

Procedure for Estimating Returns Finishing Steer Calves

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The Iowa State University Estimated Returns model was developed to serve as a barometer of profitability for the industry and is not intended to represent any one operation. The series assumes a “hand-to-mouth” cash based process of procuring inputs (e.g., feed and feeder cattle) as well as selling fed cattle. That is, the calculations purposely assume no risk management, forward pricing, or other strategies in-place. While this approach is used to provide a benchmark over time for profitability trends, it fails to capture notable variability in specific situations and managerial approaches. To be transparent in how the return series is created, the following is a brief summary of the sources and approaches used.

Production Level

Costs per unit and net returns in cattle finishing are highly dependent on production levels. The finishing yearling steers estimated returns includes a production level for feed efficiency. Feed efficiency is based on Iowa State University beef cattle nutrition guidelines. Cattle inventory is assumed to turn about 1.2 times a year. Feeding calves from a start weight of 550 pounds to a finished weight of 1,500 pounds requires 310 days of feeding when the animals have an average daily gain of 3.06 pounds per day.

Feed Costs

Feed costs were calculated using corn, modified distillers grains with soluble (MDGS), and hay-based diets. Feed rations also include supplements and minerals. Feed requirements at each stage of production are based on Iowa State University beef cattle nutrition guidelines. Feed costs are calculated each month based on the feed quantity consumed and monthly market price.

- Corn prices are provided by the North Central Iowa corn price published in the USDA Iowa Daily Cash Grain Bids report.
- MDGS prices are provided by the monthly Iowa East and Iowa West MDGS price published in the USDA National Weekly Ethanol Report.
- Hay prices are provided by the Iowa other hay price published in the USDA Agricultural Prices report.
- Supplement and mineral prices are provided by utilizing the U.S., Feed, Supplements – Index for Price Paid, 2011 published in the USDA Agricultural Prices report.

Capital Requirements

Feedlot facility costs are based on the estimate construction costs outlined in the Iowa State University *Beef Feedlot Systems Manual*. Based on the annual ownership costs of a 1,500 head feedlot the average annual fixed cost is \$114.50 per head of capacity. Feed grinding and mixing costs are included as part of the yardage cost. Office facilities, site preparation, and miscellaneous

items are also included in the capital requirements. Building and equipment costs are included as repairs, depreciation, interest, insurance, and taxes.

- Building and equipment repairs: annual repairs calculated as 2.5% of the total investment.
- Depreciation on buildings and equipment: based on the total initial cost less salvage value of buildings and equipment on a per steer basis divided by the estimated life. A salvage value of 10% is used for buildings and 0% for equipment. A useful life of 25 years is used for buildings and 15 years for equipment.
- Interest on buildings and equipment: interest is charged on one-half the average investment $[(\text{initial cost} + \text{salvage value}) \div 2]$ for buildings and equipment at a rate of 4% percent divided by the number of finished steers sold per year.
- Insurance and taxes on buildings and equipment: based on initial cost multiplied by 0.25% (insurance) and 1.5% (taxes, buildings only) divided by the number of finished steers sold per year.

Operating Costs

Operating Costs

- Labor: Based on a 1.42 labor hours per head equivalent. A wage rate is provided by utilizing the Corn Belt, Labor, Hired, Animal Workers – Wage Rate, Measured in \$/Hour reported in the USDA Agricultural Prices report.
- Transportation: Include the expense of hauling feeder steers and finished steers. Trucking costs are calculated from a base per mile livestock hauling cost per loaded mile adjusted for the price of over-the-road diesel fuel.
 - Livestock hauling costs provided by the Iowa State University Iowa Farm Custom Rate Survey.
 - The price of over-the-road diesel fuel is provided by the price of Midwest No. 2 over-the-road diesel reported in the U.S. Energy Information Administration Weekly Retail Gasoline and Diesel Prices report.
- Marketing: Provided by The Center for Farm Financial Management FINBIN Farm Financial Database. Series updated using the Ag Services - Index for Price Paid, 2011 published in the USDA Agricultural Prices report.
- Utilities, Fuel, and Oil: Utilities, fuel, and oil costs allocated to feeder to finish enterprise are provided by The Center for Farm Financial Management FINBIN Farm Financial Database. Series updated using the Fuels - Index for Price Paid, 2011 published in the USDA Agricultural Prices report.
- Veterinary and supply: Provided by The Center for Farm Financial Management FINBIN Farm Financial Database. Series updated using the Ag Services - Index for Price Paid, 2011 and Supplies - Index for Price Paid, 2011 published in the USDA Agricultural Prices report.
- Miscellaneous: Provided by The Center for Farm Financial Management FINBIN Farm Financial Database. Series updated using the Repairs - Index for Price Paid, 2011 published in the USDA Agricultural Prices report.
- Interest on Operating Costs: Calculated on one-half of operating costs at the operating loan rate reported by the Chicago Federal Reserve Bank for the number of months on feed.

Returns

Finished steer sales

- Based on a 1,500-pound finished steer. Live steer prices are provided by the USDA Iowa/Minnesota Weighted Average Cattle Report – Negotiated Purchases (LM_CT185) for steers live FOB, total all grades.

Less Cost of Feeder Steer

- Based on a 550-pound feeder steer. Feeder steer prices are provided by the USDA Iowa Weekly Cattle Auction Summary report for 500-600 Medium and Large #1 steers.

Less Death Loss

- Based on death loss during finishing times the value of the finished steer (with feed, transportation, and marketing cost adjustment).

Manure Credit

- A manure credit is included that is based on the amount of nitrogen and phosphate excreted that would be available to crops the following year valued at the price of commercial fertilizer less the cost of applying the liquid manure.
 - Based on nitrogen (N), phosphate (P₂O₅), and potassium (K₂O) excreted per steer sold that would be available the following year for crop production valued at N, P₂O₅, and K₂O prices reported in the USDA Iowa Production Cost Summary report less an application cost reported by the Iowa State University Iowa Farm Custom Rate Survey.