

MICROCOMPUTER CROP COST AND RETURN GENERATOR

BUDGET AREA..... SOUTHERN HIGH PLAINS, LEA COUNTY Projected 2008.
FARM SIZE..... 1,600.00 ACRES
IRRIGATION TYPE..... DRYLAND
NUMBER OF CROPS..... 2

VERSION 1.0

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TABLE 1. Acreage Summary, Lea County, Projected 2008.

BUDGET AREA.....	SOUTHERN HIGH PLAINS, LEA COUNTY
FARM SIZE.....	1600 ACRES
IRRIGATION TYPE.....	DRYLAND
NUMBER OF CROPS.....	2

ACREAGE SUMMARY:	LAND USE (ACRES)
WHEAT	680.00
ARP	0.00
FLEX IN WHEAT	120.00
GRAIN SORGHUM	646.00
ARP	0.00
FLEX IN WHEAT	114.00
FALLOW	0.00
ROADS, HOMESTEAD	40.00
TOTAL	1,600.00

TABLE 2. Basic cost information for Lea County, Projected 2008.

Item		
Labor Wage Rate:		
Equipment operators	\$/hour	\$7.45
General & Irrigators	\$/hour	\$6.60
Purchased Inputs:		
Fertilizer:		
Nitrogen (N)	\$/pound	\$0.63
Phosphate (P205)	\$/pound	\$0.55
Seed:		
Wheat	\$/pound	\$0.28
Grain Sorghum	\$/pound	\$0.89
Fuel:		
Diesel fuel	\$/gallon	\$3.05
Gasoline	\$/gallon	\$2.85
Employee Liability Insurance	\$/ \$1,000 wages	\$20.00
Employee Benefits	percent/wages	18.00%
Labor Downtime	percent	25.00%
Financial Rates:		
Operating Capital Interest Rate	percent	7.75%
Land Interest Rate	percent	7.75%
Equipment Interest Rate	percent	7.75%
Real Interest Rate	percent	3.00%
Land Taxes	\$40.00 /acre (full value)	\$0.35
Personal Property Tax Rate	- NR - R	\$/ \$1,000 (Assessed Value) \$26.25 \$23.83
Supervision Factor	\$/labor hour	\$0.50
Management Rate	percent	7.00%

TABLE 3. Overhead cost information for Lea County, Projected 2008.

Item		
Electricity (Domestic & Shop)	\$224.00 per month	\$2,688
Telephone	\$112.00 per month	\$1,344
Accounting & Legal		\$1,635
Misc. Supplies & Hand Tools		\$2,458
Pickup and Auto		
miles	34,720 @ \$0.415 per mile	\$14,409
Insurance		
- general liability (non-employee)		\$1,719
- fire/theft		\$1,361
Property Taxes		
- non-planted land		\$0
- other than land & machinery		\$6,010
Building repairs and maintenance		\$1,305
Dues, fees, publications		\$392
Farmstead Equipment		\$168
	Total	\$33,489
	Total per planted acre	\$21.47

TABLE 4. Equipment summary for a 1600 acre dryland farm with above average management, Lea County, Projected 2008.

EQUIPMENT ITEM & SIZE	ANNUAL HOURS OF USE	NUMBER	TOTAL VALUE	VARIABLE COSTS				FIXED COSTS		
				FUEL, OIL, LUBRICANT	REPAIR	FUEL, OIL, PER HR	REPAIR PER HR	DEPRECIATION	TAXES	TOTAL PER HR
TRACTOR 226 HP	344	1	\$95,013	\$11,823	\$2,690	\$34.39	\$7.83	\$8,694	\$571	\$26.95
TRUCK 2 TON	218	1	\$22,000	\$4,232	\$1,759	\$19.38	\$8.05	\$4,400	\$193	\$21.03
COMBINE 145 HP	218	1	\$63,415	\$5,563	\$5,392	\$25.47	\$24.69	\$8,864	\$582	\$43.25
GRAIN HEAD 22 FT	218	1	\$3,600		\$513		\$2.35	\$501	\$33	\$2.45
CULTIVATOR 12 ROW	78	1	\$5,000		\$481		\$6.20	\$667	\$44	\$9.16
CHISEL 40 FT	91	1	\$6,750		\$761		\$8.37	\$900	\$59	\$10.55
SPRAYER 12 ROW	45	1	\$2,250		\$49		\$1.08	\$300	\$20	\$7.07
PLANTER 12 ROW	52	1	\$8,500		\$211		\$4.08	\$1,700	\$74	\$34.33
DRILL 40 FT	46	1	\$7,750		\$170		\$3.72	\$1,550	\$68	\$35.40
FERT SPREADER DEALER FURNISHED	78	1								
			\$214,278	\$21,618	\$12,026			\$27,576	\$1,642	

