

Monthly Returns from Farrowing and Finishing Hogs

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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 Farrowing and Finishing Hogs is the estimated profit or loss to a producer that farrows sows and then feeds the pigs to a slaughter weight of 270 pounds. The following assumptions, market information sources and methodology are used to calculate the estimated returns.

Farrowing and feeding period

A farrow to finish operation maintains a sow breeding herd and feeds the pigs to a finished market weight. The assumed operation has a 1200 head sow herd with modern buildings and equipment to care for the sow herd during gestation, farrowing and lactation. This operation also has facilities for the weaned pigs to be grown to a finished weight. Pigs are weaned at 19-21 days of age and placed in a growing-finish facility for 165 days. Average daily gain is approximately 1.55 pounds per day and finished hogs are marketed at a weight of 270 pounds. If feeder pigs are sold rather than kept, the weaned pigs are kept in a nursery for 6 weeks before being sold as 50 lbs feeder pigs.

Breeding stock

New breeding gilts are considered home raised and are valued at \$75 per head above the slaughter market value in the month they are bred. Sows are expected to deliver 2.2 litters per year and 4 litters before being replaced. Cull sows are assumed to weigh 450 pounds when sold for the average weekly live basis price according to the 450-499 pound weight class in the USDA report, LM_HG201. Rather than using natural service, semen is purchased or collected at a cost of \$14.29 per litter assuming 84% double dose conception.

Returns per head sold are also adjusted for the change in a sow's value. The change in the value of the sow per head finished is the difference between the current sow value and the value of a new gilt twelve months previous, divided by the number of market hogs the sow produced over her productive life. Eleven months is the assumed time between breeding and the offspring being market ready. The sow and breeding gilt values are both adjusted for an assumed 5% annual sow death loss. If feeder pigs are sold, the breeding gilt price from seven months previous and the number of feeder pigs produced over the sow's life are used to calculate in the change of value.

Feeding duration, ration and cost

Feed rations do vary between the gestation, growing and finishing periods, and the monthly intake increases as the hogs become larger. However, for each hog finished it is assumed that about 11.9 bushels of corn, 143 pounds of soybean meal, and 32.5 pounds of dried distiller grains are fed. Distiller grains make up only 5% of the assumed ration during the finishing period. The percentage of corn in the assumed ration ranges between 42% of the diet in the nursery and 85% during the final months of finishing. Sows are fed a ration of 86% corn during gestation and 75% during lactation. Soybean meal is fed at 12% of the ration during gestation, 16% during lactation, 56% in the nursery, and between 23% and 8% during the finishing period. Vitamin and mineral supplements are assumed to make up 2% of all rations. If feeder pigs are sold, 2.7 bushels of corn and 31 pounds of soybean meal are fed per feeder pig produced.

Feed costs are assessed each month based on the feed quantity consumed and monthly market price. The price of corn is assumed to be the mid-month price received by farmers, reported in the *USDA Agricultural Prices*, adjusted upward by \$0.10 per bushel to reflect a purchase price. Soybean meal is valued each month according to the average Thursday midpoint price in Central Illinois as reported in USDA report GX_GR117. The cost of dried distiller grain is based in the average midpoint price in Iowa, reported weekly in USDA report SJ_GR225. In the event that Iowa prices are not reported during a particular month, the price of dried distiller grain in Central Illinois will be used. Vitamins, mineral supplement and purchased complete feed is included at a cost of \$6.55 per feeder pig produced and \$7.80 per head during finishing.

Operating and overhead costs

Animal health expenses include the cost of commonly used vaccines, parasite control and miscellaneous cost such as antibiotics and vet charges. A cost of \$4.72 per head finished includes the health costs of the sows and hogs raised. A cost of \$2.40 per feeder pig sold includes sow and pig health costs.

Labor costs are based on pay rate of \$22 per hour, benefits included. The labor cost per finished hog sold is \$11.40, or if feeder pigs are sold labor would cost \$8.59 per pig sold. Administrative costs are estimated to be \$3.50 per hog sold, or \$2 per feeder pig sold.

Some of the other production costs include manure handling, feed delivery and utilities. Manure handling costs are based on a custom handling price of \$0.01 per gallon. Feeder pig production is expected to produce 110 gallons of manure per pig, and feeder finishing is expected to produce 190 gallons of manure per hog. Utilities are charged at a rate of \$2.54 per feeder pig produced and \$1.57 per animal finished. Custom feed mixing, grinding and delivery is charged at a rate of \$10 per ton of feed.

Transportation costs include the expense of trucking finished hogs 100 miles to a packing facility, or hauling feeder pigs 200 miles to a finishing 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 web site. Transportation costs per head are determined under the assumption that a truck is filled by 180 finished hogs, and 403 feeder pigs. The minimum transportation cost per hog is \$1.68 and \$0.63 per feeder pig.

Interest costs are assessed on feed, labor and other variable input costs. Interest on these inputs costs is calculated as the product of one half of the total cost and the operating interest rate in the month the sow was bred. Interest costs are based on the operating loan rate reported by the Chicago Federal Reserve Bank, available on their website.

Facility costs include the cost of all buildings and equipment needed for farrow to finish operations. Also included are the costs of repair and maintenance, taxes and insurance. Buildings are expected to last 25 year and equipment 10 years. The construction and equipment cost of a 1200 sow gestation-farrowing barn is estimated at \$1.56 million dollars, with 65% of the cost allocated to the building and 35% for equipment. Cost of a nursery with 4000 spaces is estimated at slightly less than \$450,000 with a 65/35 split between the cost of the building and the equipment. A 9600 space finishing facility is estimated to cost \$1.9 million with a 70/30 building to equipment cost split. Depreciation is amortized according to useful life. Annual repair costs are estimated to be 1.5% of original value. Property insurance and tax are assessed at 0.4% and 0.7% respectively. Preparation of the building site and utility hookup is estimated to cost \$38,500 amortized for 25 years for all buildings. An annual land value or "rent" of \$625 is also assumed. The cost of site preparation and annual land cost is assumed to be \$0.09 per animal sold. The final estimated fixed cost per finished hog sold is \$14.21, or \$7.49 per feeder pig sold.

Sale price

Finished hogs, weighing 270 pounds, are sold for the average weekly price paid in Iowa-So. Minnesota as determined by Livestock Market Information Service based on USDA report LM_HG 204. The average market hog price is multiplied by 74% to make the conversion to a live hog price. Final sale values are adjusted by 98.4% in order to account for light weight cull hogs. Cull hogs are assumed to make up 3% of the market hog volume and are discounted 45% on a per head basis. If feeder pigs are sold rather than finished, they are sold for the average weekly price paid for 50 pound pigs in 750 plus size lots delivered, as reported in the weekly National Direct Feeder Pig Report.