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Analyzing the Costs and Returns of US Meat Goat Farms

By Berdikul Qushim, Jeffrey M. Gillespie, and Kenneth McMillin

ABSTRACT

This paper analyzes the costs and returns of meat goat farms for the US and Southeastern US region. We compare components of costs and returns of meat goat production based on operation size (small and large) and targeted marketing segment (slaughter, breeding/show, and mixed). Our costs and returns analyses show that input expenses decrease substantially with increasing scale of operation. Increasing the number of meat goats for small meat goat farms can lead to reduced input expenses per acre.

Introduction

Over the past 25 years, meat goat production has increased in the US. Several factors have played significant roles in this expansion such as the formation of the American Meat Goat Association in 1992 and the American Boer Goat Association in 1993; repealing of the Wool Act of 1954 in 1993, which caused Angora goat producers to switch to meat goat production (USDA/APHIS, 2004); and financial settlements of the US tobacco industry, which caused former tobacco farmers to search for alternative farm enterprises (Spencer, 2008).



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This research is based upon work that was supported by the National Institute of Food and Agriculture, US Department of Agriculture, under award number 2010-85211-20476 and Hatch project LAB94178 from NIFA. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the US Department of Agriculture.

Furthermore, diversification of US population demographics with immigration from goat meat consuming countries has led to increased demand for goat meat (Solaiman, 2007). Over the period 1997 to 2012, the number of meat goats produced in the US increased from 1.23 million to 2.05 million (USDA-NASS, 2012 Census of Agriculture).

Meat goats are produced in all US states; however, most meat goat production occurs in the Southeastern US, with Texas dominating the production of meat goats (38%) among all US states (USDA-NASS, 2012 Census of Agriculture). Goat production can complement other livestock production such as cattle, sheep, and others on marginal grazing pasture land. Goats efficiently convert low-quality forage including brush and other plants that are less desirable forage for other livestock into quality lean meat, requiring little or no other feed sources such as corn and other processed feed (Singh-Knights and Knights, 2005). Moreover, meat goats can be produced with a small amount of grazing land and limited resources.

US meat goat production economics has not been studied extensively compared with other livestock industries such as beef cattle or swine (Qushim, Gillespie, and McMillin, 2015b). Therefore, comparatively little information exists regarding analysis of US meat goat production costs and returns based on different operation sizes and segments such as slaughter, breeder, and show. Much of the meat goat economics research in the US has focused on goat meat marketing and consumer preferences for goat meat (Worley et al., 2004; Knight et al., 2006; Ibrahim, 2011). Several meat goat budget worksheets have been developed by agricultural extension services in the US. Sahs and Doye (2006) developed a meat goat

enterprise budget for Oklahoma assuming a 50-doe unit. Their costs and returns are presented as those that could be expected for this operation size, but do not reflect averages of costs and returns across a sample of meat goat farms.

A few studies have focused on US meat goat farm production efficiency (Qushim et al., 2015a; Qushim, Gillespie, and McMillin, 2015b), finding increasing returns to scale for US and Southeastern US meat goat farms. They also found that meat goat farms could be scale efficient at 64 total goats or greater than 40 breeding does on their operations. There are also production efficiency studies that have addressed the industry in other countries (Zaibet et al., 2004; Ogunniyi, 2010; Alex, Cheemani, and Thomas, 2013). For the US goat industry, meat goat production is now the dominant enterprise compared to the production of goats for milk and wool. The USDA-NASS (2012) Census of Agriculture estimates show that about 77 and 78 percent of all goats in the US were raised for meat in 2002 and 2012, respectively. Moreover, the number of meat goat farms increased by 35 percent and operation size of meat goat farms increased by 6 percent from 2002 to 2012, showing increased meat goat production. The objective of this study is to analyze the costs and returns of US meat goat production by operation size, region, and segment, specifically slaughter, breeder, show, and other mixed farms.

Data and Methods

For costs and returns analyses of US and Southeastern US meat goat production, we use statistical procedures to compare the means of costs and returns categories by operation size and production segment. The Satterthwaite approximation method is used to calculate

degrees of freedom, assuming that the samples have unequal variances (Satterthwaite, 1946).

