
UNIVERSITY OF CALIFORNIA AGRICULTURE AND NATURAL RESOURCES
COOPERATIVE EXTENSION
AGRICULTURAL ISSUES CENTER
UC DAVIS DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS
2019
SAMPLE COSTS FOR BEEF CATTLE



COW – CALF PRODUCTION
200 Head
CENTRAL SAN JOAQUIN VALLEY
Amended – September - 2019

Rebecca K. Ozeran UCCE Farm Advisor, Fresno & Madera Counties
Donald Stewart Staff Research Associate, UC Agricultural Issues Center and Department of Agricultural and Resource Economics, UC Davis
Daniel A. Sumner Director, UC Agricultural Issues Center, Frank H. Buck Jr. Professor, Department of Agricultural and Resource Economics, UC Davis

UC AGRICULTURE AND NATURAL RESOURCES
 COOPERATIVE EXTENSION
 AGRICULTURAL ISSUES CENTER
 UC DAVIS DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS
SAMPLE COSTS FOR BEEF CATTLE COW – CALF PRODUCTION
 200 Head Central San Joaquin Valley – 2019
 Amended- September 2019

CONTENTS

INTRODUCTION	2
ASSUMPTIONS	3
Production Operations	5
Table A. Operations Calendar	5
Livestock/Marketing/Revenue	6
Table B. Animal Inventory per Month	7
Cash Overhead	7
Non-Cash Overhead	9
REFERENCES	11
Table 1. Costs and Returns for Beef Cow-Calf Production	12
Table 2. Monthly Costs for Beef Cow-Calf Production (Combined)	14
Table 2-A. Monthly Costs for Beef Cow-Calf Production (Owned land)	15
Table 2-B. Monthly Costs for Beef Cow-Calf Production (Rented land)	16
Table 3. Ranging Analysis for Beef Cow-Calf Production	17
Table 4. Equipment, Investment and Business Overhead	18

INTRODUCTION

Cattle operations are an important part of the California agricultural economy, ranking fifth in revenue among agricultural commodities (NASS). The cattle industry in California includes feedlots, yearling feeding operations, and cow-calf operations, which are the focus of this study. The cow-calf industry is geographically diverse, ranging from pastures in the far northeastern mountains to the foothills of the coast range and the Sierra Nevada and irrigated pastures in the Central Valley. Pasture for cattle occurs throughout California and includes both privately own ranchland and pastures that can be leased from the federal government and state and local agencies. Leases are typically based on the number of animals that are allowed on the pastures and the number of months of the year that they can graze there. Many cow-calf operations use pastures in more than one location. Herds may move from mountain pastures in the summer to valley pastures in the winter each year.

Cattle grazing operations play an important role in California’s landscape and environment, using approximately 15 percent of the total land area of California for grazing. Cow-calf operations vary widely in size with many part-time cattle operations and some full-time businesses with 1,000 cows or more. These ranches need to be economically viable to maintain the landscape under their purview.

Sample costs to raise beef calves from a cow-calf operation are presented in this study. It can be used to guide production decisions, estimate potential returns, prepare budgets and evaluate production loans. Sample costs for labor, materials, equipment, and custom services are based on January 2019 figures. A blank column titled Your Costs is provided in Table 1 for convenience.

For an explanation of calculations, refer to the section titled Assumptions. For more information contact Donald Stewart; University of California Agriculture and Natural Resources, Agricultural Issues Center, Department of Agricultural and Resource Economics, at 530-752-4651 or destewart@ucdavis.edu. To discuss the results

of this analysis with a local Central California extension farm advisor contact your county cooperative extension office or contact Rebecca Ozeran at 559-241-6564 or rkozeran@ucanr.edu.

Sample Cost of Production studies for many commodities are available and can be downloaded from the website, <http://coststudies.ucdavis.edu>. Archived studies are also available on the website.

Costs and Returns Study Program/Acknowledgements. A “costs and returns” study is a compilation of specific data collected from meetings with professionals working in production agriculture from the region. The authors thank rancher cooperators, UC Cooperative Extension, and other industry representatives who provided information, assistance, and expert advice. **The use of trade names and ranching practices in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products or cultural practices.** *The University is an affirmative action/equal opportunity employer.*

ASSUMPTIONS

The assumptions contain background information used in developing Tables 1 through 4 and pertain to sample costs to operate a beef cow–calf operation. Practices described represent production practices and materials considered typical of a well-managed ranch in the region.

This study explains the annual costs associated with an ongoing operation, under the assumptions that the ranch was operated on this basis in prior years and will continue in subsequent years. The costs, materials, and practices shown will not apply to all situations. Production practices vary by rancher and the differences can be significant. This analysis does not represent any single ranch and is intended as a guide only.

Some of the costs associated with ranching can be shared between production alternatives and operations. This analysis describes a cattle production operation in which a percentage of certain costs are shared accordingly with other production alternatives, which are noted in the narrative sections and tables. It’s important to note that some cow/calf operators in the Central San Joaquin Valley do not have multiple production alternatives and the costs will not be shared among production alternatives.

Overview. In Fresno and Madera Counties, there are two dominant types of ranch operation. In one, the rancher operates a large, contiguous parcel of rangeland where their livestock remain year-round. In the other, the rancher owns a parcel of land and leases additional rangeland from other landowners, including sometimes from government landowners. Direct expenses for land used in the cattle operation thus may take two forms: estimated property taxes, insurance and perhaps interest expenses for land that is owned by the rancher, and rental or lease expenses for land that is rented from other owners, including the government in some cases (Table 1).

Grazing in Fresno and Madera Counties requires 7 to 48 acres of rangeland per cow-calf pair, depending upon the location, animal size, and the amount of forage available. Thus even for the same size of herd, the amount of land used varies widely. Herd sizes in California also vary widely, ranging from part-time operations of fewer than 10 cows to operations running thousands of cattle

Ranching operations in California are based on size of operation and activities of the rancher may be classified into four types.

