

Economic Analysis of Meat Goat Production



John Campbell

Area Farm Management Specialist



Budget Assumptions

- Estimates goat sales and economic costs and returns
- Includes interest expenses for resources used in the goat enterprise
- Assumes existing land resources are used.
- Producers should use their own information when available
- Personalized adjustments should be made as needed

Herd Assumptions For Budget

- 50 Does
- 1 Buck
- 150% kid crop
- 10 doe kids held for replacements
- 20% does replaced each year
- Sell 9 cull does; assume 1 dies



Revenue Per Doe

	Head	Average Weight	Average Price Cwt.	Sales Per Doe
Kids	65	65	80.00	\$67.60
Cull Does	9	70	50.00	6.30
Total Per Doe				\$73.90

Revenue based on selling 65 kids and 9 cull does per year.

Variable Expenses

- Hay - \$11.78 per doe
 - Does and buck consume 3.5 pounds per day for 120 days
 - Purchase price \$55.00 per ton
- Corn - \$9.42 per doe
 - Kids: 1 lb./day for 100 days
 - Does: one half lb./day for 90 days
 - Corn price \$2.75 per bushel



Variable Expenses

- Pasture - \$5.40 per doe
 - Stocking rate 5 does per acre
- Salt & Minerals - \$1.00 per doe
- Vet & Med - \$5.00 per doe
 - Worming does: 6 times, \$2.80 per doe
 - Worming kids: \$0.50 per doe
 - Vaccine: \$1.15 per doe
 - Incidentals: \$0.55 per doe



Variable Expenses

- Marketing - \$4.44 per doe
 - 74 head total @ \$3.00 per head
- Hauling - \$1.11 per doe
 - 74 head total @ \$0.75 per head
- Machinery - \$0.81 per doe
 - Tractor fuel for hay feeding
- Operating Interest - \$1.75 per doe

Depreciation & Repairs

- Buildings
 - Depreciation \$1.78 per doe
 - Repairs \$0.95 per doe
- Buck Depreciation - \$0.83 per doe
- Fence Repair and Depreciation - \$1.00/doe
- Machinery Depreciation - \$0.38 per doe

Interest Expenses

- Reflect the fact that capital invested is costly, regardless of its source
- Borrowed capital entails a cash interest charge for repayment to lenders
- Capital provided by the owner results in a non-cash opportunity cost
- Capital could have been invested elsewhere and earned interest

Interest Expenses

- Does and Buck \$6.98 per doe
 - Purchased buck for \$125
 - Does valued at \$75
- Bldgs. & Equip 1.42 per doe
- Fences 0.69 per doe
- Machinery 0.30 per doe



Labor Expenses

- \$6.50 per doe
 - 50 hours @ \$6.50 per hour
- Reflect the cost of hired and/or owner labor
- Owner provided labor is a non-cash opportunity cost for earnings foregone if time spent on another paying job or enterprise
- Hired labor is cash expense

Budget Summary - Herd

• Projected Total Revenue	\$3695
• Total Variable Expenses	2036
• Total Fixed Expenses	246
• Total Interest Expense	469
• Labor Expense	325
• Total All Expenses	3077
• Return to Land, Mgmt., Risk	618

Budget Summary - Per Doe

• Projected Total Revenue	\$74
• Total Variable Expenses	41
• Total Fixed Expenses	5
• Total Interest Expense	9
• Labor Expense	7
• Total All Expenses	62
• Return to Land, Mgmt., Risk	12

