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# Net Returns to Alternative Weaning Dates in Beef Cow-Calf Operations

A Thesis Presented for the
Master of Science
Degree
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Gregory Edward Savage
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## ABSTRACT

There is sparse research literature in agricultural economics regarding early weaning as a potential alternative production/marketing strategy. The objective of this research is to estimate and analyze the impacts on net returns of alternative weaning dates for Tennessee cow-calf operations including alternative post-weaning treatments for calves.

The Decision Evaluator for the Cattle Industry (DECI) simulation program was used for this study to produce outputs such as calf numbers, gender, and weights, other output including cow weights and body condition score, both at calving and at weaning, and pregnancy percentages. Forty-two simulations were run for average and summer drought weather, weaning at an average age of 135, 165, 195, 225, 255, and 285 days and selling at weaning or after a 60 or 90-day drylot backgrounding period. Prices for steers, heifers, and culled cows from 1995-2008 were taken from market reports. Costs were derived from University of Tennessee Extension Beef and Forage Budgets and USDA-NASS. The outputs from DECI were combined with prices to result in total revenues. Subtracting the costs of feed, interest, veterinary and medical, and marketing resulted in return to land, labor, management, and risk to the enterprise.

The results of this study revealed that under average weather conditions in East Tennessee, marketing at weaning in November yielded the highest net return. Weaning in August and backgrounding for 60 days yielded the lowest net return with the base 90-cow herd.

Under summer drought conditions, marketing at weaning in August resulted in the highest net return. Weaning in November and marketing after a 90-day backgrounding period yielded the lowest net return.

Under the conditions used in this study, the only time early weaning makes economic sense is when herd size is increased for June or July weaning or under drought conditions when August (195 days) weaning and sale is optimal. Several limitations of this study imply that additional research is required on this topic before definite conclusions can be drawn.

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# Chapter 1: PROBLEM AND OBJECTIVE OF THE STUDY

## Introduction

The livestock industry in Tennessee consists primarily of beef cow-calf operations with 42,000 farms having beef cattle (Tennessee Department of Agriculture 2008). While Tennessee herd size is growing, it averages only 26 breeding cows (USDA-NASS 2009). According to the U.S. Department of Agriculture (2008), the average weaning age of calves in the Southeast is 200 days. Early weaning has been defined by Barker-Neef et al. (2001) as a system in which calves are weaned at less than seven months of age. Fausti et al. (2007a) state that early weaning has the potential to increase profitability of slaughter steers relative to normally weaned steers. There is sparse research literature in agricultural economics regarding early weaning as a potential alternative production/marketing strategy. Fausti et al. (2007a) also state that additional research is needed to determine whether early weaning improves pasture carrying capacity and cow health enough to offset the lower slaughter weights.

## Statement of the Problem

Weaning calves earlier than would be common in typical cow-calf operations may be a management alternative for producers. Myers et al. (1999a) generated data that indicate early-weaned calves had a more efficient weight gain while on pasture with a finishing diet compared to normally-weaned calves and steers. Myers et al. (1999b) found that early-weaned steers of 90 and 152 days of age showed reduced slaughter age

and improved feed efficiency, improved gain, and reduced daily intake but increased total concentrate consumed in feedlot compared to steers weaned at 215 days.

What is the impact of weaning calves early on net returns? In answering this question, factors that may affect net returns are enumerated as follows:

1) Early weaning reduces nursing demands on cows and may increase cow condition or reduce feed requirements to maintain cow condition.

2) Early weaning and resulting improved cow condition may improve conception rates for the following breeding season.

3) Additional cattle may be carried on the same land base. "Cows with early-weaned calves consumed 45.3% less hay on a total digestible nutrient basis than normally-weaned cow-calf pairs between early and normal weaning (Peterson et al. 1987)."

4) Feed cost for post-weaning strategies may increase or decrease depending on what program is chosen. These programs may include pasture only, a creep feed program, other grain feed programs, or a combination of both pasture grazing and a feed program. The producer has many alternatives from which to choose for gaining optimal returns.

5) Early weaning should allow more efficient utilization of the tall-fescue seasonal growth pattern in Tennessee.

6) Early weaning and marketing avoids seasonal lows in feeder cattle prices in September, October, and November.

The producer's trade-off is between the aforementioned potential benefits and a reduction in calf weights if he/she sells at early weaning. Price per hundredweight

differences would occur between early- and normally-weaned calves because of the lighter weights, with price premiums for early-weaned calves as opposed to heavier weights with lower prices for normally-weaned calves.

More information is needed about the trade-off between early and normal weaning as alternatives for Tennessee cow-calf operators to consider. Producers may not have considered early weaning because they are unsure of the economic outcome. This research will help develop the logical reasoning on whether to early-wean calves or not early-wean calves in each producer's operation. The approach will be to investigate the impact of alternative weaning dates on net return to the cow-calf operation.

## Review of Literature

Weder et al. (2004) stated that there are limited published data that evaluate the long-term biological and economic implications of early weaning on cow and calf performance. There has been very little information found within the agricultural economics journals. Most of the studies that are related to net returns on early versus normal weaning of calves in a cow-calf operation were found in the *Journal of Animal Science*.

A study conducted by Peterson et al. (1987) at The Ohio State University was designed to determine whether performance of fall-calving cows and fall-born calves differs when calves are weaned at 110 or 222 days of age, and to determine whether there is an economic advantage to weaning fall-born calves at 110 days. Peterson et al. (1987) fed mixed legume hay of tall fescue and alfalfa or red clover and supplemental soybean meal to the cows. Early weaned calves were full-fed alfalfa hay and 0.77% or 1.60% of

the calf's body weight of ground corn until normal weaning. Normal weaned calves were not fed any additional creep feed. Peterson et al. (1987) found that early- and normally-weaned calves had similar growth patterns up to the early weaning date. Early-weaned calves weighed 25.2±4.4 kg more than normally-weaned calves at the time of normal weaning. Cows with early-weaned calves gained 2.5±3.3 kg while cows with normally-weaned calves lost 18.2±2.9 kg between early and normal weaning dates. Peterson et al. (1987) stated that cows with normally-weaned calves lost weight and body condition score (BCS), because of the greater energy requirements for lactation as compared to early-weaned cows. They found that cows with early-weaned calves consumed 45.3% less hay on a total digestible nutrient (TDN) basis than normally-weaned cow-calf pairs between the early and normal weaning time periods. Also, early-weaned cow-calf pairs were 43.9% more efficient than the normally-weaned cow-calf pairs in converting kg TDN into kg of calf gain. They concluded that feed cost per cow was 46.7% higher during the 112 days between early and normal weaning for cows with normally-weaned calves. The loss for early-weaned cow-calf pairs was $95.26± 23.73 less on income over feed cost for the period between early and normal weaning than for normally-weaned cow-calf pairs.

Myers et al. (1999a, b) conducted a study at the University of Illinois, Urbana, to determine the effects for three weaning management systems and three breed types on 1) steer performance and carcass traits and 2) cow performance, BCS, and pregnancy rates. In these studies , the herd grazed an endophyte-infected tall fescue and red clover pasture. They found that early-weaned steers were heavier at the time of slaughter and were fed 51 days longer than the average of the normally-weaned calves and steers when fed to a

constant fat end point. Average daily gains in early-weaned steers were 0.32 kg/day higher before the time of normal weaning than the average of normally-weaned calves and steers. At the time of normal weaning, cows that were early weaned had a higher weight and BCS compared to cows that normal weaned. This result was also reflected in Peterson et al. (1987). Myers et al. (1999a) implied that early weaning increased overall gain, decreased daily intake, improved feed efficiency, increased total concentrate consumed, and improved quality grades of steers.

Story et al. (2000) conducted an experiment at the University of Nebraska, Lincoln, to evaluate the effects of weaning calves at 150 (early weaning), 210 (normal weaning), and 270 (late weaning) days of age on subsequent cow and calf performance and factors that influence net income when steer calves are retained and finished. They found that cows that early-weaned had greater BCS and weight than cows that normally-weaned their calves at the time of normal weaning. The finding from their study is consistent with Peterson et al. (1987) and Myers et al. (1999a, b). The late-weaned calf group had a greater yearly cost than early- or normally-weaned groups. Net return or loss was calculated by the cost/return data from the cow, heifer, and steer-feedlot enterprises. The normally-weaned group generated the most net revenue per cow ($1.44± 4.26) whereas early-weaned calves generated the least net revenue per cow (−$51.29± 4.26). Story et al. (2000) believe that, "early-weaned calf should be retained after weaning to increase profit potential for this management system."

Barker-Neef et al. (2001) conducted a study at Michigan State University to determine effects of early weaning Angus steers with high marbling potential on feedlot performance and carcass characteristics and to determine economic return to the cow-calf

enterprise. They found similar results that confirmed Story et al. (2000), Myers et al. (1999a, b), and Peterson et al. (1987) with early-weaned calves having higher average daily gains compared to normally-weaned calves and also increased weights and BCS in cows that early weaned compared to cows that normally weaned at the time of normal weaning. Barker-Neef et al. (2001) concluded that early-weaned steers had significantly lower weights and therefore had lower return to the cow-calf enterprise if they were retained through finish.

Weder et al. (2004) concluded from their study in Alberta, Canada, that BCS and weight on cows that early weaned were larger than for cows that normally weaned, which were similar and consistent with previous findings from Peterson et al. (1987), Myers et al. (1999a, b), Story et al. (2000), and Barker-Neef et al. (2001).

Schultz et al. (2005), at the University of Kentucky, confirm that the previous findings of cows that early weaned compared to cows that normally weaned had an increase in weight and BCS at the time of normal weaning. Schultz et al. (2005) grazed the herd on endophyte infected tall fescue and fed early weaned calves a commercial creep diet for 14 or 35 days before weaning and gradually switched to a commercial grower diet until normal weaning time. They concluded that early weaning a calf to an endophyte-infected tall fescue pasture was comparable to that of a conventional weaning management system.

Fausti et al. (2007b) conducted a study in the Western Dakota's to determine the effect of early versus normal weaning on a) steer calf feedlot performance and b) cow health and pasture utilization rates. "The research suggests that a herd management strategy of early weaning will enhance the economic sustainability of cow-calf operations

during periods of drought." They found that early-weaned steers that went to a feedlot stayed 31 days longer than normally-weaned steers but were 50 days younger and 92 pounds lighter at slaughter. Their research confirms the findings in previous studies concerning cow health. Fausti et al. (2007b) also found that normally-weaned steers had a larger economic return compared to early-weaned steers, but the difference was not large.

From this review of literature, it is clear that there has not been any research done to determine whether early weaning in the Southeast region of the United States is a positive and cost-effective alternative for Tennessee cow-calf producers. The studies have indicated that as weaning age has decreased, BCS has increased on the cow, the weight of the cow increases before winter months, and calf performance increases. Fausti et al. (2007b) confirmed from previous findings of Peterson et al. (1987), Myers et al. (1999a, b), Story et al. (2000), Barker-Neef et al. (2001), Weder et al. (2004), and Schultz et al. (2005) that cow body condition score (BCS) and weight increase when weaning age decreases. Barker-Neef et al. (2001) found similar results that confirmed Story et al. (2000), Myers et al. (1999a, b), and Peterson et al. (1987) with early-weaned calves having higher average daily gains compared to normally-weaned. Story et al. (2000) believe that, "…. an early-weaned calf should be retained after weaning to increase profit potential for this management system." Fausti et al. (2007b) agreed with Myers et al. (1999a, b) that early-weaned steers were 50 days younger than normally-weaned steers in a feedlot when slaughtered. However, Fausti et al. did not agree that early-weaned steers were heavier, but rather were 92 pounds lighter at slaughter.

## Objective of the Study

The objective of this research was to estimate and analyze the impacts on net returns of alternative weaning dates for Tennessee cow-calf operations including alternative post-weaning treatments for calves. The results of this study should provide information for use by cow-calf producers in making management decisions regarding the basic operation of their enterprise.

Prior to the initiation of the study, expectations were that under average weather conditions, very early weaning dates would produce low net returns and that net returns would increase as weaning date increased up to a maximum and then decline as weaning date increased into the late Fall. Under summer drought conditions it was expected that net returns would peak earlier and at a lower net return level than under average weather conditions. Post-weaning backgrounding programs were expected to increase net returns, especially at early weaning dates.

# Chapter 2: METHODOLOGY

This study's objective was attained by adapting a bio-economic beef-cattle simulation model and combining it with weather input data and various price and cost data. The base enterprise for this simulation model is 200 acres of tall-fescue and clover pasture and 90 head of cows bred to calve each year. The variable manipulated is calf-weaning age in days. The six scenarios simulated include average weaning ages of 135, 165, 195, 225, 255, and 285 days. Each of these scenarios was simulated under three different post-weaning strategies. The post-weaning strategies include selling calves at weaning and backgrounding calves for 60 days and for 90 days in a drylot and then selling. Each of these 18 combinations of weaning ages and post-weaning strategies was simulated under average weather conditions and under summer drought conditions. Each combination of weaning age, post-weaning strategy, and weather condition was simulated for a 20-year period. Mean outcomes for each 20-year simulation were analyzed to evaluate net returns for each weaning age under the various post-weaning and weather conditions.

Each simulation scenario should have effects on several other variables. Each of these variables may affect net returns. The indirect variables contribute to net returns because they affect production costs and revenues of the following year's calf crop as well as the current year's. The net returns were calculated by using the following equation:

(1) $NR_{ijk} = (SW_{ijk} * SPW_{ijk} * SS_{ijk} + HW_{ijk} * HPW_{ijk} * HS_{ijk} + CCW_{ijk} * CCPW_{ijk} * CCS_{ijk}) – (DL * CCS_{ijk} * CCW_{ijk} * CCPW_{ijk}) – (BCO * TS_{ijk}) – (ESB_{ijk} * PES) – (ESH_{ijk} * PES) – (CFC_{ijk} * PCFC) – (HRH_{ijk} * Ph) – (HB_{ijk} * Ph) – (HC_{ijk} * Ph) – (HBa_{ijk} * Ph) – (CFBa_{ijk} * PCFBa) − (Pas * Ac) – (SMA_{ijk} * PSMA) – (Ba_{ijk} * PSMBa) – (VMA_{ijk} * PVMA) – (Ba_{ijk} * PVMBa) − (MC*TR_{ijk}/TS_{ijk}) − (TrC * TS_{ijk}) − (TraV * TraHr) − (Imp * Ba_{ijk}) − (EC) − (RM * BC) – (((PBu − SBu)/Ser) * NBu_{ijk}) − (TraF * TraHr) – (1/2 * TVC_{ijk} * Int) − (BEC * Int)$

Where:

NR refers to net returns to land, labor, management, and risk,

i refers to weaning date, 1 through 6, where 1 denotes June 15, 2 denotes July 15, 3 denotes August 15, 4 denotes September 15, 5 denotes October 15, and 6 denotes November 15,

j refers to post weaning strategies, 1 through 3, where 1 denotes sell at weaning, 2 denotes sell after a 60-day backgrounding period, and 3 denotes sell after a 90-day backgrounding period,

k refers to herd size, 1 through 3, where 1 denotes a 90-head herd(base), 2 denotes a 103-head herd(increased herd for June weaning), and 3 denotes a 102-head herd(increased herd for July weaning),

SW = steer weight (cwt.),

SPW = steer price ($ per cwt.),

SS = number of steers sold (head),

HW = heifer weight (cwt.),

HPW = heifer price ($ per cwt.),

HS = number of heifers sold (head),

CCW = cull cow weight (cwt.),

CCPW = cull cow price ($ per cwt.),

CCS = number of cull cows sold (head),

DL = percent death loss for culled cows (18%),

BCO = beef check-off ($1 per head),

TS = total number of steers, heifers, and culled cows sold (head),

ESB = amount of energy supplement fed to bulls (tons),

PES = price of energy supplement ($233.56 per ton),

ESH = amount of energy supplement fed to heifers (tons),

CFC = amount of creep feed fed to calves (tons),

PCFC = price of creep feed ($223.38 per ton),

Ph = price of hay ($ per ton),

Ba = number of steers and heifers backgrounded (head),

HRH = amount of hay fed to replacement heifers (tons),

HB = amount of hay fed to bulls (tons),

HC = amount of hay fed to cows (tons),

HBa = amount of hay fed to backgrounded steers and heifers (tons),

CFBa = amount of concentrate fed to backgrounding steers and heifers (tons),

PCFBa = price of concentrate feed for backgrounding ($228.97 per ton),

Pas = cost of pasture maintenance per acre ($98.29),

Ac = number of acres of pasture (200),

SMA = number of cows, bulls, and replacement heifers fed salt and mineral (head),

Ba = number of backgrounded steers and heifers fed salt and mineral (head),

PSMA = price of salt and mineral for cows, bulls, and replacement heifers ($ per ton),

PSMBa = price of salt and mineral for backgrounded steers and heifers ($ per ton),

VMA = number of cows, bulls, and replacement heifers receiving veterinary and medical treatment (head),

VMBa = number of backgrounded steers and heifers receiving veterinary and medical treatment (head),

PVMA = cost of veterinary and medical treatment for cows, bulls, and replacement heifers ($ per head),

PVMBa = cost of veterinary and medical treatment for backgrounded steers and heifers ($ per head),

MC = marketing charge for animals sold (2% of total revenue),

TR = total revenue ($): $(SW_{ijk} * SPW_{ijk} * SS_{ijk} + HW_{ijk} * HPW_{ijk} * HS_{ijk} + CCW_{ijk} * CCPW_{ijk} * CCS_{ijk}) - (DL * CCS_{ijk} * CCW_{ijk} * CCPW_{ijk}) - (BCO * TS_{ijk})$,

TrC = trucking to market charge ($7.50 per head),

TraV = tractor variable cost ($10.12 per hour),

TraHr = tractor hours used for the enterprise (38.5 hours),

TraF = tractor fixed cost ($1.94 per hour),

Imp = cost of implants for backgrounded steers and heifers ($1 per head),

EC = depreciation on equipment using the straight line method over its useful life,

RM = repair and maintenance charge on buildings (2% of value in $),

BC = current buildings cost ($15,000),

PBu = purchase price for bulls ($1806.20 per head),

SBu = salvage value of bulls ($1415.70 per head),

Ser = number of years bulls are in service (3 years),

NBu = number of bulls in herd (head),

TVC = total variable costs ($),

Int = interest charge (8%), and

BEC = buildings and equipment costs ($).

## Simulation Model

The Decision Evaluator for the Cattle Industry (DECI) simulation program developed by the U.S. Department of Agriculture Meat Animal Research Center (1999) was chosen as the basis to generate biological output for the analysis (Williams et al. 2006, Williams et al. 2003a, b, and c). "DECI is decision support software (DSS) provided to the beef industry to evaluate strategic management decisions from conception through weaning for an individual herd of breeding females and from weaning through post-weaning market end points for calves (U.S. Meat Animal Research Center 1999)." The development of this program was instigated in 1996 by a subcommittee on Integrated Resource Management (IRM) within the National Cattleman's Beef Association (NCBA).

While the primary output of interest from DECI for this study was calf numbers, gender, and weights, other output including cow weights and BCS, both at calving and at weaning, and pregnancy percentages are of interest because they explain and support the calf data.

DECI utilizes inputs including cow number, breed composition, culling and replacement practice, bull number and characteristics, calving period, weaning date, and nutritional regime consisting of feed sources such as pastures, hay, and supplemental feeds by type of animal and by time period. A post-weaning backgrounding program may also be included in the simulation. Outputs from DECI include a wide variety of measures of cow herd condition and calf crop characteristics. The simulation may be operated over any number of years up to 20.

## Model Inputs

### Cow/calf management

Each scenario is simulated over a 20-year period. The simulated base herd consists of 90 females bred to calve each year.[1] In order to simulate herd adjustments that could be made to more thoroughly utilize pasture resources under the June 15 and July 15 weaning scenarios, the number of cows in the herd was adjusted upward for those two weaning dates. Cow numbers were increased until the weaning BCS and weight of cows under the June and July weaning scenarios was equal to the weaning BCS and weight of the cows under the October 15 weaning date scenario. These adjustments resulted in a 103-cow herd for June 15 weaning and a 102-cow herd for July 15 weaning. These were considered to be alternative management options for the earlier weaning

[1]When calves are weaned in June and July under average weather conditions, an alternative scenario is included in which cows are added to the base herd to reflect the additional carrying capacity of the summer forage base (103 cows for June weaning and 102 cows for July weaning).

dates. Variable costs for inputs other than pasture increase for the larger herd. Revenue from the enterprise also increases due to larger numbers of animals sold.

The calving period is January 1 through February 28. Weaning date is the 15th of each month starting in June and going through November. Castration date is set for February 1 to coincide with the average calving date. Maximum age for cows is 10 years and maximum time in the herd for bulls is three years. Twenty replacement heifers are retained each year for the 90-cow herd while 23 replacements are retained for the increased stocking rate herds associated with June and July weaning. All two-year old or older cows that are open at the time of weaning (pregnancy checked) are culled and sold.

Existing Cow Herd, Breeding System, and Groups

The DECI simulation was calibrated to mimic a cow herd from The University of Tennessee Ames Plantation Agriculture Research and Education Center. This herd consisted of cattle that were 5/8 Angus, 1/4 Hereford, and 1/8 Simmental on average with an average weight of 1,084 pounds at weaning and a BCS of 5.86 at weaning. Within DECI's files, to calibrate the program to model this herd, the mature weight of cows was adjusted to match the Ames herd. The model enterprise uses a three-breed bull rotation with Angus, Hereford, and Simmental bulls. The 60-day calving period starts on January 1 of each year and the breeding period starts on March 24 and ends on May 25. The mature cows are bred to bulls that have medium birth weight, medium milk production, and high growth rate expected progeny differences (EPD's), while heifers are bred to bulls with low birth weight, medium milk production, and medium growth rate EPD's.