- 1- Part-time operation that runs a small number of animals (less than 50) in order to utilize existing forage resources, keep the grass down, or because of the specific interest or enjoyment of the operator;
- 2- Medium-sized operations (50-200 cows) that are run as a business, but the ranch is supplemented with income from other enterprises or from off-ranch sources;

3- Large operations (over 200 cows) where cattle production is the primary enterprise and source of income for the ranch;

4- Cattle ranches of varying sizes that are part of a larger diversified operation with farming and other businesses.

Often the ranches in the first and second categories are not profitable as an individual enterprise, while in categories three and four, the ranches can be a profitable business enterprise. Few operations currently fall into category three, but they have a significant share of the total cattle.

In Fresno and Madera Counties, most herds operated as a business range from 50-250 head, although a few operations have more than 1,000 head. Although most herds are small, many of the total cattle grazed are in operations with larger herds. This cost study is based upon numbers from a herd of 200 cows, which considered of moderate size for the region.

The cost calculations are based on economic principles that include all cash costs, plus other non-cash overhead. Land rental costs may be on a per acre basis or based on the number of animals grazed and period of time they are grazed on a parcel. This analysis has used a rental value of the Animal Unit Month (AUM) as a cost of operation on rented property. An AUM is defined as the amount of forage it takes to feed one 1,000-lb cow and her suckling calf for one month. This study assumes a mature cow weight of 1,200 pounds consuming about 2 percent of her body weight every day. Therefore, in this study, each cow and her calf represents 1.2 AUM each month.

Forage production per acre varies throughout California from year-to-year based on precipitation, elevation, soil type, range and pasture management, slope, aspect and more. In this study we make specific assumptions about rental and ownerships costs and stocking rates.

Owned and Leased Pastures. We assume that the cow-calf operation uses pasture from both owned land and land leased on an animal unit month basis. We assume these contribute equally to the total pasture forage. We assume the farm owns 2,250 acres of grazing land.

For owned land, the annualized costs include interest costs and the forgone earnings of capital invested in land. The purchase costs of pasture land is included and shown in the capital recovery costs for the owned and combined columns. A benefit of owning land includes any land price increases, which are reflected in capital gains. In this study we assume for simplicity that expected capital gains from land ownership exactly offset the interest costs and foregone earning. The annual cost of land ownership is therefore the out of pocket expenses for taxes and insurance, which are shown in the column for owned land.

Some ranchers own more land than they use for their own cattle. Another way to assess costs associated with owned land is the foregone rent of that land to another rancher, but that is not the approach in this study.

In Table 1 we show a column with the combined direct cash costs of the owned land and the rented pasture together. In another column we show the direct cash costs of the owned land as taxes and insurance and then a column with the costs of the rented pastures per AUM for the period of time cattle are on the leased land. These costs are not identical in this study, but, as expected, these costs per animal are very similar.

Production Operations

The ranch described in this study is a “typical” moderate-sized owner-operated cow-calf ranch operation in the central San Joaquin Valley. The cattle producer owns some rangeland but leases additional grazing land from private landowners. For simplicity, the owned land has the same acreage and stocking rate as the leased land. For simplicity, 50% of total revenue is therefore assigned to each land type (Tables 2-A, 2-B).

Land Lease/Pasture Rent. This includes the cost of pasture that was rented or leased used in the cow-calf operation.

Rangeland in Fresno and Madera Counties is valued widely between \$250 and \$3,000 per acre and rents vary from \$5 to \$35 per acre. Rental value can vary depending on forage production and infrastructure available on the property among other factors. Pasture rent is assumed to be \$22 per acre and one AUM is assumed to equal 1.5 acres. Under these assumptions, one AUM costs \$33.00. The cow/calf pair is calculated at 1.2 AUM (\$39.60 per cow month). The quantity of forage for bulls and yearling heifers is calculated at 1.3 AUM (\$42.90 per bull month) & 0.7 AUM (\$23.10 per heifer month). There is no pasture charge for the horses.

Leased rangeland in the central San Joaquin Valley is often under a multi-year lease agreement with the land owner. Mountain pasture is usually under a long-term lease with the United States Forest Service. Due to the limited number of nearby forest grazing leases, few ranchers in these counties have one. The US Forest Service can provide current lease rates for anyone who is interested in those costs.

Table A. Operations Calendar. The Operations Calendar is for a beef breeding herd, selling weaned calves. Operations will vary according to the season. The specific timing of any given operation will depend on a variety of factors: personal preference, labor availability, cattle breed, forage availability or feed cost, disease risk, and weather. For example, black-hided cattle are often bred later in the winter, so that they calve later in the following fall and avoid the extreme heat of late summer/early fall.

Dates	Operation
June 1-Oct 31	
Summer grazing (dry grass)	
September	Buy replacement bulls; breeding soundness and trich* test
Sept 1-Oct 31	Calving
Nov 1-May 31	
Winter grazing (green grass)	
November	Pre-breeding vaccines (cows, replacement heifers); remove fly tags
December 1-January 31	Breeding season –turn bulls in
January-February	Brand and vaccinate all calves, castrate bull calves
March-April	Weaning, dewormer and booster vaccines for calves; preg check; sell open cows and heifers, cull bulls
April-May	Fly tags put on cows, worm and vaccinate cows and replacement heifers
March-May	Calves sold

*Bulls are tested for *Tritrichomonas foetus*, a protozoan which infects the reproductive tract and causes trichomoniasis, a venereal disease of cattle.

Alfalfa Hay/Mineral Supplements. Plain salt (NaCl) is made available year-round, and some ranchers also offer selenium (Se) year-round if they know their area is deficient. Other trace mineral supplements are provided to the herd from the beginning of calving season, during late summer and fall, until there is good new grass available. Livestock are fed alfalfa hay over short periods of time when there is limited feed available on rangeland and during weaning and shipping. Rangeland grazing is year-round; green feed is typically available from November through April, and dry grass from May through October. Only mountain meadows (primarily

available through US Forest Service leases) and irrigated pastures provide green forage during the summer and early fall.

