

MICROCOMPUTER CROP COST AND RETURN GENERATOR

BUDGET AREA..... SOUTHERN HIGH PLAINS, LEA COUNTY, Projected 2011.
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 2011.

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 2011.

Item		
Labor Wage Rate:		
Equipment operators	\$/hour	\$8.55
General & Irrigators	\$/hour	\$7.25
Purchased Inputs:		
Fertilizer:		
Nitrogen (N)	\$/pound	\$0.71
Phosphate (P205)	\$/pound	\$0.65
Seed:		
Wheat	\$/pound	\$0.32
Grain Sorghum	\$/pound	\$1.78
Fuel:		
Diesel fuel	\$/gallon	\$2.95
Gasoline	\$/gallon	\$3.05
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	7.00%
Land Interest Rate	percent	6.00%
Equipment Interest Rate	percent	7.00%
Real Interest Rate	percent	3.00%
Land Taxes	\$40.00 /acre (full value)	\$0.30
Personal Property Tax Rate	- NR - R	\$/ \$1,000 (Assessed Value) \$25.78
Supervision Factor	\$/labor hour	\$0.50
Management Rate	percent	7.00%

TABLE 3. Overhead cost information for Lea County,
Projected 2011.

Item		
Electricity (Domestic & Shop)	\$242.00 per month	\$2,904
Telephone	\$121.00 per month	\$1,452
Accounting & Legal		\$1,767
Misc. Supplies & Hand Tools		\$2,656
Pickup and Auto		
miles	37,510 @ \$0.500 per mile	\$18,755
Insurance		
- general liability (non-employee)		\$1,857
- fire/theft		\$1,470
Property Taxes		
- non-planted land		\$0
- other than land & machinery		\$6,010
Building repairs and maintenance		\$1,410
Dues, fees, publications		\$424
Farmstead Equipment		\$182
	Total	\$38,886
	Total per planted acre	\$24.93

TABLE 4. Equipment summary for a 1600 acre dryland farm with above average management, Lea County, Projected 2011.

EQUIPMENT	ITEM & SIZE	ANNUAL HOURS OF USE	NUMBER	VARIABLE COSTS					FIXED COSTS		
				TOTAL VALUE	FUEL, OIL, LUBRICANT	REPAIR	FUEL, OIL PER HR	REPAIR PER HR	DEPRECIATION	TAXES	TOTAL PER HR
TRACTOR	226 HP	344	1	\$69,925	\$11,436	\$2,690	\$33.26	\$7.83	\$8,694	\$482	\$26.69
TRUCK	2 TON	218	1	\$23,000	\$4,093	\$1,759	\$18.74	\$8.05	\$4,600	\$170	\$21.84
COMBINE	145 HP	218	1	\$102,000	\$5,381	\$5,392	\$24.64	\$24.69	\$8,864	\$491	\$42.83
GRAIN HEAD	22 FT	218	1	\$3,600		\$513		\$2.35	\$501	\$28	\$2.42
CULTIVATOR	12 ROW	78	1	\$5,000		\$481		\$6.20	\$667	\$37	\$9.08
CHISEL	40 FT	91	1	\$6,750		\$761		\$8.37	\$900	\$50	\$10.45
SPRAYER	12 ROW	45	1	\$2,250		\$49		\$1.08	\$300	\$17	\$7.00
PLANTER	12 ROW	52	1	\$8,500		\$211		\$4.08	\$1,700	\$63	\$34.11
DRILL 40 FT	40 FT	46	1	\$7,750		\$170		\$3.72	\$1,550	\$57	\$35.17
FERT SPREADER DEALER FURNISHET	78	1									
				\$228,775	\$20,909	\$12,026			\$27,776	\$1,394	

EQUIPMENT LIST

ITEM	NEW VALUE	USED VALUE	YEARS LIFE	EQUIP CODE	MAX HOURS	FUEL UNITHR	LUBE COEF	ACCUM HOURS	INTEREST AGE	INTEREST EXPENSE
TRACTOR	226 HP	130,417	69,925	15	1	800	10.25	0.10	2062.92	6 4,564.60
TRUCK	2 TON	46,000	23,000	10	6	800	6.05	0.05	2839.20	13 1,610.00
COMBINE	145 HP	132,955	102,000	15	2	300	6.96	0.20	2839.20	13 4,653.43
GRAIN HEAD	22 FT	7,500	3,600	15	2	300			2839.20	13 293.20
CULTIVATOR	12 ROW	10,000	5,000	15	3	500			1240.32	16 350.00
CHISEL	40 FT	13,500	6,750	15	3	300			1363.80	15 472.50
SPRAYER	12 ROW	4,500	2,250	15	8	250			678.30	15 157.50
PLANTER	12 ROW	17,000	8,500	10	8	250			671.84	13 595.00
DRILL 40 FT	40 FT	15,500	7,750	10	8	100			594.10	13 542.50
FERT SPREADER DEALER FURNISHED						100			1404.00	18