Grazed Forage

Cows, calves, bulls, and replacement heifers were on pasture year-round. For the average rainfall scenarios, pasture production was based on the monthly seasonal growth pattern for fescue/clover pastures contained in Forages: The Science of Grassland Agriculture Vol. II (West and Waller 2007). This monthly production pattern was expected to reasonably represent Eastern Tennessee conditions with average rainfall and temperatures. Percent total digestible nutrient (TDN) and pounds available per acre came from Management of Pastures for Beef Production (Waller and Fribourg 1992). Crude protein (CP) content by month was derived from Animal Performance and Economic Comparison of Novel and Toxic Endophyte Tall Fescues to Cool-Season Annuals (Beck et al. 2008). Table 1, in the Appendix[2], shows daily production in pounds dry matter, percent TDN, and percent CP for each month for average rainfall (and for drought conditions explained below). This table depicts daily grazing available per cow for each month. In months where the availability is greater than consumption per cow (assuming 30 pounds per day per cow limit of pasture forage), surplus pasture forage is carried over to the following month. This occurs during the months of April and May when the seasonal growth pattern of tall-fescue/clover pasture is increasing and peaks.

Similar forage production data were not available to represent drought conditions. To represent forage production during years of summer drought, an alternative approach was adopted. This approach consisted of simulating fescue/clover forage production using the ALMANAC (Kinery et al., 1992) plant growth simulator under: a) average monthly rainfall (1995-2008) at the National Weather Service Station at Knoxville, TN,

[2] All Tables and Figures are presented in the Appendix.

and b) summer drought conditions represented by lowering monthly rainfall by one standard deviation for the months of June through October (Table 2). Percentage reductions in forage production between the two rainfall levels from ALMANAC were then applied to the average rainfall forage production discussed above. This procedure resulted in the production levels for summer drought conditions shown in Table 1.

Raised and Purchased Feed and Feeding Groups and Systems

Energy Supplement was fed to bulls at a rate of 10 pounds per day from January 1 through May 31. This supplement was also fed to heifers between weaning and breeding at 2 pounds per day from the time of weaning through May 31. The feed is made up of a total mixed ration (TMR) of 75% TDN and 15% CP consisting of 26.5% cracked corn, 17% soybean hulls, 14.5% cottonseed meal, 0.65% limestone, 18.5% corn gluten feed, and 22.85% cottonseed hulls. Dr. John C. Waller, Associate Professor, Department of Animal Science, suggested this formulation as appropriate.

Creep feed was fed to calves at a rate of 2 pounds per day from April 1 through June 1 and 4 pounds per day from June 2 until the weaning date. The creep feed is a TMR of 80% TDN and 15% CP consisting of 33% cracked corn, 19.35% soybean hulls, 12% cottonseed meal, 0.65% limestone, 23% corn gluten feed, and 12% cottonseed hulls. Dr. John Waller also suggested this formulation as appropriate.

Concentrate ration and hay were fed to backgrounded calves at various amounts calculated to result in approximately two pounds of gain per day for steers for each half of the backgrounding period (30 or 45 days). The total pounds available to feed were split evenly between the concentrate ration and hay. The concentrate ration is a TMR of

80% TDN and 15% CP consisting of 37.5% cracked corn, 17.85% soybean hulls, 13% cottonseed meal, 0.65% limestone, 18% corn gluten feed, and 13% cottonseed hulls.

The hay fed is tall-fescue/clover-based hay with a 60% TDN and 13% CP. It was fed from November 1 through March 31 to bulls at 30 pounds per day, cows at 25 pounds per day, and heifers between breeding and calving at 20 pounds per day. Heifers between weaning and breeding were fed 15 pounds of hay per day from November 1 through March 31 except for November weaning scenarios where hay was started November 15 and fed through March 31.

## Prices

Prices for calves produced were based on the monthly average price for specific weight and gender on Tennessee auction markets for the period from 1995 to 2008 (Tables 3 and 4). The series was available from the USDA Agricultural Market Service Livestock and Seed Division in Nashville (USDA-NASS). The price for each weight bracket was assumed to represent the center of the bracket. The prices were inflated to 2008 dollars using the Index of Prices Paid by Farmers (USDA-NASS) and averaged by month. The price averages inflated to 2008 were used throughout the 20-year simulations.

Prices for individual calf weights were interpolated between the centers of the reported weight brackets in each month for steers and for heifers. Prices for cull cows came from the same data set and were handled in the same way. Prices per head for bulls were averaged from 1995 to 2009 from The University of Tennessee Bull Test Program (2010). Bull prices were used to calculate depreciation on bulls for budget purposes

## Budgets

### Total Revenue

After the simulations were run, the average calf weights and gender were imported into the price model to calculate the appropriate price per hundredweight for the month of sale (see Tables 5.1 through 10.6). Total revenue in equation (1) was calculated as weight (cwt) times price ($/cwt) times the number of head sold summed over steers, heifers, and culled cows. Steers and heifers are marketed according to the post-weaning decision either at weaning or after a 60 day or 90 day backgrounding period. Culled cows are marketed at the time of pregnancy is checked at weaning.

Death loss for cows was assumed to be 4 percent annually for the 90-cow herd. These were cows that were "culled" but not sold. To account for this reduction in culled cow revenue, 18 percent (4 percent of 90 head) of cull cow revenue was deducted. Also, the beef check-off charge ($1) times the number of total head sold was subtracted from total revenue.

### Variable Costs

Variable costs of the cow-calf operation in equation (1) consist primarily of feed but also include marketing, veterinary and medical, and some equipment expenses.

### Feeding Costs

The annual amounts of energy supplement, creep feed, hay (for heifers, bulls, and cows), concentrate feed, and hay for backgrounding were calculated separately by multiplying the number of days fed by the amount fed per day. This result gave total

pounds fed per year to each animal. Dividing this total by 2000 gave total consumed per animal per year in tons. Multiplying the result in tons times the number of animals fed times the price per ton resulted in a total cost per year (Table 11). An average price per ton of each ingredient in the feed was calculated using the first week of each month from Feedstuffs magazine (Miller Publishing Company 2008) in 2008 times the percentage accounted for by the ingredient in the mixture. Dividing this cost by the number of cows to calve each year resulted in a per cow cost. Annual costs for pasture were based on the costs of maintaining fescue/clover pasture and perimeter fencing repairs plus the prorated costs of establishment (Bowling et al. 2006). These costs consisted of seed, fertilizer, and equipment expenses.

Other Variable Costs

Other variable costs in equation (1) consisted of veterinary and medical expenses for each type of animal, marketing fees for each animal sold, trucking expenses for each animal sold, and tractor operating costs for feeding hay. These were based on University of Tennessee Extension Beef Budgets (Rhea et al. 2007).

Total Fixed Costs

Depreciation (buildings and equipment), repairs (buildings and equipment), depreciation of bulls, and tractor (60 hp) costs are the fixed costs that are modeled in equation (1) and are presented in the budget. Depreciation of buildings and equipment was a summation of buildings and equipment acquisition costs straight-lined to a zero value at the end of the useful life. Repairs of buildings and equipment were 2 percent of

the cost of the asset. Depreciation of bulls was the purchase price of the bull which was a 15-year average from the University of Tennessee bull testing program (2010) less the salvage value of the bull, divided by the number of years in service (three years). The tractor use was assumed to be shared among several enterprises. This tractor had a $1.94 hourly charge for fixed cost to be multiplied by 38.5 hours annually for the cow-calf operation. These costs are from The University of Tennessee Extension Beef Budgets (Rhea et al. 2007).

Interest

Interest is listed separately from the other expenses. Interest on operating expenses was calculated by summing total variable costs and applying an 8 % interest rate. Dividing this product by the number of cows to calve each year resulted in a per cow interest cost. Buildings and equipment interest was calculated as one-half of the total investment multiplied by an 8 % interest rate.

Net Return

Net return in equation (1) for the simulations was calculated as total revenue minus total variable, fixed, and interest expenses. Net Returns from various weaning ages were compared to each other to find the optimal weaning age for that particular scenario. It is anticipated that the weaning age with the highest net return will vary with summer rainfall. That is, one hypothesis is that summer drought will result in earlier weaning dates resulting in higher net returns compared to later weaning dates.

# Chapter 3: RESULTS AND ANALYSIS

Forty-two different scenarios were simulated using the DECI model. These scenarios were based on six alternative weaning dates at monthly intervals from June 15 through November 15 using a 90-cow herd based on 200 acres of fescue/clover pasture in Tennessee. The weaning dates were combined with three post-weaning strategies consisting of selling at weaning, backgrounding calves for 60 days before selling, and backgrounding calves for 90 days before selling. The resulting combination of 18 scenarios was replicated under average weather conditions and under summer drought conditions. In addition, for average weather conditions, for June 15 and July 15 weaning dates, additional cows were added to the herd to bring forage availability per cow to the levels associated with the later weaning dates under average weather conditions. Simulation of these larger cow herds added six scenarios (two weaning dates times three post-weaning strategies) to the number of simulation runs. The cow-calf operation for each of the 42 scenarios was simulated for a 20-year period.

Inputs including pasture, concentrated feeds, and hay were specified in the DECI model as were management practices such as calving period, cow culling rate, and number and characteristics of bulls. The DECI model produced outcomes for a large number of biological variables for the herd over the 20-year simulations. Of primary interest for this study are the mean number of calves produced annually, their weights, and gender. The biological results from the DECI model for each of the 42 scenarios were combined with: a) revenues calculated from average prices for calves and culled

cows on Tennessee auctions and b) variable and fixed costs based on UT Extension enterprise budgets. Net revenue was calculated separately for each of the 42 scenarios.

## Average Weather Conditions

### Selling at Weaning

Table 12 represents DECI mean biological output for each weaning month for average weather conditions and a 90-cow herd. The number of steers and heifers produced for each weaning month averaged over the 20-year simulation period totaled 81 for June, 72 for July, 81 for August, 81 for September, 76 for October, and 80 for November. The number of head produced shows some variability but no particular pattern. Cow weights at weaning and calving steadily decrease as weaning age increases. BCS shows the same pattern as cow weight. The mean percent pregnant at weaning does not indicate any pattern of improved pregnancy percentages as weaning age decreases. As calf sale weights increase over the months for the different weaning dates, prices per hundredweight decrease.

Tables 5.1 through 5.6 contain the budgets for selling at weaning with average weather conditions and the base 90-cow herd. These tables show net returns to land, labor, management, and risk of −$3,257.95 for June 15 weaning, −$3,995.65 for July 15, −$1,592.94 for August 15, −$979.17 for September 15, −$1,859.67 for October 15, and $1,527.23 for November 15.

Figure 1 shows the pattern of net returns by weaning date for average weather. Weaning in November has the highest net return of $1,527.23 for selling at weaning for

the 90-cow herd. Weaning in July produces the lowest return of −$3,995.65 with the 90-cow herd. Selling in September resulted in the second highest alternative in this scenario with a net return of −$979.17 with a fixed 90-cow herd.

Selling After a 60-Day Backgrounding Period After Weaning

Table 13, the mean biological output from DECI for a 60-day backgrounding period after weaning, shows similar results as Table 12 for selling at weaning. As the weaning age increased, price per hundredweight decreased. Cow weights and BCS show similar patterns in Table 13 as Table 12.

Tables 6.1 through 6.6 contain the budgets for selling after a 60-day backgrounding period with average weather conditions. These tables show net returns to land, labor, management, and risk of −$2,922.60 for June 15 weaning, −$2,848.57 for July 15, −$4,082.80 for August 15, −$2,297.07 for September 15, −$2,427.52 for October 15, and −$1,930.72 for November 15.

Figure 2 indicates that weaning in November still yields the highest net return of −$1,930.72 if keeping a 90-cow herd and August yields the lowest return under a 90-cow herd of −$4,082.80. Weaning in September is the second best alternative with −$2,297.07 net return.

Selling After a 90-Day Backgrounding Period After Weaning

Table 14, the 20-year mean biological output from DECI under average weather conditions and selling after a 90-day backgrounding period, shows differing outputs compared with Tables 12 and 13. Table 14 indicates that between weaning in July and

August and selling 90 days later for each resulted in an increased price per hundredweight for steers going from July to August. This could potentially be explained by an improved or thin market in those corresponding months for those weight brackets.

Tables 7.1 through 7.6 contain the budgets for selling after a 90-day backgrounding period with average weather conditions. These tables show net returns to land, labor, management, and risk of −$3,275.64 for June 15 weaning, −$3,292.41 for July 15, −$3,093.60 for August 15, −$1,860.56 for September 15, −$1,753.28 for October 15, and −$3,918.81 for November 15.

Figure 3 indicates that weaning in October yields the highest net return of −$1,753.28 and weaning in November yields the lowest under a 90-cow herd with a net return of −$3,918.81. Weaning in September under this scenario is the second best alternative with a net return of −$1,860.56.

## Increased Stocking Rate Under Average Weather Conditions

### Selling at Weaning

Increasing the stocking rate for June and July weaning results in a higher net return than June and July weaning from the base 90-cow herd. With the increased cow herd, the June and July weaning become the second and third best alternatives in this scenario with net returns of −$668.26 in June with 103 cows and −$580.97 in July with 102 cows (Tables 5.7 and 5.8).

Figure 1 shows that if a producer were to make a management decision to wean and sell in June or July, the model predicts that increasing the stocking rate to 102-head

and weaning in July will bring a higher return with −$580.97. If this management decision was based on current costs and prices, it may bring a higher return than the modeled output because of the unusually higher prices of variable costs in 2008. While the mean number of calves and culled cows sold for various weaning months ranged between 72 and 77 head with a 90-cow herd, an increased stocking rate in June and July resulted in 91 and 88, head sold, respectively (Table 15). This number sold takes into account cow death loss.

Increased Stocking Rate Selling After a 60-Day Backgrounding Period

Increasing the stocking rate for June and July weaning brought a higher net return than June and July weaning with the base 90-cow herd. With the larger cow herd, the respective June and July weanings were the best and second best alternatives in this scenario with net returns of −$1,311.34 in June with 103-head and −$616.94 in July with 102-head herd (Tables 6.7 and 6.8). If a producer were to make a management decision of weaning in June or July and backgrounding calves for a 60-day period, weaning in July with an increased stocking rate of 102-head indicates the highest net return with a −$616.94. Table 15 indicates that as weight increases, price per hundredweight decreases. Predicted cow weight results showed similar patterns as Table 12 with decreasing weights and BCS as weaning date is extended.

Increased Stocking Rate Selling After a 90-Day Backgrounding Period

Increasing the stocking rate to 103 or 102 head in June and July brings a higher return than the June and July weaning from the base 90-cow herd. With the increased

cow herd size, the June and July weaning become the best and fourth best alternatives in this scenario with net returns of −$67.47 in June with 103 cows and −$2,001.78 in July with 102 cows (Tables 7.7 and 7.8). If a producer were to make a management decision to wean their herd in June or July and background 90-days, weaning in June with an increased stocking rate of 103 head would yield a higher net return of −$67.47 than a 90-cow herd. Weaning in June and backgrounding 90-days or weaning in July and backgrounding 60-days resulted in higher net returns because marketing in September resulted in a higher price per hundredweight for the weights produced. This could be due to market improvements or high demand and a low supply in that weight bracket.

Summary of Scenarios with Average Weather Conditions

Figure 4 shows a comparison of all scenarios simulated under average weather conditions. Selling at weaning in November yields the highest overall net return of $1,527.23 among all options. All other options were inferior and in fact provide a negative return to land, labor, management, and risk. The second highest return of −$67.47 resulted from weaning in June and selling after a 90-day backgrounding period with an increased stocking rate of 103-head. Weaning in August and backgrounding for 60-days yielded the lowest return of −$4,082.80 in all three scenarios with the base 90-cow herd. The average weather condition resulted could be due to tall fescue being a cool-season grass that starts to grow again for a short period in the fall.

The number of calves produced between male and female were consistent, ranging between 37 and 41 for each gender in all scenarios except with the increased stocking rates resulting in a range from 45 and 48 calves produced for each gender. As

weaning age increased, calf weights increased with approximately 2.32 pounds of gain per day for steers and 2.13 pounds of gain per day up to weaning. During backgrounding scenarios, steers average daily gains were approximately 2 pounds and heifers gained approximately 1.7 pounds per day.

## Drought Weather Conditions

### Selling at Weaning

Table 16 shows the results of DECI output for selling at weaning during summer drought conditions. Cow weights and BCS at weaning and calving decrease as weaning age increases. Price per hundredweight for calves decreased as weight increased except for steers in November, where price increased slightly. This could be due to an improved market. The mean numbers of calves produced under these conditions were similar from month to month except that it declined in October and November weaning. Average daily gains for heifers and steers showed a lower gain over the same period compared to average weather conditions. As weaning age increased, average weight gain per day decreased resulting in lighter calves in later months compared to the average weather condition scenarios (Table 12).

Tables 8.1 through 8.6 show the budgets for selling at weaning with drought weather conditions from June through October. Returns to land, labor, management, and risk were −$4,836.24 for June 15 weaning, −$3,954.79 for July 15 weaning, −$2,683.81 for August 15 weaning, −$2,926.24 for September 15 weaning, −$4,107.35 for October 15 weaning, and −$3,437.41 for November 15 weaning. These net returns were typically

lower than those for average weather conditions, especially for late summer and fall weaning.

Figure 5 indicates that weaning in August yields the highest net return of −$2,683.81 and weaning in June yields the lowest return of −$4,836.24. Weaning in September resulted in the second highest net return of −$2,926.24. Increasing the stocking rate was not considered for any drought situations because of the reduced amount of pasture forage available already.

Selling After a 60-Day Backgrounding Period After Weaning

Table 17 shows the 20-year mean biological output from DECI for drought conditions and selling after a 60-day backgrounding period. Cow results are consistent with Table 16. Calf prices per hundredweight decrease as weight increases with one exception.

Tables 9.1 through 9.6 show the budgets for selling after a 60-day backgrounding period with drought weather conditions. Backgrounding periods were simulated in drought weather conditions assuming the use of a dry feedlot, which would not affect the forage available to the cow. Returns to land, labor, management, and risk were −$4,234.72 for June 15 weaning, −$3,481.90 for July 15 weaning, −$5,068.66 for August 15 weaning, −$4,001.59 for September 15 weaning, −$6,839.53 for October 15 weaning, and −$4,027.08 for November 15 weaning.

Figure 6 indicates that weaning in July yields the highest net return of −$3,481.90 while weaning in October yields the lowest of −$6,839.53. Weaning in October had lower revenue and total variable cost due to a lower mean number of calves produced

resulting in the lowest net return. The mean for October weaning was 51 calves being backgrounded, whereas the other months were around 60 head being backgrounded. The second highest return for this scenario was weaning in November and marketing in January with a net return of −$4,027.08.

Selling After a 90-Day Backgrounding Period After Weaning

Table 18 shows the 20-year mean biological output from DECI for drought conditions and selling after a 90-day backgrounding period after weaning. Cow weight and BCS results remain consistent with Tables 16 and 17. Calf prices per hundredweight decrease as weight increases for all weaning months.

Tables 10.1 through 10.6 show the budgets for selling after a 90-day backgrounding period with drought weather conditions. Returns to land, labor, management, and risk were −$4,695.06 for June 15 weaning, −$4,256.29 for July 15 weaning, −$4,893.03 for August 15 weaning, −$3,588.85 for September 15 weaning, −$5,005.35 for October 15 weaning, and −$7,058.05 for November 15 weaning.

Figure 7 indicates that weaning in September yielded the smallest loss of net return to land, labor, management, and risk of −$3,588.85 and weaning in November yielded the lowest net return of −$7,058.05. These results indicate that marketing heavier calves in December yielded higher net returns than marketing heavier calves in February of the following year. Weaning in July was the second best alternative with a net return of −$4,256.29.

Summary of Scenarios Under Drought Weather Conditions

Figure 8 shows a comparison of all scenarios under drought weather conditions. Marketing at weaning in August results in the highest net return of −$2,683.81. Weaning in November and marketing after a 90-day backgrounding period yielded the lowest net return of −$7,085.05. The second highest return came from selling at weaning in September with a net return of −$2,926.24.

Summer drought weather conditions in Tables 16 through 18 resulted in lower cow weights and BCS values at weaning and calving. This was due to reduced pasture forage production for July through October.

## Comparison of Average and Drought Weather Conditions

Average weather conditions yielded the highest net return of $1,527.23 for weaning and selling November 15. Under summer drought weather conditions, the highest net return of −$2,683.81 resulted from weaning and selling August 15. In comparison, the lowest returns were a net return of −$4,082.80 for weaning in August and selling after a 60-day backgrounding period under average weather conditions and −$7,058.05 for weaning in November and selling after a 90-day backgrounding period under summer drought conditions. Cow weight and BCS were significantly lower, as expected, under summer drought conditions. However, under both weather conditions, as weaning age increased, cow weights and BCS decreased. There was no noticeable pattern in the number of calves produced except for declining numbers under drought conditions as weaning dates passed September. Calf weights in summer drought

conditions showed a decline through the summer months compared to calf weights in average weather conditions.

The results of this study revealed that early weaning reduces nursing demands on cows and increases cow weight and BCS when keeping a constant stocking rate of 90-head. The mean percentage of cows pregnant at weaning did not show a significant change over a range of BCS probably because after the first couple of years of the simulation, the herd adjusted itself genetically to cows that could be rebred at lower condition scores. For June and July weaning scenarios, an additional stocking rate was simulated by increasing the herd for June weaning by 13 head and for July weaning by 12 head from the base of 90-cow herd. Both of these actions increased net revenues.

# Chapter 4: SUMMARY, CONCLUSIONS, AND IMPLICATIONS

## Summary

As defined by Barker-Neef et al. (2001), early weaning is a system in which calves are weaned at less than seven months of age. Weder et al. (2004) stated that there are limited published data that evaluate the long-term biological and economic implications of early weaning on cow and calf performance. Fausti et al. (2007a) stated that additional research is needed to determine whether early weaning improves pasture carrying capacity and cow health enough to offset the lower calf weights.

