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The Arkansas Meat Goat Enterprise Budget

Jessica M. House and H. L. Goodwin Jr[†]*

ABSTRACT

Goats have long been the most populous livestock animals on the planet. They have been a staple food for many low-income countries. The United States has a growing demand for goat meat. There is an increase in ethnic cultures that desire goat meat as well as a growing interest from the general population. Goat meat is a healthy alternative compared to traditional red meats. Goats also pair well with other livestock animals due to their wide range of palatable feeds. They are commonly used in cattle operations for weed control because of their ability to consume noxious weeds. There is very little information available to the general public about the profitability of raising goats in Arkansas. The creation of the Arkansas Meat Goat Enterprise Budget will allow producers to estimate their average expenses and revenues.

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MEET THE STUDENT-AUTHOR



Jessica House

I was born and raised in Fayetteville, Arkansas. I graduated from Fayetteville High School in 2008. I started college in the fall of 2008 with a degree in Agricultural Business with concentration in Marketing and Management at the University of Arkansas. I pursued minors in Sustainability, and Global Agricultural Food, and Life Sciences. I am a member of the Agricultural Business Club, Alpha Zeta, and the Agricultural Economics Quiz Bowl Team.

In the spring of 2009 I had the opportunity to begin working for H.L. Goodwin Jr. in the Agricultural Business and Economics department. This working experience allowed me to conduct research in several different and distinct areas that helped develop my passion for agriculture.

After graduation I will return to the University of Arkansas to begin my Master's degree in Agricultural Economics. Hopefully I will be able to fulfill my career goal of helping young and beginning farmers start their own agricultural production operation.

INTRODUCTION

In 2005, Sandra Solaiman of Tuskegee University estimated the global goat population to be 800 million head (Solaiman, 2007a). Goats are a good source of protein and favored in low-income countries because they are cheaper to produce than cattle and have health benefits including lower fat content (Correa, 2011). Historically, goats have been a staple food for certain cultures and religious groups including Muslims, Hispanics, Caribbean, and Chinese. Total demand for goat meat worldwide has increased over the last few decades. There has been a 21% increase in the Hispanic population from 2000-2005 and a 24% increase in the Asian population from 2000-2005 (Solaiman, 2007b). Goats slaughtered in federally inspected plants have gone from 229,600 head in 1999 to 581,743 head in 2007 (Solaiman, 2007a). Goat production has increased from 3,802,319 in 2001 to 5,168,151 in 2010 (Fig. 1) (FAO, 2012). However, until recently, United States goat production and inventory has been very low. The U. S. is a net importer of goat meat (Gipson, 1999); imports exceed exports for goat meat because producers cannot currently supply the amount of meat that is in demand (Table 1). In 2010 the United States exported 7,223 head of goats and imported 687 head of goats (FAOSTAT, 2012a). Demand in the United States is not evenly distributed; it is centered on geographical areas that contain certain ethnicities and religions. The highest concentration of demand is in the

southeast, but there is also demand in the northeast, Michigan, California, Oklahoma, and Texas (Solaiman, 2007b).

Americans receive most of their daily protein from poultry, cattle, and hogs. Many Americans do not consider goats acceptable for eating. They believe goat is a wild animal or pet (Fraser, 2004). However, goat is gaining ground because it has several health benefits. According to an article published by Alabama Cooperative Extension System, "goat meat is lower in calories, total fat, saturated fat, and cholesterol than traditional meats" (Correa, 2011). As Americans become more health conscious, goat meat may become a popular choice.

Farmers who want to increase the synergy of their operation may choose goats to complement their other animals. Goats often make excellent field companions for cattle. Cattle eat mainly grass and hay; goats prefer leaves and various weeds and can help keep noxious weeds under control. What is considered low quality forage for cattle is often considered high quality forage for goats. "Trees and shrubs, which represent poor quality roughage sources for cattle, because of their highly lignified stems and bitter taste, may be adequate to high in quality for goats" (Luginbuhl, Poore, 1998). This means that cattle and goats can graze together but will not be competing for the same food. The lack of competition for food could also encourage the growth of grasses that are the main source for cattle because grass will not be competing with weeds for soil nutrients. According to a USDA Animal Plant Health In-

spection Services article, a majority of meat goat operations ranked the important reasons for raising goats first, as brush control; second, as fun or hobby; and third, as income (USDA/AHPIS, 2011b). The same article stated, "Of operations with fewer than 10 goats, 72.4 percent indicated their primary production focus was "other," i.e. goats used for brush control, pets, livestock shows, and pack animals" (USDA/AHPIS, 2011b).

A problem for goat producers is the limited amount of research on the profitability of raising meat goats for consumption. Much research in the United States has been conducted on beef, pork, and poultry production; goats have not been a primary focus because of low demand and production in the United States. There are also a variety of approaches to take to raise meat goats, from high tech operations to low input hobby farms.