EQUIPMENT LIST

ITEM	NEW VALUE	USED VALUE	YEARS LIFE	EQUIP CODE	MAX HOURS	FUEL UNIT/HR	LUBE COEF	ACCUM HOURS	INTEREST EXPENSE
TRACTOR 226 HP	130,417	95,013	15	1	800	10.25	0.10	2062.92	6 5,053.66
TRUCK 2 TON	44,000	22,000	10	6	800	6.05	0.05	2839.20	13 1,705.00
COMBINE 145 HP	132,955	63,415	15	2	300	6.96	0.20	2839.20	13 5,152.01
GRAIN HEAD 22 FT	7,520	3,600	15	2	300			2839.20	13 291.40
CULTIVATOR 12 ROW	10,000	5,000	15	3	500			1240.32	16 387.50
CHISEL 40 FT	13,500	6,750	15	3	300			1363.80	15 523.13
SPRAYER 12 ROW	4,500	2,250	15	8	250			678.30	15 174.38
PLANTER 12 ROW	17,000	8,500	10	8	250			671.84	13 658.75
DRILL 40 FT	15,500	7,750	10	8	100			594.10	13 600.63
FERT SPREADER DEALER FURNISHED					100			1404.00	18

USAGE LIST

WHEAT	MILO	PER ACRE TOTALS
-----hours per acre-----		
	0.15	0.32 0.47
	0.14	0.14 0.28
	0.14	0.14 0.28
	0.14	0.14 0.28
	0.00	0.12 0.12
	0.05	0.07 0.12
	0.00	0.07 0.07
	0.00	0.08 0.08
	0.05	0.00 0.05
	0.05	0.05 0.10

INTEREST PRORATION

WHEAT	MILO
-----dollars per acre-----	
2.20	4.70
1.09	1.09
3.30	3.30
0.19	0.19
0.00	0.60
0.29	0.40
0.00	0.27
0.00	1.02
0.66	0.00
7.73	11.58

WHEAT	ACRES:	914	PUMP WATER:

ACCOMPLISHMENT			
MACHINE	POWER UNIT	TIMES OVER	RATE TOTAL CUSTOM
CHISEL	225 HP	1.00	0.05 0.05
DRILL	225 HP	1.00	0.05 0.05
FERT SPREADER	225 HP	1.00	0.05 0.05
COMBINE HAUL	2 TON	1.00	0.14 0.14
GRAIN SORGHUM	ACRES:	646	PUMP WATER:

ACCOMPLISHMENT			
MACHINE	POWER UNIT	TIMES OVER	RATE TOTAL CUSTOM
FERT SPREADER	225 HP	1.00	0.05 0.05
CHISEL & SPRAY	225 HP	1.00	0.07 0.07
PLANTER	225 HP	1.00	0.08 0.08
CULTIVATOR (2X)	225 HP	2.00	0.06 0.12
COMBINE HAUL	2 TON	1.00	0.14 0.14

ANNUAL REPAIR COSTS AS A PERCENT OF NEW VALUE

Hours of Use	1	2	3	4	5	6	7	8	9
0	0.000060	0.000020	0.000620	0.000020	0.000060	0.000140	0.000040	0.000240	0.000200
50	0.000060	0.000020	0.000620	0.000020	0.000060	0.000140	0.000040	0.000240	0.000200
100	0.000060	0.000020	0.000500	0.000020	0.000140	0.000220	0.000100	0.000380	0.000300
200	0.000030	0.000030	0.000430	0.000040	0.000180	0.000260	0.000110	0.000510	0.000280
300	0.000030	0.000050	0.000360	0.000050	0.000230	0.000210	0.000140	0.000440	0.000400
400	0.000030	0.000060	0.000370	0.000090	0.000260	0.000340	0.000150	0.000710	0.000450
500	0.000030	0.000070	0.000360	0.000100	0.000280	0.000370	0.000170	0.000800	0.000630
600	0.000030	0.000080	0.000340	0.000120	0.000310	0.000380	0.000190	0.000860	0.000530
700	0.000030	0.000100	0.000340	0.000130	0.000330	0.000410	0.000200	0.000910	0.000560
800	0.000030	0.000110	0.000320	0.000150	0.000350	0.000430	0.000210	0.000980	0.000590
900	0.000030	0.000120	0.000320	0.000160	0.000370	0.000450	0.000230	0.001020	0.000600
1000	0.000060	0.000130	0.000310	0.000180	0.000380	0.000460	0.000230	0.001070	0.000630
1200	0.000045	0.000145	0.000305	0.000205	0.000405	0.000480	0.000245	0.001135	0.000710
1400	0.000045	0.000170	0.000300	0.000230	0.000435	0.000510	0.000410	0.001260	0.000765
1500	0.000150	0.000170	0.000300	0.000230	0.000435	0.000510	0.000410	0.001260	0.000765
1600	0.000150	0.000190	0.000285	0.000255	0.000465	0.000525	0.000135	0.001235	0.000805
1800	0.000075	0.000170	0.000285	0.000285	0.000485	0.000560	0.000295		
2000	0.000110	0.000285	0.000280	0.000305	0.000505	0.000565	0.000310		
2500	0.000056								
3000	0.000070								
3500	0.000082								
4000	0.000096								
4500	0.000108								
5000	0.000122								
5500	0.000136								
6000	0.000148								
6500	0.000162								
7000	0.000176								
7500	0.000188								
8000	0.000204								