The primary objective of this study was to estimate the impacts on net returns of alternative weaning dates for Tennessee cow-calf operations including alternative post-weaning treatments for calves. The scenarios examined in the study included weaning on the fifteenth day of each month from June through November (135, 165, 195, 225, 255, and 285 days of age, respectively). Post-weaning treatments included marketing at weaning, marketing after a 60-day backgrounding period after weaning, and marketing after a 90-day backgrounding period after weaning. These scenarios were analyzed under average rainfall and drought weather conditions. Drought weather conditions were defined as one standard deviation less rainfall than average for the June through October period. Net returns from the various scenarios were analyzed and compared.

The Decision Evaluator for the Cattle Industry (DECI) simulation model was chosen to simulate biological aspects of the different scenarios. DECI's 20-year simulation runs for each scenario (42 scenarios) resulted in outputs of the mean number of calves produced of each gender, mean weights for calves at weaning and after

backgrounding, cow mean weight and BCS at calving and weaning, and the mean percent of cows pregnant at weaning. These results provided a biological basis for application of cost and price data to calculate net revenue for each simulated scenario.

DECI was calibrated to mimic a 90-cow herd from The University of Tennessee Ames Plantation Agricultural Research and Education Center. This herd consisted of 5/8 Angus, 1/4 Hereford, and 1/8 Simmental cows. The herd was fed hay, energy supplement, and salt and minerals along with grazing a tall-fescue/clover pasture. Calves were fed a creep feed starting April 1 up to weaning while nursing and having pasture available to graze. In backgrounding scenarios, calves in the dry feedlot were fed an evenly split feeding regime of a concentrate ration and hay.

Beef Budgets from University of Tennessee Extension were modified to generate net returns to land, labor, management, and risk for each of the scenarios simulated. Auction prices for steers, heifers, and culled cows were taken from USDA Agricultural Market Service Livestock and Seed Division in Nashville (USDA-NASS) sources from 1995 through 2008. These were inflated to 2008 dollars. Specific prices for steers and heifers were interpolated between 50-pound weight categories reported in the NASS data. Variable and fixed expenses were averages for 2008 data from the University of Tennessee Extension Beef Budgets (Rhea 2007), Tennessee Forage Budgets (Bowling 2006), and USDA-NASS (2009). Interest costs resulted from an 8 percent charge on variable costs and an 8 percent charge on half of the initial capital investments.

The results of this study revealed that under average weather conditions in Tennessee, marketing at weaning in November yielded the highest net return to land, labor, management, and risk of $1,527.23. Weaning in August and backgrounding for

60-days yielded the lowest net return to land, labor, management, and risk of −$4,082.80 with the base 90-cow herd.

For selling at weaning under average weather conditions, there appears to be a positive trend in net revenues as weaning date increases. The variations below this trend appear to be associated with the number of calves sold. That is, the months of July and October had lower numbers of calves sold, and they had lower net revenues.

Drought conditions clearly reduced net revenues. Under summer drought conditions in East Tennessee, marketing at weaning in August resulted in the highest net return of −$2,683.81. Marketing after a 90-day backgrounding period and weaning in November yielded the lowest net return of −$7,085.05 under summer drought conditions.

For selling at weaning under summer drought conditions, the highest net revenues occurred for earlier weaning compared to average weather conditions. This may have been due to the lower number of calves in the October and November weaning scenarios in addition to lower pasture availability in summer and fall. The lower numbers of calves for the late weaning dates under drought conditions appear to be related to lower cow BCS values at calving.

The results of this study revealed that early weaning increases cow BCS when keeping a constant stocking rate of 90 head. However, under average weather, mean percent pregnant at weaning did not show a significant change as BCS decreased for later weaning dates. For drought, pregnancy percentage declined somewhat for fall weaning.

For June and July weaning scenarios, additional stocking rate was accomplished by increasing the cow herd by 13 head for June and 12 head for July from the base of 90

cows. The increased cow herd increased net revenues significantly above those for the 90-cow herd.

Early weaning may provide a better biological match to the fescue/clover pasture seasonal growth pattern compared to later weaning, as shown in increased calving BCS and weight for cows, especially under lower rainfall scenarios.

There were limitations contributing to this study. Outputs produced from DECI are dependent upon DECI's biological structure. All the backgrounding periods used in this study were based on drylots only. The cost data were limited to 2008 costs only. These limitations imply that additional research is needed to develop stronger, more convincing results.

The results obtained did not conform closely to preconceived notions in that the relationships between net returns and weaning dates did not provide a smooth curve to a high point near the middle of the range of weaning dates. Rather, the relationships were rather erratic with the highest net revenue under average weather conditions occurring for the mid-November weaning date. For summer drought conditions, the maximum net return occurred for the mid-August weaning date, which more nearly fit *a priori* expectations.

## Conclusions

Under the conditions used here, the only time early weaning makes economic sense is when you increase herd size for June or July weaning or under drought conditions when August (195 days) is optimal. The results of this study revealed that under average weather conditions in East Tennessee, marketing at weaning in November

yielded the highest net return to land, labor, management, and risk because the added calf weight overcomes added cost and negative effect on cows. For average weather, weaning in August and backgrounding for 60 days yielded the lowest net return to land, labor, management, and risk −$4,082.80 with the base 90-cow herd. The dominance of the November weaning date could potentially be explained by the fact that higher weight brackets in Tennessee are a thin market and may have more potential for price error. Also, as weight increases, there is less price discount on higher weights. For average weather, with the exception of October (fewer calves produced), the net return trend is positive as weaning dates increase.

The results of this study revealed that under summer drought conditions in East Tennessee, marketing at weaning in August results in the highest net return of −$2,683.81 and weaning in November and marketing after a 90-day backgrounding period yielded the lowest net return of −$7,085.05. These results seem to indicate that keeping calves nursing a little longer than June or July will produce a heavier calf and result in higher revenue per calf sold. Keeping calves nursing past the middle of August will result in higher weights for calves but higher costs and lower calf prices in the seasonal lows of the year, causing net returns to decrease. Lower cow BCS may also reduce number of calves produced.

## Implications

Through this research study, if a producer decides to make a management decision of weaning in June or July, increasing the stocking rate will provide the best alternative (under average weather conditions) compared to keeping a smaller herd that

would be optimal for later weaning. With the increased stocking rate, weaning in June and backgrounding for 90 days would result as the best alternative for a producer under average weather conditions.

Based on this research study, under average weather conditions a producer opting not to early wean should keep the calf nursing until November and sell it then. Otherwise, weaning and marketing in September would be a better management decision than October.

For drought conditions, weaning earlier (August 15) and selling should provide higher returns than later weaning. Among the alternatives that include backgrounding, weaning in September and backgrounding for 90 days is optimal for summer drought scenarios.

Further study on this subject could include retaining calves to a finishing endpoint and other post-weaning strategies such as a pasture grazing with feed and drylots for longer periods. In addition, different weaning ages could be included for additional research. Another alternative is to study weaning ages on a rotational grazing operation. This could lessen the cost of feed through winter months due to increased stockpiling and feeding less hay. In addition, the scenarios could be re-simulated, decreasing the feed that was fed to create less cost, and to possibly stress cows to change re-breeding percentages. It may be of interest as an alternative to reduce the number of head in a herd during drought years to help cow BCS and weights stay in an average range, and to give the cow more forage available during lactation months.

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# APPENDIX

**Table 1.** Development of Daily Pasture Nutrition Availability per 2 Acres per Cow

| | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Rainfall | | | | | | | | | | | | |
| Estimated TDN (lbs.) | 2.9 | 4.3 | 14.4 | 36.0 | 28.8 | 11.5 | 5.7 | 5.7 | 11.5 | 14.4 | 5.7 | 2.9 |
| Estimated % TDN | 75.0 | 75.0 | 75.0 | 80.0 | 75.0 | 70.0 | 65.0 | 65.0 | 70.0 | 75.0 | 75.0 | 75.0 |
| Estimated % CP | 16.0 | 17.0 | 24.0 | 23.0 | 16.0 | 13.0 | 10.0 | 9.0 | 12.0 | 16.0 | 23.0 | 17.0 |
| Estimated DM Avail. (lbs.) | 3.8 | 5.8 | 19.2 | 45.0 | 38.4 | 16.5 | 8.8 | 8.8 | 16.5 | 19.2 | 7.6 | 3.8 |
| DM Avail. With Carryover with Average Rainfall | | | | | | | | | | | | |
| Wean 6/15 (lbs.) | 3.8 | 5.8 | 19.2 | 30.0 | 31.1 | 31.8 | 15.9 | 8.8 | 16.5 | 19.2 | 7.6 | 3.8 |
| Wean 7/15 - 11/15 (lbs.) | 3.8 | 5.8 | 19.2 | 30.0 | 31.1 | 33.5 | 14.1 | 8.8 | 16.5 | 19.2 | 7.6 | 3.8 |
| Summer Drought | | | | | | | | | | | | |
| Estimated TDN (lbs.) | 2.9 | 4.3 | 14.4 | 36.0 | 28.8 | 8.2 | 4.1 | 4.1 | 8.2 | 10.3 | 5.7 | 2.9 |
| Estimated % TDN | 75.0 | 75.0 | 75.0 | 80.0 | 75.0 | 65.0 | 60.0 | 60.0 | 65.0 | 70.0 | 75.0 | 75.0 |
| Estimated % CP | 16.0 | 17.0 | 24.0 | 23.0 | 16.0 | 10.0 | 7.0 | 6.0 | 9.0 | 13.0 | 23.0 | 17.0 |
| Estimated DM Avail. (lbs.) | 3.8 | 5.8 | 19.2 | 45.0 | 38.4 | 12.7 | 6.8 | 6.8 | 12.7 | 14.7 | 7.6 | 3.8 |
| DM Avail. With Carryover with Summer Drought | | | | | | | | | | | | |
| Wean 6/15 (lbs.) | 3.8 | 5.8 | 19.2 | 30.0 | 31.1 | 31.8 | 10.0 | 6.8 | 12.7 | 14.7 | 7.7 | 3.8 |
| Wean 7/15 - 11/15 (lbs.) | 3.8 | 5.8 | 19.2 | 30.0 | 31.1 | 33.5 | 8.3 | 6.8 | 12.7 | 14.7 | 7.7 | 3.8 |

Notes:
TDN - Total Digestible Nutrients
CP - Crude Protein
DM - Dry Matter

**Table 2.** Mean Monthly Precipitation at Knoxville, TN, for the 1994-2008 Period

| | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Mean | 4.76 | 4.09 | 4.85 | 4.88 | 4.52 | 4.26 | 5.71 | 2.64 | 3.14 | 2.10 | 3.63 | 3.45 | 48.01 |
| Mean less 1 Standard Deviation for June-October | 4.76 | 4.09 | 4.85 | 4.88 | 4.52 | 1.96 | 3.41 | 0.34 | 0.84 | 0.00 | 3.63 | 3.45 | 36.50 |

**Table 3.** Average Steer Price per Hundredweight by Month for 1995-2008 Inflated to 2008 Dollars

| Weight (lbs.) | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 375 | 144.65 | 149.85 | 150.35 | 149.03 | 145.61 | 143.51 | 141.24 | 142.21 | 141.30 | 138.08 | 138.07 | 140.98 |
| 425 | 136.53 | 141.74 | 143.05 | 141.53 | 139.40 | 136.74 | 134.52 | 134.08 | 132.95 | 130.12 | 129.73 | 132.43 |
| 475 | 129.59 | 134.80 | 136.89 | 135.90 | 134.53 | 132.89 | 129.72 | 129.13 | 127.03 | 124.32 | 123.55 | 125.49 |
| 525 | 122.68 | 127.30 | 130.20 | 130.08 | 129.83 | 129.10 | 126.14 | 125.55 | 122.77 | 119.55 | 118.21 | 119.84 |
| 575 | 117.51 | 121.46 | 124.38 | 125.46 | 125.30 | 125.12 | 122.81 | 122.65 | 119.99 | 116.07 | 114.29 | 115.88 |
| 625 | 112.41 | 115.11 | 117.09 | 118.07 | 119.64 | 120.34 | 119.51 | 119.92 | 117.23 | 113.22 | 110.79 | 112.20 |
| 675 | 110.95 | 111.53 | 112.68 | 114.31 | 115.53 | 117.30 | 117.07 | 117.87 | 116.26 | 111.47 | 109.32 | 111.69 |
| 725 | 112.00 | 110.91 | 109.90 | 110.05 | 113.93 | 115.26 | 115.88 | 116.98 | 115.06 | 112.22 | 112.35 | 112.35 |
| 775 | 108.12 | 106.60 | 105.91 | 108.17 | 110.89 | 112.37 | 113.87 | 113.28 | 112.26 | 110.41 | 109.26 | 109.10 |
| 825 | 105.22 | 104.58 | 103.80 | 103.21 | 107.91 | 111.12 | 107.79 | 112.46 | 110.34 | 108.71 | 107.82 | 108.51 |
| 875 | 106.43 | 103.75 | 103.88 | 101.78 | 107.39 | 111.36 | 110.13 | 110.55 | 109.40 | 108.53 | 106.77 | 106.99 |
| 925 | 100.95 | 99.53 | 98.88 | 97.56 | 103.48 | 103.75 | 106.52 | 107.98 | 104.73 | 101.40 | 101.35 | 96.74 |
| 975 | 93.96 | 96.85 | 93.46 | 93.10 | 96.88 | 97.50 | 96.29 | 100.72 | 96.33 | 93.38 | 89.30 | 93.62 |

Source: USDA Agricultural Market Service Livestock and Seed Division

**Table 4.** Average Heifer Price per Hundredweight by Month for 1995-2008 Inflated to 2008 Dollars

| Weight (lbs.) | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 375 | 122.47 | 127.43 | 130.52 | 130.89 | 129.45 | 127.33 | 124.72 | 124.20 | 122.14 | 118.31 | 116.40 | 119.13 |
| 425 | 118.05 | 122.78 | 125.61 | 126.05 | 124.93 | 123.37 | 120.80 | 120.00 | 117.63 | 113.61 | 112.04 | 114.42 |
| 475 | 113.55 | 117.76 | 120.87 | 121.61 | 121.40 | 120.17 | 118.19 | 117.28 | 114.30 | 110.14 | 108.18 | 110.71 |
| 525 | 108.99 | 112.60 | 115.66 | 116.60 | 117.01 | 116.75 | 115.34 | 114.96 | 111.64 | 107.28 | 104.60 | 106.49 |
| 575 | 106.28 | 108.72 | 111.03 | 112.75 | 113.87 | 114.08 | 113.12 | 113.13 | 110.59 | 105.51 | 102.58 | 104.22 |
| 625 | 103.25 | 104.64 | 106.08 | 107.43 | 109.03 | 110.22 | 109.96 | 110.14 | 108.02 | 103.44 | 101.04 | 102.55 |
| 675 | 102.50 | 103.21 | 103.32 | 104.33 | 106.57 | 108.38 | 107.79 | 108.39 | 107.30 | 103.10 | 101.18 | 102.44 |
| 725 | 100.50 | 101.35 | 100.18 | 100.29 | 102.43 | 105.23 | 107.33 | 106.66 | 105.15 | 101.58 | 98.47 | 100.56 |
| 775 | 99.88 | 98.53 | 97.96 | 98.25 | 101.86 | 102.18 | 104.45 | 103.08 | 102.47 | 99.83 | 99.37 | 97.76 |
| 825 | 94.40 | 95.61 | 93.90 | 94.34 | 95.81 | 98.42 | 97.38 | 99.67 | 98.39 | 95.34 | 94.65 | 94.47 |
| 875 | 93.00 | 93.25 | 90.98 | 91.07 | 92.94 | 93.87 | 96.21 | 97.18 | 94.08 | 90.82 | 92.63 | 91.73 |