Marketing goats for meat can be difficult. At a formal auction, there is no problem finding buyers; however, most meat goats are not sold at auctions because there are only a few recognized in the United States. Texas, Colorado, Kentucky, Tennessee, Oklahoma, North Carolina, and Georgia all have at least one recognized auction (AMS, 2012). It is currently much cheaper for producers to make private sales. Private sales lower transportation costs as well as any commission fee charged by sale barns. It could be more affordable to take goats to market if there were more auctions located across the country, especially close to areas with high demand for goat meat.

Global goat production is rising along with auction prices in the United States. There is a growing demand for goat meat in the United States. The average price for goat meat in the U.S. has been increasing for the last ten years (Fig. 2). This may encourage more producers to start raising goats. Even though many farmers raise goats on hobby farms, income is becoming an increasingly important reason for producing meat goats. Farmers may become more interested in producing goats if they knew what kind of costs and revenues are associated with goat production. Arkansas goat producers would benefit from access to a reliable budget for goat production. As stated earlier, goats are often paired with cattle to control noxious weeds, so farmers may start a small goat operation to reduce their pesticide costs and limit the capital necessary to begin operations, as goats require less capital initially. Producers are ill advised to venture into a new enterprise without knowing the associated costs and risks. The Arkansas Meat Goat Enterprise Budget can provide producers with information about risks and costs before embarking on a new enterprise.

The Arkansas Meat Goat Enterprise Budget will allow producers to estimate their expenditures and revenues simply by entering their costs into the spreadsheet. The spreadsheet was adapted from the Alabama Meat Goat En-

terprise Budget and adjusted to fit the needs of Arkansas producers (Department of Agricultural Economics and Rural Sociology/ACES, 2009). Although the budget will not give the exact costs and profits from the operation, it will provide the producer with an idea of what to expect as well as the opportunity to "play" with numbers and change inputs to see if he or she can find a more profitable way to run his or her operation.

MATERIALS AND METHODS

This project began by assessing what kinds of tools were available for producers to estimate their costs associated with raising meat goats. Universities and Extension services in Alabama, Mississippi, North Carolina, Oklahoma, South Carolina, Texas, Tennessee, Virginia, and Kentucky have developed goat budgets for their states. Arkansas does not currently have a goat budget. The Arkansas Livestock Feeding Analysis Tool (LFAT) was used as a guide to create the Arkansas Meat Goat Enterprise Budget (AGEB) (Popp and King-Brister, 2004). The Livestock Feeding Analysis Tool is a budget created for Arkansas feeder cattle producers. It was last updated in 2004.

The first step in choosing a budget was looking at the United States Department of Agriculture's 2007 Census of Agriculture to find which counties produce the most goats (USDA, 2008). The top ten production counties in each state were mapped to compare their climate and location with the average climate of Northwest Arkansas. Kentucky's climate was most similar to Northwest Arkansas but the budget was not detailed enough for the needs of most goat producers. After analyzing each state's budget, Alabama had the most useful budget layout. The Alabama budget was easy to understand and had the necessary inputs configured into their budget that would allow for accurate calculations and estimations. A default spreadsheet utilizing Arkansas-specific prices was created so that farmers could use it to identify costs of production, starting from other states' spreadsheets that were found to be useful.

The Arkansas Meat Goat Enterprise Budget has five distinct sections: input sheet, enterprise budget, high input example, low input example, and default sheet. A brief description of each follows.

Input Sheet. The input sheet has fifteen different categories where producers enter their data (Fig. 3). In the Animal Characteristics category, producers enter the number of does, the average doe size in pounds, number of bucks, average size in pounds of bucks, and average kid size when sold in pounds. The Market Prices category includes market kid price per head, cull buck price per head, culled doe price per head, the price of breeding bucks per buck, and the price for breeding does per doe. It also asks for the per-

centage of buck kids and doe kids sold for breeding. In the Market Assumptions category, costs of taking animals to market may be calculated. Number of trips to market, miles to market, mileage costs, sales commission, and membership dues are included in this section. The fourth through sixth categories are Cull Rates, Fertility Rates and Mortality Rates. Buck and does are often culled if they are sick, old, a runt or not an efficient producer, and cull rate can be determined. Fertility rates include conception rate and kidding rate. These two aspects will help a farmer determine which animals to keep and which animals to cull. Mortality rate is calculated from the average percentage of bucks, does, and kids that die on an annual basis due to sickness, old age, injury, or birthing complications. These three previous sections will help calculate the number of kids produced, the number of kids sold for meat, and what the replacement rate will need to be.