Health, Veterinary Services, Medicine. This includes the cost of vaccines, medicines, veterinary services, breeding soundness exams, etc. Pre-breeding vaccinations are done in November, dry cow vaccinations and deworming during April and May. All calves are branded and vaccinated in January. Branding ensures that animals can be linked to their owners and is used to record changes of ownership when animals are sold. Bull calves are also castrated in January. Heifer calves' booster vaccinations are given in May. It is assumed two-thirds of the costs occur in January and the rest is equally split between the other three months.

Freight/Trucking-Transportation of cattle. Trucking costs for commercial hauling of the cattle between summer and winter grazing or between leased pastures are minimal for most operations. Each load can haul approximately 50,000 pounds (approximately 35 mature cows). Most operations in this region utilize a pickup truck with a livestock trailer for the bulk of their cattle transportation needs.

Horse Care and Feeding. Costs for replacement animals, feed, shoeing horses and veterinary expenses are based on costs reported by the participating producers.

Dogs. Cattle dogs are used for herding. Charges are for food, training, veterinary care or purchase of a trained replacement dog. Not every operation uses dogs.

Vehicles. Pickup truck, 1-Ton, 5th Wheel – (4WD)/Livestock Trailer, 5th wheel/ATV – (4WD). Business vehicle mileage for the pickup truck is estimated at 25,000 miles per year and calculated at \$0.575 per mile. The livestock trailer is estimated at 10,000 miles per year at \$.20 per mile. Estimated costs of the All-Terrain Vehicle (ATV-4WD) 4-wheeler is \$1,200 per year. The costs are based on January 2019 prices.

Lube/Repairs-Vehicle/Equipment. Repair and maintenance charges for equipment are listed as a separate line item in tables 1 & 2.

Fencing Materials, Maintenance, and Repair of Infrastructure. This includes fencing wire, t-posts, and miscellaneous purchases of wood and other construction materials and supplies. Typical land leases, on private and public land, require the lessee to maintain fences, so these are included as costs on both owned and leased land.

Ranch Labor. Most ranchers do not use full-time hired labor but may pay for day labor or use volunteer weekend help. Family members and neighbors often provide labor (often on an un-paid basis), especially on branding and weaning days. Based upon information from producers, the estimated owner man-hours are 10.4 hours per cow per year (for 200 cows this is 2,080 hours per year, equivalent to 40-hour per week for 52 weeks) and the estimated volunteer labor is 1 hour per cow per year (200 hours is equivalent to 25 eight-hour days).

Risk. Production and market risks are substantial. While we attempt to model a production system based on typical, real world practices, this study cannot fully represent the full range of financial and market risks, which affect the profitability and economic viability of cattle production. Because there are so many potential risk factors, effective risk management must combine specific tactics in a detailed manner and in various combinations for a sustainable operation.

Livestock/Marketing/Revenue

Livestock. Livestock includes 200 bred cows, 31 replacement heifers, 10 bulls, 3 horses and 2 dogs. The ranch has a 93 percent calf crop (186 calved) with 3 percent mortality before weaning (6 calves), and one percent of the cows (2 cows) die each year. Mortality of cows and calves depends on predator pressure, genetics, and disease prevalence. A 10 percent cull rate is applied to the cow herd. Half of the 180 weaned calves are steers

and of the heifers, 31 are retained as candidates for replacements. Based on these assumptions, the rancher sells 20 cull cows and 149 calves: 59 heifer calves and 90 steer calves. With an average 70 percent pregnancy rate in heifers, the rancher sells 9 open yearling heifers, keeping 22 bred yearling heifers for replacements. There are 10 bulls included in inventory overhead. It is assumed that the producer will cull and sell 3 bulls per year. The cow to bull ratio is assumed to be 20:1, with each bull lasting an average of 3 years. Total livestock sold annually (calves, yearling heifers, cull cows, and cull bulls) totals 181 head. Horses and dogs are purchased as needed. Inventory overhead includes 3 horses and 2 dogs (Table 4).

Marketing. Cull cows, cull bulls and open yearling heifers are sold in March. Heifer calves and steer calves (8 months old) are sold via video or auction in May. Marketing costs include video and/or auction fees, brand inspection and an assessment for beef promotion (Checkoff).

Typical auction fees are in the form of a commission, which can range from 3.0% to 5.0% of the sale cost. Commission fees vary with the value of the animal sold and the services offered by the sale yard or video marketer, generally with a minimum charge per head sold.

Brand Inspection/Checkoff. Brand inspection is mandatory for all animals when they are sold and is a flat rate of \$1.50 per head, assessed by a county brand inspector. The beef promotion checkoff is also a flat rate of \$1.00 per head and contributes to state and national beef promotion and research activities; \$0.50 can be kept for use by the California Beef Council and \$0.50 goes to the national Cattlemen’s Beef Promotion and Research Board.

Revenue/Sales. Estimates of prices used in Tables 1 and 2 and the ranges shown in Table 3 are based upon the average prices across classes of livestock from local livestock markets in the San Joaquin Valley. Tables 2, 2-A and 2-B show monthly operational costs and revenue from animal sales.

Pricing/Ranging Analysis. Cattle prices vary with age, size and quality. Price per head usually increases with size. Price per pound typically decreases with size. Prices for livestock purchased or carried over from a cow-calf operation for resale are dependent on the expected value of the animal at resale and the expected costs of holding the animal until resale including the operating costs. Table 3 shows a range of returns using a range of prices.

Table B. Animal Inventory per Month. This table shows one year of a multi-year operation that starts with 200 cows and bred heifers for the beginning of the breeding season in October. October and November shows that some of the calves, heifers & steers are born during those months. The heifer calves are called yearling heifers in June in which 31 are kept as potential replacements. Bred heifers join the cow herd once they calve.