USAGE LIST

ITEM	PER ACRE TOTALS		
	WHEAT	MILO	TOTALS
-----hours per acre-----			
TRACTOR	0.15	0.32	0.47
TRUCK	0.14	0.14	0.28
COMBINE	0.14	0.14	0.28
GRAIN HEAD	0.14	0.14	0.28
CULTIVATOR	0.00	0.12	0.12
CHISEL	0.05	0.07	0.12
SPRAYER	0.00	0.07	0.07
PLANTER	0.00	0.08	0.08
DRILL 40 FT	0.05	0.00	0.05
FERT SPREADER DEALER FURNISHED	0.05	0.05	0.10

INTEREST PRORATION

WHEAT	MILO
-----dollars	per acre-----
1.99	4.25
1.03	1.03
2.98	2.98
0.17	0.17
0.00	0.54
0.26	0.36
0.00	0.24
0.00	0.92
0.59	0.00
7.03	10.50

MACHINE	POWER UNIT	TIMES OVER	ACCOMPLISHMENT		
			RATE	TOTAL	CUSTOM
WHEAT ACRES: 914 PUMP WATER:					
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	

MACHINE	POWER UNIT	TIMES OVER	ACCOMPLISHMENT		
			RATE	TOTAL	CUSTOM
GRAIN SORGHUM ACRES: 646 PUMP WATER:					
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	0.08	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	0.000080	0.000140	0.000040	0.000240	0.000200
50	0.000060	0.000020	0.000620	0.000020	0.000080	0.000140	0.000040	0.000240	0.000200
100	0.000060	0.000020	0.000620	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	0.000260
300	0.000030	0.000030	0.000390	0.000060	0.000230	0.000310	0.000140	0.000630	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	0.000390	0.000190	0.000860	0.000530
700	0.000030	0.000100	0.000320	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	0.000390	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	0.000550	0.000295		
2000	0.000110	0.000265	0.000280	0.000305	0.000505	0.000565	0.000310		
2500	0.000066								
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 hoe, disks, moldboard plows, chisels, field cultivators row cultivators, laser plane
- 4 harrows, wagons, floats, roto buck, draa, roller, water furrow, bed shaper
- 5 balewagons, cotton pickers, cotton strippers, corn pickers corn heads, forage equipment, rotary mowers, stalk choppers.
- 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 2011.
 Planting dates: August 15 - September 30
 Harvest dates: June 15 - July 5

ITEM	PRICE	YIELD	BASE	TOTAL
GROSS RETURNS				
WHEAT	\$6.50	20.00 BUSHEL		\$130.00
DIRECT PAYMENT	\$0.00	20.00 BUSHEL	0.85	\$0.00
COUNTER CYCLICAL PAYMENT	\$0.00			\$0.00
TOTAL				\$130.00

PURCHASED INPUTS	PRICE	QUANTITY	PURCHASED INPUTS	FIXED COST	TOTAL
SEED	\$0.32	30 LBS	\$9.60		\$9.60
NITROGEN (N)	\$0.71	16 LBS	\$11.36		\$11.36
PHOSPHATE (P205)	\$0.65	20 LBS	\$13.00		\$13.00
INSECTICIDE	\$16.99	1 X/ACRE	\$16.99		\$16.99
CROP INSURANCE	\$0.05		\$0.05		\$0.05
SUBTOTAL					\$51.00

PREHARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
CHISEL	225 HP	0.05 HR		\$0.43	\$1.66	\$0.81	\$1.86	\$4.76
DRILL	225 HP	0.05 HR		\$0.43	\$1.66	\$0.58	\$3.09	\$5.76
FERT SPREADER	225 HP	0.05 HR		\$0.43	\$1.66	\$0.39	\$1.33	\$3.82
SUBTOTAL		0.15 HR	\$0.00	\$1.28	\$4.99	\$1.78	\$6.28	\$14.33

HARVEST OPERATIONS								
COMBINE		0.14 HR		\$1.20	\$3.45	\$3.56	\$6.34	\$14.54
HAUL	2 TON	0.14 HR		\$1.20	\$2.62	\$0.96	\$3.06	\$7.84
SUBTOTAL		0.28 HR	\$0.00	\$2.39	\$6.07	\$4.52	\$9.39	\$22.38