Data

We collected cost and returns data for 2011 from US commercial meat goat producers during Winter, 2013, using a nationwide mail survey. This cost and returns survey was a follow-up to an earlier mail survey which had collected information on production technology, marketing, farmer attitudes, and farm and farmer characteristics of US commercial meat goat farms in Summer, 2012. By randomly selecting addresses of these meat goat producers from an extensive Internet search, the first survey was sent to 1,600 producers who advertised their meat goat product online or were members of meat goat production associations.

The survey was designed using Dillman's (2007) Tailored Design Method. After sending two surveys and two postcard reminders, a total of 584 completed responses from the earlier survey were received. Our first survey response rate was 43 percent after adjusting for producers who did not produce meat goats in 2011 and undeliverable surveys. The last question of the first survey asked producers about their willingness to fill out a second survey on costs and returns of meat goat production. A total of 435 meat goat producers indicated their willingness to fill out the second questionnaire.

Two mailings of the second questionnaire were sent to those producers. A total of 124 completed responses were received for the second questionnaire for an effective return rate of 30 percent after adjusting for incomplete and undeliverable surveys. The second survey asked detailed questions about the farm's revenues and costs. The survey questions closely followed the format

of USDA's Agricultural Resource Management Survey (ARMS). The following discusses the specifics of the returns and costs that were collected.

Returns

Gross returns to the meat goat enterprise as requested in the survey included: (1) *Meat Goat* return, which is the revenue from the sales of meat goats (in dollar value) excluding meat goat breeding stock; (2) *Goat Meat* return, which is the revenue from the sale of goat meat (in dollar value); and (3) *Meat Goat Breeding Stock*, which is the revenue from sale of meat goat breeding stock (in dollar value).

Operating Costs

The variable costs included in the survey and the resulting analyses included those associated with the meat goat enterprise. They are: *Feed, Marketing Charges, Seeds/Plants, Fertilizer, Chemicals, Purchased Goats, Bedding/Litter, Veterinary/Medical, Fuel/Oil, Electricity, Utilities, Supplies, Repairs on Equipment, Maintenance on Buildings, Management Services, Cash Wages, Custom Machine and Hired Labor, and Cash Value of Non-Cash Payment for Farm Work*. Similar to wording in the ARMS survey and our goat survey, *Management Services* is the cost of professional or farm management services such as record-keeping, accounting, tax and business planning, farm product advice, conservation practices, etc. *Cash Wages* are the wages paid to hired farm and ranch labor plus payroll taxes and benefits. *Custom Machine and Hired Labor* is the cost of custom work, performed by machines and labor hired as a unit. *Cash Value of Non-Cash Payment for Farm Work* is the cash value of feed, farm commodities, fuel, housing, meals, other food, utilities, vehicles for personal use, and other non-cash payment for farm work.

For all of the expenses, the respondent was asked to provide the cost for the whole farm. For most of these expenses, the respondent was asked to also provide the share that was for the meat goat enterprise. We did not, however, request enterprise-specific expenses for the following inputs: *Seeds/Plants, Fertilizer, Chemicals, Utilities, Supplies, Repairs on Equipment, and Custom Machine and Hired Labor*. In order to estimate enterprise-specific expenses for those input variables, we followed the USDA ERS method (USDA/ ERS, 2015) where the portion of the meat goat enterprise total operating cost was calculated as the quotient of the total meat goat enterprise profit (GEP) divided by the total whole farm profit (TFP), or GEP/TFP. To estimate meat goat enterprise-specific expenses for those expenses where farmers were not specifically asked to allocate them to the meat goat enterprise, the whole-farm expenses were multiplied by GEP/TFP.

Fixed Costs

Fixed costs included in the survey and the resulting analyses include *Depreciation, Insurance, Interest/Fees, Vehicle/Licensing Fees, Taxes, and Equipment Rental*. Of these expenses, the respondent was asked to provide the share of Depreciation that was for the meat goat enterprise. All others were allocated to the meat goat enterprise according to the portion of farm profit from the meat goat enterprise, or multiplied by GEP/TFP.