The seventh category in AGEB is feeding. This includes acres of pasture, months required of hay feeding, the pounds of hay fed per animal per day, the months of concentrate feed, concentrate per pound per animal per day, and the amount of salt or minerals needed per animal per day. These inputs will change drastically depending on the size of the operation. If the farm has many acres, then the amount of hay and concentrate to be fed can be drastically reduced; whereas if there are very few acres, hay and concentrate may need to be fed more regularly. The eighth category is Feed Prices. This category includes hay price per ton, concentrate cost per hundredweight, variable pasture costs per acre, fixed pasture costs per acre, and salt and mineral costs per hundredweight. Housing is the ninth category. This includes square feet per animal, cost per square foot, the useful life of the house, the salvage value of the house and the repair and maintenance costs as a percent of building cost. The tenth category is Health Costs and Procedures. De-wormer costs per doe, number of times dewormed per animal per year, vaccination costs per dose, number of times vaccinated per year, cost of kid vaccination per animal, number of times kid are vaccinated per year, and any additional medication costs are included in this section. The eleventh category is Equipment and Supplies, which is the equipment costs per year, and the miscellaneous supplies cost per year. Fencing and Corral are the twelfth category on the input sheet. This is the cost of fencing per linear foot, useful life of the fence in years, salvage value of the fence in years, working facilities cost, the useful life of the working facilities, the salvage value of the working facilities, and extra repair for fencing and working facilities per year. Land and Labor is the thirteenth category and includes land rent or ownership costs per acre, and labor cost per hour per animal. The fourteenth category is General Overhead as a percentage of variable costs. The final category is Financial, which is the

annual interest rate applied to breeding stock, buildings and working facilities, and operation capital. A reference sheet for required data can be seen in Fig. 4.

Budget Sheet. Once the producer enters the data into the input sheet, the information is calculated into the budget sheet (e.g., Fig. 5). The budget sheet is comprised of seven sections. The first section is Herd Information, which is the number and average weight of does and bucks that are owned by the operation, and number of kids sold and their average weights. The second section is Gross Receipts, which contains the amount the producer receives from the sales of kids, does and bucks. The third section, Variable Costs, is costs associated with raising and selling animals. Feed, pasture maintenance, medication, and transportation are all included in this section. Income above variable costs is reported in the fourth section. Gross Receipts minus variable costs shows the farmer what it will cost to raise and market these animals. The fifth section is Fixed Costs, which are those costs associated with the operation whether or not anything is produced. Asset depreciation, insurance costs, interest and taxes are included in this section. The sixth section, Net Returns to Risks and Management, is Gross Receipts minus Variable and Fixed Costs and is referred to as profits; although, not all farms will become or remain profitable. Capital Investments is the seventh and final section of the budget sheet and includes investments that are capitalized over a period of time, such as buildings and livestock kept for reproduction.

High Input, Low Input and Default Spreadsheets. These three spreadsheets comprise the remaining three sections of the AGEB. They represent three production systems that entail varying levels of production intensity, high input, low input, and typical (default) input. The default spreadsheet is the income sheet with a hypothetical farm's information. The default can be used if a producer does not know his or her own expense costs or if the farmer has not started an operation and needs an estimation of startup costs. The data in the default sheet were computed after entering current prices of inputs in Arkansas.

RESULTS AND DISCUSSION

Several scenarios were structured to determine how changing farm practices could reduce operation costs. One of the scenarios analyzed was to place all the data from the default sheet into the input sheet. These data and the results can be seen in Figs. 3 and 4, respectively. This operation had 50 does and two bucks. Once all the numbers from the default sheet were entered, net revenues were calculated. Gross Revenue was \$6,117.65 or \$122.35 per animal (Fig. 3) and Variable Costs were \$8,896.52 or \$177.93 per animal (Fig. 4). Income above Variable Costs was -\$2,778.87 or -\$55.58 per animal. Fixed Costs were

\$2,131.71 or \$42.63 per animal. Returns to Risk Management were -\$4,910.58 or -\$98.21 per animal. According to this scenario each goat loses the farmer almost \$100. The default sheet utilizes conservative data, i.e., high costs. The input of conservative data in the default sheet is important to minimize entry of extremely low figures and output of faulty, overly optimistic results. There is very little goat production in Northwest Arkansas; therefore, the figures utilized in the default sheet are estimates based on local stores and cooperatives.

We analyzed several scenarios to determine how changing feeding and medication practices could affect revenues. For simplicity's sake, we used all the numbers from the default sheet found in the budget except the Health Cost and Procedures section. Data from these scenarios can be seen in Figs. 5 and 6. Two different ways to change costs would be by limiting worming procedures to a per animal as needed basis, as well as practicing rotational grazing. These practices are highlighted in on-going research at the Dale Bumpers Small Farm Research Center in Booneville, Arkansas. It is more efficient to fence off sections of land and rotate animals through the sections every two or three weeks. This can reduce hay and concentrate feed consumption on a daily basis. Rotational grazing also limits worm infestation. When fields are overgrazed, there is a higher correlation of animals having a heavy dose of worms than on healthy pastures (Burke et al., 2009).

