

The Use of Enterprise Budgets to Measure Cost of Production in Meat Goat Operations

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Introduction

The current domestic demand for goat meat, also known as chevron, is twice the amount that is being produced in the USA. The demand for this product in Florida is reflected in increased production which is driven mainly by a growing ethnic population who consume goat meat. This has led to interest and investments in meat goat production. Most of these small farms are part-time operations but making a profit remains a priority, regardless of size. The availability of imported goat meat from countries with low costs of production tends to place a ceiling on the price paid for goat meat in Florida. Producers in Florida must be able to compete successfully with imports from outside of the USA. Consequently, investors need to be trained to measure their cost of production through which they can identify efficient production practices needed to reduce input costs.

Materials and Methods

This enterprise budget was developed using a Microsoft Excel spreadsheet. Literature on meat goat production was reviewed to obtain information on production parameters for goats in Florida, specifically meat breeds. Six goat producers in Florida were interviewed to gather information on production. There were many variations among different breeds of goats such as the Boer, Kiko, Spanish and Myotonic goats. Consequently, this sample budget should be used as a template only. Each farm should develop a budget that reflects its own input costs and market prices.

Assumptions

Production

- Animals are rotationally grazed on 5 acres of pasture.
- Kids are sold at the target weight of 70-90 lbs. on the auction market.
- Animals are pasture fed from mid-spring to early winter and supplemented with hay and/or grain during the winter.
- Transportation costs cover trips to the livestock auction.
- Pasture maintenance costs include fertilizer and lime (annually) and reseeding (every 4-5 years).
- Fence repairs are approximated at 4% of replacement value.

- Building and equipment repair and maintenance costs are approximated at 1% of replacement value.
- The income from selling a buck every two years will be used to purchase another buck of improved genetics.
- Replacement does will be selected from the herd.

Economic

- Interest on Operating Capital equal to 10% for 6 months
- Overhead costs are assumed to be 10% of Operating Capital needs
- 5 sensitivity scenarios were assumed: worst, pessimistic, expected, optimistic, and best

Enterprise Profitability

Returns above cash costs for the enterprise are positive in 56% of scenarios. Returns above total costs are positive 8% of the time. Through this it can be determined that profitability of a goat production enterprise is highly dependent on price and yield. Short-term debt and variable costs can be paid under most circumstances. Further economic analysis such as cash flow would be needed to determine long-term profitability.

Concluding Remarks

The main objective of this effort is to increase the knowledge and ability of producers to use an enterprise budget. The knowledge they gain would influence them to make changes to their production practices that are conducive to productive and profitable enterprises. The enterprise budget is available electronically, as a Microsoft Excel spreadsheet formatted to be used on any meat goat enterprise to calculate costs of production.

Table 1. Meat Goat Enterprise Budget						2013
General Information						
Acres	5	# of Bucks				1
Stocking Rate	5	Replacement Doelings				5
# of Nannies	25	Labor Rate		\$	10.00	
Kid Crop	200%	Miles to Market				50
Male	25	Trips to Market				3
Female	25	Weight				80
Kids Yielded	50					
Revenue	Total weight	Price per cwt*				Total \$
	3600	\$ 202.00				\$ 7,272.00
Variable Costs		Unit	Quantity	Price	Value	Total \$
Feed Costs						
Pasture Management	acre	5	\$	19.70	\$	98.50
Supplemental Feed	nanny	25	\$	119.84	\$	2,996.00
Minerals	nanny	25	\$	6.00	\$	150.00
Total Production Cost						\$ 3,244.50
Veterinary						
General Care	kid	50	\$	4.00	\$	200.00
Veterinary Service	nanny	25	\$	6.00	\$	150.00
Total Veterinary Cost						\$ 350.00
Repairs, Machine Operation, and Interest						
Fence	%	4%	\$	8,400.00	\$	336.00
Facilities	%	1%	\$	2,000.00	\$	20.00
Machine Labor	acre	5	\$	25.00	\$	250.00
Interest on Operating Capital	%	5%	\$	5,804.00	\$	290.20
Total Repairs, Machine Operation, and Interest Cost						\$ 896.20
Auction and Hauling						
Commission	head	45	\$	6.50	\$	292.50
Vehicle	miles	150	\$	0.74	\$	111.00
Total Auction and Hauling Cost						\$ 403.50
Labor	hour	120	\$	10.00	\$	1,200.00
Total Labor Cost						\$ 1,200.00
Total Variable Cost						\$ 6,094.20
Fixed Costs						
Equipment and Infrastructure						
Depreciation and Interest	\$	1	\$	1,834.97	\$	1,835.97
Taxes and Insurance	\$	1	\$	302.75	\$	303.75
Land	acre	5	\$	160.00	\$	800.00
Overhead		10%	\$	5,804.00	\$	580.40
Total Fixed Cost						\$ 3,520.12
Total Cost						\$ 9,614.32
Returns Above Cash Costs						\$ 1,177.80
Returns Above Total Costs						\$ (2,342.32)
Breakeven Price to Cover Cash Costs (cwt)						\$ 169.28
Breakeven Price to Cover Total Costs (cwt)						\$ 267.06