We use 61 farms as a sub-sample for Southeastern US meat goat production cost and returns analyses after adjusting for outliers. The Southeastern US region includes AL, AR, FL, GA, KY, LA, MS, NC, Eastern OK, SC, TN, Eastern TX, VA, and WV. The Northern and Western US regions, for which we do not include separate estimates due to a small number of observations,

include, for the North, DE, IA, IL, IN, MD, ME, MI, MO, NH, NY, OH, PA, SD, WI, and, for the West, CA, CO, ID, KS, MT, Western OK, OR, UT, Western TX, WA. We developed these regions based on regional differences in environmental conditions such as heat, humidity, forage and soil types. We do not have cost and returns observations for the unlisted states.

Results

Descriptive statistics of parameters for US meat goat farms and farmer characteristics are presented in Table 1. The average total acreage for the whole farm and for the goat operation were 113 and 45 per farm, respectively, with average numbers of 54 goats and 30 breeding does per farm. On average, there were almost eight breeding-aged goats in the extensive-range or pasture/woods (not handled much) production system. Producers reported that the average farm included about 14 breeding-aged animals in pasture without rotational grazing systems and almost 20 breeding-aged animals in pasture with rotational grazing systems. On average, the lowest numbers of breeding-aged goats were in dry-lot production systems (about five per operation). Most of the meat goat farmers sold their goats for slaughter or as meat (43%) or as breeding stock (34%). On average, respondents sold 18 and 5 percent of their goats for show and other purposes, respectively. Most producers had some college or a college degree, on average. Sixty-five percent of the respondents indicated that they held off-farm jobs. Forty-one percent of the producers were female.

Comparing US Meat Goat Costs and Returns by Operation Size

The sample population of this study, 114 US farms after adjusting for outliers, was divided into two operation

sizes, with 56 small and 58 large farms, based on meat goat production land acres. Small and large meat goat farms are defined as goat production land of < 20 acres and goat production land of ≥ 20 acres, respectively.

A comparison of US meat goat enterprise expenses (in dollar value) per acre of goat production land by operation size is shown in Table 2. Meat goat enterprise variable, fixed, and total expenses per acre for large farms were lower than for small farms. Variable expenses that were lower per acre for large farms were *Feed, Marketing Charges, Seeds/Plants, Fertilizer, Chemicals, Bedding/Litter, Veterinary/Medical, Electricity, Utilities, Supplies, Repairs on Equipment, Management Services, Cash Wages, and Cash Value of Non-Cash Payment for Farm Work*. All fixed expenses per acre were significantly lower for large farms except for Equipment Rental.

Meat goat enterprise total returns per acre for small farms were higher than for large farms. Returns that were higher per acre for small farms were returns from *Meat Goats* and *Meat Goat Breeding Stock* sales, perhaps due to small operations using more intensive production systems than large farms. Small meat goat farms, on average, used 0.8 acres per breeding doe compared to large farms with 2.4 acres per breeding doe. US meat goat farms, on average, used 1.6 acres per breeding doe.

Comparing US Meat Goat Costs and Returns by Production Segment

A comparison of US meat goat enterprise expenses per goat production acre by segment (slaughter, breeder and show, and mixed farms) is shown in Table 3. Slaughter and Breeder/show goat farms were defined as those with greater than 50 percent of goat sales for slaughter and for breeding stock/livestock shows. Mixed farms

were those with goat sales for other purposes and/or none of the slaughter, breeding, or show with greater than 50 percent of goat sales. There were 40, 36, and 38 observations each for slaughter farms, breeder and show farms, and mixed farms, respectively. Meat goat enterprise total, variable, and fixed expenses per acre on slaughter goat farms were not statistically different than for breeder and show farms, and mixed farms. Specific variable costs that were lower cost per acre on slaughter goat farms were *Marketing Charges, Utilities, Supplies, and Cash Value of Non-Cash Payment for Farm Work*. Fertilizer was lower per acre on mixed farms than on slaughter farms. Variable expenses that were significantly lower for mixed goat farms than for breeder and show farms were *Electricity* and *Supplies*. Total fixed costs per acre for mixed farms were lower than for breeder and show farms. *Taxes* were lower cost per acre for slaughter relative to breeder and show farms. *Meat Goat Breeding Stock* return was higher for breeder and show farms than slaughter goat farms and mixed farms. *Meat Goat Breeding Stock* gross return was higher for mixed farms than slaughter goat farms.