There are many ways to reduce costs; for example, one could minimize medical expenses. Parasite control can be quite expensive in livestock, but many producers over-medicate their animals (Burke et al., 2009). Internal parasites are the most critical threat to goats; commonly found parasites include *Haemonchus contortus*, *Ostertagia circumcincta* and *Eimeria intricata* (Burke, et.al, 2004). In a study conducted at the Dale Bumpers Small Farms Research Center in Booneville, Arkansas, researchers found that "condensed tannin-rich forages could be used as supplement feed for goats during the infection season of the parasite" (Burke et. al, 2004). Deworming is best done on an as-needed basis; instead of deworming animals every few months it is best to worm only animals that are infected. Using the FAMACHA score, developed by Faffa Malan, a producer should be able to decide if the animal in question needs a chemical wormer (Lewandowski, 2010). The FAMACHA score can only be used to detect *Haemonchus contortus*. This score is calculated by physically examining the goat. A goat with *Haemonchus contortus* infestation will show signs of anemia because it is a blood-sucking parasite. The producer can look at the color of the membrane of the eye; if the membrane is bright red then it receives a score of 5, which means no anemia and a white membrane is a score of 1, which correlates to extreme anemia. A score in the middle usually means that an increasing load is oc-

curing. By deworming on a per animal basis, the herd is less likely to build up resistance to the deworming medications; deworming may be advisable when FAMACHA scores are below 3 (Lewandowski, 2010). Deworming animals too often can increase the costs of operation due to veterinarian visits and deworming costs.

In a hypothetical situation, we simulated limited deworming as well as utilization of field rotation. The farmer reduced the number of times each animal is wormed from six times a year to once a year. Implementing field rotation reduced the number of months hay and grain is fed by 50%. Total variable cost decreased from \$8,896.52 in Fig. 4 to \$5,592.89 in Fig. 6. This reduced variable costs by \$3,303.63 and changed total returns from -\$4,910.58 to -\$1,507.84. This scenario illustrates how changing practices can help a farmer save money and keep his or her animals healthier.

CONCLUSIONS

Like any farming operation, some producers will be successful and others will fail. Goats are much smaller animals than cattle and are raised in similar atmospheres. They require more inputs because unlike cattle they require shelter from the elements. Because of the increasing price of goat meat, goat production may increase in the future. Producers want to see returns for their investments. If the price of meat is increasing, then the farmer has more incentive to raise and market their animals for slaughter. The Arkansas Meat Goat Enterprise Budget is a valuable tool for the Arkansas goat industry. It allows farmers to estimate the cost and revenues of their own operation. Producers can also use it to evaluate additional costs of implementing new techniques on their operation. The budget should not be considered 100% accurate for individual farms, but it should give a producer a fairly realistic portrayal of his or her individual farm operation.

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Table 1. United States goat meat import (MT) value (\$1000).^a

	1999	2003	2006
Goat meat	3,360	8,462	11,070
Value (\$)	7,850	21,484	41,816
\$/lb.	1.06	1.15	1.72

^a Data from USDA/ERS, 2012.

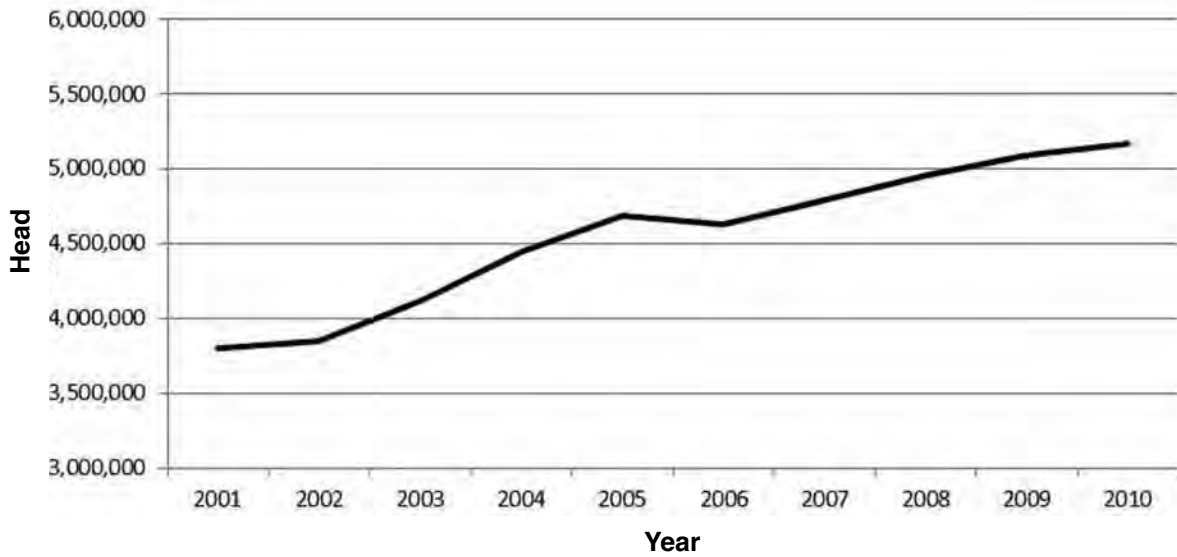


Fig. 1. Global goat production 2001-2010 (FAOSTAT, 2012b).