Animals	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Cows	178	178	178	178	200	200	200	200	200	200	178	178
Steer calves	0	0	0	0	45	75	90	90	90	90	90	90
Heifer calves	0	0	0	0	45	75	90	90	90	90	90	90
*Yearling heifers	31	31	31	31	31	31	31	31	31	31	0	0
Bred heifers	22	22	22	22	0	0	0	0	0	0	22	22
Bulls	7	7	7	7	7	10	10	10	10	10	7	7

*Open yearling heifers (9) are culled after preg check in March; bred yearling heifers (22) are retained as replacements and become cows after calving.

Cash Overhead

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs can include property taxes, interest on operating capital, office expense, liability and property insurance, equipment repairs, sanitary services, and management.

Property Taxes. For leased land, property tax is generally subsumed within lease rates and not included separately; for land owned wholly or in part, property taxes are an annual cost to the owner-operator. These will vary based on land values and the county of residence, but for the purposes of this study we will assume an annual per acre cost based on a property tax rate of 1.0 percent.

Insurance. Insurance for farm investments varies depending on the assets included and the amount of coverage.

Farm Property Insurance. This provides coverage for property loss and is charged at 8.86/\$1,000 value of the assets over their useful life.

Commercial agribusiness property insurance covers buildings, contents, equipment (owned or leased), outdoor fixtures and other real and personal property, including: Inventory, Furniture, Property improvements, Supplies, Personal property of others, Computers and data processing equipment, Records, valuable papers and other documents, Business income.

Additional coverage, also called Endorsements can fill in where basic property insurance leaves off. Endorsements cover events such as: Floods, earthquakes and volcanoes, and equipment breakdown.

Livestock Insurance. Insurance packages provide broad causes of loss protection for livestock, which includes the following: accidental shooting, attacks by dogs or wild animals (does not apply to sheep), earthquake loss, electrocution, flood loss, loading and unloading accidents, and sudden and accidental collision damage causing death. Most cow/calf operations do not utilize this type of insurance.

USDA Insurance Programs. The USDA, through the Risk Management Agency and the Farm Services Agency, offers a number of insurance programs to livestock producers. A Livestock Risk Protection (LRP) policy offers protection against a decline in feeder cattle prices during the term of the endorsement. Non-insured Crop Disaster Assistance Program (NAP) provides payments to producers based on percent forage loss over 50 percent and number of acres insured. Other insurance programs are offered through federal programs. There are limitations and application deadlines that apply to all programs. We assume that the ranch does not participate in these government programs.

Liability Insurance. A standard farm liability insurance policy will help cover the expenses for which you become legally obligated to pay for bodily injury claims on your property and damages to another person's property as a result of a covered accident. Common liability expenses covered under your policy include attorney fees and court costs, medical expenses for people injured on your property, and injury or damage to another's property caused by your animals. An annual charge of \$2,600 per year is for the entire ranch.

Fire Insurance. Some operations opt to purchase fire insurance for high-risk rangeland, such as areas near busy roads or areas prone to burn frequently. No amount is specified.

Office Expense. Office and business expenses are estimated at \$2,600 per year or \$13.00 per head. These expenses include office supplies, telephone/internet, bookkeeping, accounting, office utilities, and miscellaneous administrative charges.

Interest on Operating Capital. Interest on operating capital is based on cash operating costs and is calculated monthly until sale months at a nominal rate of 6.5 percent per year.

Interest charge is the cost of your money that is tied up in the cattle production. It reflects the amount of money you pay on borrowed money (Line of Credit) or that amount you could have earned had you invested your own resources in alternative uses. The interest cost of post animal sales is discounted back to the last sale month using a negative interest charge. The interest rate will vary depending upon various factors, the rate is

considered a typical lending rate by a farm lending agency as of January 2019. As revenue is received from animal sales it is used to pay back the operating loan (Table 2).

Owner/Operator/Management. Returns to operator (and Family) labor and management is treated as net revenue of the operation and not included as an explicit labor cost. Assignment of ranch operator labor and management costs differ by operation. Some ranches hire direct labor and some hire management that is paid a monthly salary. Owner/Operator labor for hauling, turnout, gathering, feeding, fence repair, salting, checking cows, and moving pastures is not an included cost in this study, but the value of operator labor and management time and effort must be considered in assessing ranch profits.

Non-Cash Overhead

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments.

Capital Recovery Costs. Capital recovery cost is the annual depreciation and interest costs for a capital investment. This includes equipment, machinery and livestock. It is the amount of money required each year to recover the difference between the purchase prices and salvage value (unrecovered capital). It is equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is: $((\text{Purchase Price} - \text{Salvage Value}) \times \text{Capital Recovery Factor}) + (\text{Salvage Value} \times \text{Interest Rate})$.

Capital recovery is calculated in Table 4 and the charges are shown in Table 1. Table 4 shows two columns of capital recovery, one with the land value for the owned land column (charged at 33% of the total) and the combined column (charged at 67% of the total) and one without, for the rented pasture column (charged at 33% of the total). The remaining capital recovery costs are assumed to be allocated to other operations on the ranch.

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements), the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. Purchase price, salvage value and useful life (yrs.) for the equipment, livestock and investments are listed (Table 4).

Capital Recovery Factor. Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate used and the life of the machine.

Interest Rate. The interest rate used to calculate capital recovery cost is the effective long-term interest rate effective January 2019. An interest rate of 6.0 percent is provided by a local farm lending agency and will vary according to risk and loan amount.

Portable Cattle Working Facilities. An estimated price for portable livestock handling equipment (a loading chute and corral panels) required by a typical 200 head operation is used. Portable facilities are more relevant for leased property than for owned property, but permanent facilities will occasionally need to be replaced as well.

Water Tanks (3,000 gal)/Troughs. Water tanks and troughs are included to account for necessary range improvements on leased pasture and United States Forest Service allotments.

Shop & Fencing Tools. This includes hand tools, gloves, a chainsaw and other miscellaneous tools.

Tack. This category includes three saddles and related necessary equipment (blanket, headgear, lariat, etc.).

Table Values. Due to rounding, the totals may be slightly different from the sum of the components.

