\$/1,000 wages	\$20.00
Employee Benefits		percent/wages	18.00%
Labor Downtime		percent	25.00%
<b>Financial Rates:</b>			
Operating Capital Interest Rate		percent	5.50%
Land Interest Rate		percent	5.00%
Equipment Interest Rate		percent	5.50%
Real Interest Rate		percent	3.00%
<b>Land Taxes</b>			
Irrigated	\$96.00 /acre (full value)		\$0.82
Dryland	\$38.00 /acre (full value)		\$0.33
Personal Property Tax Rate	- NR	\$/1,000 (Assessed Value)	\$25.73
	- R		\$20.14
<b>Supervision Factors</b>			
Field Crop-Irrigation		\$/acre	\$1.00
Field Crop-Equipment & General		\$/acre	\$0.50
Management Rate		percent	7.00%

TABLE 3. Overhead cost information for Southern Quay County,  
Projected 2018

Item			
Electricity (Domestic & Shop)		\$254.00 per month	\$3,048
Telephone		\$127.00 per month	\$1,524
Accounting & Legal			\$1,867
Misc. Supplies & Hand Tools			\$2,800
Pickup and Auto			
miles	26,162	@ \$0.500 per mile	\$13,081
<b>Insurance</b>			
- general liability (non-employee)			\$2,007
- fire/theft			\$1,588
<b>Property Taxes</b>			
- non-planted land			\$0
- other than land & machinery			\$6,010
Building repairs and maintenance			\$1,524
Dues, fees, publications			\$457
Farmstead Equipment			\$191
		<b>Total</b>	<b>\$34,096</b>
		<b>Total per planted acre</b>	<b>\$35.33</b>
		<b>Total per dryland acre</b>	<b>\$19.09</b>



TABLE 6. Wheat, dryland, budgeted per acre costs and returns for a 1,000 acre farm with above average management, Southern Quay County, Projected 2018  
Planting dates: August 20 - September 15  
Harvesting dates: June 15 - July 10

ITEM	PRICE	YIELD	BASE	TOTAL
<b>GROSS RETURNS</b>				
WHEAT	\$4.40	20.00 BUSHELS		\$88.00
DIRECT PAYMENT	\$0.00	20.00 BUSHELS	0.85	\$0.00
COUNTER CYCLICAL PAYMENT	\$0.00			\$0.00
GRAZING	\$5.00	1.00 ACRE		\$5.00
<b>TOTAL</b>				<b>\$93.00</b>

PURCHASED INPUTS	PRICE	QUANTITY	PURCHASED INPUTS	FIXED COST	TOTAL
SEED	\$0.44	25 LBS	\$11.00		\$11.00
CROP INSURANCE	\$0.08		\$0.08		\$0.08
<b>SUBTOTAL</b>			<b>\$11.08</b>		<b>\$11.08</b>

PREHARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
SWEEP (2X)	185 HP	0.16 HR		\$1.37	\$4.47	\$1.77	\$3.76	\$11.37
STUBBLE MULCHER	185 HP	0.08 HR		\$0.68	\$2.24	\$1.21	\$3.27	\$7.40
RODWEEED (2X)	126 HP	0.16 HR		\$1.37	\$3.56	\$0.76	\$1.74	\$7.43
DRILL	126 HP	0.12 HR		\$1.03	\$2.67	\$0.79	\$3.12	\$7.62
<b>SUBTOTAL</b>		<b>0.52 HR</b>		<b>\$4.45</b>	<b>\$12.95</b>	<b>\$4.53</b>	<b>\$11.89</b>	<b>\$33.81</b>

HARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
COMBINE	22 FT	0.14 HR		\$1.20	\$3.12	\$0.58	\$3.41	\$8.30
HAUL	2 TON	0.14 HR		\$1.20	\$2.40	\$0.90	\$4.72	\$9.22
<b>SUBTOTAL</b>		<b>0.28 HR</b>		<b>\$2.39</b>	<b>\$5.52</b>	<b>\$1.48</b>	<b>\$8.13</b>	<b>\$17.52</b>

OVERHEAD EXPENSES	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
DOWNTIME	0.20 HR		\$1.71				\$1.71
EMPLOYEE BENEFITS			\$1.23				\$1.23
INSURANCE		\$0.14					\$0.14
LAND TAXES						\$0.33	\$0.33
SUPERVISION AND MANAGEMENT			\$7.51				\$7.51
OTHER EXPENSES		\$19.09					\$19.09
<b>SUBTOTAL</b>	<b>0.20 HR</b>	<b>\$19.22</b>	<b>\$10.45</b>			<b>\$0.33</b>	<b>\$30.00</b>

<b>TOTAL OPERATING EXPENSES</b>	<b>1.00 HR</b>	<b>\$30.31</b>	<b>\$17.29</b>	<b>\$18.47</b>	<b>\$6.01</b>	<b>\$20.35</b>	<b>\$92.42</b>
<b>NET OPERATING PROFIT</b>							<b>\$0.58</b>
INTEREST ON OPERATING CAPITAL	( \$10.49 @ 5.50% )						\$0.58
INTEREST ON EQUIPMENT INVESTMENT							\$8.29
<b>RETURN TO LAND AND RISK</b>							<b>(\$8.29)</b>