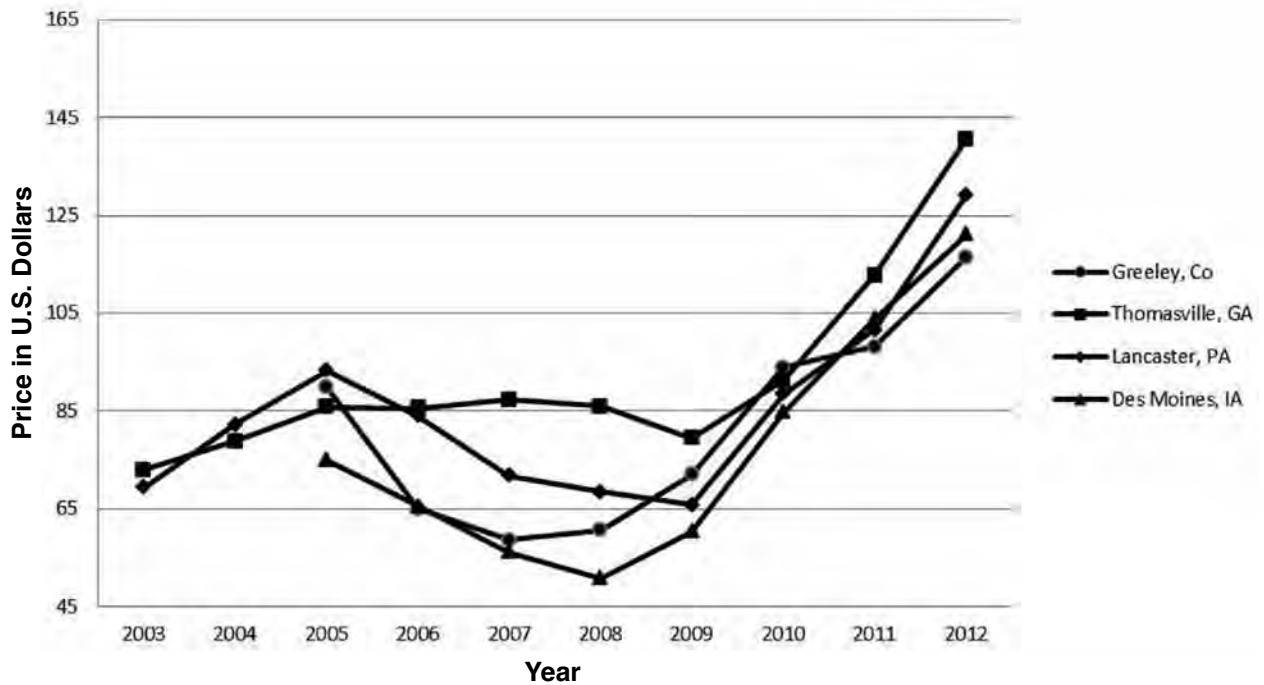


Fig. 2. Average high price per head: slaughter does 70-100 lbs. (USDA, AMS 2012).

Input Sheet

Estimated Costs and Returns for Arkansas Meat Goat Enterprise

Column 1

Herd / Animal Characteristics	
Herd Numbers & Size	
Number of Does	50
Doe Size (lbs) - Average	85
Number of Bucks	2
Buck Size (lbs) - Average	225
Kid Size When Sold (lbs) - Average	65
Number of Kids Produced	72
Kids Sold for Meat	64
Replacements needed	8
Market Prices	
Market Kids	\$ 85.00 /Head
\$/ CWT Conversion	\$130.77 /CWT
Cull Bucks	\$ 150.00 /Head
\$/ CWT Conversion	\$71.11
Cull Does	\$ 85.00 /Head
\$/ CWT Conversion	\$100.00
Breeding Bucks	\$ 160.00 / buck
Breeding Does	\$ 85.00 / doe
% buck kids sold for Breeding	0%
% doe kids sold for Breeding	0%
Bucks Sold for Breeding	0
Does Sold for Breeding	0
Marketing Assumptions	
Number of Trips to Market	4 trips
Miles to Market (Round Trip)	50 miles
Mileage Costs (\$ / Mile)	\$ 1.00 / mile
Sales Commission (%)	7.00% /Hd Sold
Assoc./Membership Dues	25.00 /year