REFERENCES

- American Society of Agricultural and Biological Engineers (ASABE). *2018 ASABE Standards Book with 2015 Standards Supplement*. St. Joseph, MI: Curran Associates, Inc., 2015. <https://www.asabe.org/>
- Boehlje, Michael D., and Vernon R. Eidman. *Farm Management*. New York: John Wiley and Sons, 1984.
- California Chapter of the American Society of Farm Managers and Rural Appraisers. *Trends in Agricultural Land & Lease Values*. Woodbridge, CA: American Society of Farm Managers and Rural Appraisers, 2018. www.calasfmra.com
- California Department of Insurance, Rate Regulation Branch. January-2019. <http://www.insurance.ca.gov/0500-about-us/>
- Energy Information Administration. Weekly Retail on Highway Diesel Prices-January-2019. <http://www.eia.gov/petroleum/gasdiesel/>
- Barry, Sheila, L.C. Forero, D. A. Sumner, D. Stewart. *2017-Sample Costs for Beef Cattle Cow-Calf Production-100 Head, Public Lands – San Francisco Bay Area*. University of California Cooperative Extension, Davis CA. <http://coststudies.ucdavis.edu/en/current/>
- Finzel, Julie, D. A. Sumner, D. Stewart. *2017-Sample Costs for Beef Cattle Cow-Calf Production-300 Head, San Joaquin Valley-South*. University of California Cooperative Extension, Davis CA. <http://coststudies.ucdavis.edu/en/current/>
- Forero, Larry, C., R. Ingram, G. A. Nader, D. A. Sumner, D. Stewart. *2017-Sample Costs for Beef Cattle Cow-Calf Production-300 Head, Sacramento Valley*. University of California Cooperative Extension, Davis CA. <http://coststudies.ucdavis.edu/en/current/>
- Rao, Devii, R., D. A. Sumner, D. Stewart. *2018-Sample Costs for Beef Cattle Cow-Calf Production, Central Coast-300 Head*. University of California Cooperative Extension, Davis CA. <http://coststudies.ucdavis.edu/en/current/>
- "National Agricultural Statistics Service." (NASS). United States Department of Agriculture. www.nass.usda.gov/Quick_Stats/.
- Visalia and Templeton Livestock Markets. <http://www.visalialivestock.com/index.html>
- Western Video Markets. <http://www.wvmcattle.com/site/>

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER
Table 1. COSTS AND RETURNS FOR BEEF COW – CALF PRODUCTION
 200 Cow/Calf Operation Central San Joaquin Valley-2019

Production/Revenue	Head	Units/Head	Unit	Price/Unit	**Owned Value	**Rented Value	Total Value	Value/Head
Steer Calves	90	6.50	cwt	\$150	\$43,875	\$43,875	\$87,750	\$975.00
Heifer Calves	59	5.75	cwt	\$145	\$24,596	\$24,596	\$49,191	\$883.83
Yearling Heifers	9	8.00	cwt	\$80	\$2,880	\$2,880	\$5,760	\$320.00
Cull Cows	20	12.00	cwt	\$58	\$6,960	\$6,960	\$13,920	\$696.00
Cull Bulls	3	18.00	cwt	\$77	\$2,079	\$2,079	\$4,158	\$1,386.00
TOTAL REVENUE	181				\$80,390	\$80,390	\$160,779	
Operating Inputs	Units	Amounts/Units	Cost/Unit	Owned Land Costs	Rented Land Costs	Combined Land Costs	*Cost/Cow	Your Costs
Alfalfa Hay	84 tons	1 year	\$225.00	\$9,450	\$9,450	\$18,900	\$94.50	
Supplements - (Combined)	9 tons	1 year	\$385.68	\$1,736	\$1,736	\$3,471	\$17.36	
Pasture – Owned – (property insurance)	2,250 acres	1 acre	\$1,200.00	\$11,961	\$0	\$11,961	\$59.81	
Pasture – Owned – (annual property tax)	2,700,000 land (\$)	1 percent	\$0.01	\$13,500	\$0	\$13,500	\$67.50	
Pasture - Summer (cows @ 1.2/AUM)	178 cows	6 months	\$39.60	\$0	\$10,573	\$10,573	\$52.87	
Pasture - Winter (cows @ 1.2/AUM)	200 cows	6 months	\$39.60	\$0	\$11,880	\$11,880	\$59.40	
Pasture - (yearlings heifers @ 0.7/AUM)	31 heifers	10 months	\$23.10	\$0	\$1,790	\$1,790	\$8.95	
Pasture - (bred heifers @ 0.7/AUM)	22 heifers	6 months	\$23.10	\$0	\$762	\$762	\$3.81	
Pasture - (bulls @ 1.3/AUM)	10 bulls	5 months	\$42.90	\$0	\$536	\$536	\$2.68	
Pasture - (bulls @ 1.3/AUM)	7 bulls	7 months	\$42.90	\$0	\$526	\$526	\$2.63	
Veterinary Service - cows	178 cows	1 each	\$5.00	\$445	\$445	\$890	\$4.45	
Veterinary Service - heifers	31 heifers	1 each	\$3.00	\$47	\$47	\$93	\$0.47	
Veterinary Service - bulls	10 bulls	1 each	\$40.00	\$200	\$200	\$400	\$2.00	
Vaccine/Wormer/Etc.- cows	178 cows	1 each	\$25.00	\$2,225	\$2,225	\$4,450	\$22.25	
Vaccine/Wormer/Etc.- heifers	31 heifers	1 each	\$8.00	\$124	\$124	\$248	\$1.24	
Vaccine/Wormer/Etc.- calves	149 calves	1 each	\$16.00	\$1,192	\$1,192	\$2,384	\$11.92	
Vaccine/Wormer/Etc.- bulls	10 bulls	1 each	\$17.00	\$85	\$85	\$170	\$0.85	
Brand Inspection	181 head	1 inspection	\$1.50	\$136	\$136	\$272	\$1.50	
Marketing Order Promo - (checkoff)	181 head	1 checkoff	\$1.00	\$91	\$91	\$181	\$1.00	
Freight/trucking	200 cows	1 each	\$20.00	\$2,000	\$2,000	\$4,000	\$20.00	
Marketing – (video/auction fees)	181 head	1 each	\$35.00	\$3,168	\$3,168	\$6,335	\$31.68	
Horses – (feed/shoes/vet)	3 horses	1 each	\$3,000.00	\$4,500	\$4,500	\$9,000	\$45.00	
Dogs - (food/training/vet)	2 dogs	1 each	\$500.00	\$500	\$500	\$1,000	\$5.00	
Yearling Bulls Purchased	3 bulls	1 each	\$5,000.00	\$7,500	\$7,500	\$15,000	\$75.00	
Pickup Truck - 1Ton	1 pickup	25,000 miles	\$0.58	\$7,188	\$7,188	\$14,375	\$71.88	
Stock Trailer	1 trailer	10,000 miles	\$0.20	\$1,000	\$1,000	\$2,000	\$10.00	
ATV	1 ATV	1 year	\$1,200.00	\$600	\$600	\$1,200	\$6.00	
Fencing Materials	-	1 year	\$3,500.00	\$1,750	\$1,750	\$3,500	\$17.50	
Equipment - (maintenance/repair)	-	1 \$/year	\$1,350.00	\$675	\$675	\$1,350	\$6.75	
OPERATING COSTS				\$70,070	\$70,677	\$140,747	\$703.97	
Interest on Operating Capital @ 6.5%				\$1,450	\$1,822	\$3,272	\$16.36	
TOTAL OPERATING COSTS				\$71,521	\$72,499	\$144,019	\$720.00	