BUDGET SUMMARY			
GROSS RETURN		\$93.00	
VARIABLE OPERATING EXPENSES	\$54.79		
RETURN OVER VARIABLE EXPENSES		\$38.21	(GROSS MARGIN)
FIXED EXPENSES	\$20.35		
NET FARM INCOME		\$17.87	(RETURN TO CAPITAL, LABOR, LAND & RISK)
LABOR AND MANAGEMENT COST	\$17.29		
NET OPERATING PROFIT		\$0.58	(RETURN TO CAPITAL, LAND & RISK)
CAPITAL COSTS	\$8.86		
RETURN TO LAND AND RISK			(\$8.29)

TABLE 7. Grain sorghum, sprinkler-irrigated, budgeted per acre costs and returns for a 1,000 acre farm with above average management, Southern Quay County, Projected 2018  
 Planting dates: June 15 - July 15  
 Harvesting dates: September 20 - October 30

ITEM	PRICE	YIELD	BASE	TOTAL
<b>GROSS RETURNS</b>				
GRAIN SORGHUM	\$6.08	50.00 CWT		\$303.93
COUNTER CYCLICAL PAYMENT	\$0.00	0.00 CWT		\$0.00
DIRECT PAYMENT	\$0.00	50.00 CWT	0.85	\$0.00
<b>TOTAL</b>				<b>\$303.93</b>

PURCHASED INPUTS	PRICE	QUANTITY	PURCHASED INPUTS	FIXED COST	TOTAL
SEED	\$1.32	5 LBS	\$6.60		\$6.60
NITROGEN (N)	\$0.31	80 LBS	\$24.80		\$24.80
PHOSPHATE (P205)	\$0.24	40 LBS	\$9.60		\$9.60
HERBICIDE	\$16.99	1 ACRE	\$16.99		\$16.99
PUMP WATER		12 AC. IN.			
CROP INSURANCE	\$0.14		\$0.14		\$0.14
<b>SUBTOTAL</b>			<b>\$58.13</b>		<b>\$58.13</b>

PREHARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
SWEEP	185 HP	0.08 HR		\$0.68	\$2.24	\$0.88	\$1.88	\$5.68
DISC (2X)	185 HP	0.22 HR		\$1.88	\$6.15	\$3.29	\$7.06	\$18.39
SPRAYER	126 HP	0.06 HR		\$0.51	\$1.34	\$0.28	\$1.17	\$3.30
LISTER	185 HP	0.12 HR		\$1.03	\$3.36	\$1.00	\$3.08	\$8.46
ROD WEED & PLANTER	185 HP	0.18 HR		\$1.54	\$5.03	\$1.52	\$5.92	\$14.02
CULTIVATOR (2X)	126 HP	0.26 HR		\$2.22	\$5.79	\$2.00	\$3.87	\$13.88
IRRIGATE (12X)		1.20 HR		\$9.00	\$49.98	\$0.00	\$10.32	\$69.30
<b>SUBTOTAL</b>		<b>2.12 HR</b>		<b>\$16.87</b>	<b>\$73.89</b>	<b>\$8.98</b>	<b>\$33.32</b>	<b>\$133.04</b>

HARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
COMBINE	22 FT	0.16		\$1.37	\$3.56	\$0.66	\$3.90	\$9.49
HAUL	2 TON	0.16		\$1.37	\$2.74	\$1.03	\$5.40	\$10.54
<b>SUBTOTAL</b>		<b>0.32 HR</b>		<b>\$2.74</b>	<b>\$6.31</b>	<b>\$1.69</b>	<b>\$9.29</b>	<b>\$20.03</b>

OVERHEAD EXPENSES	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
DOWNTIME	0.61 HR		\$5.22				\$5.22
EMPLOYEE BENEFITS			\$3.53				\$3.53
INSURANCE		\$0.39					\$0.39
LAND TAXES						\$0.82	\$0.82
SUPERVISION AND MANAGEMENT			\$22.28				\$22.28
OTHER EXPENSES		\$35.33					\$35.33
<b>SUBTOTAL</b>	<b>0.61 HR</b>	<b>\$35.72</b>	<b>\$31.02</b>			<b>\$0.82</b>	<b>\$67.57</b>

<b>TOTAL OPERATING EXPENSES</b>	<b>2.73 HR</b>	<b>\$93.85</b>	<b>\$50.62</b>	<b>\$80.19</b>	<b>\$10.67</b>	<b>\$43.43</b>	<b>\$278.76</b>
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<b>NET OPERATING PROFIT</b>							<b>\$25.17</b>
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INTEREST ON OPERATING CAPITAL	(	\$50.44	@	5.50%	)		\$2.77
INTEREST ON EQUIPMENT INVESTMENT							\$17.89

<b>RETURN TO LAND AND RISK</b>							<b>\$4.50</b>
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\* Pump water costs are shown under irrigation in the preharvest operations section.