Sensitivity – Price & Production

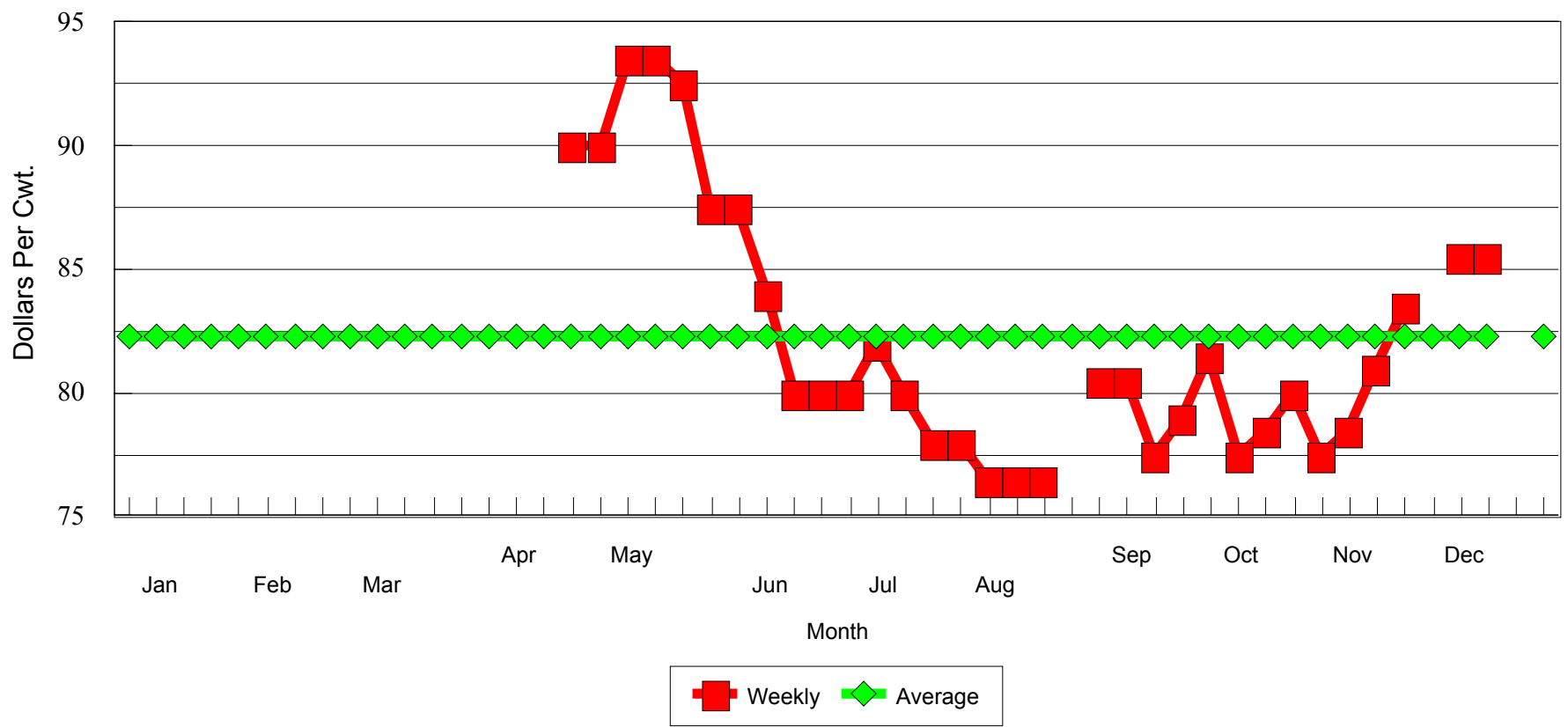
Price	1.3 Kids	1.5 Kids	1.7 Kids
70.00	-173.62	195.75	565.13
75.00	5.13	407.00	808.88
80.00	183.88	618.25	1,052.63
85.00	362.63	829.50	1,296.38
90.00	541.38	1,040.75	1,540.13

Sensitivity – Weight & Production

Wt.	1.3 Kids	1.5 Kids	1.7 Kids
59	-80.12	306.25	692.63
62	51.88	462.25	872.63
65	183.88	618.25	1,052.63
68	315.88	774.25	1,232.63
71	447.88	930.25	1,412.63

