

Monthly Returns from Finishing Steer Calves

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Iowa Estimated Returns is a series of estimated monthly profits or losses to cattle and swine feeders. Returns are calculated using assumed feed rations, production methods and costs which reflect the Iowa production environment. Market prices for inputs and animals sold fluctuate with the current market conditions.

The Estimated Monthly Returns from Finishing Calves is the estimated profit or loss associated with feeding 550 pound feeder calves to a market weight of 1,150 pounds. The following assumptions, market information sources, and methodology are used to calculate the estimated returns.

Feedlot and feeding period

The assumed feedlot is an open lot design with windbreak based on the facility design in the *Beef Feedlot Systems Manual*, ISU Extension publication number PM 1867, revised in December 2006. Feeding calves from a start weight of 550 pounds to a finished weight of 1,150 pounds requires 203 days of feeding when the animals have an average daily gain of 2.95 pounds per day. It is also assumed that the cattle inventory turns about 1.7 times a year.

Calf rations and feed costs

Feed rations for finishing calves are assumed to consist of 49.3 bushels of corn, 724 pounds of hay, 2,050 pounds of modified distiller grain consisting of 50% dry matter, and 128 pounds of mineral and feed supplement. This ration follows the feed requirements outline in the *Beef Feedlot Systems Manual*.

Corn and hay costs are the product of the average of mid-month price during the finishing period and total consumption during the finishing period. Mid-month corn and hay prices are reported monthly in the USDA report *Agricultural Prices*.

Corn distiller co-products are becoming a common ingredient in feedlot rations. Starting in fall of 2006 USDA report NW_GR111 reports the daily distiller's grains from around the state of Iowa. Based on this report, the monthly distiller's co-product price used in the estimated returns comes from the average midpoint of the price range paid for modified distiller's grain in the northwest part region of the state at the first, middle and end of each month.

The supplement in the assumed ration is a mineral based "gluten balancer" routinely used by finishing operations when distiller's co-products are being utilized. The cost of the supplement is assumed to be constant at \$0.13 per pound.

Operating and overhead cost

Operating costs include the cost to transport cattle to and from the feedlot, labor costs, interest charges, utility expenses, veterinary costs, manure handling and other miscellaneous costs. Overhead costs include the amortized depreciation of the facilities and equipment.

Transportation costs include the expense of trucking calves 200 miles to arrive at the feedlot site, and trucking finished cattle 100 miles to a packing facility. Trucking costs are calculated from a base per mile trucking fee of \$2.50 per loaded mile and an addition fuel surcharge when the price of road diesel fuel exceeds a threshold of \$1.20 per gallon. Fuel surcharges per mile are 20% of the cost of a gallon of diesel above the \$1.20 threshold price. The price of Midwest No. 2 over-the-road diesel is obtained from historic price database on the U.S. Department of Energy website. Transportation costs per head are determined under the assumption that a truck is filled by either 73 feeder calves or 35 finished steers. The cost of delivering calves is also assessed a finance charge included in the interest expenses. At a minimum, transportation will cost \$13.99 per head sold.

Some of the production costs detailed in the *Beef Feedlot Systems Manual* have little to no fluctuation and remain constant in the estimated returns to cattle finishing. Labor cost is assumed to be \$40.08 per animal finished, based on a rate of \$22 per hour and slightly more than 1.8 hours of labor per animal finished. Machinery and equipment costs are \$6.47, and other marketing and miscellaneous costs are \$8.23 per head finished. An estimated 3 tons of solid open lot manure is produced per animal each year and the cost of custom manure handling is \$1.50 per ton. Based on 1.7 turns per year the estimated cost of manure handling is \$2.65 per animal finished.

	Annual cost per space	Cost per calf finished
Labor	68.15	40.08
Machinery & equipment	11.00	6.47
Marketing & misc.	14.00	8.23
Manure handling	4.50	2.65

Veterinary, health and implant costs are \$12 per head, based on the following health program for calves:

Pour on-\$1.49	8 way-\$2.84	8 way booster-\$0.53
5 way-\$1.05	5 way booster-\$0.44	First implant-\$2.00
Second implant-\$2.90	Miscellaneous costs-\$0.75	

Feedlot facility cost are based on the estimated construction costs outlined in the *Beef Feedlot Systems Manual*. The facility cost of the assumed feedlot is the average facility costs of 750 and 1,500 head feedlots, as detailed in the manual. Average annual cost of facility ownership of the two sizes of feedlot is \$34.19. This includes depreciation and annual repair costs for pens, fences, windbreaks, bunks, sheds and livestock handling equipment. This amount is divided by 1.7 animals fed per space per year for an estimated \$20.11 per animal finished.

Interest expenses include the finance cost of purchasing feeder cattle, feedstuffs, cattle delivery and other variable inputs. The finance charge for the cost of purchasing feeder cattle is charged at a feeder cattle loan rate for the duration of the feeding period. Costs of feed and other operating costs are financed at an operating loan rate for half of the feeding period. The loan rates for feeder cattle purchase and operating are reported quarterly by the Chicago Federal Reserve Bank.

Purchase price, 550 pound feeder steer calf

Purchase price is the Missouri combined auction monthly average price of 500-550 and 550-600 pound animals in the purchase month. Missouri combined auction prices are reported in USDA report JC_LS795. The purchase price, reported as dollars per hundred pounds of weight, is multiplied by 5.5 to determine the total cost of a 550 pound animal.

Sale price, 1,150 pound fed steer

A price for finished cattle is determined from the average monthly Iowa, Southern Minnesota live cattle price reported by Ag Market News. The live cattle price reported as dollars per hundred weight, is multiplied by 11.5 to determine the per head value of a finished 1,150 pound animal.