OVERHEAD EXPENSES								
DOWNTIME		0.11 HR		\$0.92				\$0.92
EMPLOYEE BENEFITS				\$0.66				\$0.66
INSURANCE			\$0.07					\$0.07
LAND TAXES							\$0.30	\$0.30
SUPERVISION AND MANAGEMENT				\$12.22				\$12.22
OTHER EXPENSES			\$24.93					\$24.93
SUBTOTAL		0.11 HR	\$25.00	\$13.80			\$0.30	\$39.09

TOTAL OPERATING EXPENSES		0.54 HR	\$76.00	\$17.47	\$11.06	\$6.30	\$15.97	\$126.81
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NET OPERATING PROFIT \$3.19

INTEREST ON OPERATING CAPITAL (\$28.07 @ 7.00%) \$1.97
 INTEREST ON EQUIPMENT INVESTMENT \$7.03

RETURN TO LAND AND RISK (\$5.80)

BUDGET SUMMARY

GROSS RETURN		\$130.00	
VARIABLE OPERATING EXPENSES	\$93.36		
RETURN OVER VARIABLE EXPENSES		\$36.64	(GROSS MARGIN)
FIXED EXPENSES	\$15.97		
NET FARM INCOME		\$20.67	(RETURN TO CAPITAL, LABOR, LAND & RISK)
LABOR AND MANAGEMENT COST	\$17.47		
NET OPERATING PROFIT		\$3.19	(RETURN TO CAPITAL, LAND & RISK)
CAPITAL COSTS	\$8.99		
RETURN TO LAND AND RISK		(\$5.80)	

TABLE 6. Grain sorghum, dryland, budgeted per acre costs and returns for a 1,600 acre farm with above average management, Lea County, Projected 2011.
Planting dates: May 15 - June 10
Harvest dates: October 15 - November 15

ITEM	PRICE	YIELD	BASE	TOTAL
GROSS RETURNS				
GRAIN SORGHUM	\$8.63	12.00 CWT		\$103.50
COUNTER CYCLICAL PAYMENT	\$0.00	0.00 CWT		\$0.00
DIRECT PAYMENT	\$0.00	12.00 CWT	0.85	\$0.00
TOTAL				\$103.50

PURCHASED INPUTS	PRICE	QUANTITY	PURCHASED INPUTS	FIXED COST	TOTAL
SEED	\$1.78	3 LBS	\$5.34		\$5.34
NITROGEN (N)	\$0.71	16 LBS	\$11.36		\$11.36
PHOSPHATE (P205)	\$0.65	20 LBS	\$13.00		\$13.00
HERBICIDE	\$18.82	1 X/ACRE	\$18.82		\$18.82
CROP INSURANCE	\$0.08		\$0.08		\$0.08
SUBTOTAL			\$48.59		\$48.59

PREHARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
FERT SPREADER	225 HP	0.05 HR		\$0.43	\$1.66	\$0.39	\$1.33	\$3.82
CHISEL & SPRAY	225 HP	0.07 HR		\$0.60	\$2.33	\$1.21	\$3.09	\$7.23
PLANTER	225 HP	0.08 HR		\$0.68	\$2.66	\$0.95	\$4.86	\$9.16
CULTIVATOR (2X)	225 HP	0.12 HR		\$1.03	\$3.99	\$1.68	\$4.29	\$10.99
SUBTOTAL		0.32 HR		\$2.74	\$10.64	\$4.24	\$13.58	\$31.20

HARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
COMBINE		0.14 HR		\$1.20	\$3.45	\$3.89	\$6.34	\$14.87
HAUL	2 TON	0.14 HR		\$1.20	\$2.62	\$1.09	\$3.06	\$7.97
SUBTOTAL		0.28 HR		\$2.39	\$6.07	\$4.98	\$9.39	\$22.84

OVERHEAD EXPENSES	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
DOWNTIME	0.15 HR		\$1.28				\$1.28
EMPLOYEE BENEFITS			\$0.92				\$0.92
INSURANCE		\$0.10					\$0.10
LAND TAXES						\$0.30	\$0.30
SUPERVISION AND MANAGEMENT			\$11.60				\$11.60
OTHER EXPENSES		\$24.93					\$24.93
SUBTOTAL	0.15 HR		\$25.03	\$13.80		\$0.30	\$39.13

TOTAL OPERATING EXPENSES	0.75 HR		\$73.62	\$18.93	\$16.72	\$9.22	\$23.27	\$141.76
NET OPERATING PROFIT								(\$38.26)
INTEREST ON OPERATING CAPITAL	(\$28.94	@	7.00%)			\$2.03
INTEREST ON EQUIPMENT INVESTMENT								\$10.50
RETURN TO LAND AND RISK								(\$50.78)