Comparing Southeastern US Meat Goat Costs and Returns by Operation Size

The sample population of 61 Southeastern US farms was divided into two operation sizes, 33 small and 28 large farms based on goat production acreage. Small and large meat goat farms are defined as goat production land < 20 acres and goat production land ≥ 20 acres, respectively. A comparison of Southeastern US meat goat enterprise expenses per acre of goat production land by operation size is shown in Table 4. Meat goat enterprise variable, fixed, and total expenses per acre for large farms were lower than for small farms. Specific variable expenses that were lower per acre for large farms

were *Feed, Bedding/Litter, Veterinary/Medical, Electricity, Utilities, Supplies, Management Services*, and *Cash Value of Non-Cash Payment for Farm Work*. Specific fixed expenses that contributed to lower cost per acre for large farms were Taxes and Depreciation. Small meat goat farms, on average, stocked animals at 0.8 acres per breeding doe compared to large farms with 1.8 acres per breeding doe. Southeastern US meat goat farms, on average, used 1.3 acres per breeding doe. Though total, variable, and fixed costs per acre were higher on small farms, returns were not statistically different per acre. Furthermore, measures of profitability did not differ statistically.

Comparing Southeastern US Meat Goat Costs and Returns by Production Segment

A comparison of Southeastern US meat goat enterprise expenses per goat production acre based on three segments (slaughter, breeder and show, and mixed farms) is shown in Table 5. There were 19, 22, and 20 observations each for slaughter farms, breeder and show farms, and mixed farms, respectively. Meat goat enterprise total, variable, and fixed expenses per acre on slaughter goat farms, breeder and show, and mixed farms were not statistically significant. *Marketing Charges* and *Supplies* were lower for slaughter goat farms than for breeder and show farms. *Utilities* expenses were lower for mixed farms than for breeder and show farms. Total return per acre did not differ statistically between slaughter goat farms, breeder and show, and mixed farms. However, *Meat Goat Breeding Stock* return was higher for breeder and show goat farms than slaughter goat farms. Measures of profitability did not differ statistically.

Summary and Conclusions

The economic challenge associated with meat goat production is to produce quality meat goats, goat meat,

and meat goat breeding stock at the lowest possible cost per unit basis. The profitability of meat goat production is directly impacted by selecting highly productive meat goat breeding stock. In addition, increasing the size of the operation is important as it directly impacts the profitability.

Costs and returns analysis for the US and Southeastern US meat goat farms show that total, variable and fixed expenses per acre for small meat goat farms were higher than for large farms. This is due partially to more intensive production systems being used on small meat goat farms compared to large farms. The major cost components that lead to lower costs with greater farm size are *Feed, Bedding/Litter, Veterinary/Medical, Electricity, Utilities, Supplies, Management Services, Insurance, Interest/Fees, Taxes*, and *Depreciation*. Note, however, that enterprise profit measures did not differ by farm size because the small farms produced more revenue per acre. Slaughter meat goat farms were lower cost than breeder and show, and mixed farms. Input expenses that were lower cost for slaughter meat goat farms relative to mixed and breeder and show farms were *Marketing Charges, Utilities, Supplies*, and *Cash Value of Non-Cash Payment for Farm Work*. The major cost components that were lower cost for mixed farms were *Fertilizer, Electricity*, and *Utilities* relative to slaughter and breeder and show goat farms. *Electricity, Utilities*, and *Supplies* were lower for mixed farms than for breeder and show farms. However, their revenue per acre was also lower, so profitability did not differ by production segment. A specific return that was higher per acre for breeder and show farms than for slaughter and mixed goat farms was *Meat Goat Breeding Stock* return.