Source: USDA Agricultural Market Service Livestock and Seed Division

**Table 5.1.** Beef Cow-Calf Operation Budget: June Weaning, Average Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 3.78 | 127.09 | 10,088.40 | 112.09 |
| Feeder Steers | head | 40 | 4.08 | 139.04 | 22,691.33 | 252.13 |
| Cull Cows | head | 20 | 14.20 | 61.67 | 17,512.86 | 194.59 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,152.31) | (35.03) |
| Beef Checkoff | head | 77 | - | 1.00 | (77.00) | (0.86) |
| | | | Total Revenue | | 47,063.28 | 522.93 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 20 | 233.56 | 1,611.56 | 17.91 |
| Creep Feed – Calves | ton | 0.09 | 81 | 223.38 | 1,628.44 | 18.09 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 81 | 60.00 | 9,112.50 | 101.25 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 105 | - | 33.69 | 3,537.45 | 39.31 |
| Salt & Min. – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 105 | - | - | 905.71 | 10.06 |
| Vet & Med – Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 77 | - | 12.24 | 942.81 | 10.48 |
| Truck – Marketing | head | 77 | - | 7.50 | 577.50 | 6.42 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 42,754.27 | 475.05 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,309.01 | 47.88 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 45,635.68 | 507.06 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,427.59 | 15.86 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,420.34 | 38.00 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,685.54 | 52.06 |
| Total Variable, Fixed and Interest Expenses | | | | | 50,321.23 | 559.12 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,257.95) | (36.20) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 5.2.** Beef Cow-Calf Operation Budget: July Weaning, Average Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 4.42 | 119.91 | 10,070.13 | 111.89 |
| Feeder Steers | head | 38 | 4.74 | 129.82 | 23,383.18 | 259.81 |
| Cull Cows | head | 20 | 13.47 | 59.38 | 15,995.89 | 177.73 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,879.26) | (31.99) |
| Beef Checkoff | head | 73 | - | 1.00 | (73.00) | (0.81) |
| | | | Total Revenue | | 46,496.94 | 516.63 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 20 | 233.56 | 1,471.43 | 16.35 |
| Creep Feed – Calves | ton | 0.15 | 77 | 223.38 | 2,580.04 | 28.67 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 77 | 60.00 | 8,662.50 | 96.25 |
| Concentrate Feed - Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay - Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 101 | - | 33.69 | 3,402.69 | 37.81 |
| Salt & Min. - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 101 | - | - | 879.09 | 9.77 |
| Vet & Med - Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 73 | - | 12.76 | 931.40 | 10.35 |
| Truck – Marketing | head | 73 | - | 7.50 | 547.50 | 6.08 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | Total Variable Expenses | | | 42,912.94 | 476.81 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,584.00 | 39.82 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 45,794.36 | 508.83 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 702.58 | 7.81 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,433.04 | 38.14 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,698.24 | 52.20 |
| Total Variable, Fixed and Interest Expenses | | | | | 50,492.59 | 561.03 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,995.65) | (44.40) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 5.3.** Beef Cow-Calf Operation Budget: August Weaning, Average Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 5.01 | 116.07 | 12,211.72 | 135.69 |
| Feeder Steers | head | 40 | 5.46 | 124.33 | 27,153.67 | 301.71 |
| Cull Cows | head | 20 | 11.96 | 59.01 | 14,114.47 | 156.83 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,540.61) | (28.23) |
| Beef Checkoff | head | 77 | - | 1.00 | (77.00) | (0.86) |
| | | | Total Revenue | | 50,862.27 | 565.14 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.285 | 20 | 233.56 | 1,331.29 | 14.79 |
| Creep Feed – Calves | ton | 0.21 | 81 | 223.38 | 3,799.69 | 42.22 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 81 | 60.00 | 9,112.50 | 101.25 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 105 | - | 33.69 | 3,537.45 | 39.31 |
| Salt & Min. – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 105 | - | - | 914.66 | 10.16 |
| Vet & Med – Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 77 | - | 13.23 | 1,018.79 | 11.32 |
| Truck – Marketing | head | 77 | - | 7.50 | 577.50 | 6.42 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | Total Variable Expenses | | | 44,730.18 | 497.00 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 6,132.09 | 68.13 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 47,611.59 | 529.02 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 3,250.67 | 36.12 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,578.41 | 39.76 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,843.61 | 53.82 |
| Total Variable, Fixed and Interest Expenses | | | | | 52,455.21 | 582.84 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (1,592.94) | (17.70) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 5.4.** Beef Cow-Calf Operation Budget: September Weaning, Average Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 5.64 | 110.82 | 13,125.88 | 145.84 |
| Feeder Steers | head | 40 | 6.19 | 117.57 | 29,110.33 | 323.45 |
| Cull Cows | head | 20 | 11.12 | 56.91 | 12,657.45 | 140.64 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,278.34) | (25.31) |
| Beef Checkoff | head | 77 | - | 1.00 | (77.00) | (0.86) |
| | | | Total Revenue | | 52,538.32 | 583.76 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.255 | 20 | 233.56 | 1,191.16 | 13.24 |
| Creep Feed – Calves | ton | 0.27 | 81 | 223.38 | 4,885.32 | 54.28 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 81 | 60.00 | 9,112.50 | 101.25 |
| Concentrate Feed - Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 105 | - | 33.69 | 3,537.45 | 39.31 |
| Salt & Min. - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 105 | - | - | 919.24 | 10.21 |
| Vet & Med - Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 77 | - | 13.67 | 1,052.31 | 11.69 |
| Truck – Marketing | head | 77 | - | 7.50 | 577.50 | 6.42 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | Total Variable Expenses | | | 45,713.77 | 507.93 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 6,824.55 | 75.83 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 48,595.18 | 539.95 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 3,943.13 | 43.81 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,657.10 | 40.63 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,922.30 | 54.69 |
| Total Variable, Fixed and Interest Expenses | | | | | 53,517.49 | 594.64 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (979.17) | (10.88) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 5.5.** Beef Cow-Calf Operation Budget: October Weaning, Average Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 18 | 6.32 | 103.39 | 11,761.65 | 130.68 |
| Feeder Steers | head | 38 | 7.02 | 111.88 | 29,845.11 | 331.61 |
| Cull Cows | head | 20 | 11.05 | 54.38 | 12,017.54 | 133.53 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,163.16) | (24.04) |
| Beef Checkoff | head | 72 | - | 1.00 | (72.00) | (0.80) |
| | | | Total Revenue | | 51,389.14 | 570.99 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.225 | 20 | 233.56 | 1,051.02 | 11.68 |
| Creep Feed – Calves | ton | 0.33 | 76 | 223.38 | 5,602.37 | 62.25 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 76 | 60.00 | 8,550.00 | 95.00 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 100 | - | 33.69 | 3,369.00 | 37.43 |
| Salt & Min. – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 100 | - | - | 885.08 | 9.83 |
| Vet & Med – Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 72 | - | 14.29 | 1,029.22 | 11.44 |
| Truck – Marketing | head | 72 | - | 7.50 | 540.00 | 6.00 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | Total Variable Expenses | | | 45,465.00 | 505.17 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 5,924.14 | 65.82 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 48,346.41 | 537.18 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 3,042.73 | 33.81 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,637.20 | 40.41 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,902.40 | 54.47 |
| Total Variable, Fixed and Interest Expenses | | | | | 53,248.81 | 591.65 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (1,859.67) | (20.66) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 5.6.** Beef Cow-Calf Operation Budget: November Weaning, Average Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 6.87 | 100.53 | 13,812.82 | 153.48 |
| Feeder Steers | head | 40 | 7.58 | 110.31 | 33,445.99 | 371.62 |
| Cull Cows | head | 20 | 11.06 | 52.88 | 11,696.30 | 129.96 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,105.33) | (23.39) |
| Beef Checkoff | head | 76 | - | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 56,773.78 | 630.82 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.195 | 20 | 233.56 | 910.88 | 10.12 |
| Creep Feed – Calves | ton | 0.39 | 80 | 223.38 | 6,969.46 | 77.44 |
| Hay – Repl. Heifers | ton | 2.5125 | 20 | 60.00 | 3,015.00 | 33.50 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed - Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay - Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 920.36 | 10.23 |
| Vet & Med - Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 76 | - | 14.96 | 1,137.00 | 12.63 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 47,314.76 | 525.72 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 9,459.02 | 105.10 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 50,196.17 | 557.74 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 6,577.61 | 73.08 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,785.18 | 42.06 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,050.38 | 56.12 |
| Total Variable, Fixed and Interest Expenses | | | | | 55,246.55 | 613.85 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | 1,527.23 | 16.97 |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 5.7.** Beef Cow-Calf Operation Budget: June Weaning, Average Weather Conditions, 103-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 24 | 3.81 | 126.86 | 11,600.08 | 112.62 |
| Feeder Steers | head | 48 | 4.04 | 139.58 | 27,068.13 | 262.80 |
| Cull Cows | head | 23 | 13.25 | 61.67 | 18,792.41 | 182.45 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,382.63) | (32.84) |
| Beef Checkoff | head | 91 | - | 1.00 | (91.00) | (0.88) |
| | | | Total Revenue | | 53,986.98 | 524.15 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 5 | 233.56 | 875.85 | 8.50 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 23 | 233.56 | 1,853.30 | 17.99 |
| Creep Feed – Calves | ton | 0.09 | 95 | 223.38 | 1,909.90 | 18.54 |
| Hay – Repl. Heifers | ton | 2.625 | 23 | 60.00 | 3,622.50 | 35.17 |
| Hay – Bulls | ton | 2.25 | 5 | 60.00 | 675.00 | 6.55 |
| Hay – Cows | ton | 1.875 | 95 | 60.00 | 10,687.50 | 103.76 |
| Concentrate Feed - Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay - Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 190.85 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 123 | - | 33.69 | 4,143.87 | 40.23 |
| Salt & Min. - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 123 | - | - | 1,067.13 | 10.36 |
| Vet & Med - Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 91 | - | 11.89 | 1,081.56 | 10.50 |
| Truck – Marketing | head | 91 | - | 7.50 | 682.50 | 6.63 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 3.78 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 46,646.72 | 452.88 |
| | | | RETURN ABOVE VARIABLE EXPENSES | | 7,340.26 | 71.26 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 19.28 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 2.91 |
| Depreciation (Bulls) | head | 5 | - | 130.17 | 650.83 | 6.32 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.73 |
| | | | Total Fixed Expenses | | 3,011.58 | 29.24 |
| | | | Total Variable and Fixed Expenses | | 49,658.30 | 482.12 |
| | | | RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | 4,328.68 | 42.03 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,731.74 | 36.23 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 12.28 |
| | | | | Total | 4,996.94 | 48.51 |
| | | | Total Variable, Fixed and Interest Expenses | | 54,655.24 | 530.63 |
| | | | RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | (668.26) | (6.49) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 5.8.** Beef Cow-Calf Operation Budget: July Weaning, Average Weather Conditions, 102-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 23 | 4.42 | 119.91 | 12,190.15 | 119.51 |
| Feeder Steers | head | 46 | 4.74 | 129.82 | 28,305.95 | 277.51 |
| Cull Cows | head | 23 | 12.73 | 59.38 | 17,384.70 | 170.44 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,129.25) | (30.68) |
| Beef Checkoff | head | 88 | - | 1.00 | (88.00) | (0.86) |
| | | | Total Revenue | | 54,663.56 | 535.92 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 5 | 233.56 | 875.85 | 8.59 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 23 | 233.56 | 1,692.14 | 16.59 |
| Creep Feed – Calves | ton | 0.15 | 92 | 223.38 | 3,082.64 | 30.22 |
| Hay – Repl. Heifers | ton | 2.625 | 23 | 60.00 | 3,622.50 | 35.51 |
| Hay – Bulls | ton | 2.25 | 5 | 60.00 | 675.00 | 6.62 |
| Hay – Cows | ton | 1.875 | 92 | 60.00 | 10,350.00 | 101.47 |
| Concentrate Feed - Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay - Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 192.73 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 120 | - | 33.69 | 4,042.80 | 39.64 |
| Salt & Min. - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 120 | - | - | 1,048.77 | 10.28 |
| Vet & Med - Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 88 | - | 12.44 | 1,095.03 | 10.74 |
| Truck – Marketing | head | 88 | - | 7.50 | 660.00 | 6.47 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 3.82 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 47,192.35 | 462.67 |
| | | | RETURN ABOVE VARIABLE EXPENSES | | 7,471.20 | 73.25 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 19.47 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 2.94 |
| Depreciation (Bulls) | head | 5 | - | 130.17 | 650.83 | 6.38 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.73 |
| | | | Total Fixed Expenses | | 3,011.58 | 29.53 |
| | | | Total Variable and Fixed Expenses | | 50,203.94 | 492.20 |
| | | | RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | 4,459.62 | 43.72 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,775.39 | 37.01 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 12.40 |
| | | | | Total | 5,040.59 | 49.42 |
| | | | Total Variable, Fixed and Interest Expenses | | 55,244.52 | 541.61 |
| | | | RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | (580.97) | (5.70) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 6.1.** Beef Cow-Calf Operation Budget: June Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 4.79 | 117.10 | 11,218.18 | 124.65 |
| Feeder Steers | head | 40 | 5.30 | 125.26 | 26,555.12 | 295.06 |
| Cull Cows | head | 20 | 14.19 | 61.67 | 17,500.53 | 194.45 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,150.09) | (35.00) |
| Beef Checkoff | head | 76 | - | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 52,047.73 | 578.31 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 20 | 233.56 | 1,611.56 | 17.91 |
| Creep Feed – Calves | ton | 0.09 | 80 | 223.38 | 1,608.34 | 17.87 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed - Backgrounding | ton | 0.2055 | 60 | 228.97 | 2,823.20 | 31.37 |
| Hay – Backgrounding | ton | 0.2055 | 60 | 60.00 | 739.80 | 8.22 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 60 | - | 4.08 | 244.80 | 2.72 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 905.24 | 10.06 |
| Vet & Med – Backgrounding | head | 60 | - | - | 506.73 | 5.63 |
| Marketing | head | 76 | - | 13.72 | 1,042.47 | 11.58 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 60 | - | 1.08 | 64.80 | 0.72 |
| | | | Total Variable Expenses | | 47,059.00 | 522.88 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,988.73 | 55.43 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 49,940.41 | 554.89 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 2,107.32 | 23.41 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,764.72 | 41.83 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,029.92 | 55.89 |
| Total Variable, Fixed and Interest Expenses | | | | | 54,970.33 | 610.78 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (2,922.60) | (32.47) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 6.2.** Beef Cow-Calf Operation Budget: July Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 5.40 | 111.32 | 12,022.88 | 133.59 |
| Feeder Steers | head | 40 | 5.96 | 118.83 | 28,329.07 | 314.77 |
| Cull Cows | head | 20 | 13.48 | 59.38 | 16,007.77 | 177.86 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,881.40) | (32.02) |
| Beef Checkoff | head | 76 | | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 53,402.33 | 593.36 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 20 | 233.56 | 1,471.43 | 16.35 |
| Creep Feed – Calves | ton | 0.15 | 80 | 223.38 | 2,680.56 | 29.78 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed – Backgrounding | ton | 0.2175 | 60 | 228.97 | 2,988.06 | 33.20 |
| Hay – Backgrounding | ton | 0.2175 | 60 | 60.00 | 783.00 | 8.70 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 60 | - | 4.08 | 244.80 | 2.72 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 909.67 | 10.11 |
| Vet & Med – Backgrounding | head | 60 | - | - | 520.76 | 5.79 |
| Marketing | head | 76 | - | 14.07 | 1,069.57 | 11.88 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 60 | - | 1.08 | 64.80 | 0.72 |
| | | Total Variable Expenses | | | 48,244.71 | 536.05 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 5,157.62 | 57.31 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 51,126.12 | 568.07 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 2,276.20 | 25.29 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,859.58 | 42.88 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,124.78 | 56.94 |
| Total Variable, Fixed and Interest Expenses | | | | | 56,250.90 | 625.01 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (2,848.57) | (31.65) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 6.3.** Beef Cow-Calf Operation Budget: August Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 6.05 | 104.27 | 11,985.84 | 133.18 |
| Feeder Steers | head | 40 | 6.66 | 111.78 | 29,778.19 | 330.87 |
| Cull Cows | head | 20 | 11.94 | 59.01 | 14,090.87 | 156.57 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,536.36) | (28.18) |
| Beef Checkoff | head | 75 | | 1.00 | (75.00) | (0.83) |
| | | | Total Revenue | | 53,243.54 | 591.59 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.285 | 20 | 233.56 | 1,331.29 | 14.79 |
| Creep Feed – Calves | ton | 0.21 | 79 | 223.38 | 3,705.87 | 41.18 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 79 | 60.00 | 8,887.50 | 98.75 |
| Concentrate Feed – Backgrounding | ton | 0.237 | 59 | 228.97 | 3,201.69 | 35.57 |
| Hay – Backgrounding | ton | 0.237 | 59 | 60.00 | 838.98 | 9.32 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 103 | - | 33.69 | 3,470.07 | 38.56 |
| Salt & Min. – Backgrounding | head | 59 | - | 4.08 | 240.72 | 2.67 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 103 | - | - | 906.58 | 10.07 |
| Vet & Med – Backgrounding | head | 59 | - | - | 526.89 | 5.85 |
| Marketing | head | 75 | - | 14.22 | 1,066.37 | 11.85 |
| Truck – Marketing | head | 75 | - | 7.50 | 562.50 | 6.25 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 59 | - | 1.08 | 63.72 | 0.71 |
| | | Total Variable Expenses | | | 49,240.49 | 547.12 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,003.06 | 44.48 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 52,121.90 | 579.13 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,121.64 | 12.46 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,939.24 | 43.77 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,204.44 | 57.83 |
| Total Variable, Fixed and Interest Expenses | | | | | 57,326.34 | 636.96 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (4,082.80) | (45.36) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 6.4.** Beef Cow-Calf Operation Budget: September Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 6.74 | 101.18 | 14,321.02 | 159.12 |
| Feeder Steers | head | 39 | 7.44 | 111.17 | 32,257.09 | 358.41 |
| Cull Cows | head | 20 | 11.08 | 56.91 | 12,611.92 | 140.13 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,270.15) | (25.22) |
| Beef Checkoff | head | 76 | | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 56,843.88 | 631.60 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.255 | 20 | 233.56 | 1,191.16 | 13.24 |
| Creep Feed – Calves | ton | 0.27 | 80 | 223.38 | 4,825.01 | 53.61 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed – Backgrounding | ton | 0.258 | 60 | 228.97 | 3,544.46 | 39.38 |
| Hay – Backgrounding | ton | 0.258 | 60 | 60.00 | 928.80 | 10.32 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 60 | - | 4.08 | 244.80 | 2.72 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 919.42 | 10.22 |
| Vet & Med – Backgrounding | head | 60 | - | - | 551.78 | 6.13 |
| Marketing | head | 76 | - | 14.98 | 1,138.40 | 12.65 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 60 | - | 1.08 | 64.80 | 0.72 |
| | | Total Variable Expenses | | | 50,920.68 | 565.79 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 5,923.20 | 65.81 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 53,802.09 | 597.80 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 3,041.79 | 33.80 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,073.65 | 45.26 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,338.85 | 59.32 |
| Total Variable, Fixed and Interest Expenses | | | | | 59,140.95 | 657.12 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (2,297.07) | (25.52) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 6.5.** Beef Cow-Calf Operation Budget: October Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 17 | 7.38 | 99.83 | 12,524.42 | 139.16 |
| Feeder Steers | head | 38 | 8.24 | 108.52 | 33,979.78 | 377.55 |
| Cull Cows | head | 20 | 11.11 | 54.38 | 12,082.79 | 134.25 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,174.90) | (24.17) |
| Beef Checkoff | head | 71 | | 1.00 | (71.00) | (0.79) |
| | | | Total Revenue | | 56,341.09 | 626.01 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.225 | 20 | 233.56 | 1,051.02 | 11.68 |
| Creep Feed – Calves | ton | 0.33 | 75 | 223.38 | 5,528.66 | 61.43 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 75 | 60.00 | 8,437.50 | 93.75 |
| Concentrate Feed – Backgrounding | ton | 0.279 | 55 | 228.97 | 3,513.54 | 39.04 |
| Hay – Backgrounding | ton | 0.279 | 55 | 60.00 | 920.70 | 10.23 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 99 | - | 33.69 | 3,335.31 | 37.06 |
| Salt & Min. – Backgrounding | head | 55 | - | 4.08 | 224.40 | 2.49 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 99 | - | - | 884.97 | 9.83 |
| Vet & Med – Backgrounding | head | 55 | - | - | 521.38 | 5.79 |
| Marketing | head | 71 | - | 15.89 | 1,128.24 | 12.54 |
| Truck – Marketing | head | 71 | - | 7.50 | 532.50 | 5.92 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 55 | - | 1.08 | 59.40 | 0.66 |
| | | Total Variable Expenses | | | 50,575.93 | 561.95 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 5,765.16 | 64.06 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 53,457.34 | 593.97 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 2,883.75 | 32.04 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,046.07 | 44.96 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,311.27 | 59.01 |
| Total Variable, Fixed and Interest Expenses | | | | | 58,768.62 | 652.98 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (2,427.52) | (26.97) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 6.6.** Beef Cow-Calf Operation Budget: November Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 16 | 7.87 | 98.57 | 12,411.93 | 137.91 |
| Feeder Steers | head | 38 | 8.76 | 106.32 | 35,391.80 | 393.24 |
| Cull Cows | head | 20 | 11.08 | 52.88 | 11,717.45 | 130.19 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,109.14) | (23.43) |
| Beef Checkoff | head | 70 | | 1.00 | (70.00) | (0.78) |
| | | | Total Revenue | | 57,342.05 | 637.13 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.195 | 20 | 233.56 | 910.88 | 10.12 |
| Creep Feed – Calves | ton | 0.39 | 74 | 223.38 | 6,446.75 | 71.63 |
| Hay – Repl. Heifers | ton | 2.5125 | 20 | 60.00 | 3,015.00 | 33.50 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 74 | 60.00 | 8,325.00 | 92.50 |
| Concentrate Feed – Backgrounding | ton | 0.282 | 54 | 228.97 | 3,486.76 | 38.74 |
| Hay – Backgrounding | ton | 0.282 | 54 | 60.00 | 913.68 | 10.15 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 98 | - | 33.69 | 3,301.62 | 36.68 |
| Salt & Min. – Backgrounding | head | 54 | - | 4.08 | 220.32 | 2.45 |
| Vet & Med - Cows, Bulls & Repl. Heifs | head | 98 | - | - | 880.72 | 9.79 |
| Vet & Med – Backgrounding | head | 54 | - | - | 522.16 | 5.80 |
| Marketing | head | 70 | - | 16.40 | 1,148.24 | 12.76 |
| Truck – Marketing | head | 70 | - | 7.50 | 525.00 | 5.83 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 54 | - | 1.08 | 58.32 | 0.65 |
| | | | Total Variable Expenses | | 51,042.74 | 567.14 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 6,299.31 | 69.99 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 53,924.15 | 599.16 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 3,417.90 | 37.98 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,083.42 | 45.37 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,348.62 | 59.43 |
| Total Variable, Fixed and Interest Expenses | | | | | 59,272.77 | 658.59 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (1,930.72) | (21.45) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 6.7.** Beef Cow-Calf Operation Budget: June Weaning, Average Weather Conditions, 103-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 22 | 4.77 | 117.19 | 12,297.92 | 119.40 |
| Feeder Steers | head | 46 | 5.26 | 125.49 | 30,363.56 | 294.79 |
| Cull Cows | head | 23 | 13.22 | 61.67 | 18,749.86 | 182.04 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,374.97) | (32.77) |
| Beef Checkoff | head | 87 | | 1.00 | (87.00) | (0.84) |
| | | | Total Revenue | | 57,949.36 | 562.62 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 5 | 233.56 | 875.85 | 8.50 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 23 | 233.56 | 1,853.30 | 17.99 |
| Creep Feed – Calves | ton | 0.09 | 91 | 223.38 | 1,829.48 | 17.76 |
| Hay – Repl. Heifers | ton | 2.625 | 23 | 60.00 | 3,622.50 | 35.17 |
| Hay – Bulls | ton | 2.25 | 5 | 60.00 | 675.00 | 6.55 |
| Hay – Cows | ton | 1.875 | 91 | 60.00 | 10,237.50 | 99.39 |
| Concentrate Feed – Backgrounding | ton | 0.2025 | 68 | 228.97 | 3,152.92 | 30.61 |
| Hay – Backgrounding | ton | 0.2025 | 68 | 60.00 | 826.20 | 8.02 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 190.85 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 119 | - | 33.69 | 4,009.11 | 38.92 |
| Salt & Min. – Backgrounding | head | 68 | - | 4.08 | 277.44 | 2.69 |
| Vet & Med - Cows, Bulls & Repl. Heifs | head | 119 | - | - | 1,043.87 | 10.13 |
| Vet & Med – Backgrounding | head | 68 | - | - | 573.59 | 5.57 |
| Marketing | head | 87 | - | 13.34 | 1,160.73 | 11.27 |
| Truck – Marketing | head | 87 | - | 7.50 | 652.50 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 3.78 |
| Implant – Backgrounding | head | 68 | - | 1.08 | 73.44 | 0.71 |
| | | | Total Variable Expenses | | 50,911.04 | 494.28 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 7,038.32 | 68.33 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 19.28 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 2.91 |
| Depreciation (Bulls) | head | 5 | - | 130.17 | 650.83 | 6.32 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.73 |
| | | | Total Fixed Expenses | | 3,011.58 | 29.24 |
| | | | Total Variable and Fixed Expenses | | 53,922.63 | 523.52 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 4,026.74 | 39.09 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,072.88 | 39.54 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 12.28 |
| | | | | Total | 5,338.08 | 51.83 |
| Total Variable, Fixed and Interest Expenses | | | | | 59,260.71 | 575.35 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (1,311.34) | (12.73) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 6.8.** Beef Cow-Calf Operation Budget: July Weaning, Average Weather Conditions, 102-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 22 | 5.37 | 111.39 | 13,159.14 | 129.01 |
| Feeder Steers | head | 47 | 5.94 | 118.94 | 33,205.67 | 325.55 |
| Cull Cows | head | 23 | 12.68 | 59.38 | 17,316.42 | 169.77 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,116.95) | (30.56) |
| Beef Checkoff | head | 88 | | 1.00 | (88.00) | (0.86) |
| | | | Total Revenue | | 60,476.27 | 592.90 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 5 | 233.56 | 875.85 | 8.59 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 23 | 233.56 | 1,692.14 | 16.59 |
| Creep Feed – Calves | ton | 0.15 | 92 | 223.38 | 3,082.64 | 30.22 |
| Hay – Repl. Heifers | ton | 2.625 | 23 | 60.00 | 3,622.50 | 35.51 |
| Hay – Bulls | ton | 2.25 | 5 | 60.00 | 675.00 | 6.62 |
| Hay – Cows | ton | 1.875 | 92 | 60.00 | 10,350.00 | 101.47 |
| Concentrate Feed – Backgrounding | ton | 0.2175 | 69 | 228.97 | 3,436.27 | 33.69 |
| Hay – Backgrounding | ton | 0.2175 | 69 | 60.00 | 900.45 | 8.83 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 192.73 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 120 | - | 33.69 | 4,042.80 | 39.64 |
| Salt & Min. – Backgrounding | head | 69 | - | 4.08 | 281.52 | 2.76 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 120 | - | - | 1,056.71 | 10.36 |
| Vet & Med – Backgrounding | head | 69 | - | - | 598.50 | 5.87 |
| Marketing | head | 88 | - | 13.76 | 1,211.29 | 11.88 |
| Truck – Marketing | head | 88 | - | 7.50 | 660.00 | 6.47 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 3.82 |
| Implant – Backgrounding | head | 69 | - | 1.08 | 74.52 | 0.73 |
| | | Total Variable Expenses | | | 52,607.81 | 515.76 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 7,868.46 | 77.14 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 19.47 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 2.94 |
| Depreciation (Bulls) | head | 5 | - | 130.17 | 650.83 | 6.38 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.73 |
| | | Total Fixed Expenses | | | 3,011.58 | 29.53 |
| | | Total Variable and Fixed Expenses | | | 55,619.39 | 545.29 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 4,856.88 | 47.62 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,208.62 | 41.26 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 12.40 |
| | | | | Total | 5,473.82 | 53.66 |
| Total Variable, Fixed and Interest Expenses | | | | | 61,093.22 | 598.95 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (616.94) | (6.05) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 7.1.** Beef Cow-Calf Operation Budget: June Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 5.39 | 111.34 | 11,402.33 | 126.69 |
| Feeder Steers | head | 40 | 5.84 | 119.49 | 27,912.86 | 310.14 |
| Cull Cows | head | 20 | 14.17 | 61.67 | 17,475.86 | 194.18 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,145.65) | (34.95) |
| Beef Checkoff | head | 75 | - | 1.00 | (75.00) | (0.83) |
| | | | Total Revenue | | 53,570.40 | 595.23 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 20 | 233.56 | 1,611.56 | 17.91 |
| Creep Feed – Calves | ton | 0.09 | 79 | 223.38 | 1,588.23 | 17.65 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 79 | 60.00 | 8,887.50 | 98.75 |
| Concentrate Feed – Backgrounding | ton | 0.31725 | 59 | 228.97 | 4,285.80 | 47.62 |
| Hay – Backgrounding | ton | 0.31725 | 59 | 60.00 | 1,123.07 | 12.48 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 103 | - | 33.69 | 3,470.07 | 38.56 |
| Salt & Min. – Backgrounding | head | 59 | - | 4.08 | 240.72 | 2.67 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 103 | - | - | 901.78 | 10.02 |
| Vet & Med – Backgrounding | head | 59 | - | - | 549.61 | 6.11 |
| Marketing | head | 75 | - | 14.31 | 1,072.91 | 11.92 |
| Truck – Marketing | head | 75 | - | 7.50 | 562.50 | 6.25 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 59 | - | 1.08 | 63.72 | 0.71 |
| | | | Total Variable Expenses | | 48,795.77 | 542.18 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,774.63 | 53.05 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 51,677.18 | 574.19 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,893.22 | 21.04 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,903.66 | 43.37 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,168.86 | 57.43 |
| Total Variable, Fixed and Interest Expenses | | | | | 56,846.04 | 631.62 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,275.64) | (36.40) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 7.2.** Beef Cow-Calf Operation Budget: July Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 6.05 | 104.27 | 13,247.50 | 147.19 |
| Feeder Steers | head | 40 | 6.58 | 112.07 | 29,496.82 | 327.74 |
| Cull Cows | head | 20 | 13.47 | 59.38 | 15,995.89 | 177.73 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,879.26) | (31.99) |
| Beef Checkoff | head | 77 | | 1.00 | (77.00) | (0.86) |
| | | | Total Revenue | | 55,783.96 | 619.82 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 20 | 233.56 | 1,471.43 | 16.35 |
| Creep Feed – Calves | ton | 0.15 | 81 | 223.38 | 2,714.07 | 30.16 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 81 | 60.00 | 9,112.50 | 101.25 |
| Concentrate Feed – Backgrounding | ton | 0.34425 | 61 | 228.97 | 4,808.20 | 53.42 |
| Hay – Backgrounding | ton | 0.34425 | 61 | 60.00 | 1,259.96 | 14.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 105 | - | 33.69 | 3,537.45 | 39.31 |
| Salt & Min. – Backgrounding | head | 61 | - | 4.08 | 248.88 | 2.77 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 105 | - | - | 922.22 | 10.25 |
| Vet & Med – Backgrounding | head | 61 | - | - | 587.29 | 6.53 |
| Marketing | head | 77 | - | 14.51 | 1,117.22 | 12.41 |
| Truck – Marketing | head | 77 | - | 7.50 | 577.50 | 6.42 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 61 | - | 1.08 | 65.88 | 0.73 |
| | | Total Variable Expenses | | | 50,860.89 | 565.12 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,923.07 | 54.70 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 53,742.30 | 597.14 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 2,041.66 | 22.69 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,068.87 | 45.21 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,334.07 | 59.27 |
| Total Variable, Fixed and Interest Expenses | | | | | 59,076.37 | 656.40 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,292.41) | (36.58) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 7.3.** Beef Cow-Calf Operation Budget: August Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 6.65 | 101.15 | 13,452.95 | 149.48 |
| Feeder Steers | head | 39 | 7.26 | 112.29 | 31,793.79 | 353.26 |
| Cull Cows | head | 20 | 11.94 | 59.01 | 14,090.87 | 156.57 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,536.36) | (28.18) |
| Beef Checkoff | head | 75 | | 1.00 | (75.00) | (0.83) |
| | | | Total Revenue | | 56,726.26 | 630.29 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.285 | 20 | 233.56 | 1,331.29 | 14.79 |
| Creep Feed – Calves | ton | 0.21 | 79 | 223.38 | 3,705.87 | 41.18 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 79 | 60.00 | 8,887.50 | 98.75 |
| Concentrate Feed – Backgrounding | ton | 0.3645 | 59 | 228.97 | 4,924.11 | 54.71 |
| Hay – Backgrounding | ton | 0.3645 | 59 | 60.00 | 1,290.33 | 14.34 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 103 | - | 33.69 | 3,470.07 | 38.56 |
| Salt & Min. - Backgrounding | head | 59 | - | 4.08 | 240.72 | 2.67 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 103 | - | - | 910.94 | 10.12 |
| Vet & Med - Backgrounding | head | 59 | - | - | 587.91 | 6.53 |
| Marketing | head | 75 | - | 15.15 | 1,136.03 | 12.62 |
| Truck – Marketing | head | 75 | - | 7.50 | 562.50 | 6.25 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 59 | - | 1.08 | 63.72 | 0.71 |
| | | Total Variable Expenses | | | 51,549.30 | 572.77 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 5,176.96 | 57.52 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 54,430.71 | 604.79 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 2,295.54 | 25.51 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,123.94 | 45.82 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,389.14 | 59.88 |
| Total Variable, Fixed and Interest Expenses | | | | | 59,819.85 | 664.67 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,093.60) | (34.37) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 7.4.** Beef Cow-Calf Operation Budget: September Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 7.30 | 100.28 | 13,908.84 | 154.54 |
| Feeder Steers | head | 41 | 7.99 | 108.82 | 35,648.34 | 396.09 |
| Cull Cows | head | 20 | 11.14 | 56.91 | 12,680.22 | 140.89 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,282.44) | (25.36) |
| Beef Checkoff | head | 76 | | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 59,878.96 | 665.32 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.255 | 20 | 233.56 | 1,191.16 | 13.24 |
| Creep Feed – Calves | ton | 0.27 | 80 | 223.38 | 4,825.01 | 53.61 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed – Backgrounding | ton | 0.38925 | 60 | 228.97 | 5,347.59 | 59.42 |
| Hay – Backgrounding | ton | 0.38925 | 60 | 60.00 | 1,401.30 | 15.57 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 60 | - | 4.08 | 244.80 | 2.72 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 923.49 | 10.26 |
| Vet & Med – Backgrounding | head | 60 | - | - | 617.45 | 6.86 |
| Marketing | head | 76 | - | 15.78 | 1,199.10 | 13.32 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 60 | - | 1.08 | 64.80 | 0.72 |
| | | Total Variable Expenses | | | 53,326.76 | 592.52 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 6,552.20 | 72.80 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 56,208.17 | 624.54 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 3,670.78 | 40.79 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,266.14 | 47.40 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,531.34 | 61.46 |
| Total Variable, Fixed and Interest Expenses | | | | | 61,739.51 | 685.99 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (1,860.56) | (20.67) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 7.5.** Beef Cow-Calf Operation Budget: October Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 8.03 | 96.81 | 14,770.30 | 164.11 |
| Feeder Steers | head | 39 | 8.85 | 105.33 | 36,354.65 | 403.94 |
| Cull Cows | head | 20 | 11.06 | 54.38 | 12,028.41 | 133.65 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,165.11) | (24.06) |
| Beef Checkoff | head | 74 | | 1.00 | (74.00) | (0.82) |
| | | | Total Revenue | | 60,914.25 | 676.83 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.225 | 20 | 233.56 | 1,051.02 | 11.68 |
| Creep Feed – Calves | ton | 0.33 | 78 | 223.38 | 5,749.80 | 63.89 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 78 | 60.00 | 8,775.00 | 97.50 |
| Concentrate Feed – Backgrounding | ton | 0.42525 | 58 | 228.97 | 5,647.43 | 62.75 |
| Hay – Backgrounding | ton | 0.42525 | 58 | 60.00 | 1,479.87 | 16.44 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min.- Cows, Bulls, Repl. Heifs | head | 102 | - | 33.69 | 3,436.38 | 38.18 |
| Salt & Min. – Backgrounding | head | 58 | - | 4.08 | 236.64 | 2.63 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 102 | - | - | 913.16 | 10.15 |
| Vet & Med – Backgrounding | head | 58 | - | - | 621.03 | 6.90 |
| Marketing | head | 74 | - | 16.48 | 1,219.77 | 13.55 |
| Truck – Marketing | head | 74 | - | 7.50 | 555.00 | 6.17 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 58 | - | 1.08 | 62.64 | 0.70 |
| | | Total Variable Expenses | | | 54,186.04 | 602.07 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 6,728.21 | 74.76 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 57,067.45 | 634.08 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 3,846.80 | 42.74 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,334.88 | 48.17 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,600.08 | 62.22 |
| Total Variable, Fixed and Interest Expenses | | | | | 62,667.53 | 696.31 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (1,753.28) | (19.48) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 7.6.** Beef Cow-Calf Operation Budget: November Weaning, Average Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 16 | 8.52 | 94.34 | 12,860.43 | 142.89 |
| Feeder Steers | head | 39 | 9.39 | 98.78 | 36,174.22 | 401.94 |
| Cull Cows | head | 20 | 11.03 | 52.88 | 11,664.58 | 129.61 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,099.62) | (23.33) |
| Beef Checkoff | head | 71 | | 1.00 | (71.00) | (0.79) |
| | | | Total Revenue | | 58,528.61 | 650.32 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.195 | 20 | 233.56 | 910.88 | 10.12 |
| Creep Feed – Calves | ton | 0.39 | 75 | 223.38 | 6,533.87 | 72.60 |
| Hay – Repl. Heifers | ton | 2.5125 | 20 | 60.00 | 3,015.00 | 33.50 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 75 | 60.00 | 8,437.50 | 93.75 |
| Concentrate Feed – Backgrounding | ton | 0.43875 | 55 | 228.97 | 5,525.33 | 61.39 |
| Hay – Backgrounding | ton | 0.43875 | 55 | 60.00 | 1,447.88 | 16.09 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 99 | - | 33.69 | 3,335.31 | 37.06 |
| Salt & Min. – Backgrounding | head | 55 | - | 4.08 | 224.40 | 2.49 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 99 | - | - | 893.26 | 9.93 |
| Vet & Med – Backgrounding | head | 55 | - | - | 606.60 | 6.74 |
| Marketing | head | 71 | - | 16.51 | 1,171.99 | 13.02 |
| Truck – Marketing | head | 71 | - | 7.50 | 532.50 | 5.92 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 55 | - | 1.08 | 59.40 | 0.66 |
| | | Total Variable Expenses | | | 53,982.22 | 599.80 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,546.38 | 50.52 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 56,863.64 | 631.82 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,664.97 | 18.50 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,318.58 | 47.98 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,583.78 | 62.04 |
| Total Variable, Fixed and Interest Expenses | | | | | 62,447.42 | 693.86 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,918.81) | (43.54) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 7.7.** Beef Cow-Calf Operation Budget: June Weaning, Average Weather Conditions, 103-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 23 | 5.40 | 111.32 | 13,825.94 | 134.23 |
| Feeder Steers | head | 48 | 5.85 | 119.43 | 33,535.94 | 325.59 |
| Cull Cows | head | 23 | 13.25 | 61.67 | 18,792.41 | 182.45 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,382.63) | (32.84) |
| Beef Checkoff | head | 90 | | 1.00 | (90.00) | (0.87) |
| | | | Total Revenue | | 62,681.66 | 608.56 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 5 | 233.56 | 875.85 | 8.50 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 23 | 233.56 | 1,853.30 | 17.99 |
| Creep Feed – Calves | ton | 0.09 | 94 | 223.38 | 1,889.79 | 18.35 |
| Hay – Repl. Heifers | ton | 2.625 | 23 | 60.00 | 3,622.50 | 35.17 |
| Hay – Bulls | ton | 2.25 | 5 | 60.00 | 675.00 | 6.55 |
| Hay – Cows | ton | 1.875 | 94 | 60.00 | 10,575.00 | 102.67 |
| Concentrate Feed – Backgrounding | ton | 0.315 | 71 | 228.97 | 5,120.91 | 49.72 |
| Hay – Backgrounding | ton | 0.315 | 71 | 60.00 | 1,341.90 | 13.03 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 190.85 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 122 | - | 33.69 | 4,110.18 | 39.90 |
| Salt & Min. – Backgrounding | head | 71 | - | 4.08 | 289.68 | 2.81 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 122 | - | - | 1,072.60 | 10.41 |
| Vet & Med – Backgrounding | head | 71 | - | - | 659.62 | 6.40 |
| Marketing | head | 90 | - | 13.95 | 1,255.43 | 12.19 |
| Truck – Marketing | head | 90 | - | 7.50 | 675.00 | 6.55 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 3.78 |
| Implant – Backgrounding | head | 71 | - | 1.08 | 76.68 | 0.74 |
| | | Total Variable Expenses | | | 54,141.07 | 525.64 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 8,540.59 | 82.92 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 19.28 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 2.91 |
| Depreciation (Bulls) | head | 5 | - | 130.17 | 650.83 | 6.32 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.73 |
| | | Total Fixed Expenses | | | 3,011.58 | 29.24 |
| | | Total Variable and Fixed Expenses | | | 57,152.65 | 554.88 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 5,529.01 | 53.68 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,331.29 | 42.05 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 12.28 |
| | | | | Total | 5,596.49 | 54.33 |
| Total Variable, Fixed and Interest Expenses | | | | | 62,749.14 | 609.21 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (67.47) | (0.66) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 7.8.** Beef Cow-Calf Operation Budget: July Weaning, Average Weather Conditions, 102-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 6.02 | 104.39 | 13,196.98 | 129.38 |
| Feeder Steers | head | 46 | 6.55 | 112.17 | 33,796.82 | 331.34 |
| Cull Cows | head | 23 | 12.72 | 59.38 | 17,371.04 | 170.30 |
| Death Loss (4% of Cows) | | 18% | - | - | (3,126.79) | (30.65) |
| Beef Checkoff | head | 86 | | 1.00 | (86.00) | (0.84) |
| | | | Total Revenue | | 61,152.06 | 599.53 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 5 | 233.56 | 875.85 | 8.59 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 23 | 233.56 | 1,692.14 | 16.59 |
| Creep Feed – Calves | ton | 0.15 | 90 | 223.38 | 3,015.63 | 29.57 |
| Hay – Repl. Heifers | ton | 2.625 | 23 | 60.00 | 3,622.50 | 35.51 |
| Hay – Bulls | ton | 2.25 | 5 | 60.00 | 675.00 | 6.62 |
| Hay – Cows | ton | 1.875 | 90 | 60.00 | 10,125.00 | 99.26 |
| Concentrate Feed – Backgrounding | ton | 0.33975 | 67 | 228.97 | 5,212.10 | 51.10 |
| Hay – Backgrounding | ton | 0.33975 | 67 | 60.00 | 1,365.80 | 13.39 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 192.73 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 118 | - | 33.69 | 3,975.42 | 38.97 |
| Salt & Min. – Backgrounding | head | 67 | - | 4.08 | 273.36 | 2.68 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 118 | - | - | 1,046.51 | 10.26 |
| Vet & Med – Backgrounding | head | 67 | - | - | 646.74 | 6.34 |
| Marketing | head | 86 | - | 14.24 | 1,224.76 | 12.01 |
| Truck – Marketing | head | 86 | - | 7.50 | 645.00 | 6.32 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 3.82 |
| Implant – Backgrounding | head | 67 | - | 1.08 | 72.36 | 0.71 |
| | | Total Variable Expenses | | | 54,515.79 | 534.47 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 6,636.27 | 65.06 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 19.47 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 2.94 |
| Depreciation (Bulls) | head | 5 | - | 130.17 | 650.83 | 6.38 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.73 |
| | | Total Fixed Expenses | | | 3,011.58 | 29.53 |
| | | Total Variable and Fixed Expenses | | | 57,527.37 | 563.99 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 3,624.69 | 35.54 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,361.26 | 42.76 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 12.40 |
| | | | | Total | 5,626.46 | 55.16 |
| Total Variable, Fixed and Interest Expenses | | | | | 63,153.84 | 619.16 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (2,001.78) | (19.63) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 8.1.** Beef Cow-Calf Operation Budget: June Weaning, Drought Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 3.75 | 127.33 | 9,072.26 | 100.80 |
| Feeder Steers | head | 41 | 4.03 | 139.72 | 23,085.94 | 256.51 |
| Cull Cows | head | 20 | 13.02 | 61.67 | 16,057.57 | 178.42 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,890.36) | (32.12) |
| Beef Checkoff | head | 76 | - | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 45,249.40 | 502.77 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 20 | 233.56 | 1,611.56 | 17.91 |
| Creep Feed – Calves | ton | 0.09 | 80 | 223.38 | 1,608.34 | 17.87 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 897.67 | 9.97 |
| Vet & Med – Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 76 | - | 11.93 | 906.51 | 10.07 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 42,536.14 | 472.62 |
| | | | RETURN ABOVE VARIABLE EXPENSES | | 2,713.26 | 30.15 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 45,417.55 | 504.64 |
| | | | RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | (168.15) | (1.87) |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,402.89 | 37.81 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,668.09 | 51.87 |
| | | | Total Variable, Fixed and Interest Expenses | | 50,085.65 | 556.51 |
| | | | RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | (4,836.24) | (53.74) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 8.2.** Beef Cow-Calf Operation Budget: July Weaning, Drought Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 4.35 | 120.28 | 10,464.36 | 116.27 |
| Feeder Steers | head | 40 | 4.70 | 130.20 | 24,477.60 | 271.97 |
| Cull Cows | head | 20 | 12.65 | 59.38 | 15,022.13 | 166.91 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,703.98) | (30.04) |
| Beef Checkoff | head | 76 | - | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 47,184.10 | 524.27 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 20 | 233.56 | 1,471.43 | 16.35 |
| Creep Feed – Calves | ton | 0.15 | 80 | 223.38 | 2,680.56 | 29.78 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 902.04 | 10.02 |
| Vet & Med – Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 76 | - | 12.44 | 945.20 | 10.50 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 43,511.29 | 483.46 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,672.82 | 40.81 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 46,392.70 | 515.47 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 791.40 | 8.79 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,480.90 | 38.68 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,746.10 | 52.73 |
| Total Variable, Fixed and Interest Expenses | | | | | 51,138.80 | 568.21 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,954.70) | (43.94) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 8.3.** Beef Cow-Calf Operation Budget: August Weaning, Drought Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 4.92 | 116.49 | 12,035.75 | 133.73 |
| Feeder Steers | head | 41 | 5.34 | 125.03 | 27,374.07 | 304.16 |
| Cull Cows | head | 20 | 11.00 | 59.01 | 12,981.54 | 144.24 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,336.68) | (25.96) |
| Beef Checkoff | head | 78 | - | 1.00 | (78.00) | (0.87) |
| | | | Total Revenue | | 49,976.68 | 555.30 |