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

Table 1. CONTINUED

200 Cow/Calf Operation Central San Joaquin Valley-2019

Cash Overhead Costs	Owned Land Costs	Rented Land Costs	Combined Land Costs	*Cost/Cow	Your Costs
Liability Insurance	1,300	1,300	\$2,600	\$13	
Office Expenses	1,300	1,300	\$2,600	\$13	
TOTAL CASH OVERHEAD	2,600	2,600	\$5,200	\$26	
TOTAL CASH COSTS	\$74,121	\$75,099	\$149,219	\$746	
REVENUE ABOVE CASH COSTS	\$6,269	\$5,291	\$11,560	\$57.80	
ANNUAL CAPITAL RECOVERY	\$19,189	\$17,407	\$38,959	\$194.80	
TOTAL COSTS	\$93,309	\$92,506	\$188,178	\$940.89	
REVENUE ABOVE TOTAL COSTS	(\$12,920)	(\$12,116)	(\$27,399)	(\$137.00)	

**These columns represent half the value of the total revenue from sales.

*Cost per cow based on 200 head.

Note: For the combined column, half of the pasture is on owned land and half is on leased land. Charged on animal unit month (AUM) basis.

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

Table 2. MONTHLY SUMMARY OF COSTS AND RETURNS FOR BEEF COW – CALF PRODUCTION (Combined)

200 Cow/Calf Operation Central San Joaquin Valley-2019

*Production/Revenue	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Steer Calves	0	0	0	0	0	0	0	0	0	0	0	87,750	87,750
Heifer Calves	0	0	0	0	0	0	0	0	0	0	0	49,191	49,191
Yearling Heifers	0	0	0	0	0	0	0	0	0	5,760	0	0	5,760
Cull Cows	0	0	0	0	0	0	0	0	0	13,920	0	0	13,920
Cull Bulls	0	0	0	0	0	0	0	0	0	4,158	0	0	4,158
Total Revenue	0	0	0	0	0	0	0	0	0	23,838	0	136,941	160,779
Operating Inputs													
Alfalfa Hay	0	0	0	3,150	3,150	3,150	3,150	3,150	3,150	0	0	0	18,900
Supplements - (combined)	579	579	579	579	579	579	0	0	0	0	0	0	3,471
Pasture – Owned – (property insurance)	0	0	0	0	0	5,981	0	0	0	0	0	5,981	11,961
Pasture – Owned – (annual property tax)	0	0	0	0	0	6,750	0	0	0	0	0	6,750	13,500
Pasture - (cows @ 1.2/AUM)	1,762	1,762	1,762	1,762	1,980	1,980	1,980	1,980	1,980	1,980	1,762	1,762	22,453
Pasture - (yearling heifers @ 0.7/AUM)	179	179	179	179	179	179	179	179	179	179	0	0	1,790
Pasture - (bred heifers @ 0.7/AUM)	127	127	127	127	0	0	0	0	0	0	127	127	762
Pasture - (bulls @ 1.3/AUM)	75	75	75	75	75	107	107	107	107	107	75	75	1,062
Veterinary/Vaccines - (combined)	0	0	540	0	0	540	540	0	0	540	0	6,476	8,635
Brand Inspection	0	0	0	0	0	0	0	0	0	54	0	217	272
Marketing Order Promo - (checkoff)	0	0	0	0	0	0	0	0	0	36	0	145	181
Freight/Trucking	0	0	0	0	0	0	0	0	0	2,000	0	2,000	4,000
Marketing - (video/auction fees)	0	0	0	0	0	0	0	0	0	1,584	0	4,751	6,335
Horses - (feed/shoes/vet)	750	750	750	750	750	750	750	750	750	750	750	750	9,000
Dogs - (food/training/vet)	83	83	83	83	83	83	83	83	83	83	83	83	1,000
Yearling Bulls Purchased	0	0	0	15,000	0	0	0	0	0	0	0	0	15,000
Vehicles/Trailer - (combined)	1,465	1,465	1,465	1,465	1,465	1,465	1,465	1,465	1,465	1,465	1,465	1,465	17,575
Fencing Materials	292	292	292	292	292	292	292	292	292	292	292	292	3,500
Equipment - (maintenance/repairs)	113	113	113	113	113	113	113	113	113	113	113	113	1,350
Operating Costs	5,424	5,424	5,964	23,574	8,665	21,967	8,658	8,118	8,118	9,182	4,666	30,986	140,747
Net Revenue above Op. Costs (Cumulative)	-5,424	-10,848	-16,812	-40,386	-49,050	-71,017	-79,675	-87,794	-95,912	-81,256	-85,923	20,032	20,032
Interest on Operating Capital @ 6.5%	29.38	58.76	91.06	218.75	265.69	384.68	431.57	475.55	519.52	440.14	465.41	-108.51	3,272
Total Operating Costs	5,453	5,483	6,055	23,793	8,930	22,352	9,090	8,594	8,638	9,622	5,132	30,878	144,019
Net Revenue above Operating Costs													16,760
Net Revenue per cow above Operating Costs													83.80

*Tables 2 & 3 are based on the Combined Total Costs column from table #1.