It is noted that the “average” farms in this analysis showed negative net returns over both variable and total

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expenses. Note that these data were collected for 2011, a year at relatively higher expense than previous years for inputs, especially feed, livestock, seeds, fertilizer, and fuel, shown in USDA – NASS (2014). Nonetheless, 32 percent of US meat goat farms showed positive returns over variable expenses and 38 percent of Southeastern US goat farms showed positive returns over variable expenses. Two things are thus observed: (1) in a more favorable year in terms of prices, more farms would likely be profitable; and (2) some farms were profitable even in a year of relatively high input costs. For future

research, it would be instructive to determine the types of farms that are most likely to be profitable. Furthermore, it would be helpful to repeat the study in another year(s) under different prices.

Overall, results of this study suggest that increasing the size of the meat goat operation leads to lower cost of meat goat production. Qushim et al. (2015) found that increasing returns to scale on meat goat farms exists so that producers can increase the size of their operations, resulting in less overall input usage per unit produced.

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Table 1. Summary statistics and parameter definitions for US meat goat producers.

Parameters	Definition	Mean	Std. Dev.
Farm Land	Total acres of farm land	112.55	228.73
Goat Land	Total acres of land for goat operations	45.26	109.30
Goat Number	Farm total goat numbers including all breeds	54.00	55.99
Breeding Does	Total number of breeding doe	30.23	32.62
Goat Income	% of annual net farm income from goat operations: 1 = <= 19; 2 = 20 - 39; 3 = 40 - 59; 4 = 60 - 79; 5 = 80 - 100	2.70	1.77
Extensive Range	Total number of breeding-aged goats on farm in the extensive-range production system	7.65	30.31
Pasture without Rotation	Total number of breeding-aged goats on farm in the pastured but not rotated production system	14.44	30.51
Pasture with Rotation	Total number of breeding-aged goats on farm in the pastured and rotated production system	20.10	46.29
Dry Lot	Total number of breeding-aged goats on farm in the dry lot production system	4.62	14.64
Breeding Stock	% of goat sales for breeding stock	34.00	29.69
Show	% of goat sales for show	18.00	27.34
Slaughter	% of goat sales for slaughter	43.00	35.86
Sales for other	% of goat sales for other	5.00	17.29
Organic	1 = certified organic; 2 = traditional; 3 = transitional	2.02	0.20
Education	1 = less than high school; 2 = high school; 3 = some college; 4 = Bachelor's; 5 = Advanced degrees	3.56	1.01
Farm Experience	Total number of years raising goats: 1 = <=10 ; 2 = 11 to 20; 3 = 21 to 30; 4 = 31 to 40; 5 = >= 41	1.50	0.75
Off-Farm Job	1 = if farm operator has off-farm job; 0 = otherwise (%)	0.65	0.48
Gender	1 = male; 0 = female (%)	0.59	0.49

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Table 2. US meat goat enterprise costs and returns, dollars per goat production acre, 2011.

Average Costs and Returns	Total Land for Goat Production	
	Small Farm ^A	Large Farm ^B
Production		
Meat Goat	148.68 ^B	72.71 ^A
Goat Meat	4.54	1.26
Meat Goat Breeding Stock	168.02 ^B	85.17 ^A
Total Returns	321.24^B	159.14^A
Operating Inputs		
Feed	245.72 ^B	90.80 ^A
Marketing Charges	12.05 ^B	4.98 ^A
Seeds/Plants	25.02 ^B	4.02 ^A
Fertilizer	30.75 ^B	8.64 ^A
Chemicals	13.83 ^B	3.59 ^A
Purchased Goats	22.87	6.73
Bedding/Litter	14.39 ^B	3.05 ^A
Veterinary/Medical	42.82 ^B	12.64 ^A
Fuel/Oil	60.66	15.86
Electricity	27.19 ^B	8.82 ^A
Utilities	18.54 ^B	4.00 ^A
Supplies	48.16 ^B	15.79 ^A
Repairs on Equipment	35.00 ^B	11.58 ^A
Maintenance on Buildings	35.91	25.37
Management Services	13.17 ^B	1.66 ^A
Cash Wages	27.11 ^B	7.77 ^A
Custom Machine and Hired Labor	15.05	2.14
Cash Value of Non-cash Payment for Farm Work	16.51 ^B	4.21 ^A
Total Operating Costs	704.74^B	231.65^A
Return Above Total Operating Costs	-383.5	-72.51
Fixed Costs		
Insurance	55.67 ^B	6.70 ^A
Interest/Fees	58.72 ^B	7.49 ^A
Taxes	80.53 ^B	22.67 ^A
Equipment Rental	2.39	0.04
Vehicle/Licensing Fees	9.16 ^B	2.65 ^A
Depreciation	152.27 ^B	41.66 ^A
Total Fixed Costs	358.73^B	81.22^A
Total Costs (Operating + Fixed)	1063.47^B	312.86^A
Returns Above All Specified Costs	-742.23	-153.72