* Based on unpublished data of D. R. Hunt, Department of Agricultural Engineering, University of Illinois.

** Based on "Agricultural Machinery Data" in Agricultural Engineers Yearbook, 1983.

Codes

- 1 tractors
- 2 balers, combines, forage harvesters, windrowers, pickups
- 3 rotary hoes, disks, moldboard plows, chisels, field cultivators row cultivators, laser plane
- 4 harrows, wagons, floats, roto buck, drag, roller, water furrow, bed shaper
- 5 balewagons, cotton pickers, cotton strippers, corn pickers corn heads, forage equipment, rotary mowers, stalk choppers, feed wagons, farm trucks
- 6 rakes, cutterbar mower
- 7 baler w/ engine, manure spreader
- 8 planters, drills, seeding equipment, mounted sprayers
- 9 fertilizer distributing equipment

TABLE 5. Wheat, dryland, budgeted per acre costs and returns for a 1600 acre farm with above average management, Lea County
 Projected 2008.
 Planting dates: August 15 - September 30
 Harvest dates: June 15 - July 5

ITEM	PRICE	YIELD	BASE					TOTAL	
GROSS RETURNS									
WHEAT	\$9.50	20.00 BUSHELS						\$190.00	
DIRECT PAYMENT	\$0.00	20.00 BUSHELS	0.85					\$0.00	
COUNTER CYCLICAL PAYMENT	\$0.00							\$0.00	
TOTAL								\$190.00	
PURCHASED INPUTS									
	PRICE	QUANTITY	PURCHASED INPUTS					FIXED COST	TOTAL
SEED	\$0.28	30 LBS	\$8.40					\$8.40	
NITROGEN (N)	\$0.63	16 LBS	\$10.08					\$10.08	
PHOSPHATE (P205)	\$0.55	20 LBS	\$11.00					\$11.00	
INSECTICIDE	\$16.99	1 X/ACRE	\$16.99					\$16.99	
CROP INSURANCE	\$0.05		\$0.05					\$0.05	
SUBTOTAL								\$46.52	
PREHARVEST OPERATIONS									
	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL	
CHISEL	225 HP	0.05 HR		\$0.37	\$1.72	\$0.81	\$1.87	\$4.78	
DRILL	225 HP	0.05 HR		\$0.37	\$1.72	\$0.58	\$3.12	\$5.79	
FERT SPREADER	225 HP	0.05 HR		\$0.37	\$1.72	\$0.39	\$1.35	\$3.83	
SUBTOTAL								\$14.39	
HARVEST OPERATIONS									
COMBINE		0.14 HR		\$1.04	\$3.57	\$3.56	\$6.40	\$14.57	
HAUL	2 TON	0.14 HR		\$1.04	\$2.71	\$0.96	\$2.94	\$7.66	
SUBTOTAL								\$22.23	
OVERHEAD EXPENSES									
DOWNTIME		0.11 HR		\$0.80				\$0.80	
EMPLOYEE BENEFITS				\$0.58				\$0.58	
INSURANCE			\$0.06					\$0.06	
LAND TAXES							\$0.35	\$0.35	
SUPERVISION AND MANAGEMENT				\$16.14				\$16.14	
OTHER EXPENSES			\$21.47					\$21.47	
SUBTOTAL								\$39.40	
TOTAL OPERATING EXPENSES									
								\$68.05	
NET OPERATING PROFIT									
								\$67.46	
INTEREST ON OPERATING CAPITAL									
(\$25.89 @ 7.75%)								\$2.01	
INTEREST ON EQUIPMENT INVESTMENT									
								\$7.73	
RETURN TO LAND AND RISK									
								\$57.72	
BUDGET SUMMARY									
GROSS RETURN		\$190.00							
VARIABLE OPERATING EXPENSES	\$85.79								
RETURN OVER VARIABLE EXPENSES		\$104.21	(GROSS MARGIN)						
FIXED EXPENSES	\$16.03								
NET FARM INCOME		\$88.18	(RETURN TO CAPITAL, LABOR, LAND & RISK)						
LABOR AND MANAGEMENT COST	\$20.72								
NET OPERATING PROFIT		\$67.46	(RETURN TO CAPITAL, LAND & RISK)						
CAPITAL COSTS	\$9.74								
RETURN TO LAND AND RISK		\$57.72							

