

Procedure for Estimating Returns Feeder to Finish

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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 feeder to finish production are highly dependent on production levels. The feeder to finish estimated returns includes a production level for feed efficiency. Feed efficiency is based on Iowa State University swine nutrition guidelines.

Feed Costs

Feed costs were calculated using corn, dried distillers grains with soluble (DDGS), and soybean meal-based diets for finishing production phase. Feed rations also include feed components purchased as complete feeds and other ingredients. Feed requirements at each stage of production are based on Iowa State University swine 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.
- Soybean meal prices are provided by the monthly Iowa soybean meal price reported in USDA report NW_GR116.
- DDGS prices are provided by the average of the monthly East Iowa and monthly West Iowa DDGS price reported in the USDA report NW_GR111.
- Complete feed prices are provided by utilizing the U.S., Feed, Complete Feeds – Index for Price Paid, 2011 reported in the USDA report Agricultural Prices.
- Other ingredient prices are provided by utilizing the U.S., Feed, Supplements – Index for Price Paid, 2011 reported in the USDA report Agricultural Prices.
- Feed processing costs are provided by the Iowa State University Iowa Farm Custom Rate Survey.

Capital Requirements

Facility investment of 1,200 finishing pig capacity is assumed. Capital invested in swine facilities assumes a total confinement finishing building (deep pit) is estimated to cost \$187.50 per pig (7.5 sq. ft. per pig), with the inside equipment adding another \$28.75 per pig. 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 pig 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 pigs 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 pigs sold per year.

Operating Costs

Operating Costs

- Labor: Based on a 1/5 full-time employee 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 and finished pigs. 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 pig sales

- ~~Based on a 270 pounds finished pig. Finished pig prices are provided by the negotiated purchases price, USDA report LM_HG 204. The average finished pig price is multiplied by 75% to make the conversion to a live hog price.~~
- Based on a 270 pound finished pig. Finished pig prices are provided by the weighted average base prices of the producer sold negotiated, other market formula (futures/options), and swine or pork market formula purchase types. Data are obtained from the USDA Livestock, Poultry & Grain Market News report LM_HG204 Iowa/Minnesota Daily Direct Prior Day Hog Report Based on State of Origin.
- To arrive at a net price to represent producer's total income, the weighted average difference between the average net price and the carcass base price for the producer sold negotiated, other market formula, and swine or pork market formula purchase types in the USDA Livestock, Poultry & Grain Market News report LM_HG201 National Daily Direct Hog Prior Day Report – Slaughtered Swine is calculated.
- The calculated premiums from the LM_HG201 report are added to the calculated price from the LM_HG204 report. This derived price series provides an Iowa/Minnesota price and accounts for the added income from premiums from packer buying programs.
- The goal of this derived price series is to provide the total revenue for an Iowa producer selling in a manner representative of Iowa producers. The producer sold negotiated, other market formula, and swine or pork market formula purchase types have averaged 75% of the Iowa/Minnesota producer sold transactions over the last 15 years.

Less Cost of Feeder Pig

- Based on a 40 pound feeder pig. Feeder pig per head prices are provided by the calculated average monthly price reported in the National Direct Delivered Feeder Pig Report – Early Weaned Pigs 40 lb Basis, USDA report NW_LS 255. The calculated average monthly price is based on the formula and cash weighted average price.

Less Death Loss

- Based on death loss in finisher times the value of the finished pig (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 pig sold with manure stored in a deep pit (assumed 85% retained N from excreted amount) 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.