Notes: Letters (A, B) indicate significant differences ($P < 0.10$) in means across columns with A = small farms with <20 acres of total goat land, B = large farms with ≥ 20 acres of total goat land.

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Table 3. US meat goat enterprise costs and returns, dollars per goat production acre by segment, 2011.

Average Costs and Returns	Goat Farms by Production Segment		
	Slaughter Farms ^A	Breeder&Show Farms ^B	Mixed Farms ^C
Production			
Meat Goat	131.43	85.72	110.54
Goat Meat	2.69	1.62	4.25
Meat Goat Breeding Stock	56.68 ^{B,C}	212.82 ^{A,C}	116.32 ^{A,B}
Total Returns	190.80	300.16	231.12
Operating Inputs			
Feed	164.13	205.68	133.08
Marketing Charges	4.21 ^B	12.00 ^A	9.57
Seeds/Plants	16.98	9.62	16.00
Fertilizer	31.07 ^C	17.67	9.06 ^A
Chemicals	7.84	8.12	9.91
Purchased Goats	15.39	19.68	9.12
Bedding/Litter	8.98	10.14	6.79
Veterinary/Medical	29.77	26.11	26.31
Fuel/Oil	27.40	24.81	61.26
Electricity	17.26	25.51 ^C	11.19 ^B
Utilities	6.68 ^B	16.67 ^A	10.62
Supplies	17.75 ^B	52.04 ^{A,C}	27.10 ^B
Repairs on Equipment	28.89	23.41	16.66
Maintenance on Buildings	22.63	38.98	30.89
Management Services	6.67	9.01	6.37
Cash Wages	14.11	15.84	21.95
Custom Machine and Hired Labor	1.85	5.43	18.34
Cash Value of Non-cash Payment for Farm Work	2.31 ^A	17.06 ^B	12.17
Total Operating Costs	423.91	537.78	436.38
Returns Above Total Operating Costs	-233.11	-237.62	-205.27
Fixed Costs			
Insurance	21.31	62.25	10.86
Interest/Fees	25.07	59.78	14.94
Taxes	33.99 ^A	76.51 ^B	45.03
Equipment Rental	3.41	0.00	0.00
Vehicle/Licensing Fees	5.76	8.25	3.66
Depreciation	99.94	117.16	71.79
Total Fixed Costs	189.47	323.94^C	146.28^B
Total Costs (Operating + Fixed)	613.38	861.73	582.66
Returns Above All Specified Costs	-422.58	-561.57	-351.55

Note: Letters (A, B, C) indicate significant differences ($P < 0.10$) in means across columns with A = slaughter goat farms with greater than 50% of goat sales for slaughter, B = breeder and show farms with greater than 50% of goat sales for breeding stock and show, and C = mixed farms with goat sales for other purposes and none of slaughter, breeding, or show with greater than 50% of goat sales for slaughter, breeding stock and show.

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Table 4. Southeastern meat goat enterprise costs and returns, dollars per goat production acre, 2011.