| ***VARIABLE EXPENSES*** | Unit | Quantity | Total Head | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.285 | 20 | 233.56 | 1,331.29 | 14.79 |
| Creep Feed – Calves | ton | 0.21 | 82 | 223.38 | 3,846.60 | 42.74 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 82 | 60.00 | 9,225.00 | 102.50 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 106 | - | 33.69 | 3,571.14 | 39.68 |
| Salt & Min. – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 106 | - | - | 921.82 | 10.24 |
| Vet & Med – Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 78 | - | 12.83 | 1,001.09 | 11.12 |
| Truck – Marketing | head | 78 | - | 7.50 | 585.00 | 6.50 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | Total Variable Expenses | | | 44,920.25 | 499.11 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 5,056.43 | 56.18 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 47,801.66 | 531.13 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 2,175.01 | 24.17 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,593.62 | 39.93 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,858.82 | 53.99 |
| Total Variable, Fixed and Interest Expenses | | | | | 52,660.48 | 585.12 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (2,683.81) | (29.82) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 8.4.** Beef Cow-Calf Operation Budget: September Weaning, Drought Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 5.51 | 111.09 | 12,242.12 | 136.02 |
| Feeder Steers | head | 41 | 5.99 | 118.66 | 29,141.71 | 323.80 |
| Cull Cows | head | 20 | 9.90 | 56.91 | 11,268.77 | 125.21 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,028.38) | (22.54) |
| Beef Checkoff | head | 77 | - | 1.00 | (77.00) | (0.86) |
| | | | Total Revenue | | 50,547.22 | 561.64 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.255 | 20 | 233.56 | 1,191.16 | 13.24 |
| Creep Feed – Calves | ton | 0.27 | 81 | 223.38 | 4,885.32 | 54.28 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 81 | 60.00 | 9,112.50 | 101.25 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 105 | - | 33.69 | 3,537.45 | 39.31 |
| Salt & Min. - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 105 | - | - | 918.29 | 10.20 |
| Vet & Med - Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 77 | - | 13.15 | 1,012.48 | 11.25 |
| Truck - Marketing | head | 77 | - | 7.50 | 577.50 | 6.42 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 45,673.00 | 507.48 |
| | | | RETURN ABOVE VARIABLE EXPENSES | | 4,874.22 | 54.16 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 48,554.42 | 539.49 |
| | | | RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | 1,992.80 | 22.14 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,653.84 | 40.60 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,919.04 | 54.66 |
| | | | Total Variable, Fixed and Interest Expenses | | 53,473.46 | 594.15 |
| | | | RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | (2,926.24) | (32.51) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 8.5.** Beef Cow-Calf Operation Budget: October Weaning, Drought Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 6.14 | 103.90 | 13,396.87 | 148.85 |
| Feeder Steers | head | 37 | 6.74 | 111.50 | 27,805.87 | 308.95 |
| Cull Cows | head | 20 | 9.51 | 54.38 | 10,342.70 | 114.92 |
| Death Loss (4% of Cows) | | 18% | - | - | (1,861.69) | (20.69) |
| Beef Checkoff | head | 74 | - | 1.00 | (74.00) | (0.82) |
| | | | Total Revenue | | 49,609.75 | 551.22 |
| **VARIABLE EXPENSES** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.225 | 20 | 233.56 | 1,051.02 | 11.68 |
| Creep Feed – Calves | ton | 0.33 | 78 | 223.38 | 5,749.80 | 63.89 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 78 | 60.00 | 8,775.00 | 97.50 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 102 | - | 33.69 | 3,436.38 | 38.18 |
| Salt & Min. - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 102 | - | - | 899.41 | 9.99 |
| Vet & Med - Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 74 | - | 13.43 | 993.67 | 11.04 |
| Truck - Marketing | head | 74 | - | 7.50 | 555.00 | 6.17 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant - Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 45,898.59 | 509.98 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,711.16 | 41.24 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 48,780.00 | 542.00 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 829.74 | 9.22 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,671.89 | 40.80 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,937.09 | 54.86 |
| Total Variable, Fixed and Interest Expenses | | | | | 53,717.09 | 596.86 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (4,107.35) | (45.64) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 8.6.** Beef Cow-Calf Operation Budget: November Weaning, Drought Weather Conditions, 90-Cow Herd, Selling at Weaning