**BUDGET SUMMARY**

GROSS RETURN		\$303.93	
VARIABLE OPERATING EXPENSES	\$184.71		
RETURN OVER VARIABLE EXPENSES		\$119.22	(GROSS MARGIN)
FIXED EXPENSES	\$43.43		
NET FARM INCOME		\$75.79	(RETURN TO CAPITAL, LABOR, LAND & RISK)
LABOR AND MANAGEMENT COST	\$50.62		
NET OPERATING PROFIT		\$25.17	(RETURN TO CAPITAL, LAND & RISK)
CAPITAL COSTS	\$20.66		
RETURN TO LAND AND RISK		\$4.50	

TABLE 8. Summary of per acre costs and returns for a 1,000 acre farm, Southern Quay County, Projected 2018

	WHEAT (Dryland)	GRAIN SORGHUM (Sprinkler)
	BU	CWT
PRIMARY YIELD	20.00	50.00
PRIMARY PRICE	\$4.40	\$6.08
GOVERNMENT PAYMENTS	\$0.00	\$0.00
SECOND INCOME	\$5.00	\$0.00
GROSS RETURN	\$93.00	\$303.93
CASH OPERATING EXPENSES		
SEED	\$11.00	\$6.60
FERTILIZER		\$34.40
CHEMICALS		\$16.99
CROP INSURANCE	\$0.08	\$0.14
OTHER PURCHASED INPUTS		
CANAL WATER		
FUEL, OIL & LUBRICANTS-EQUIPMENT	\$18.47	\$30.22
FUEL-IRRIGATION		\$49.98
REPAIRS	\$6.01	\$10.67
CUSTOM CHARGES		
LAND TAXES	\$0.33	\$0.82
OTHER EXPENSES	\$19.22	\$35.72
TOTAL CASH EXPENSES	\$55.11	\$185.53
RETURN OVER CASH EXPENSES	\$37.89	\$118.40
FIXED EXPENSES	\$20.02	\$42.61
TOTAL EXPENSES	\$75.13	\$228.14
NET FARM INCOME	\$17.87	\$75.79
LABOR AND MANAGEMENT COSTS	\$17.29	\$50.62
NET OPERATING PROFIT	\$0.58	\$25.17
CAPITAL COSTS		
INTEREST ON OPERATING CAPITAL	\$0.58	\$2.77
INTEREST ON EQUIPMENT INVESTMENT	\$8.29	\$17.89
TOTAL CAPITAL COSTS	\$8.86	\$20.66
RETURN TO LAND AND RISK	(\$8.29)	\$4.50

TABLE 9. Whole farm summary, Southern Quay County,  
Projected 2018

GROSS RETURNS		
WHEAT	607.75 ACRES	
CROP		\$53,482
GRAZING		\$3,039
DIRECT PAYMENT		\$0
COUNTER CYCLICAL PAYMENT		\$0
GRAIN SORGHUM	357.25 ACRES	
CROP		\$108,578
COUNTER CYCLICAL PAYMENT		\$0
DIRECT PAYMENT		\$0
GROSS RETURN		<u>\$165,099</u>
CASH OPERATING EXPENSES		
SEED		\$9,043
FERTILIZER		\$12,289
CHEMICALS		\$6,068
CROP INSURANCE		\$100
OTHER PURCHASED INPUTS		\$0
CANAL WATER		\$0
FUEL, OIL & LUBRICANTS-EQUIPMENT		\$22,019
FUEL-IRRIGATION		\$17,854
REPAIRS		\$7,463
CUSTOM CHARGES		\$0
LAND TAXES		\$492
OTHER EXPENSES		\$24,447
TOTAL CASH EXPENSES		<u>\$99,776</u>
RETURN OVER CASH EXPENSES		\$65,323
FIXED EXPENSES		\$27,389
TOTAL EXPENSES		\$127,165
NET FARM INCOME		\$37,934
LABOR AND MANAGEMENT COSTS		\$28,593
NET OPERATING PROFIT		\$9,341
CAPITAL COSTS		
INTEREST ON OPERATING CAPITAL		\$1,342
INTEREST ON EQUIPMENT INVESTMENT		\$11,426
TOTAL CAPITAL COSTS		<u>\$12,768</u>
RETURN TO LAND AND RISK		<u>(\$3,427)</u>

LAND VALUE	RETURN TO RISK*	RETURN ON INVESTMENT**
\$150 /ACRE	(\$7,927)	2.63%
\$300 /ACRE	(\$12,427)	1.85%
\$450 /ACRE	(\$16,927)	1.43%
\$600 /ACRE	(\$21,427)	1.16%
\$750 /ACRE	(\$25,927)	0.98%
\$900 /ACRE	(\$30,427)	0.85%

\* RETURN TO LAND AND RISK MINUS (INTEREST RATE TIMES LAND VALUE TIMES ACREAGE)

\*\* NET OPERATING PROFIT DIVIDED BY (MACHINERY AND EQUIPMENT VALUE PLUS LAND VALUE)