TABLE 6. Grain sorghum, dryland, budgeted per acre costs and returns for a 1,600 acre farm with above average management, Lea County
 Projected 2008.
 Planting dates: May 15 - June 10
 Harvest dates: October 15 - November 15

ITEM	PRICE	YIELD	BASE						TOTAL	
GROSS RETURNS										
GRAIN SORGHUM	\$7.70	12.00 CWT							\$92.40	
COUNTER CYCLICAL PAYMENT	\$0.00	0.00 CWT							\$0.00	
DIRECT PAYMENT	\$0.00	12.00 CWT	0.85						\$0.00	
TOTAL									\$92.40	
PURCHASED INPUTS										
PURCHASED INPUTS	PRICE	QUANTITY	PURCHASED INPUTS						FIXED COST	TOTAL
SEED	\$0.89	3 LBS	\$2.67							\$2.67
NITROGEN (N)	\$0.63	16 LBS	\$10.08							\$10.08
PHOSPHATE (P205)	\$0.55	20 LBS	\$11.00							\$11.00
HERBICIDE	\$18.82	1 X/ACRE	\$18.82							\$18.82
CROP INSURANCE	\$0.08		\$0.08							\$0.08
SUBTOTAL			\$42.64							\$42.64
PREHARVEST OPERATIONS										
PREHARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL		
FERT SPREADER	225 HP	0.05 HR		\$0.37	\$1.72	\$0.39	\$1.35	\$3.83		
CHISEL & SPRAY	225 HP	0.07 HR		\$0.52	\$2.41	\$1.21	\$3.12	\$7.26		
PLANTER	225 HP	0.08 HR		\$0.60	\$2.75	\$0.95	\$4.90	\$9.20		
CULTIVATOR (2X)	225 HP	0.12 HR		\$0.89	\$4.13	\$1.68	\$4.33	\$11.04		
SUBTOTAL		0.32 HR		\$2.38	\$11.00	\$4.24	\$13.70	\$31.33		
HARVEST OPERATIONS										
COMBINE		0.14 HR		\$1.04	\$3.57	\$3.89	\$6.40	\$14.90		
HAUL	2 TON	0.14 HR		\$1.04	\$2.71	\$1.09	\$2.94	\$7.79		
SUBTOTAL		0.28 HR		\$2.09	\$6.28	\$4.98	\$9.34	\$22.69		
OVERHEAD EXPENSES										
DOWNTIME		0.15 HR		\$1.12				\$1.12		
EMPLOYEE BENEFITS				\$0.80				\$0.80		
INSURANCE			\$0.09					\$0.09		
LAND TAXES							\$0.35	\$0.35		
SUPERVISION AND MANAGEMENT				\$10.43				\$10.43		
OTHER EXPENSES			\$21.47					\$21.47		
SUBTOTAL		0.15 HR		\$21.56	\$12.35		\$0.35	\$34.26		
TOTAL OPERATING EXPENSES		0.75 HR		\$64.20	\$16.82	\$17.28	\$9.22	\$23.39	\$130.91	
NET OPERATING PROFIT									(\$38.51)	
INTEREST ON OPERATING CAPITAL		(\$26.07 @	7.75%)					\$2.02	
INTEREST ON EQUIPMENT INVESTMENT									\$11.58	
RETURN TO LAND AND RISK									(\$52.11)	

BUDGET SUMMARY

GROSS RETURN		\$92.40	
VARIABLE OPERATING EXPENSES	\$90.70		
RETURN OVER VARIABLE EXPENSES		\$1.70	(GROSS MARGIN)
FIXED EXPENSES	\$23.39		
NET FARM INCOME		(\$21.69)	(RETURN TO CAPITAL, LABOR, LAND & RISK)
LABOR AND MANAGEMENT COST	\$16.82		
NET OPERATING PROFIT		(\$38.51)	(RETURN TO CAPITAL, LAND & RISK)
CAPITAL COSTS	\$13.60		
RETURN TO LAND AND RISK		(\$52.11)	

TABLE 7. Summary of per acre costs and returns for a 1,600 acre farm with above average management, Lea County, Projected 2008.