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 18 | 6.65 | 101.15 | 12,107.66 | 134.53 |
| Feeder Steers | head | 37 | 7.26 | 112.29 | 30,163.34 | 335.15 |
| Cull Cows | head | 20 | 9.37 | 52.88 | 9,909.07 | 110.10 |
| Death Loss (4% of Cows) | | 18% | - | - | (1,783.63) | (19.82) |
| Beef Checkoff | head | 71 | - | 1.00 | (71.00) | (0.79) |
| | | | Total Revenue | | 50,325.44 | 559.17 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.195 | 20 | 233.56 | 910.88 | 10.12 |
| Creep Feed – Calves | ton | 0.39 | 75 | 223.38 | 6,533.87 | 72.60 |
| Hay – Repl. Heifers | ton | 2.5125 | 20 | 60.00 | 3,015.00 | 33.50 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 75 | 60.00 | 8,437.50 | 93.75 |
| Concentrate Feed – Backgrounding | ton | 0 | 0 | 228.97 | 0.00 | 0.00 |
| Hay – Backgrounding | ton | 0 | 0 | 60.00 | 0.00 | 0.00 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 99 | - | 33.69 | 3,335.31 | 37.06 |
| Salt & Min. – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 99 | - | - | 879.66 | 9.77 |
| Vet & Med – Backgrounding | head | 0 | - | - | 0.00 | 0.00 |
| Marketing | head | 71 | - | 14.20 | 1,007.93 | 11.20 |
| Truck – Marketing | head | 71 | - | 7.50 | 532.50 | 5.92 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 0 | - | 0.00 | 0.00 | 0.00 |
| | | | Total Variable Expenses | | 45,940.95 | 510.46 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,384.48 | 48.72 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 48,822.37 | 542.47 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,503.07 | 16.70 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,675.28 | 40.84 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 4,940.48 | 54.89 |
| Total Variable, Fixed and Interest Expenses | | | | | 53,762.84 | 597.36 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,437.41) | (38.19) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 9.1.** Beef Cow-Calf Operation Budget: June Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 4.75 | 117.28 | 10,584.52 | 117.61 |
| Feeder Steers | head | 41 | 5.23 | 125.69 | 26,951.71 | 299.46 |
| Cull Cows | head | 20 | 13.04 | 61.67 | 16,082.23 | 178.69 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,894.80) | (32.16) |
| Beef Checkoff | head | 76 | - | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 50,647.66 | 562.75 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 20 | 233.56 | 1,611.56 | 17.91 |
| Creep Feed – Calves | ton | 0.09 | 80 | 223.38 | 1,608.34 | 17.87 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed – Backgrounding | ton | 0.2025 | 60 | 228.97 | 2,781.99 | 30.91 |
| Hay – Backgrounding | ton | 0.2025 | 60 | 60.00 | 729.00 | 8.10 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 60 | - | 4.08 | 244.80 | 2.72 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 904.95 | 10.05 |
| Vet & Med – Backgrounding | head | 60 | - | - | 505.59 | 5.62 |
| Marketing | head | 76 | - | 13.35 | 1,014.47 | 11.27 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 60 | - | 1.08 | 64.80 | 0.72 |
| | | | Total Variable Expenses | | 46,977.56 | 521.97 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,670.10 | 40.78 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 49,858.97 | 553.99 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 788.69 | 8.76 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,758.20 | 41.76 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,023.40 | 55.82 |
| Total Variable, Fixed and Interest Expenses | | | | | 54,882.38 | 609.80 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (4,234.72) | (47.05) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 9.2.** Beef Cow-Calf Operation Budget: July Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 5.39 | 111.34 | 12,002.45 | 133.36 |
| Feeder Steers | head | 41 | 5.91 | 119.10 | 28,859.12 | 320.66 |
| Cull Cows | head | 20 | 12.63 | 59.38 | 14,998.38 | 166.65 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,699.71) | (30.00) |
| Beef Checkoff | head | 77 | | 1.00 | (77.00) | (0.86) |
| | | | Total Revenue | | 53,083.24 | 589.81 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 20 | 233.56 | 1,471.43 | 16.35 |
| Creep Feed – Calves | ton | 0.15 | 81 | 223.38 | 2,714.07 | 30.16 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 81 | 60.00 | 9,112.50 | 101.25 |
| Concentrate Feed – Backgrounding | ton | 0.219 | 61 | 228.97 | 3,058.81 | 33.99 |
| Hay – Backgrounding | ton | 0.219 | 61 | 60.00 | 801.54 | 8.91 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 105 | - | 33.69 | 3,537.45 | 39.31 |
| Salt & Min. – Backgrounding | head | 61 | - | 4.08 | 248.88 | 2.77 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 105 | - | - | 917.42 | 10.19 |
| Vet & Med – Backgrounding | head | 61 | - | - | 528.69 | 5.87 |
| Marketing | head | 77 | - | 13.81 | 1,063.20 | 11.81 |
| Truck – Marketing | head | 77 | - | 7.50 | 577.50 | 6.42 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 61 | - | 1.08 | 65.88 | 0.73 |
| | | | Total Variable Expenses | | 48,535.67 | 539.29 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,547.57 | 50.53 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 51,417.09 | 571.30 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,666.16 | 18.51 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,882.85 | 43.14 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,148.05 | 57.20 |
| Total Variable, Fixed and Interest Expenses | | | | | 56,565.14 | 628.50 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,481.90) | (38.69) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 9.3.** Beef Cow-Calf Operation Budget: August Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 6.00 | 104.48 | 12,537.60 | 139.31 |
| Feeder Steers | head | 40 | 6.58 | 112.07 | 29,496.82 | 327.74 |
| Cull Cows | head | 20 | 10.95 | 59.01 | 12,922.53 | 143.58 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,326.06) | (25.85) |
| Beef Checkoff | head | 76 | | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 52,554.90 | 583.94 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.285 | 20 | 233.56 | 1,331.29 | 14.79 |
| Creep Feed – Calves | ton | 0.21 | 80 | 223.38 | 3,752.78 | 41.70 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed – Backgrounding | ton | 0.237 | 60 | 228.97 | 3,255.95 | 36.18 |
| Hay – Backgrounding | ton | 0.237 | 60 | 60.00 | 853.20 | 9.48 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 60 | - | 4.08 | 244.80 | 2.72 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 914.04 | 10.16 |
| Vet & Med – Backgrounding | head | 60 | - | - | 534.15 | 5.93 |
| Marketing | head | 76 | - | 13.85 | 1,052.62 | 11.70 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 60 | - | 1.08 | 64.80 | 0.72 |
| | | | Total Variable Expenses | | 49,515.69 | 550.17 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,039.21 | 33.77 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 52,397.10 | 582.19 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 157.80 | 1.75 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,961.26 | 44.01 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,226.46 | 58.07 |
| Total Variable, Fixed and Interest Expenses | | | | | 57,623.56 | 640.26 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (5,068.66) | (56.32) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 9.4.** Beef Cow-Calf Operation Budget: September Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 6.55 | 101.13 | 12,585.63 | 139.84 |
| Feeder Steers | head | 41 | 7.23 | 112.23 | 33,268.34 | 369.65 |
| Cull Cows | head | 20 | 9.86 | 56.91 | 11,223.24 | 124.70 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,020.18) | (22.45) |
| Beef Checkoff | head | 76 | | 1.00 | (76.00) | (0.84) |
| | | | Total Revenue | | 54,981.03 | 610.90 |
| **VARIABLE EXPENSES** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.255 | 20 | 233.56 | 1,191.16 | 13.24 |
| Creep Feed – Calves | ton | 0.27 | 80 | 223.38 | 4,825.01 | 53.61 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 80 | 60.00 | 9,000.00 | 100.00 |
| Concentrate Feed – Backgrounding | ton | 0.252 | 60 | 228.97 | 3,462.03 | 38.47 |
| Hay – Backgrounding | ton | 0.252 | 60 | 60.00 | 907.20 | 10.08 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 104 | - | 33.69 | 3,503.76 | 38.93 |
| Salt & Min. – Backgrounding | head | 60 | - | 4.08 | 244.80 | 2.72 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 104 | - | - | 918.04 | 10.20 |
| Vet & Med – Backgrounding | head | 60 | - | - | 547.85 | 6.09 |
| Marketing | head | 76 | - | 14.49 | 1,101.14 | 12.23 |
| Truck – Marketing | head | 76 | - | 7.50 | 570.00 | 6.33 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 60 | - | 1.08 | 64.80 | 0.72 |
| | | Total Variable Expenses | | | 50,774.07 | 564.16 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,206.95 | 46.74 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 53,655.49 | 596.17 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,325.54 | 14.73 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,061.93 | 45.13 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,327.13 | 59.19 |
| Total Variable, Fixed and Interest Expenses | | | | | 58,982.61 | 655.36 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (4,001.59) | (44.46) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 9.5.** Beef Cow-Calf Operation Budget: October Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 16 | 7.18 | 100.82 | 11,582.20 | 128.69 |
| Feeder Steers | head | 35 | 7.93 | 108.89 | 30,222.42 | 335.80 |
| Cull Cows | head | 20 | 9.51 | 54.38 | 10,342.70 | 114.92 |
| Death Loss (4% of Cows) | | 18% | - | - | (1,861.69) | (20.69) |
| Beef Checkoff | head | 67 | | 1.00 | (67.00) | (0.74) |
| | | | Total Revenue | | 50,218.63 | 557.98 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.225 | 20 | 233.56 | 1,051.02 | 11.68 |
| Creep Feed – Calves | ton | 0.33 | 71 | 223.38 | 5,233.79 | 58.15 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 71 | 60.00 | 7,987.50 | 88.75 |
| Concentrate Feed – Backgrounding | ton | 0.27 | 51 | 228.97 | 3,152.92 | 35.03 |
| Hay – Backgrounding | ton | 0.27 | 51 | 60.00 | 826.20 | 9.18 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 95 | - | 33.69 | 3,200.55 | 35.56 |
| Salt & Min. – Backgrounding | head | 51 | - | 4.08 | 208.08 | 2.31 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 95 | - | - | 852.24 | 9.47 |
| Vet & Med – Backgrounding | head | 51 | - | - | 478.28 | 5.31 |
| Marketing | head | 67 | - | 15.01 | 1,005.71 | 11.17 |
| Truck – Marketing | head | 67 | - | 7.50 | 502.50 | 5.58 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 51 | - | 1.08 | 55.08 | 0.61 |
| | | | Total Variable Expenses | | 48,992.17 | 544.36 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 1,226.46 | 13.63 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 51,873.59 | 576.37 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | (1,654.96) | (18.39) |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,919.37 | 43.55 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,184.57 | 57.61 |
| Total Variable, Fixed and Interest Expenses | | | | | 57,058.16 | 633.98 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (6,839.53) | (75.99) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 9.6.** Beef Cow-Calf Operation Budget: November Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 60-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 19 | 7.73 | 99.91 | 14,673.78 | 163.04 |
| Feeder Steers | head | 37 | 8.48 | 105.78 | 33,189.53 | 368.77 |
| Cull Cows | head | 20 | 9.32 | 52.88 | 9,856.20 | 109.51 |
| Death Loss (4% of Cows) | | 18% | - | - | (1,774.12) | (19.71) |
| Beef Checkoff | head | 72 | | 1.00 | (72.00) | (0.80) |
| | | | Total Revenue | | 55,873.40 | 620.82 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.195 | 20 | 233.56 | 910.88 | 10.12 |
| Creep Feed – Calves | ton | 0.39 | 76 | 223.38 | 6,620.98 | 73.57 |
| Hay – Repl. Heifers | ton | 2.5125 | 20 | 60.00 | 3,015.00 | 33.50 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 76 | 60.00 | 8,550.00 | 95.00 |
| Concentrate Feed – Backgrounding | ton | 0.2775 | 56 | 228.97 | 3,558.19 | 39.54 |
| Hay – Backgrounding | ton | 0.2775 | 56 | 60.00 | 932.40 | 10.36 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 100 | - | 33.69 | 3,369.00 | 37.43 |
| Salt & Min. - Backgrounding | head | 56 | - | 4.08 | 228.48 | 2.54 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 100 | - | - | 895.34 | 9.95 |
| Vet & Med - Backgrounding | head | 56 | - | - | 535.98 | 5.96 |
| Marketing | head | 72 | - | 15.54 | 1,118.91 | 12.43 |
| Truck - Marketing | head | 72 | - | 7.50 | 540.00 | 6.00 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant - Backgrounding | head | 56 | - | 1.08 | 60.48 | 0.67 |
| | | | Total Variable Expenses | | 51,623.95 | 573.60 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,249.45 | 47.22 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 54,505.36 | 605.62 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,368.03 | 15.20 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,129.92 | 45.89 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,395.12 | 59.95 |
| Total Variable, Fixed and Interest Expenses | | | | | 59,900.48 | 665.56 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (4,027.08) | (44.75) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 10.1.** Beef Cow-Calf Operation Budget: June Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 17 | 5.33 | 111.47 | 10,100.30 | 112.23 |
| Feeder Steers | head | 41 | 5.81 | 119.65 | 28,501.83 | 316.69 |
| Cull Cows | head | 20 | 13.00 | 61.67 | 16,032.90 | 178.14 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,885.92) | (32.07) |
| Beef Checkoff | head | 74 | - | 1.00 | (74.00) | (0.82) |
| | | | Total Revenue | | 51,675.10 | 574.17 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.345 | 20 | 233.56 | 1,611.56 | 17.91 |
| Creep Feed – Calves | ton | 0.09 | 78 | 223.38 | 1,568.13 | 17.42 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 78 | 60.00 | 8,775.00 | 97.50 |
| Concentrate Feed – Backgrounding | ton | 0.31275 | 58 | 228.97 | 4,153.40 | 46.15 |
| Hay – Backgrounding | ton | 0.31275 | 58 | 60.00 | 1,088.37 | 12.09 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 102 | - | 33.69 | 3,436.38 | 38.18 |
| Salt & Min. – Backgrounding | head | 58 | - | 4.08 | 236.64 | 2.63 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 102 | - | - | 893.52 | 9.93 |
| Vet & Med – Backgrounding | head | 58 | - | - | 501.21 | 5.57 |
| Marketing | head | 74 | - | 13.99 | 1,034.98 | 11.50 |
| Truck – Marketing | head | 74 | - | 7.50 | 555.00 | 6.17 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 58 | - | 1.08 | 62.64 | 0.70 |
| | | | Total Variable Expenses | | 48,355.14 | 537.28 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,319.96 | 36.89 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 51,236.55 | 569.30 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 438.55 | 4.87 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 3,868.41 | 42.98 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,133.61 | 57.04 |
| Total Variable, Fixed and Interest Expenses | | | | | 56,370.16 | 626.34 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (4,695.06) | (52.17) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 10.2.** Beef Cow-Calf Operation Budget: July Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 20 | 5.96 | 104.64 | 12,473.09 | 138.59 |
| Feeder Steers | head | 41 | 6.48 | 112.42 | 29,867.75 | 331.86 |
| Cull Cows | head | 20 | 12.64 | 59.38 | 15,010.25 | 166.78 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,701.85) | (30.02) |
| Beef Checkoff | head | 77 | | 1.00 | (77.00) | (0.86) |
| | | | Total Revenue | | 54,572.24 | 606.36 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.315 | 20 | 233.56 | 1,471.43 | 16.35 |
| Creep Feed – Calves | ton | 0.15 | 81 | 223.38 | 2,714.07 | 30.16 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 81 | 60.00 | 9,112.50 | 101.25 |
| Concentrate Feed – Backgrounding | ton | 0.33525 | 61 | 228.97 | 4,682.49 | 52.03 |
| Hay – Backgrounding | ton | 0.33525 | 61 | 60.00 | 1,227.02 | 13.63 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 105 | - | 33.69 | 3,537.45 | 39.31 |
| Salt & Min. – Backgrounding | head | 61 | - | 4.08 | 248.88 | 2.77 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 105 | - | - | 921.57 | 10.24 |
| Vet & Med – Backgrounding | head | 61 | - | - | 541.34 | 6.01 |
| Marketing | head | 77 | - | 14.19 | 1,092.98 | 12.14 |
| Truck – Marketing | head | 77 | - | 7.50 | 577.50 | 6.42 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 61 | - | 1.08 | 65.88 | 0.73 |
| | | Total Variable Expenses | | | 50,631.40 | 562.57 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,940.84 | 43.79 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 53,512.81 | 594.59 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,059.43 | 11.77 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,050.51 | 45.01 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,315.71 | 59.06 |
| Total Variable, Fixed and Interest Expenses | | | | | 58,828.53 | 653.65 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (4,256.29) | (47.29) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 10.3.** Beef Cow-Calf Operation Budget: August Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 17 | 6.54 | 101.12 | 11,242.52 | 124.92 |
| Feeder Steers | head | 41 | 7.13 | 111.62 | 32,629.87 | 362.55 |
| Cull Cows | head | 20 | 10.94 | 59.01 | 12,910.73 | 143.45 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,323.93) | (25.82) |
| Beef Checkoff | head | 74 | | 1.00 | (74.00) | (0.82) |
| | | | Total Revenue | | 54,385.20 | 604.28 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.285 | 20 | 233.56 | 1,331.29 | 14.79 |
| Creep Feed – Calves | ton | 0.21 | 78 | 223.38 | 3,658.96 | 40.66 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 78 | 60.00 | 8,775.00 | 97.50 |
| Concentrate Feed – Backgrounding | ton | 0.36 | 58 | 228.97 | 4,780.89 | 53.12 |
| Hay – Backgrounding | ton | 0.36 | 58 | 60.00 | 1,252.80 | 13.92 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 102 | - | 33.69 | 3,436.38 | 38.18 |
| Salt & Min. – Backgrounding | head | 58 | - | 4.08 | 236.64 | 2.63 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 102 | - | - | 902.32 | 10.03 |
| Vet & Med – Backgrounding | head | 58 | - | - | 528.37 | 5.87 |
| Marketing | head | 74 | - | 14.72 | 1,089.18 | 12.10 |
| Truck – Marketing | head | 74 | - | 7.50 | 555.00 | 6.17 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 58 | - | 1.08 | 62.64 | 0.70 |
| | | | Total Variable Expenses | | 51,047.79 | 567.20 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,337.41 | 37.08 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | | Total Fixed Expenses | | 2,881.41 | 32.02 |
| | | | Total Variable and Fixed Expenses | | 53,929.20 | 599.21 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 455.99 | 5.07 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,083.82 | 45.38 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,349.02 | 59.43 |
| Total Variable, Fixed and Interest Expenses | | | | | 59,278.23 | 658.65 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (4,893.03) | (54.37) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 10.4.** Beef Cow-Calf Operation Budget: September Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 21 | 7.17 | 100.86 | 15,186.49 | 168.74 |
| Feeder Steers | head | 40 | 7.79 | 109.05 | 33,979.98 | 377.56 |
| Cull Cows | head | 20 | 9.87 | 56.91 | 11,234.63 | 124.83 |
| Death Loss (4% of Cows) | | 18% | - | - | (2,022.23) | (22.47) |
| Beef Checkoff | head | 77 | | 1.00 | (77.00) | (0.86) |
| | | | Total Revenue | | 58,301.86 | 647.80 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.255 | 20 | 233.56 | 1,191.16 | 13.24 |
| Creep Feed – Calves | ton | 0.27 | 81 | 223.38 | 4,885.32 | 54.28 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 81 | 60.00 | 9,112.50 | 101.25 |
| Concentrate Feed – Backgrounding | ton | 0.3825 | 61 | 228.97 | 5,342.44 | 59.36 |
| Hay – Backgrounding | ton | 0.3825 | 61 | 60.00 | 1,399.95 | 15.56 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 105 | - | 33.69 | 3,537.45 | 39.31 |
| Salt & Min. – Backgrounding | head | 61 | - | 4.08 | 248.88 | 2.77 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 105 | - | - | 930.37 | 10.34 |
| Vet & Med – Backgrounding | head | 61 | - | - | 569.44 | 6.33 |
| Marketing | head | 77 | - | 15.16 | 1,167.58 | 12.97 |
| Truck – Marketing | head | 77 | - | 7.50 | 577.50 | 6.42 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 61 | - | 1.08 | 65.88 | 0.73 |
| | | Total Variable Expenses | | | 53,466.76 | 594.08 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 4,835.10 | 53.72 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 56,348.18 | 626.09 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 1,953.69 | 21.71 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,277.34 | 47.53 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,542.54 | 61.58 |
| Total Variable, Fixed and Interest Expenses | | | | | 61,890.72 | 687.67 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (3,588.85) | (39.88) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 10.5.** Beef Cow-Calf Operation Budget: October Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 16 | 7.79 | 99.44 | 12,394.20 | 137.71 |
| Feeder Steers | head | 39 | 8.54 | 105.92 | 35,277.72 | 391.97 |
| Cull Cows | head | 20 | 9.47 | 54.38 | 10,299.19 | 114.44 |
| Death Loss (4% of Cows) | | 18% | - | - | (1,853.85) | (20.60) |
| Beef Checkoff | head | 71 | | 1.00 | (71.00) | (0.79) |
| | | | Total Revenue | | 56,046.26 | 622.74 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement - Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.225 | 20 | 233.56 | 1,051.02 | 11.68 |
| Creep Feed – Calves | ton | 0.33 | 75 | 223.38 | 5,528.66 | 61.43 |
| Hay – Repl. Heifers | ton | 2.625 | 20 | 60.00 | 3,150.00 | 35.00 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 75 | 60.00 | 8,437.50 | 93.75 |
| Concentrate Feed – Backgrounding | ton | 0.41175 | 55 | 228.97 | 5,185.31 | 57.61 |
| Hay – Backgrounding | ton | 0.41175 | 55 | 60.00 | 1,358.78 | 15.10 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 99 | - | 33.69 | 3,335.31 | 37.06 |
| Salt & Min. – Backgrounding | head | 55 | - | 4.08 | 224.40 | 2.49 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 99 | - | - | 887.95 | 9.87 |
| Vet & Med – Backgrounding | head | 55 | - | - | 528.34 | 5.87 |
| Marketing | head | 71 | - | 15.81 | 1,122.35 | 12.47 |
| Truck – Marketing | head | 71 | - | 7.50 | 532.50 | 5.92 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 55 | - | 1.08 | 59.40 | 0.66 |
| | | Total Variable Expenses | | | 52,689.81 | 585.44 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 3,356.45 | 37.29 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 55,571.22 | 617.46 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | 475.03 | 5.28 |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,215.18 | 46.84 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,480.38 | 60.89 |
| Total Variable, Fixed and Interest Expenses | | | | | 61,051.61 | 678.35 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (5,005.35) | (55.62) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 10.6.** Beef Cow-Calf Operation Budget: November Weaning, Drought Weather Conditions, 90-Cow Herd, Selling after a 90-Day Backgrounding Period