Column 2

Cull Rates	
Buck Cull Rate	33%
Doe Cull Rate	14%
Fertility Rates	
Conception Rate	94%
Kidding Rate	180%
Mortality Rates	
Buck Mortality Rate	1%
Doe Mortality Rate	1%
Kid Mortality Rate	15%
Feeding	
Pasture Acreage	17.50
Months on Hay	4.5
Lbs Hay Fed (lbs/doe/day)	3.50
Months on Concentrate Suppl.	5.00
Concentrate (lbs/doe/day)	1.50
Salt/Mineral (Oz/head/day)	1.50
Feed Prices	
Hay Costs (\$/ton)	\$ 170.00
Concentrate Costs (\$/cwt)	\$ 34.00
Pasture Costs Variable(\$/acre)	\$ 60.00
Pasture Costs-Fixed (\$/acre)	\$ 15.00
Salt/Minerals (\$/cwt)	\$ 23.75
Housing	
Square Feet / Adult Animal	8.00
Cost / Sq. Foot	\$ 17.00
Useful Life Housing- Years	10.0
Salvage Value-Housing	5.00%
Repair & Maintenance	4.00%
% of Building Cost	

Column 3

Health Costs / Procedures	
Dewormer Costs	\$ 1.00 / dose
Number of Times Dewormed	6/ buck & does / year
Enterotoxemia C&DT Vaccination	\$ 0.55 / dose
Number of Times Vac.	1/ doe / year
Kids Vaccination - Cost	\$ 0.55 / dose
Number of Times Vac.	2/ year
Misc. Medication Costs (Herd)	\$ 30.00 / herd / year
Equipment / Supplies	
Misc. Equipment costs	\$ 100.00 / herd / year
Misc. Supplies	\$ 55.00 / herd / year
Fencing and Corral	
Cost of Fencing	\$ 0.79 /linear foot
Usefull Life-Fence	12.00 years
Salvage Value-Fence	0.00% percent
Working Facilities cost	\$ 1,650.00 unit
Usefull Life-Work. Fac.	15.00 years
Salvage Value-Work Fac.	5.00% percent
Repair for Fencing and working facilities	\$ 85.00 / year
Land and Labor	
Land Rent/Ownership Cost	\$ 5.00 /acre
Labor - Hired	0.00 /hours/doe
Labor Cost	\$ 8.25 /hour
General Overhead	
General Overhead	3.00% %
% of Variable Cost	
Financial	
Annual Interest Rate Applied to Breeding Stock	8% / year
Buildings/Working Facilities	8% / year
Operating Capital	8% / year

Fig. 3. Example input sheet.

Arkansas Meat Goat Enterprise Budget							
Estimated Costs and Returns							
Following Recommended Management Practices							
1. Herd Information:							
Number of Does	50.00			Average Weight - Lbs.		85	
Number of Bucks	2.00			Average Weight - Lbs.		225	
Kids Marketed	63.73			Average Weight - Lbs. (Sold)		65	
2. GROSS RECEIPTS							
	Unit	Quantity	Unit Price	Total	\$/Doe		
Market Kids Sold For Meat	Head	63.7	85.00	5417.05	108.34		
Buck Kids Sold For Breed. Stock	Head	0.0	160.00	0.00	0.00		
Doe Kids Sold For Breed. Stock	Head	0.0	85.00	0.00	0.00		
Cull Bucks Sold	Head	0.66	160.00	105.60	2.11		
Cull Does Sold	Head	7.0	85.00	595.00	11.90		
Gross Revenue				\$6,117.65	\$122.35		
3. Variable Costs							
	Unit	Quantity	Unit Price	Total	\$/Doe		
Feed							
Hay	Pounds	23,625	0.09	2,008.13	40.16		
Concentrate	Pounds	11,250	0.34	3,825.00	76.50		
Pasture	Acres	17.50	60.00	1,050.00	21.00		
Salt & Minerals	Pounds	1,711	0.24	406.35	8.13		
Vet & Medicine							
Dewormer	Dose	312.00	1.00	312.00	6.24		
Enterotoxemia C&D/T Vaccination	Dose	52.00	0.55	28.60	0.57		
Kids Vaccination	Dose	143.82	0.55	79.10	1.58		
Misc. Antibiotics / Medications	Year	1.00	30.00	30.00	0.60		
Other							
Hired Labor	Hours	0.00	8.25	0.00	0.00		
Sales Commission	Head	71.39	0.07	5.00	0.10		
Association Dues	Herd		25.00	25.00	0.50		
Misc. Equipment/Supplies	Year	1.00	155.00	155.00	3.10		
Interest on Operating Capital	Dollars	3962.09	0.08	316.97	6.34		
Transportation	Mile	200.00	1.00	200.00	4.00		
Repair & Maintenance-Buildings	Dollars		282.88	282.88	5.66		
Repair & Maintenance - Fence & Working Facilities	Dollars		85.00	85.00	1.70		
Land Rent/Ownership Cost	Acre	17.50	5.00	87.50	1.75		
Total Variable Costs				\$8,896.52	\$177.93		
4. Income Above Variable Costs				-\$2,778.87	-\$55.58		
5. Fixed Costs							
	Unit	Quantity	Unit Price	Total	\$/Doe		
Depreciation (Livestock)	Dollars		0.00	0.00	0.00		
Depreciation (Buildings & Equipment)	Dollars		960.27	960.27	19.21		
Interest (Livestock)	Dollars		182.80	182.80	3.66		
Interest (Buildings & Equipment)	Dollars		459.24	459.24	9.18		
Pasture Fixed Cost	Acre	17.50	15.00	262.50	5.25		
General Overhead	Dollars	8,896.52	0.03	266.90	5.34		
Total Fixed Costs				\$2,131.71	\$42.63		
6. Returns to Risks and Management				-\$4,910.58	-\$98.21		
7. Capital Investments							
Item	Unit	Quantity	Unit Cost	Total Cost	Salvage Value	Useful Life (Years)	Annual Deprec.
Livestock							
Breeding Does	Head	50	\$ 85.00	\$ 4,250.00	\$ 4,250.00	7.1	\$ -
Breeding Bucks	Head	2	\$ 160.00	\$ 320.00	\$ 320.00	3.0	\$ -
Buildings and Equipment							
Housing	Sq. Ft.	416	\$ 17.00	\$ 7,072.00	\$353.60	10.0	\$ 671.84
Fencing	Ln Ft.	3,492	\$ 0.79	\$ 2,758.99	\$0.00	15.0	\$ 183.93
Working Facilities	Each	1	\$ 1,650.00	\$ 1,650.00	\$82.50	15.0	\$ 104.50

