

Procedure for Estimating Returns Finishing Steer Calves

January 2014

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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. It is designed to represent the rank-and-file Iowa producer. 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 1.4 times a year. Feeding calves from a start weight of 560 pounds to a finished weight of 1,300 pounds requires 253 days of feeding.

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 monthly North Central Iowa corn price reported in the USDA report NW_GR110.
- MDGS prices are provided by the average of the monthly East Iowa and monthly West Iowa MDGS price reported in the USDA report NW_GR111.
- Hay prices are provided by the other hay price reported in the USDA report Agricultural Prices.
- Supplement and mineral prices are provided by utilizing the U.S., Feed, Supplements – Index for Price Paid, 2011 reported in the USDA report Agricultural Prices.

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 \$74.18 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 1.16 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 report Agricultural Prices.
- 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 report Weekly Retail Gasoline and Diesel Prices.
- Marketing: Provided by The Center for Farm Financial Management FINBIN Farm Financial Database.
- 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.
- Veterinary and supply: Provided by The Center for Farm Financial Management FINBIN Farm Financial Database.
- Miscellaneous: Provided by The Center for Farm Financial Management FINBIN Farm Financial Database.
- 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 1,300 pound finished steer. Live steer prices are provided by Iowa/Minnesota Weighted Average Cattle Report – Negotiated Purchases for over 80% Choice Steers, USDA report LM_CT185.

Less Cost of Feeder Steer

- Based on a 560 pound feeder steer. Feeder steer prices are provided by the Iowa Weekly Weighted Average Feeder Cattle Report for 500-600 Medium and Large #1 steers, USDA report NW_LS795.

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) and phosphate (P₂O₅) excreted per steer sold that would be available the following year for crop production valued at N and P₂O₅ prices reported in the USDA report Agricultural Prices less an application cost reported by the Iowa State University Iowa Farm Custom Rate Survey.