| Item | Unit | Quantity | Weight | Price | Amount | Per Cow |
|---|---|---|---|---|---|---|
| ***REVENUE*** | | | (cwt) | $ | $ | $ |
| Feeder Heifers | head | 16 | 8.32 | 95.28 | 12,683.67 | 140.93 |
| Feeder Steers | head | 36 | 9.09 | 100.88 | 33,011.97 | 366.80 |
| Cull Cows | head | 20 | 9.34 | 52.88 | 9,877.35 | 109.75 |
| Death Loss (4% of Cows) | | 18% | - | - | (1,777.92) | (19.75) |
| Beef Checkoff | head | 68 | | 1.00 | (68.00) | (0.76) |
| | | | Total Revenue | | 53,727.07 | 596.97 |
| ***VARIABLE EXPENSES*** | **Unit** | **Quantity** | **Total Head** | **Price** | **Amount** | **Per Cow** |
| Energy Supplement – Bulls | ton | 0.75 | 4 | 233.56 | 700.68 | 7.79 |
| Energy Supplement – Repl. Heifers | ton | 0.195 | 20 | 233.56 | 910.88 | 10.12 |
| Creep Feed – Calves | ton | 0.39 | 72 | 223.38 | 6,272.51 | 69.69 |
| Hay – Repl. Heifers | ton | 2.5125 | 20 | 60.00 | 3,015.00 | 33.50 |
| Hay – Bulls | ton | 2.25 | 4 | 60.00 | 540.00 | 6.00 |
| Hay – Cows | ton | 1.875 | 72 | 60.00 | 8,100.00 | 90.00 |
| Concentrate Feed – Backgrounding | ton | 0.42525 | 52 | 228.97 | 5,063.21 | 56.26 |
| Hay – Backgrounding | ton | 0.42525 | 52 | 60.00 | 1,326.78 | 14.74 |
| Pasture | acre | 200 | - | 98.29 | 19,658.00 | 218.42 |
| Salt & Min. - Cows, Bulls, Repl. Heifs | head | 96 | - | 33.69 | 3,234.24 | 35.94 |
| Salt & Min. – Backgrounding | head | 52 | - | 4.08 | 212.16 | 2.36 |
| Vet & Med - Cows, Bulls, Repl. Heifs | head | 96 | - | - | 868.35 | 9.65 |
| Vet & Med – Backgrounding | head | 52 | - | - | 509.56 | 5.66 |
| Marketing | head | 68 | - | 15.82 | 1,075.90 | 11.95 |
| Truck – Marketing | head | 68 | - | 7.50 | 510.00 | 5.67 |
| Tractor - Feeding Hay | hour | 38.5 | - | 10.12 | 389.62 | 4.33 |
| Implant – Backgrounding | head | 52 | - | 1.08 | 56.16 | 0.62 |
| | | Total Variable Expenses | | | 52,443.06 | 582.70 |
| RETURN ABOVE VARIABLE EXPENSES | | | | | 1,284.01 | 14.27 |
| ***FIXED EXPENSES*** | | | | | | |
| Depreciation (Buildings & Equipment) | | - | - | - | 1,986.06 | 22.07 |
| Repairs (Buildings & Equipment) | | - | - | - | 300.00 | 3.33 |
| Depreciation (Bulls) | head | 4 | - | 130.17 | 520.67 | 5.79 |
| Tractor, 60 hp | | - | - | - | 74.69 | 0.83 |
| | | Total Fixed Expenses | | | 2,881.41 | 32.02 |
| | | Total Variable and Fixed Expenses | | | 55,324.48 | 614.72 |
| RETURN TO LAND, LABOR, CAPITAL, MANAGEMENT, AND RISK | | | | | (1,597.41) | (17.75) |
| ***INTEREST*** | | | | | | |
| Operating Expenses - 8% | | - | - | - | 4,195.44 | 46.62 |
| Buildings and Equipment - 8% | | - | - | - | 1,265.20 | 14.06 |
| | | | | Total | 5,460.64 | 60.67 |
| Total Variable, Fixed and Interest Expenses | | | | | 60,785.12 | 675.39 |
| RETURN TO LAND, LABOR, MANAGEMENT, AND RISK | | | | | (7,058.05) | (78.42) |

Source: University of Tennessee Extension Budgets and data from various sources.

**Table 11.** Feed Ingredient Prices ($/ton) distributed from Fayetteville, North Carolina

| | Soy Hulls ($/ton) | Cottonseed Meal ($/ton) | Cottonseed Hulls ($/ton) | Corn Gluten Feed ($/ton) | Corn ($/ton) |
|---|---|---|---|---|---|
| Jan. 7, 2008 | 182.00 | 230.00 | 158.00 | N/A | 162.50 |
| Feb. 4, 2008 | 182.00 | 300.00 | 173.00 | N/A | 171.43 |
| Mar. 3, 2008 | 192.00 | 300.00 | 173.00 | N/A | 179.29 |
| Apr. 7, 2008 | 228.00 | 270.00 | 178.00 | N/A | 202.50 |
| May. 5, 2008 | 193.00 | 265.00 | 173.00 | N/A | 195.36 |
| Jun. 2, 2008 | 125.00 | 275.00 | 176.00 | N/A | 210.71 |
| Jul. 7, 2008 | 135.00 | 340.00 | 179.00 | N/A | 250.00 |
| Aug. 4, 2008 | 155.00 | 385.00 | 184.00 | N/A | 205.36 |
| Sep. 1, 2008 | 190.00 | N/A | 185.00 | 170.00 | 211.43 |
| Oct. 6, 2008 | 170.00 | N/A | 197.00 | 170.00 | 183.57 |
| Nov. 3, 2008 | 130.00 | 255.00 | 185.00 | 165.00 | 178.57 |
| Dec. 1, 2008 | 130.00 | 230.00 | 210.00 | 140.00 | 157.50 |
| Average $/ton | 167.67 | 285.00 | 180.92 | 161.25 | 192.35 |

Source: Feed Stuffs (Miller Publishing Company 2008)

**Table 12**. Twenty-year Mean Biological Output from DECI Simulation Model for Average Weather and Selling at Weaning

| | Month of Weaning | | | | | |
|---|---|---|---|---|---|---|
| | **June** | **July** | **August** | **September** | **October** | **November** |
| **Cows** | | | | | | |
| Calving Weight (lbs.) | 1311 | 1275 | 1243 | 1213 | 1192 | 1184 |
| Calving BCS | 6.3 | 6.1 | 5.8 | 5.6 | 5.5 | 5.4 |
| Wean Weight (lbs.) | 1420 | 1347 | 1196 | 1112 | 1105 | 1106 |
| Wean BCS | 7.0 | 6.4 | 5.2 | 4.5 | 4.5 | 4.4 |
| Pregnancy % at Weaning | 86 | 84 | 85 | 85 | 84 | 85 |
| **Calves Produced** | | | | | | |
| **At Weaning** | | | | | | |
| Number of Steers | 40 | 38 | 40 | 40 | 38 | 40 |
| Number of Steers Sold | 40 | 38 | 40 | 40 | 38 | 40 |
| Steer Weight (lbs.) | 408 | 474 | 546 | 619 | 702 | 758 |
| Steer ADG (lbs./day) | 2.32 | 2.32 | 2.31 | 2.32 | 2.38 | 2.32 |
| Steer Price ($/cwt) | 139.04 | 129.82 | 124.33 | 117.57 | 111.88 | 110.31 |
| Number of Heifers | 41 | 39 | 41 | 41 | 38 | 40 |
| Number Repl. Heifers | 20 | 20 | 20 | 20 | 20 | 20 |
| Number of Heifers Sold | 21 | 19 | 21 | 21 | 18 | 20 |
| Heifer Weight (lbs.) | 378 | 442 | 501 | 564 | 632 | 687 |
| Heifer ADG (lbs./day) | 2.16 | 2.13 | 2.11 | 2.10 | 2.12 | 2.09 |
| Heifer Price ($/cwt) | 127.09 | 119.91 | 116.07 | 110.82 | 103.39 | 100.53 |

notes:
For all months, cows to calve each year is 90 head.
BCS- Body Condition Score (1-10).
ADG- Average Daily Gain (lbs./day).
Calves were weaned on the 15th of each respective month.

**Table13.** Twenty-year Mean Biological Output from DECI Simulation Model for Average Weather and Selling After 60-Day Backgrounding Program

| | Month of Weaning | | | | | |
|---|---|---|---|---|---|---|
| | **June** | **July** | **August** | **September** | **October** | **November** |
| **Cows** | | | | | | |
| Calving Weight (lbs.) | 1309 | 1277 | 1241 | 1211 | 1198 | 1182 |
| Calving BCS | 6.3 | 6.1 | 5.9 | 5.5 | 5.5 | 5.4 |
| Wean Weight (lbs.) | 1419 | 1348 | 1194 | 1108 | 1111 | 1108 |
| Wean BCS | 7 | 6.4 | 5.2 | 4.5 | 4.6 | 4.6 |
| Pregnancy % at Weaning | 85 | 85 | 84 | 86 | 83 | 83 |
| **Calves Produced** | | | | | | |
| **At Weaning** | | | | | | |
| Number of Steers | 41 | 40 | 40 | 40 | 39 | 38 |
| Steer Weight (lbs.) | 407 | 477 | 546 | 620 | 700 | 756 |
| Steer ADG (lbs./day) | 2.32 | 2.32 | 2.31 | 2.33 | 2.37 | 2.31 |
| Number of Heifers | 41 | 40 | 40 | 42 | 38 | 37 |
| Number Repl. Heifers | 20 | 20 | 20 | 20 | 20 | 20 |
| Heifer Weight (lbs.) | 380 | 442 | 503 | 566 | 634 | 687 |
| Heifer ADG (lbs./day) | 2.16 | 2.13 | 2.11 | 2.11 | 2.12 | 2.08 |
| **After Backgrounding** | | | | | | |
| Number of Steers | 40 | 40 | 40 | 39 | 38 | 38 |
| Steer Weight (lbs.) | 530 | 596 | 666 | 744 | 824 | 876 |
| Steer ADG (lbs./day) | 2.05 | 1.98 | 2.00 | 2.07 | 2.07 | 2.00 |
| Steer Price ($/cwt) | 125.26 | 118.83 | 111.78 | 111.17 | 108.52 | 106.32 |
| Number of Heifers | 20 | 20 | 19 | 21 | 17 | 16 |
| Heifer Weight (lbs.) | 479 | 540 | 605 | 674 | 738 | 787 |
| Heifer ADG (lbs./day) | 1.65 | 1.63 | 1.70 | 1.80 | 1.73 | 1.67 |
| Heifer Price ($/cwt) | 117.10 | 111.32 | 104.27 | 101.18 | 99.83 | 98.57 |

notes:
For all months, cows to calve each year is 90 head.
BCS- Body Condition Score (1-10).
ADG- Average Daily Gain (lbs./day).
Calves were weaned on the 15th of each respective month.

**Table 14.** Twenty-year Mean Biological Output from DECI Simulation Model for Average Weather and Selling After 90-Day Backgrounding Program

| | Month of Weaning | | | | | |
|---|---|---|---|---|---|---|
| | **June** | **July** | **August** | **September** | **October** | **November** |
| **Cows** | | | | | | |
| Calving Weight (lbs.) | 1308 | 1277 | 1243 | 1215 | 1195 | 1180 |
| Calving BCS | 6.4 | 6.2 | 5.8 | 5.6 | 5.4 | 5.4 |
| Wean Weight (lbs.) | 1417 | 1347 | 1194 | 1114 | 1106 | 1103 |
| Wean BCS | 7.1 | 6.5 | 5.2 | 4.5 | 4.4 | 4.5 |
| Pregnancy % at Weaning | 85 | 85 | 85 | 85 | 86 | 83 |
| **Calves Produced** | | | | | | |
| **At Weaning** | | | | | | |
| Number of Steers | 40 | 41 | 40 | 41 | 40 | 40 |
| Steer Weight (lbs.) | 406 | 472 | 546 | 618 | 702 | 755 |
| Steer ADG (lbs./day) | 2.31 | 2.32 | 2.32 | 2.33 | 2.38 | 2.31 |
| Number of Heifers | 40 | 41 | 41 | 40 | 39 | 37 |
| Number Repl. Heifers | 20 | 20 | 20 | 20 | 20 | 20 |
| Heifer Weight (lbs.) | 379 | 440 | 502 | 566 | 635 | 685 |
| Heifer ADG (lbs./day) | 2.16 | 2.14 | 2.11 | 2.10 | 2.12 | 2.09 |
| **After Backgrounding** | | | | | | |
| Number of Steers | 40 | 40 | 39 | 41 | 39 | 39 |
| Steer Weight (lbs.) | 584 | 658 | 726 | 799 | 885 | 939 |
| Steer ADG (lbs./day) | 2.03 | 2.04 | 2.00 | 2.01 | 2.03 | 2.04 |
| Steer Price ($/cwt) | 119.49 | 112.07 | 112.29 | 108.82 | 105.33 | 98.78 |
| Number of Heifers | 19 | 21 | 20 | 19 | 19 | 16 |
| Heifer Weight (lbs.) | 539 | 605 | 665 | 730 | 803 | 852 |
| Heifer ADG (lbs./day) | 1.78 | 1.83 | 1.81 | 1.82 | 1.87 | 1.86 |
| Heifer Price ($/cwt) | 111.34 | 104.27 | 101.15 | 100.28 | 96.81 | 94.34 |

notes:
For all months, cows to calve each year is 90 head.
BCS- Body Condition Score (1-10).
ADG- Average Daily Gain (lbs./day).
Calves were weaned on the 15th of each respective month.

**Table 15.** Twenty-year Mean Biological Output from DECI Simulation Model for Average Weather and Increased Stocking Rate

| | Month of Weaning | | | | | |
|---|---|---|---|---|---|---|
| | Sell at Weaning | | 60-Day Backgrounding | | 90-Day Backgrounding | |
| | **June** | **July** | **June** | **July** | **June** | **July** |
| **Cows** | | | | | | |
| Calving Weight (lbs.) | 1195 | 1195 | 1194 | 1191 | 1199 | 1194 |
| Calving BCS | 5.4 | 5.3 | 5.5 | 5.4 | 5.5 | 5.4 |
| Wean Weight (lbs.) | 1325 | 1273 | 1322 | 1268 | 1325 | 1272 |
| Wean BCS | 6.2 | 5.7 | 6.3 | 5.8 | 6.3 | 5.8 |
| Pregnancy % at Weaning | 86 | 86 | 85 | 86 | 87 | 85 |
| **Calves Produced** | | | | | | |
| **At Weaning** | | | | | | |
| Number of Steers | 48 | 46 | 46 | 47 | 48 | 47 |
| Steer Weight (lbs.) | 404 | 474 | 405 | 475 | 403 | 474 |
| Steer ADG (lbs./day) | 2.31 | 2.32 | 2.31 | 2.32 | 2.32 | 2.32 |
| Steer Price ($/cwt) | 139.58 | 129.82 | - | - | - | - |
| Number of Heifers | 47 | 46 | 45 | 45 | 46 | 44 |
| Number of Repl. Heifers | 23 | 23 | 23 | 23 | 23 | 23 |
| Number of Heifers Sold | 24 | 23 | - | - | - | - |
| Heifer Weight (lbs.) | 381 | 442 | 379 | 440 | 379 | 442 |
| Heifer ADG (lbs./day) | 2.17 | 2.14 | 2.16 | 2.13 | 2.17 | 2.14 |
| Heifer Price ($/cwt) | 126.86 | 119.91 | - | - | - | - |
| **After Backgrounding** | | | | | | |
| Number of Steers | - | - | 46 | 47 | 48 | 46 |
| Steer Weight (lbs.) | - | - | 526 | 594 | 585 | 655 |
| Steer ADG (lbs./day) | | | 2.02 | 1.98 | 2.02 | 2.01 |
| Steer Price ($/cwt) | - | - | 125.49 | 118.94 | 119.43 | 112.17 |
| | - | - | | | | |
| Number of Heifers | - | - | 22 | 22 | 23 | 21 |
| Heifer Weight (lbs.) | - | - | 477 | 537 | 540 | 602 |
| Heifer ADG (lbs./day) | | | 1.63 | 1.62 | 1.79 | 1.78 |
| Heifer Price ($/cwt) | | | 117.19 | 111.39 | 111.32 | 104.39 |

notes:
June cows to calve each year is 103 head.
July cows to calve each year is 102 head.
BCS- Body Condition Score (1-10).
ADG- Average Daily Gain (lbs./day).
Calves were weaned on the 15th of each respective month.

**Table 16.** Twenty-year Mean Biological Output from DECI Simulation Model for Drought Weather and Selling at Weaning

| | Month of Weaning | | | | | |
|---|---|---|---|---|---|---|
| | **June** | **July** | **August** | **September** | **October** | **November** |
| **Cows** | | | | | | |
| Calving Weight (lbs.) | 1142 | 1136 | 1108 | 1076 | 1051 | 1035 |
| Calving BCS | 5.2 | 5.1 | 4.8 | 4.5 | 4.3 | 4.3 |
| Wean Weight (lbs.) | 1302 | 1265 | 1100 | 990 | 951 | 937 |
| Wean BCS | 6.3 | 5.9 | 4.5 | 3.5 | 3.2 | 3.1 |
| Pregnancy % at Weaning | 84 | 85 | 84 | 84 | 82 | 81 |
| **Calves Produced** | | | | | | |
| **At Weaning** | | | | | | |
| Number of Steers | 41 | 40 | 41 | 41 | 37 | 37 |
| Number of Steers Sold | 41 | 40 | 41 | 41 | 37 | 37 |
| Steer Weight (lbs.) | 403 | 470 | 534 | 599 | 674 | 726 |
| Steer ADG (lbs./day) | 2.30 | 2.31 | 2.27 | 2.25 | 2.28 | 2.22 |
| Steer Price ($/cwt) | 139.72 | 130.20 | 125.03 | 118.66 | 111.50 | 112.29 |
| Number of Heifers | 39 | 40 | 41 | 40 | 41 | 38 |
| Number Repl. Heifers | 20 | 20 | 20 | 20 | 20 | 20 |
| Number of Heifers Sold | 19 | 20 | 21 | 20 | 21 | 18 |
| Heifer Weight (lbs.) | 375 | 435 | 492 | 551 | 614 | 665 |
| Heifer ADG (lbs./day) | 2.14 | 2.11 | 2.08 | 2.05 | 2.05 | 2.02 |
| Heifer Price ($/cwt) | 127.33 | 120.28 | 116.49 | 111.09 | 103.90 | 101.15 |

note:
For all months cows to calve each year is 90 head.
BCS- Body Condition Score (1-10).
ADG- Average Daily Gains (lbs./day).
Calves Weaned on the 15th of each respective month.