Interest on Operating Expenses charged at 10% for 6 months

Overhead costs are assumed to be equal to 10% of operating capital

*Market Price as reported for slaughter weight kids at White County, GA Livestock Market 7/2/13

Table 2. Investment Costs								2013	
			Taxes and Insurance Rate		1.4%				
			Interest Rate		6.5%				
			Original Cost	Salvage Value	Life (Yrs.)	Depreciation	Interest	Tax & Ins.	Annualized
Land*	acres	5	\$ 12,500.00	\$ -			\$ 406.25	\$ 175.00	\$ 581.25
Equipment & Infrastructure									
Facilities									
	Storage Barn (Hay and Equipment)		\$ 2,500.00	\$ -	20	\$ 125.00	\$ 81.25	\$ 35.00	\$ 241.25
	Perimeter Fence		\$ 5,600.00	\$ -	20	\$ 280.00	\$ 182.00	\$ 78.40	\$ 540.40
	Permanent Internal Fence		\$ 2,800.00	\$ -	20	\$ 140.00	\$ 91.00	\$ 39.20	\$ 270.20
	Water Supply		\$ 6,250.00	\$ -	25	\$ 250.00	\$ 203.13	\$ 87.50	\$ 540.63
	Corral		\$ 2,000.00	\$ 350.00	20	\$ 82.50	\$ 76.38	\$ 28.00	\$ 186.88
	Total Equipment Costs		\$ 16,650.00			\$ 877.50	\$ 633.75	\$ 268.10	\$ 1,779.35
Livestock*									
		# of Head							
	Nannies	25	\$ 1,875.00	\$ 1,875.00	7	\$ -	\$ 121.88	\$ 26.25	\$ 148.13
	Billy	1	\$ 110.00	\$ 110.00	5	\$ -	\$ 7.15	\$ 1.54	\$ 8.69
	Total Livestock Costs		\$ 1,985.00			\$ -	\$ 129.03	\$ 27.79	\$ 156.82
Durables									
	Tools		\$ 200.00	\$ -	10	\$ 20.00	6.5	\$ 2.80	\$ 29.30
	Handling Equipment		\$ 90.00	\$ -	3	\$ 30.00	2.925	\$ 1.26	\$ 34.19
	Pasture Seed		\$ 300.00	\$ -	5	\$ 60.00	\$ 2.10	\$ -	\$ 62.10
	Temporary Electric Fence		\$ 200.00	\$ -	3	\$ 66.67	\$ 6.50	\$ 2.80	\$ 75.97
	Total Durables		\$ 790.00			\$ 176.67	\$ 18.03	\$ 6.86	\$ 201.55
	Utility Hookups (Electric and Water)		\$ 500.00						
	Total Investment		\$ 32,425.00						\$ 2,137.72
						Total Annual Fixed Cost			

Depreciation = (Initial Cost - Salvage Value) / Years of Life

Interest on average investment = ((Initial Cost + Salvage Value) / 2) * Interest Rate

Property Taxes and Insurance = (Initial Investment * Tax and Insurance Rate)

*Land and Livestock are non-depreciable. Costs of maintaining the herd are captured through replacement purchases and cull sales.

Table 3. Feed Costs					
Description	Unit	Quantity	Price	Total	
Pasture Management					\$ 98.50
Nitrogen	b/acre on 5 acres of pas	lbs	250	\$ 0.25	\$ 62.50
Lime		tons	1	\$ 36.00	\$ 36.00
Supplemental Feed					\$ 2,996.00
Range Cubes		lbs	0	\$ 0.30	\$ -
Grain		tons	3.2	\$ 280.00	\$ 896.00
Additional Hay		tons	14	\$ 150.00	\$ 2,100.00
Minerals	.015 lb/hd/day	lbs	250	\$ 0.60	\$ 150.00
					\$ 150.00

Pasture is reseeded every 5 years, cost associated is captured in durable goods

Hay used to supplementally feed during winter months

Table 4. Kid Crop vs. Price: Sensitivity Table						
Returns above Cash Costs		Price cwt				
		Worst	Pessimistic	Expected	Optimistic	Best
Kid Crop Percentage		\$105.00	\$140.00	\$202.00	\$235.00	\$290.00
Worst	150%	\$ (3,129.92)	\$ (2,184.92)	\$ (510.92)	\$ (380.08)	\$ 1,865.08
Pessimistic	170%	\$ (2,803.63)	\$ (1,732.63)	\$ 164.37	\$ 1,174.37	\$ 2,857.37
Expected	200%	\$ (2,314.20)	\$ (1,054.20)	\$ 1,177.80	\$ 2,365.80	\$ 4,345.80
Optimistic	220%	\$ (1,987.91)	\$ (601.91)	\$ 1,853.29	\$ 3,160.09	\$ 5,338.09
Best	250%	\$ (1,498.48)	\$ 76.52	\$ 2,866.52	\$ 4,351.52	\$ 6,826.52

Purple Background indicates positive Returns above Total Costs