	WHEAT	GRAIN SORGHUM
	BU	CWT
PRIMARY YIELD	20.00	12.00
PRIMARY PRICE	\$9.50	\$7.70
GOVERNMENT PAYMENTS	\$0.00	\$0.00
SECOND INCOME	\$0.00	\$0.00
GROSS RETURN	\$190.00	\$92.40
VARIABLE OPERATING EXPENSES		
SEED	\$8.40	\$2.67
FERTILIZER	\$21.08	\$21.08
CHEMICALS	\$16.99	\$18.82
CROP INSURANCE	\$0.05	\$0.08
OTHER PURCHASED INPUTS		
CANAL WATER		
FUEL, OIL & LUBRICANTS-EQUIPMENT	\$11.44	\$17.28
FUEL-IRRIGATION		
REPAIRS	\$6.30	\$9.22
CUSTOM CHARGES	\$0.00	\$0.00
LAND TAXES	\$0.35	\$0.35
OTHER EXPENSES	\$21.53	\$21.56
TOTAL VARIABLE EXPENSES	\$86.14	\$91.05
RETURN OVER VARIABLE EXPENSES	\$103.86	\$1.35
FIXED EXPENSES	\$15.68	\$23.04
TOTAL EXPENSES	\$101.82	\$114.09
RETURNS TO CAPITAL, LABOR, LAND & RISK	\$88.18	(\$21.69)
LABOR AND MANAGEMENT COSTS	\$20.72	\$16.82
RETURNS TO CAPITAL, LAND & RISK	\$67.46	(\$38.51)
CAPITAL COSTS		
INTEREST ON OPERATING CAPITAL	\$2.01	\$2.02
INTEREST ON EQUIPMENT INVESTMENT	\$7.73	\$11.58
TOTAL CAPITAL COSTS	\$9.74	\$13.60
RETURN TO LAND AND RISK	\$57.72	(\$52.11)

TABLE 8. Whole farm summary, Lea County,
Projected 2008.

GROSS RETURNS		
WHEAT	914.00 ACRES	
CROP		\$173,660
DIRECT PAYMENT		\$0
COUNTER CYCLICAL PAYMENT		\$0
GRAIN SORGHUM	646.00 ACRES	
CROP		\$59,690
DIRECT PAYMENT		\$0
GROSS RETURN		<u>\$233,350</u>
VARIABLE OPERATING EXPENSES		
SEED		\$9,402
FERTILIZER		\$32,885
CHEMICALS		\$27,680
CROP INSURANCE		\$100
OTHER PURCHASED INPUTS		\$0
CANAL WATER		\$0
FUEL, OIL & LUBRICANTS-EQUIPMENT		\$21,618
FUEL-IRRIGATION		\$0
REPAIRS		\$11,710
CUSTOM CHARGES		\$0
LAND TAXES		\$546
OTHER EXPENSES		\$33,606
TOTAL VARIABLE EXPENSES		<u>\$137,547</u>
RETURN OVER VARIABLE EXPENSES		\$95,803
FIXED EXPENSES		\$29,218
TOTAL EXPENSES		\$166,765
NET FARM INCOME		\$66,585
LABOR AND MANAGEMENT COSTS		\$29,803
NET OPERATING PROFIT		\$36,782
CAPITAL COSTS		
INTEREST ON OPERATING CAPITAL		\$3,139
INTEREST ON EQUIPMENT INVESTMENT		\$14,546
TOTAL CAPITAL COSTS		<u>\$17,686</u>
RETURN TO LAND AND RISK		<u>\$19,096</u>

LAND VALUE	RETURN TO RISK*	RETURN ON INVESTMENT**
\$150 /ACRE	\$11,896	8.10%
\$200 /ACRE	\$9,496	6.88%
\$250 /ACRE	\$7,096	5.99%
\$300 /ACRE	\$4,696	5.30%
\$350 /ACRE	\$2,296	4.75%

* 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)