**Table 17.** Twenty-year Mean Biological Output from DECI Simulation Model for Drought Weather and Selling After 60-Day Backgrounding Program

| | Month of Weaning | | | | | |
|---|---|---|---|---|---|---|
| | **June** | **July** | **August** | **September** | **October** | **November** |
| **Cows** | | | | | | |
| Calving Weight (lbs.) | 1144 | 1135 | 1105 | 1071 | 1051 | 1031 |
| Calving BCS | 5.2 | 5.1 | 4.8 | 4.5 | 4.4 | 4.2 |
| Wean Weight (lbs.) | 1304 | 1263 | 1095 | 986 | 951 | 932 |
| Wean BCS | 6.3 | 5.9 | 4.5 | 3.5 | 3.2 | 3 |
| Pregnancy % at Weaning | 85 | 86 | 85 | 84 | 82 | 82 |
| **Calves Produced** | | | | | | |
| **At Weaning** | | | | | | |
| Number of Steers | 41 | 41 | 41 | 41 | 35 | 37 |
| Steer Weight (lbs.) | 401 | 470 | 534 | 600 | 671 | 726 |
| Steer ADG (lbs./day) | 2.30 | 2.30 | 2.26 | 2.24 | 2.28 | 2.22 |
| Number of Heifers | 39 | 41 | 40 | 39 | 36 | 40 |
| Number Repl. Heifers | 20 | 20 | 20 | 20 | 20 | 20 |
| Heifer Weight (lbs.) | 375 | 437 | 494 | 549 | 612 | 666 |
| Heifer ADG (lbs./day) | 2.14 | 2.12 | 2.08 | 2.05 | 2.05 | 2.02 |
| **After Backgrounding** | | | | | | |
| Number of Steers | 41 | 41 | 40 | 41 | 35 | 37 |
| Steer Weight (lbs.) | 523 | 591 | 658 | 723 | 793 | 848 |
| Steer ADG (lbs./day) | 2.03 | 2.02 | 2.07 | 2.05 | 2.03 | 2.03 |
| Steer Price ($/cwt) | 125.69 | 119.10 | 112.07 | 112.23 | 108.89 | 105.77 |
| Number of Heifers | 19 | 20 | 20 | 19 | 16 | 19 |
| Heifer Weight (lbs.) | 475 | 539 | 600 | 655 | 718 | 773 |
| Heifer ADG (lbs./day) | 1.67 | 1.70 | 1.78 | 1.77 | 1.77 | 1.78 |
| Heifer Price ($/cwt) | 117.28 | 111.34 | 104.48 | 101.13 | 100.82 | 99.91 |

note:
For all months cows to calve each year is 90 head.
BCS- Body Condition Score (1-10).
ADG- Average Daily Gains (lbs./day).
Calves Weaned on the 15th of each respective month.

**Table 18.** Twenty-year Mean Biological Output from DECI Simulation Model for Drought Weather and Selling After 90-Day Backgrounding Program

| | Month of Weaning | | | | | |
|---|---|---|---|---|---|---|
| | **June** | **July** | **August** | **September** | **October** | **November** |
| **Cows** | | | | | | |
| Calving Weight (lbs.) | 1141 | 1136 | 1103 | 1073 | 1048 | 1033 |
| Calving BCS | 5.2 | 5.1 | 4.9 | 4.5 | 4.4 | 4.3 |
| Wean Weight (lbs.) | 1300 | 1264 | 1094 | 987 | 947 | 934 |
| Wean BCS | 6.3 | 5.9 | 4.5 | 3.5 | 3.2 | 3.1 |
| Pregnancy % at Weaning | 83 | 86 | 84 | 85 | 83 | 80 |
| **Calves Produced** | | | | | | |
| **At Weaning** | | | | | | |
| Number of Steers | 41 | 41 | 41 | 41 | 40 | 36 |
| Steer Weight (lbs.) | 401 | 468 | 533 | 599 | 673 | 728 |
| Steer ADG (lbs./day) | 2.30 | 2.31 | 2.26 | 2.25 | 2.27 | 2.22 |
| Number of Heifers | 38 | 40 | 38 | 42 | 36 | 37 |
| Number Repl. Heifers | 20 | 20 | 20 | 20 | 20 | 20 |
| Heifer Weight (lbs.) | 375 | 435 | 492 | 550 | 614 | 665 |
| Heifer ADG (lbs./day) | 2.15 | 2.12 | 2.07 | 2.05 | 2.05 | 2.02 |
| | 119.65 | 112.42 | 111.62 | 109.05 | 105.92 | 100.88 |
| **After Backgrounding** | | | | | | |
| Number of Steers | | | | | | |
| Steer Weight (lbs.) | 41 | 41 | 41 | 40 | 39 | 36 |
| Steer ADG (lbs./day) | 581 | 648 | 713 | 779 | 854 | 909 |
| Steer Price ($/cwt) | 2.00 | 2.00 | 2.00 | 2.00 | 2.01 | 2.01 |
| Number of Heifers | 17 | 20 | 17 | 21 | 16 | 16 |
| Heifer Weight (lbs.) | 533 | 596 | 654 | 717 | 779 | 832 |
| Heifer ADG (lbs./day) | 1.76 | 1.78 | 1.80 | 1.86 | 1.83 | 1.86 |
| Heifer Price ($/cwt) | 111.47 | 104.64 | 101.12 | 100.86 | 99.44 | 95.28 |

note:
For all months cows to calve each year is 90 head.
BCS- Body Condition Score (1-10).
ADG- Average Daily Gains (lbs./day).
Calves Weaned on the 15th of each respective month.

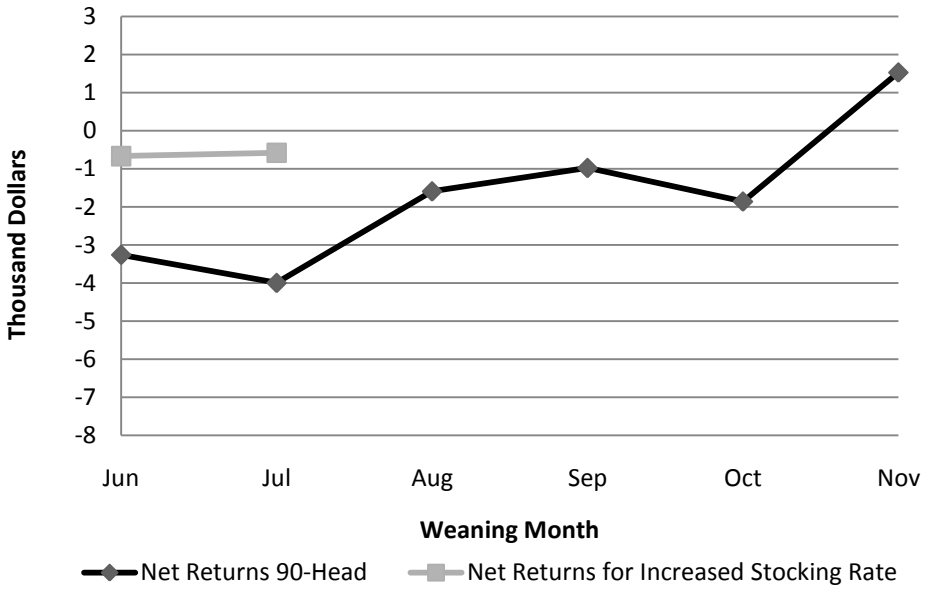



**Figure 1.** Net Returns by Weaning Month with Average Weather Conditions and Selling at Weaning

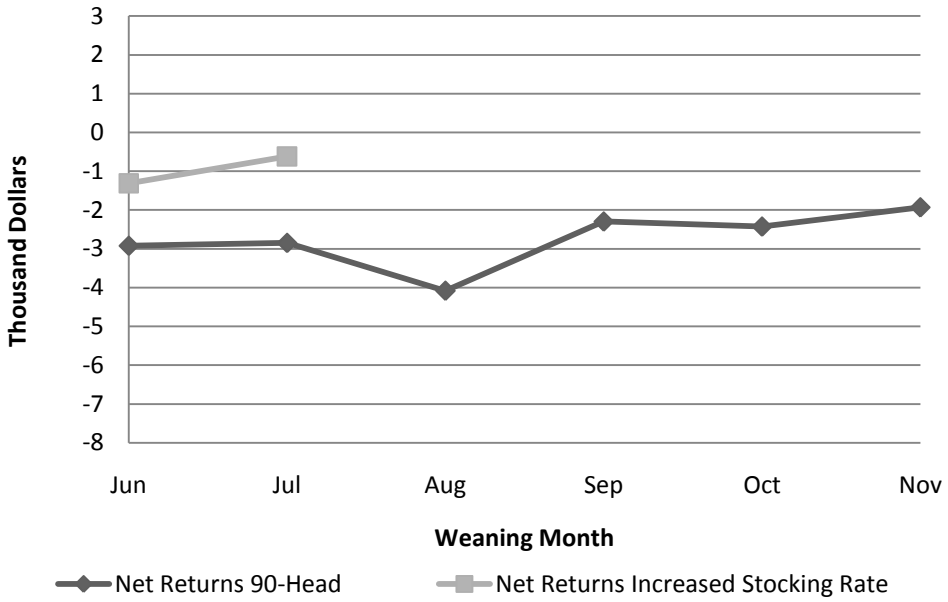



**Figure 2.** Net Returns by Weaning Month with Average Weather Conditions and Marketing After a 60-Day Backgrounding Period After Weaning

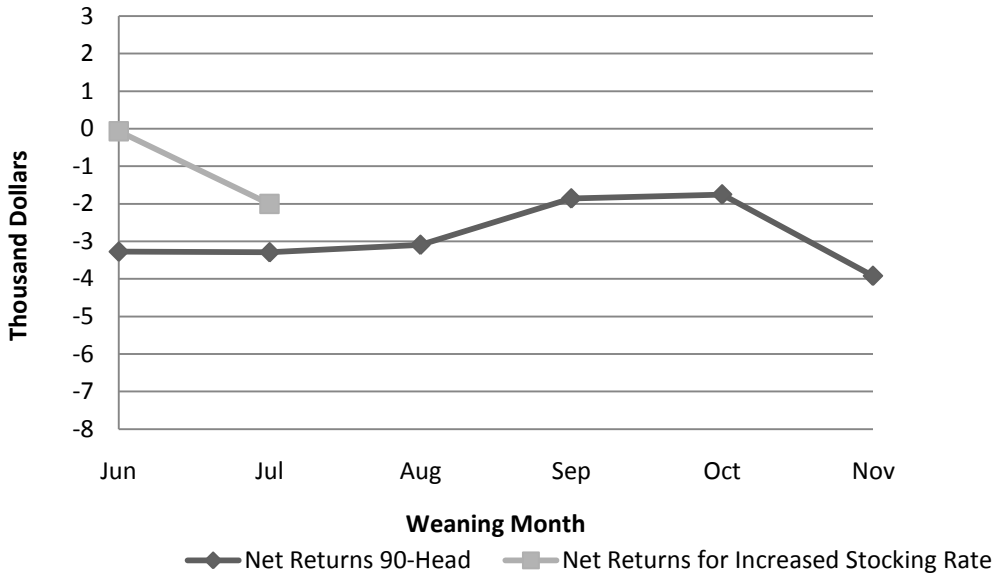



**Figure 3.** Net Returns by Weaning Month with Average Weather Conditions and Marketing After a 90-Day Backgrounding Period After Weaning

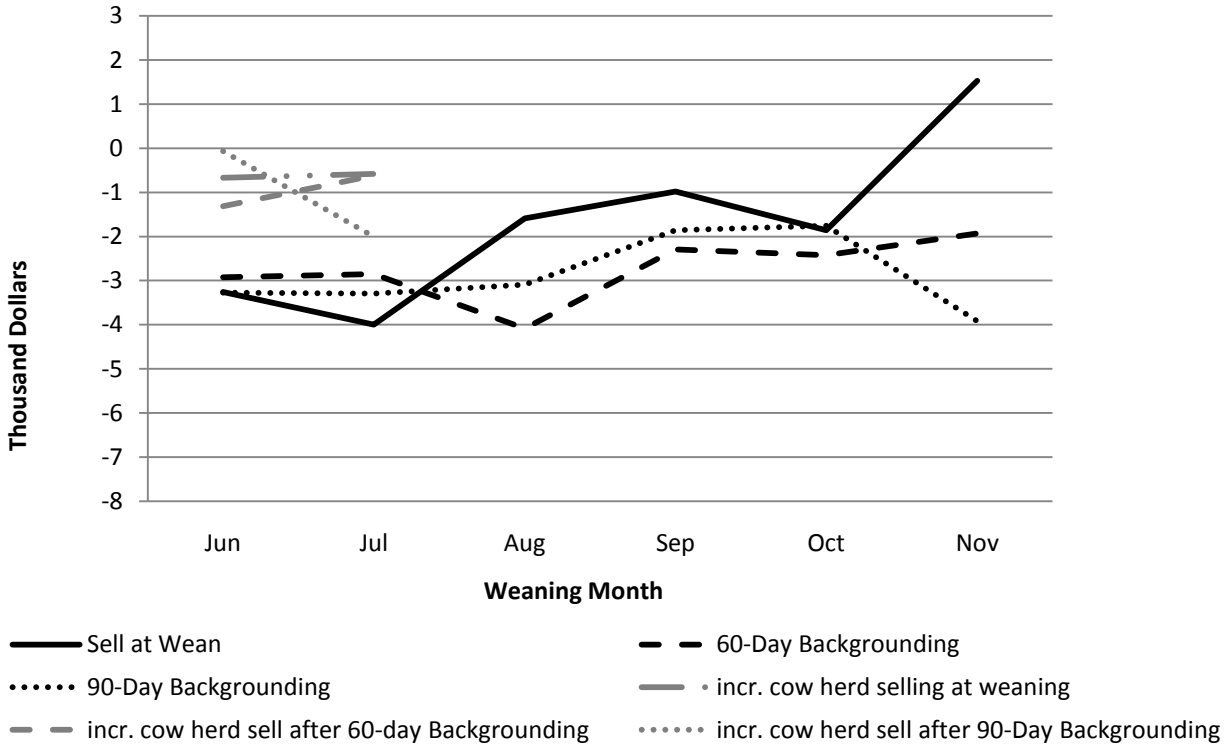



**Figure 4.** Net Returns by Weaning Month for All Average Weather Condition Scenarios

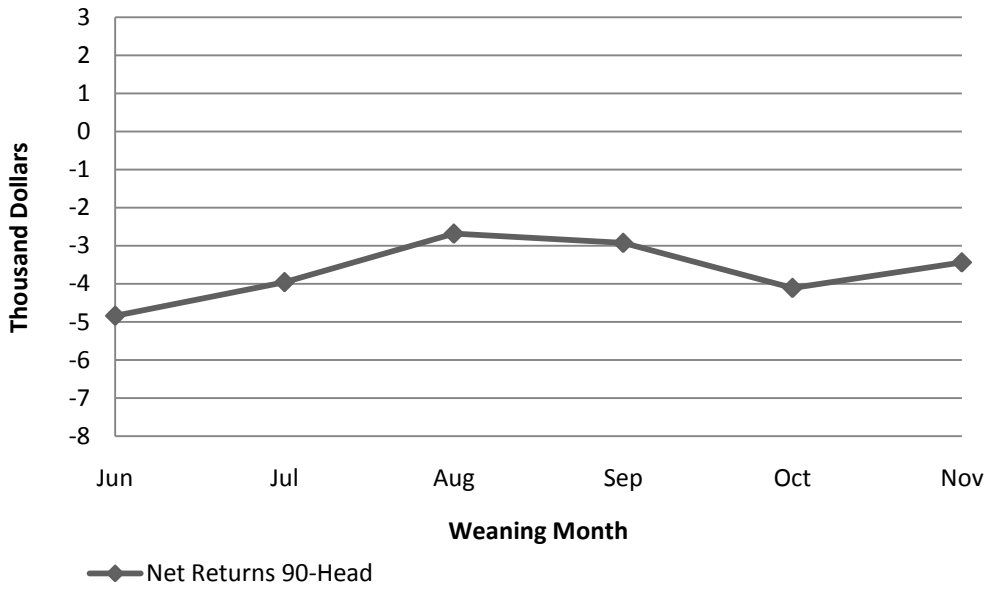



**Figure 5.** Net Returns by Weaning Month with Drought Weather Conditions and Marketing at Weaning

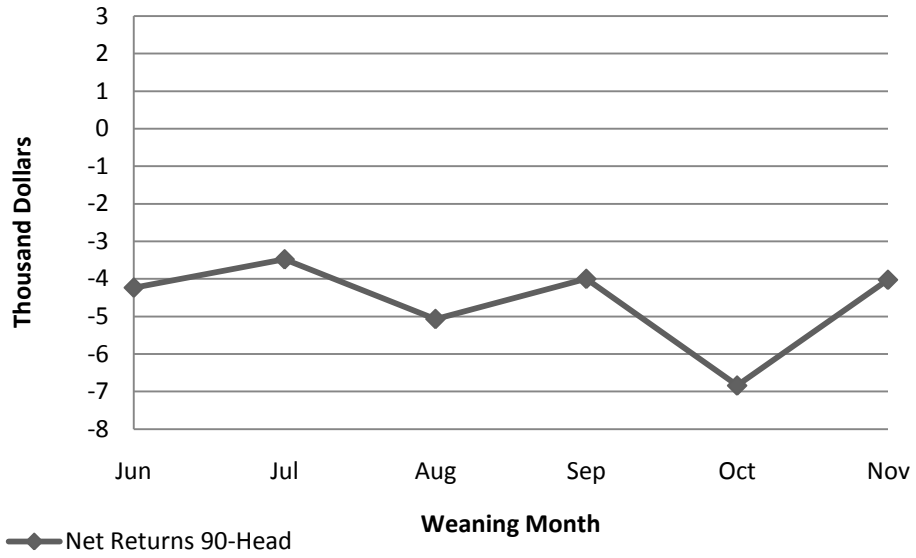



**Figure 6.** Net Returns by Weaning Month with Drought Weather Conditions and Marketing after a 60-Day Backgrounding Period After Weaning

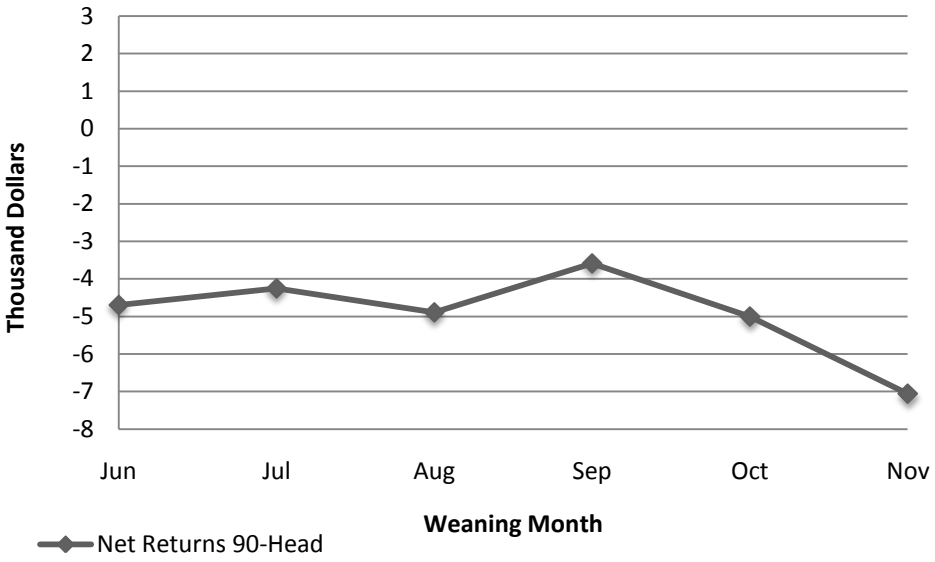



**Figure 7.** Net Returns by Weaning Month with Drought Weather Conditions and Marketing After a 90-Day Backgrounding Period After Weaning

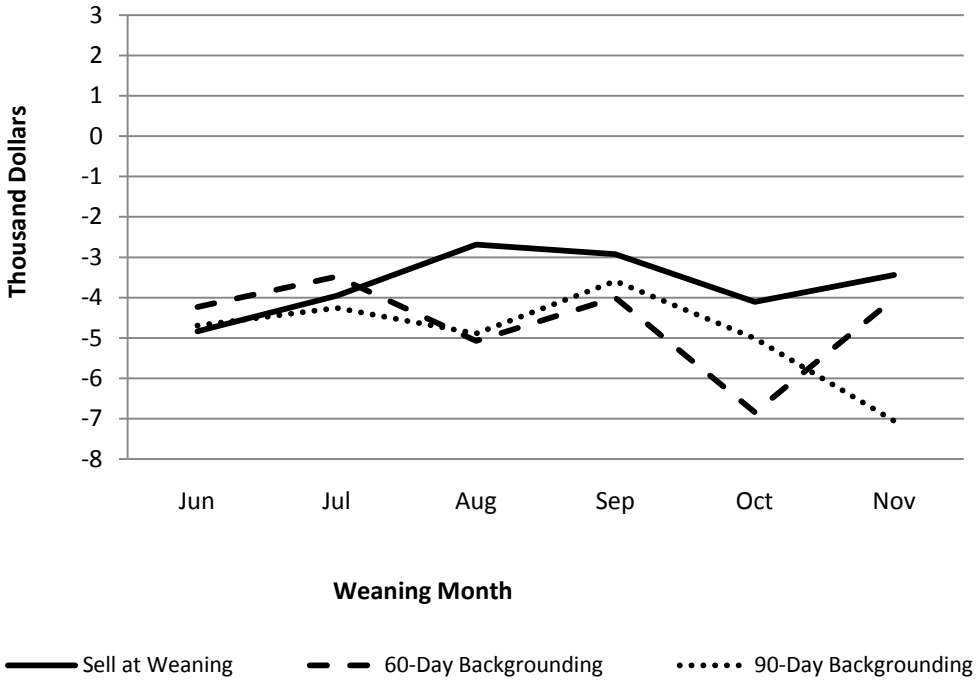



**Figure 8.** Net Returns by Weaning Month for All Drought Weather Condition Scenarios

# VITA

Gregory Edward Savage, son of Mr. and Mrs. Donald Savage, was born in Keokuk, Iowa, on January 24, 1987. He is a native of Warsaw, Illinois, and graduated from Warsaw Jr./Sr. High School in 2005. He began his undergraduate studies at Western Illinois University, Macomb, in August, 2005.

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