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER
Table 2-A. MONTHLY SUMMARY OF COSTS AND RETURNS FOR BEEF COW – CALF PRODUCTION (Owned land)
 200 Cow/Calf Operation Central San Joaquin Valley-2019

Production/Revenue	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Steer Calves	0	0	0	0	0	0	0	0	0	0	0	43,875	43,875
Heifer Calves	0	0	0	0	0	0	0	0	0	0	0	24,596	24,596
Yearling Heifers	0	0	0	0	0	0	0	0	0	2,880	0	0	2,880
Cull Cows	0	0	0	0	0	0	0	0	0	6,960	0	0	6,960
Cull Bulls	0	0	0	0	0	0	0	0	0	2,079	0	0	2,079
Total Revenue	0	0	0	0	0	0	0	0	0	11,919	0	68,471	80,390
Operating Inputs													
Alfalfa Hay	0	0	0	1,575	1,575	1,575	1,575	1,575	1,575	0	0	0	9,450
Supplements - (combined)	289	289	289	289	289	289	0	0	0	0	0	0	1,736
Pasture – Owned – (property insurance)	0	0	0	0	0	5,981	0	0	0	0	0	5,981	11,961
Pasture – Owned – (annual property tax)	0	0	0	0	0	6,750	0	0	0	0	0	6,750	13,500
Pasture - (Cows @ 1.2/AUM)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pasture - (Yearling Heifers @ 0.7/AUM)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pasture - (Bred Heifers @ 0.7/AUM)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pasture - (Bulls @ 1.3/AUM)	0	0	0	0	0	0	0	0	0	0	0	0	0
Veterinary/Vaccines - (combined)	0	0	270	0	0	270	270	0	0	270	0	3,238	4,318
Brand Inspection	0	0	0	0	0	0	0	0	0	27	0	109	136
Marketing Order Promo - (checkoff)	0	0	0	0	0	0	0	0	0	18	0	72	91
Freight/trucking	0	0	0	0	0	0	0	0	0	1,000	0	1,000	2,000
Marketing - (video/auction fees)	0	0	0	0	0	0	0	0	0	792	0	2,376	3,168
Horses - (feed/shoes/vet)	375	375	375	375	375	375	375	375	375	375	375	375	4,500
Dogs - (food/training/vet)	42	42	42	42	42	42	42	42	42	42	42	42	500
Yearling Bulls Purchased	0	0	0	7,500	0	0	0	0	0	0	0	0	7,500
Vehicles/Trailer - (combined)	732	732	732	732	732	732	732	732	732	732	732	732	8,788
Fencing Materials	146	146	146	146	146	146	146	146	146	146	146	146	1,750
Equipment - (maintenance/repair)	56	56	56	56	56	56	56	56	56	56	56	56	675
Operating Costs	1,640	1,640	1,910	10,715	3,215	16,216	3,196	2,926	2,926	3,458	1,351	20,876	70,070
Net Revenue above Op. Costs (Cumulative)	-1,640	-3,281	-5,191	-15,906	-19,121	-35,337	-38,533	-41,459	-44,385	-35,924	-37,275	10,319	10,319
Interest on Operating Capital @ 6.5%	8.88	17.77	28.12	86.16	103.57	191.41	208.72	224.57	240.42	194.59	201.91	-55.90	1,450
Total Operating Costs	1,649	1,658	1,938	10,801	3,319	16,407	3,405	3,151	3,166	3,653	1,553	20,820	71,521
Net Revenue above Operating Costs													8,869
Net Revenue per cow above Operating Costs													44.35

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

Table 2-B. MONTHLY SUMMARY OF COSTS AND RETURNS FOR BEEF COW – CALF PRODUCTION (Rented land)