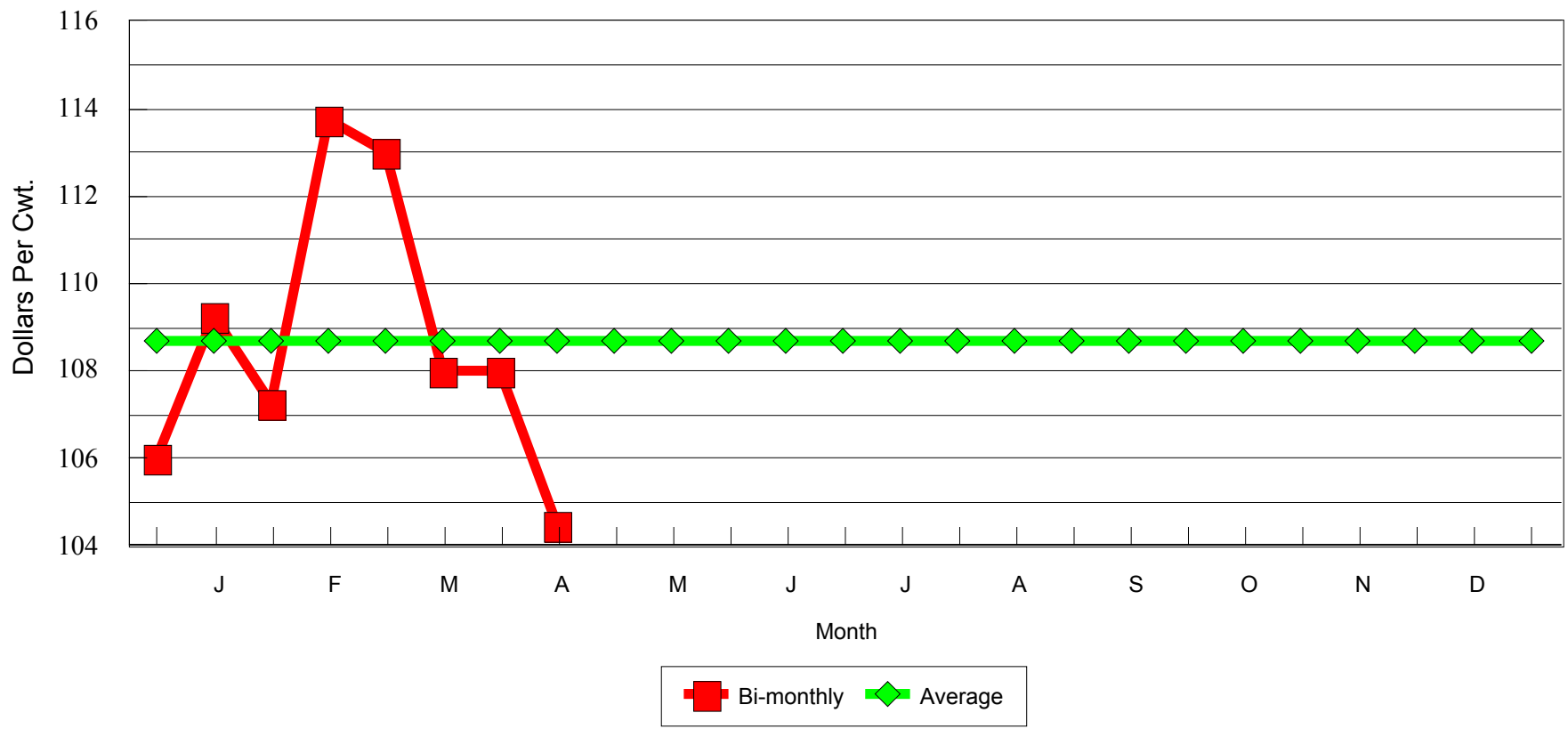
2001

Prime and Choice Kids, 50-75 Pounds
Possum Hollow Direct Buying Station



2003

Selection 2 Kids, 51-65 Pounds
Thompson Station Graded Sale



Market Information

- Thompson Station Market
 - www.ams.usda.gov/mnreports/NV_LS320.txt
- UT Agricultural Economics
 - economics.ag.utk.edu
- Market News
 - 800-342-8206
- USDA Marketing Service
 - www.ams.usda.gov/LSMNpubs/CFATN.htm



Whole Farm Planning

- Information for making informed decisions
- Reviews current financial situation
- Develops an individualized farm plan
- Analyzes potential consequences of changes in operation before changes occur
- Helps to determine appropriate production practices



Summary

- Adjust budget to specific farm situation
- Develop plan to attempt to obtain a price above the market average
- Manage for higher number of offspring
- Production, market weight, selling price combine to determine gross income
- Keep expenses as low as possible without decreasing production