BUDGET SUMMARY			
GROSS RETURN		\$103.50	
VARIABLE OPERATING EXPENSES	\$99.55		
RETURN OVER VARIABLE EXPENSES		\$3.95	(GROSS MARGIN)
FIXED EXPENSES	\$23.27		
NET FARM INCOME		(\$19.32)	(RETURN TO CAPITAL, LABOR, LAND & RISK)
LABOR AND MANAGEMENT COST	\$18.93		
NET OPERATING PROFIT		(\$38.26)	(RETURN TO CAPITAL, LAND & RISK)
CAPITAL COSTS	\$12.53		
RETURN TO LAND AND RISK		(\$50.78)	

TABLE 7. Summary of per acre costs and returns for a 1,600 acre farm with above average management, Lea County, Projected 2011.

	WHEAT	GRAIN SORGHUM
	BU	CWT
PRIMARY YIELD	20.00	12.00
PRIMARY PRICE	\$6.50	\$8.63
GOVERNMENT PAYMENTS	\$0.00	\$0.00
SECOND INCOME	\$0.00	\$0.00
GROSS RETURN	\$130.00	\$103.50
VARIABLE OPERATING EXPENSES		
SEED	\$9.60	\$5.34
FERTILIZER	\$24.36	\$24.36
CHEMICALS	\$16.99	\$18.82
CROP INSURANCE	\$0.05	\$0.08
OTHER PURCHASED INPUTS		
CANAL WATER		
FUEL, OIL & LUBRICANTS-EQUIPMENT	\$11.06	\$16.72
FUEL-IRRIGATION		
REPAIRS	\$6.30	\$9.22
CUSTOM CHARGES	\$0.00	\$0.00
LAND TAXES	\$0.30	\$0.30
OTHER EXPENSES	\$25.00	\$25.03
TOTAL VARIABLE EXPENSES	\$93.66	\$99.85
RETURN OVER VARIABLE EXPENSES	\$36.34	\$3.65
FIXED EXPENSES	\$15.68	\$22.97
TOTAL EXPENSES	\$109.33	\$122.82
RETURNS TO CAPITAL, LABOR, LAND & RISK	\$20.67	(\$19.32)
LABOR AND MANAGEMENT COSTS	\$17.47	\$18.93
RETURNS TO CAPITAL, LAND & RISK	\$3.19	(\$38.26)
CAPITAL COSTS		
INTEREST ON OPERATING CAPITAL	\$1.97	\$2.03
INTEREST ON EQUIPMENT INVESTMENT	\$7.03	\$10.50
TOTAL CAPITAL COSTS	\$8.99	\$12.53
RETURN TO LAND AND RISK	(\$5.80)	(\$50.78)

TABLE 8. Whole farm summary, Lea County,
Projected 2011.

GROSS RETURNS		
WHEAT	914.00 ACRES	
CROP		\$118,820
DIRECT PAYMENT		\$0
COUNTER CYCLICAL PAYMENT		\$0
GRAIN SORGHUM	646.00 ACRES	
CROP		\$66,861
DIRECT PAYMENT		\$0
GROSS RETURN		<u>\$185,681</u>
VARIABLE OPERATING EXPENSES		
SEED		\$12,224
FERTILIZER		\$38,002
CHEMICALS		\$27,680
CROP INSURANCE		\$100
OTHER PURCHASED INPUTS		\$0
CANAL WATER		\$0
FUEL, OIL & LUBRICANTS-EQUIPMENT		\$20,909
FUEL-IRRIGATION		\$0
REPAIRS		\$11,710
CUSTOM CHARGES		\$0
LAND TAXES		\$461
OTHER EXPENSES		\$39,019
TOTAL VARIABLE EXPENSES		<u>\$150,105</u>
RETURN OVER VARIABLE EXPENSES		\$35,576
FIXED EXPENSES		\$29,171
TOTAL EXPENSES		\$179,276
NET FARM INCOME		\$6,405
LABOR AND MANAGEMENT COSTS		\$28,201
NET OPERATING PROFIT		(\$21,796)
CAPITAL COSTS		
INTEREST ON OPERATING CAPITAL		\$3,105
INTEREST ON EQUIPMENT INVESTMENT		\$13,209
TOTAL CAPITAL COSTS		<u>\$16,313</u>
RETURN TO LAND AND RISK		<u>(\$38,110)</u>

LAND VALUE	RETURN TO RISK*	RETURN ON INVESTMENT**
\$150 /ACRE	(\$45,310)	-4.65%
\$200 /ACRE	(\$47,710)	-3.97%
\$250 /ACRE	(\$50,110)	-3.47%
\$300 /ACRE	(\$52,510)	-3.08%
\$350 /ACRE	(\$54,910)	-2.76%

* 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)