Average Costs and Returns	Total Land for Goat Production	
	Small Farm ^A	Large Farm ^B
Production		
Meat Goat	123.76	82.19
Goat Meat	5.72	0.00
Meat Goat Breeding Stock	137.07	90.61
Total Returns	266.55	172.79
Operating Inputs		
Feed	199.31 ^B	102.72 ^A
Marketing Charges	10.80	7.52
Seeds/Plants	19.86	2.37
Fertilizer	22.90	9.81
Chemicals	11.36	2.74
Purchased Goats	23.02	2.95
Bedding/Litter	5.59 ^B	1.66 ^A
Veterinary/Medical	39.72 ^B	12.37 ^A
Fuel/Oil	71.52	15.87
Electricity	19.20 ^B	9.79 ^A
Utilities	13.57 ^B	4.80 ^A
Supplies	43.07 ^B	15.34 ^A
Repairs on Equipment	20.95	14.65
Maintenance on Buildings	31.05	17.67
Management Services	9.91 ^B	1.60 ^A
Cash Wages	17.89	13.17
Custom Machine and Hired Labor	13.33	0.53
Cash Value of Non-cash Payment for Farm Work	24.99 ^B	4.79 ^A
Total Operating Costs	598.03^B	240.34^A
Returns Above Total Operating Costs	-331.48	-67.46
Fixed Costs		
Insurance	16.61	6.69
Interest/Fees	19.02	9.84
Taxes	65.93 ^B	18.50 ^A
Equipment Rental	0.00	0.10
Vehicle/Licensing Fees	10.05	3.82
Depreciation	94.78 ^B	36.20 ^A
Total Fixed Costs	206.40^B	75.15^A
Total Costs (Operating+Fixed)	804.43^B	315.49^A
Returns Above All Specified Costs	-537.88	-142.61

Notes: Letters (A, B) indicate significant differences ($P < 0.10$) in means across columns with A = small farms with ≤ 20 acres of total goat land, B = large farms with > 20 acres of total goat land.

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Table 5. Southeastern meat goat enterprise costs and returns, dollars per goat production acre by segment, 2011.

Average Costs and Returns	Goat Farms by Production Segment		
	Slaughter Farms ^A	Breeder&Show Farms ^B	Mixed Farms ^C
Production			
Meat Goat	89.08	90.33	135.29
Goat Meat	0.00	2.27	6.94
Meat Goat Breeding Stock	55.83 ^B	165.75 ^A	117.63
Total Returns	144.91	258.35	259.86
Operating Costs			
Feed	133.62	190.48	136.20
Marketing Charges	2.60 ^B	11.36 ^A	13.38
Seeds/Plants	4.57	7.12	23.93
Fertilizer	15.95	24.58	9.33
Chemicals	3.85	6.99	11.22
Purchased Goats	13.25	24.77	2.27
Bedding/Litter	2.29	4.50	4.42
Veterinary/Medical	31.65	20.75	29.97
Fuel/Oil	24.98	14.79	100.23
Electricity	13.87	20.22	9.96
Utilities	11.95	13.83 ^C	2.54 ^B
Supplies	14.82 ^B	42.49 ^A	31.72
Repairs on Equipment	25.34	16.80	12.52
Maintenance on Buildings	15.67	38.26	19.00
Management Services	8.55	7.30	2.44
Cash Wages	17.88	16.63	12.68
Custom Machine and Hired Labor	0.16	0.53	22.00
Cash Value of Non-cash Payment for Farm	4.01	22.84	19.00
Total Operating Costs	345.00	484.24	462.80
Return Above Total Operating Costs	-200.09	-225.89	-202.94
Fixed Costs			
Insurance	11.79	12.36	11.97
Interest/Fees	7.06	33.40	1.71
Taxes	41.50	40.21	51.01
Equipment Rental	0.14	0.00	0.00
Vehicle/Licensing Fees	8.82	10.33	2.18
Depreciation	55.01	64.02	84.39
Total Fixed Cost	124.32	160.32	151.26
Total Costs (Operating+Fixed)	469.33	644.56	614.06
Returns Above All Specified Costs	-324.42	-386.21	-354.2

Note: Letters (A, B, C) indicate significant differences ($P < 0.10$) in means across columns with A = slaughter goat farms >50% of goat sales for slaughter, B = breeder and show farms with >50% of goat sales for breeding stock and show, and C = mixed farms with goat sales for other purposes and none of slaughter, breeding, or show with $\leq 50\%$ of goat sales for slaughter, breeding stock and show.