Table 1

**GOAT PRODUCTION (50 DOES AND 1 BUCK)
ESTIMATED COSTS AND RETURNS**

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>PRICE</u>	<u>TOTAL</u>	<u>PER DOE</u>	<u>YOUR FARM</u>
REVENUE							
Kids (1)	65 Head	cwt	0.65	80.00	3380.00	67.60	_____
Cull Doe (2)	9 Head	cwt	0.70	50.00	315.00	6.30	_____
TOTAL REVENUE					3695.00	73.90	_____
VARIABLE EXPENSES							
Hay (3)		ton	10.71	55.00	589.05	11.78	_____
Cor n (4)	50 Does	bu/doe	0.80	2.75	110.00	2.20	_____
	75 Kids	bu/kid	1.75	2.75	360.94	7.22	_____
Pasture (5)		acre	10.00	27.00	270.00	5.40	_____
Salt & Minerals		head	50.00	1.00	50.00	1.00	_____
Vet & Med		head	50.00	5.00	250.00	5.00	_____
Marketing		head	74.00	3.00	222.00	4.44	_____
Hauling		head	74.00	0.75	55.50	1.11	_____
Machinery (6)		hour	14.00	2.91	40.74	0.81	_____
Operating Interest - 6 months			1948.23	9.00%	87.67	1.75	_____
TOTAL VARIABLE EXPENSES					2035.90	40.72	_____
RETURN ABOVE VARIABLE EXPENSES					1659.10	33.18	_____
DEPRECIATION AND REPAIRS							
Depreciation (7 Buildings, equipment					88.75	1.78	_____
Repairs Buildings, equipment					47.25	0.95	_____
Depreciation Buck					41.67	0.83	_____
Depr. & Repair: Fences					49.79	1.00	_____
Machinery		hour	14.00	1.37	19.18	0.38	_____
TOTAL FIXED EXPENSES					246.64	4.93	_____
TOTAL VARIABLE & FIXED EXPENSES					2282.53	45.65	_____
RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, RISK					1412.47	28.25	_____
INTEREST							
Doe & Buck (8)	9.00%				348.75	6.98	_____
Bldgs. & Equip	9.00%				70.88	1.42	_____
Fences	9.00%				34.47	0.69	_____
Machinery	9.00% hour		14.00	1.08	15.12	0.30	_____
TOTAL INTEREST EXPENSE					469.22	9.38	_____
TOTAL VARIABLE, FIXED, INTEREST EXPENSE					2751.75	55.03	_____
NET RETURN TO LAND, LABOR, MANAGEMENT, RISK					943.25	18.87	_____
LABOR EXPENSES							
LABOR		hour	50	6.50	325.00	6.50	_____
TOTAL ALL EXPENSES					3076.75	61.53	_____
RETURN TO LAND, MANAGEMENT, RISK					618.25	12.37	_____

FOOTNOTES TO TABLE 1

- (1) Revenue assumes a 150% weaned kid crop with 10 kept for replacements.
- (2) 20% of does replaced each year; sell 9 cull does, assume 1 died.
- (3) Does and buck consume 3.5 pounds of hay per day for 120 days.
- (4) Kids consume 1 pound of corn per day for 100 days. Does consume 1/2 pound per day for 90 days.
- (5) Pasture stocking rate is 5 does per acre.
- (6) Machinery cost is for 50 hp tractor to feed hay.
- (7) Assume 1/2 use of buildings for goats.
- (8) One buck is purchased for \$125 and used for 3 years. Does are valued at \$75.00.

Table 2 Building, Equipment, and Livestock Fixed Expenses

ITEM	COST (\$)	LIFE (YEARS)	DEPREC. (\$/YEAR)	INTEREST (\$/YEAR)	REPAIRS (\$/YEAR)	TOTAL (\$/YEAR)
Buildings and Equipment						
Pole Barn, 500 sq. ft., 6 months	2750	20	68.75	61.88	41.25	171.88
Feeders and Waterers	200	10	20.00	9.00	6.00	35.00
Fencing, 2640 ft. @ \$0.29	766	20	38.30	34.47	11.49	84.26
TOTAL BUILDINGS AND EQUIPMENT			127.05	105.35	58.74	291.14
Livestock						
Buck	125	3	41.67	11.25	n. a.	52.92
Does	3750		n. a.	337.50	n. a.	337.50
TOTAL LIVESTOCK			41.67	348.75		390.42

Table 3 The Effects of Varying Kids Weaned per Doe and Market Price on Returns to Land, Management and Risk.

Price Per Cwt.	Kids Weaned Per Doe						
	1.2	1.3	1.4	1.5	1.6	1.7	1.8
65.00	-520.81	-352.37	-183.94	-15.50	152.94	321.38	489.81
70.00	-358.31	-173.62	11.06	195.75	380.44	565.13	749.81
75.00	-195.81	5.13	206.06	407.00	607.94	808.88	1009.81
80.00	-33.31	183.88	401.06	618.25	835.44	1052.63	1269.81
85.00	129.19	362.63	596.06	829.50	1062.94	1296.38	1529.81
90.00	291.69	541.38	791.06	1040.75	1290.44	1540.13	1789.81
95.00	454.19	720.13	986.06	1252.00	1517.94	1783.88	2049.81

Table 4 The Effects of Varying Kids Weaned per Doe and Market Weight on Returns to Land, Management and Risk.

Market Weight	Kids Weaned Per Doe						
	1.2	1.3	1.4	1.5	1.6	1.7	1.8
56.00	-393.31	-212.12	-30.94	150.25	331.44	512.63	693.81
59.00	-273.31	-80.12	113.06	306.25	499.44	692.63	885.81
62.00	-153.31	51.88	257.06	462.25	667.44	872.63	1077.81
65.00	-33.31	183.88	401.06	618.25	835.44	1052.63	1269.81
68.00	86.69	315.88	545.06	774.25	1003.44	1232.63	1461.81
71.00	206.69	447.88	689.06	930.25	1171.44	1412.63	1653.81
74.00	326.69	579.88	833.06	1086.25	1339.44	1592.63	1845.81