200 Cow/Calf Operation Central San Joaquin Valley-2019

Production/Revenue	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Steer Calves	0	0	0	0	0	0	0	0	0	0	0	43,875	43,875
Heifer Calves	0	0	0	0	0	0	0	0	0	0	0	24,596	24,596
Yearling Heifers	0	0	0	0	0	0	0	0	0	2,880	0	0	2,880
Cull Cows	0	0	0	0	0	0	0	0	0	6,960	0	0	6,960
Cull Bulls	0	0	0	0	0	0	0	0	0	2,079	0	0	2,079
Total Revenue	0	0	0	0	0	0	0	0	0	11,919	0	68,471	80,390
Operating Inputs													
Alfalfa Hay	0	0	0	1,575	1,575	1,575	1,575	1,575	1,575	0	0	0	9,450
Supplements - (combined)	289	289	289	289	289	289	0	0	0	0	0	0	1,736
Pasture – Owned – (property insurance)	0	0	0	0	0		0	0	0	0	0	0	0
Pasture – Owned – (annual property tax)	0	0	0	0	0		0	0	0	0	0	0	0
Pasture - (Cows @ 1.2/AUM)	1,762	1,762	1,762	1,762	1,980	1,980	1,980	1,980	1,980	1,980	1,762	1,762	22,453
Pasture - (Yearling Heifers @ 0.7/AUM)	179	179	179	179	179	179	179	179	179	179	0	0	1,790
Pasture - (Bred Heifers @ 0.7/AUM)	127	127	127	127	0	0	0	0	0	0	127	127	762
Pasture - (Bulls @ 1.3/AUM)	75	75	75	75	75	107	107	107	107	107	75	75	1,062
Veterinary/Vaccines - (combined)	0	0	270	0	0	270	270	0	0	270	0	3,238	4,318
Brand Inspection	0	0	0	0	0	0	0	0	0	27	0	109	136
Marketing Order Promo - (checkoff)	0	0	0	0	0	0	0	0	0	18	0	72	91
Freight/trucking	0	0	0	0	0	0	0	0	0	1,000	0	1,000	2,000
Marketing - (video/auction fees)	0	0	0	0	0	0	0	0	0	792	0	2,376	3,168
Horses - (feed/shoes/vet)	375	375	375	375	375	375	375	375	375	375	375	375	4,500
Dogs - (food/training/vet)	42	42	42	42	42	42	42	42	42	42	42	42	500
Yearling Bulls Purchased	0	0	0	7,500	0	0	0	0	0	0	0	0	7,500
Vehicles/Trailer – (combined)	732	732	732	732	732	732	732	732	732	732	732	732	8,788
Fencing Materials	146	146	146	146	146	146	146	146	146	146	146	146	1,750
Equipment - (maintenance/repair)	56	56	56	56	56	56	56	56	56	56	56	56	675
Operating Costs	3,784	3,784	4,053	12,859	5,449	5,751	5,462	5,192	5,192	5,724	3,315	10,110	70,677
Net Revenue above Op. Costs (Cumulative)	-3,784	-7,567	-11,621	-24,479	-29,929	-35,680	-41,142	-46,335	-51,527	-45,332	-48,648	9,713	9,713
Interest on Operating Capital @ 6.5%	20.49	40.99	62.95	132.60	162.11	193.27	222.85	250.98	279.10	245.55	263.51	-52.61	1,822
Total Operating Costs	3,804	3,825	4,116	12,991	5,612	5,945	5,685	5,443	5,471	5,970	3,579	10,058	72,499
Net Revenue above Operating Costs													7,891
Net Revenue per cow above Operating Costs													39.45

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER
Table 3. RANGING ANALYSIS FOR BEEF COW – CALF PRODUCTION
 200 Cow/Calf Operation Central San Joaquin Valley-2019

Production/Revenue	Total Head	CWT/ Animal	*Market Prices (\$ per cwt)									
			130	135	140	145	150	155	160	165	170	175
Steer Calves	90	6.50	130	135	140	145	150	155	160	165	170	175
Heifer Calves	59	5.75	125	130	135	140	145	150	155	160	165	170
Yearling Heifers	9	8.00	60	65	70	75	80	85	90	95	100	105
Cull Cows	20	12.00	40	45	50	55	60	65	70	75	80	85
Cull Bulls	3	18.00	55	60	65	70	75	80	85	90	95	100
Gross Revenue			135,346	141,798	148,249	154,700	161,151	167,603	174,054	180,505	186,956	193,408
†Total Operating Costs			144,019	144,019	144,019	144,019	144,019	144,019	144,019	144,019	144,019	144,019
Net Revenue above Operating Costs			(8,673)	(2,222)	4,230	10,681	17,132	23,583	30,035	36,486	42,937	49,388
Net Revenue/Head above Operating Costs	200		(43)	(11)	21	53	86	118	150	182	215	247

* Estimate based upon average price differences between classes of livestock from Visalia and Templeton Livestock Markets.

† Total operating costs based on Combined Total Costs (Table 1).

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER
Table 4. EQUIPMENT, INVESTMENT AND BUSINESS OVERHEAD
 200 Cow/Calf Operation Central San Joaquin Valley-2019

*OVERHEAD	Purchase Price	Salvage/Cull Value	Livestock Share (%)	Useful Life (yrs.)	Annual Taxes and Insurance	‡Annual Capital Recovery	†Annual Capital Recovery (-) Land Value
BUILDINGS, IMPROVEMENTS AND EQUIPMENT							
Land (2,250 acres at \$1,200/acre)	2,700,000	2,700,000	100	30	25,461	5,400	0
Workshop/Storage Shed	18,000	-	100	30	170	1,307	1,307
Squeeze/Loading Chute	17,000	1,190	100	15	172	1,700	1,700
Water Tanks 3,000 gallon Troughs (4)	6,400	448	100	20	65	546	546
Shop/Fencing Tools	3,850	270	100	20	39	328	328
Saddles/Tack (3)	8,550	599	100	20	86	729	729
TOTAL BUILDINGS, IMPROVEMENTS AND EQUIPMENT	2,753,800	2,702,506			25,992	10,010	4,610
LIVESTOCK INVENTORY							
Bulls (10)	50,000	13,860	100	4	-	11,262	11,262
Cows Bred (200)	240,000	139,200	100	8	-	24,581	24,581
Heifers (31)	44,175	19,840	100	0.7	-	2,251	2,251
TOTAL LIVESTOCK INVENTORY	334,175	172,900			-	38,094	38,094
MACHINERY AND VEHICLES							
ATV – (4WD)	8,500	4,250	100	8	63	939	939
Stock Trailer, 5 th -Wheel - (Hauling cattle)	16,000	1,120	100	10	93	2,089	2,089
Pickup 1-Ton, 5 th -Wheel - (4WD)	60,000	15,000	100	10	2,400	7,016	7,016
TOTAL MACHINERY AND VEHICLES	84,500	20,370			2,556	10,044	10,044
TOTAL COMBINED OVERHEAD	3,172,475	2,895,776			28,548	58,148	52,748

*This table accounts for all equipment, investment, overhead, and depreciation costs.

The interest rate for capital recovery is calculated at 6.0%.

‡Capital Recovery for the "Owned Land" column in Table 1 is shown at 33% of the total and at 67% of the total for the combined column in Table 1.

†Capital Recovery for the "Rented land" column in Table 1 is shown at 33% of the total.

The remaining costs are assumed to be allocated to other operations on the ranch.