Fig. 4. Example budget.

Input Sheet

Estimated Costs and Returns for Arkansas Meat Goat Enterprise

Column 1

Herd / Animal Characteristics

Herd Numbers & Size	
Number of Does	50
Doe Size (lbs) - Average	85
Number of Bucks	2
Buck Size (lbs) - Average	225
Kid Size When Sold (lbs) - Average	65

Number of Kids Produced	72
Kids Sold for Meat	64
Replacements needed	8

Market Prices

Market Kids	\$ 85.00 /Head
\$/ CWT Conversion	\$130.77 /CWT
Cull Bucks	\$ 160.00 /Head
\$/ CWT Conversion	\$71.11
Cull Does	\$ 85.00 /Head
\$/ CWT Conversion	\$100.00
Breeding Bucks	\$ 160.00 / buck
Breeding Does	\$ 85.00 / doe
% buck kids sold for Breeding	0%
% doe kids sold for Breeding	0%
Bucks Sold for Breeding	0
Does Sold for Breeding	0

Marketing Assumptions

Number of Trips to Market	4 trips
Miles to Market (Round Trip)	50 miles
Mileage Costs (\$ / Mile)	\$ 1.00 / mile
Sales Commission (%)	7.00% /Hd Sold
Assoc./Membership Dues	25.00 /year

Column 2

Cull Rates

Buck Cull Rate	33%
Doe Cull Rate	14%

Fertility Rates

Conception Rate	94%
Kidding Rate	180%

Mortality Rates

Buck Mortality Rate	1%
Doe Mortality Rate	1%
Kid Mortality Rate	15%

Feeding

Pasture Acreage	17.50
Months on Hay	2.3
Lbs Hay Fed (lbs/doe/day)	3.50
Months on Concentrate Suppl.	2.50
Concentrate (lbs/doe/day)	1.50
Salt/Mineral (Oz/head/day)	1.50

Feed Prices

Hay Costs (\$/ton)	\$ 170.00
Concentrate Costs (\$/cwt)	\$ 34.00
Pasture Costs Variable(\$/acre)	\$ 60.00
Pasture Costs- Fixed (\$/acre)	\$ 15.00
Salt/Minerals (\$/cwt)	\$ 23.75

Housing

Square Feet / Adult Animal	8.00
Cost / Sq. Foot	\$ -17.00
Useful Life Housing- Years	10.0
Salvage Value-Housing	5.00%
Repair & Maintenance	4.00%
% of Building Cost	

Column 3

Health Costs / Procedures

Dewormer Costs	\$ 1.00 / dose
Number of Times Dewormed	1 / buck & does / year
Enterotoxemia C&D/T Vaccination	\$ 0.55 / dose
Number of Times Vac.	1 / doe / year
Kids Vaccination - Cost	\$ 0.55 / dose
Number of Times Vac.	2 / year
Misc. Medication Costs (Herd)	\$ 30.00 / herd / year

Equipment / Supplies

Misc. Equipment costs	\$ 100.00 / herd / year
Misc. Supplies	\$ 55.00 / herd / year

Fencing and Corral

Cost of Fencing	\$ 0.79 /linear foot
Useful Life-Fence	12.00 years
Salvage Value-Fence	0.00% percent
Working Facilities cost	\$ 1,650.00 unit
Useful Life-Work. Fac.	15.00 years
Salvage Value-Work Fac.	5.00% percent
Repair for Fencing and working facilities	\$ 85.00 / year

Land and Labor

Land Rent/Ownership Cost	\$ 5.00 /acre
Labor - Hired	0.00 hours/doe
Labor Cost	\$ 8.25 /hour

General Overhead

General Overhead	3.00% %
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Financial

Annual Interest Rate Applied to Breeding Stock	8% / year
Buildings/Working Facilities	8% / year
Operating Capital	8% / year

Fig. 5. Input sheet with rotational grazing.

Arkansas Meat Goat Enterprise Budget							
Estimated Costs and Returns							
Following Recommended Management Practices							
1. Herd Information:							
Number of Does	50.00		Average Weight - Lbs.		85		
Number of Bucks	2.00		Average Weight - Lbs.		225		
Kids Marketed	63.73		Average Weight - Lbs. (Sold)		65		
2. GROSS RECEIPTS							
	Unit	Quantity	Unit Price	Total	\$/Doe		
Market Kids Sold For Meat	Head	63.7	85.00	5417.05	108.34		
Buck Kids Sold For Breed. Stock	Head	0.0	160.00	0.00	0.00		
Doe Kids Sold For Breed. Stock	Head	0.0	85.00	0.00	0.00		
Cull Bucks Sold	Head	0.66	160.00	105.60	2.11		
Cull Does Sold	Head	7.0	85.00	595.00	11.90		
Gross Revenue				\$6,117.65	\$122.35		
3. Variable Costs							
	Unit	Quantity	Unit Price	Total	\$/Doe		
Feed							
Hay	Pounds	12,075	0.09	1,026.38	20.53		
Concentrate	Pounds	5,625	0.34	1,912.50	38.25		
Pasture	Acres	17.50	60.00	1,050.00	21.00		
Salt & Minerals	Pounds	1,711	0.24	406.35	8.13		
Vet & Medicine							
Dewormer	Dose	52.00	1.00	52.00	1.04		
Enterotoxemia C&D/T Vaccination	Dose	52.00	0.55	28.60	0.57		
Kids Vaccination	Dose	143.82	0.55	79.10	1.58		
Misc. Antibiotics / Medications	Year	1.00	30.00	30.00	0.60		
Other							
Hired Labor	Hours	0.00	8.25	0.00	0.00		
Sales Commission	Head	71.39	0.07	5.00	0.10		
Association Dues	Herd		25.00	25.00	0.50		
Misc. Equipment/Supplies	Year	1.00	155.00	155.00	3.10		
Interest on Operating Capital	Dollars	2384.96	0.08	190.80	3.82		
Transportation	Mile	200.00	1.00	200.00	4.00		
Repair & Maintenance-Buildings	Dollars		282.88	282.88	5.66		
Repair & Maintenance - Fence & Working Facilities	Dollars		85.00	85.00	1.70		
Land Rent/Ownership Cost	Acre	17.50	5.00	87.50	1.75		
Total Variable Costs				\$5,616.10	\$112.32		
4. Income Above Variable Costs							
				\$501.55	\$10.03		
5. Fixed Costs							
	Unit	Quantity	Unit Price	Total	\$/Doe		
Depreciation (Livestock)	Dollars		0.00	0.00	0.00		
Depreciation (Buildings & Equipment)	Dollars		960.27	960.27	19.21		
Interest (Livestock)	Dollars		182.80	182.80	3.66		
Interest (Buildings & Equipment)	Dollars		459.24	459.24	9.18		
Pasture Fixed Cost	Acre	17.50	15.00	262.50	5.25		
General Overhead	Dollars	5,616.10	0.03	168.48	3.37		
Total Fixed Costs				\$2,033.30	\$40.67		
6. Returns to Risks and Management							
				-\$1,531.74	-\$30.63		
7. Capital Investments							
Item	Unit	Quantity	Unit Cost	Total Cost	Salvage Value	Useful Life (Years)	Annual Deprec.
Livestock							
Breeding Does	Head	50	\$ 85.00	\$ 4,250.00	\$ 4,250.00	7.1	\$ -
Breeding Bucks	Head	2	\$ 160.00	\$ 320.00	\$ 320.00	3.0	\$ -
Buildings and Equipment							
Housing	Sq. Ft.	416	\$ 17.00	\$ 7,072.00	\$353.60	10.0	\$ 671.84
Fencing	Ln Ft.	3,492	\$ 0.79	\$ 2,758.99	\$0.00	15.0	\$ 183.93
Working Facilities	Each	1	\$ 1,650.00	\$ 1,650.00	\$82.50	15.0	\$ 104.50

Fig. 6. Example of budget with rotational grazing patterns.