

Chapter 3

How Iowa Compares to Other States

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Iowa has long held a dominant position in the U.S. pork industry. For nearly forty years Iowa produced approximately one-fourth of all the hogs in the country. However, since 1992 the state's hog inventory has been declining and for the period September 1996 - September 1997 North Carolina farrowed as many pigs as Iowa did. While Iowa will likely continue to maintain the largest hog inventory due to imports of pigs farrowed in other states to be finished in Iowa, its sow herd has declined in recent years.

These facts raise some important questions. What factors led to Iowa's dominance of the pork industry? How have these and other factors changed to allow other states to take market share from Iowa? And what are the implications for the future of Iowa's pork industry?

Iowa's U.S. Advantage

Pork production in the U.S. is a competitive industry with investment decisions driven by profitability or the anticipation of profits by individual decision-makers. Iowa historically has been a profitable place to raise hogs. Iowa has advantages in both hog prices and input prices because of excess packer capacity and abundant feed grain supplies.

While pork prices are set in a global market, Iowa's current excess packer capacity results in higher hog prices, and thus higher revenue, for Iowa, Minnesota and Nebraska producers. While hogs from other states are

transported to this higher-priced market, the sellers pay the freight, leading to lower net market hog prices.

Feed cost represents about 60 percent of the total cost of hog production, and Iowa has distinct advantages in feed prices. Hog feed is largely made of corn, an energy source, and soybean meal, a protein source. Corn is the single largest expense in pork production and Iowa and Minnesota corn prices are the lowest among leading hog producing states. In addition, there are many soybean processing facilities in the region, providing low cost access to the second largest expense item.

Depending on the size of Iowa's grain harvest, the state exports 50 to 75 percent of the corn and soybeans out of the state as raw commodities where it will be used largely to feed livestock and poultry in other states or countries.

Because Iowa is in the center of the North American continent, corn and soybean producers are at a price disadvantage to most other states in the world market. But this transportation disadvantage can be overcome by feeding the grain to livestock, processing the animals and shipping closely trimmed boneless cuts of meat to consumers in other states and countries.

For example, it takes approximately 13 bushels of corn and 6.25 bushels of soybeans as processed soybean meal per hog in a farrow-to-finish operation. This hog will weigh approximately 250 pounds and produce approximately 125 pounds of retail cuts of pork. Iowa's clear advantage is in adding value to the raw commodity and producing and shipping the lighter weight, higher value finished product rather than the 1,100 pounds of raw commodities.

Iowa's Global Advantage

There are other regions in the world with low priced feed grains, but they typically lack the efficient processing and transportation systems found in Iowa. But things may be changing.

In 1995 the Canadian government cut the transportation subsidy for grain, resulting in dramatically lower local prices for barley and feed wheat in Alberta, Saskatchewan and Manitoba. While these provinces have historically had a small livestock industry, it currently is growing rapidly.

Investment also is occurring in meat processing facilities. A leading Taiwanese pork firm has purchased land to build a new pork processing plant in southern Alberta, since it no longer can export pork from Taiwan to Japan because of an outbreak of foot-and-mouth disease. The Saskatchewan Wheat Pool has purchased a 30 percent share in a pork processing plant with the aim of increasing pork production and processing. Manitoba's pork industry is also growing rapidly.

Other regions that may develop into competitors to Iowa include Brazil, Argentina, and Eastern Europe, because of excess grain production, and Southeast Asia and Australia because of proximity to the growing Eastern Rim market. Western European countries continue to compete with the United States in the export market. But some of these countries are facing environmental pressures as well. Denmark and the Netherlands in particular are large pork producing nations, have greater animal density than Iowa, and may have to reduce pork production to meet environmental pressures.

Are Iowa's Advantages Enough?

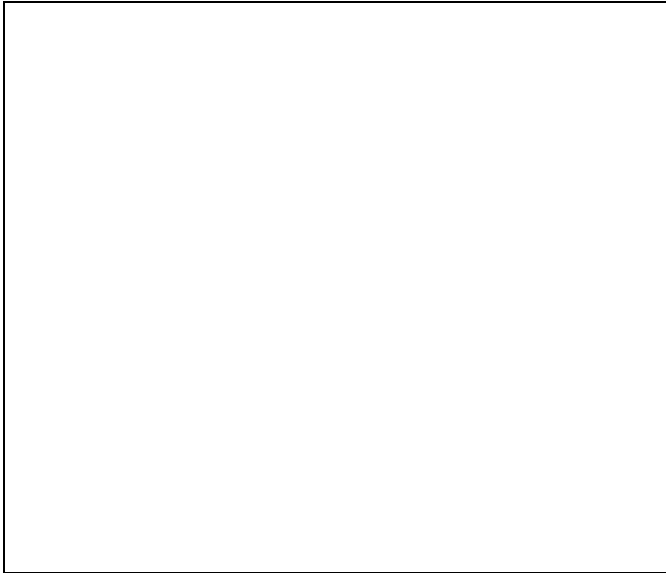
Iowa's selling price for hogs and purchasing price for corn provides the state with significant advantages. But cheap feed grains combined with a competitive hog market is not enough to guarantee success, or even survival, in the rapidly changing pork industry.

Hog production in Iowa and other Corn Belt states historically has been viewed as an enterprise to add value to farm-produced grain, while spreading demand for available labor on a year-round basis. Hog production improved cash flow and, over time, has been one of the most profitable enterprises in Iowa agriculture. However, advancements in production technology and the move to leaner hogs left many less-specialized hog farmers at a disadvantage as their production efficiencies slipped relative to the rest of the industry.

A decade or more ago, pork production systems were relatively homogeneous. While they may have differed somewhat in size or facility design, the level of technology and production efficiency was similar on most farms and in most states.

But that has changed. Larger hog farms that are more specialized and that more readily have adopted advanced production and management technologies are reporting higher reproductive efficiency than smaller hog farms (Figure 1). These improvements in production efficiency have been used by the swine industry in non-Midwestern states to overcome feed and hog price disadvantages.

Figure 1.



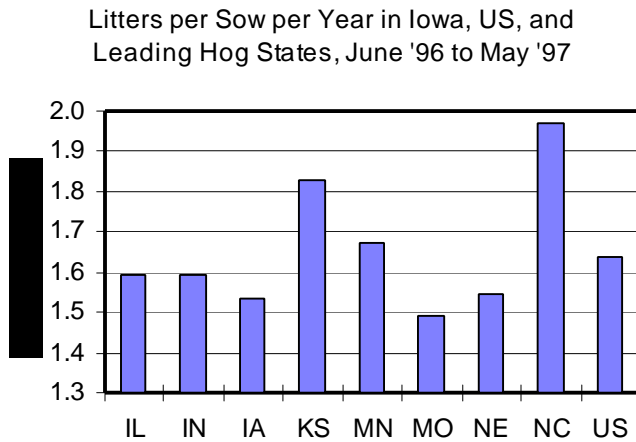
One way to overcome higher input prices is to use lower levels of inputs. Although there is no common national database of feed efficiency, comparing different databases shows that states with higher feed grain prices have feed-cost-per-pound-of-pork comparable to Iowa.

This efficiency gain is attributed to technologies such as high speed feed mills that lower per-unit feed processing costs, pelleted feed, lighter hog slaughter weights that improve feed conversion, and increased reproductive performance that produces more pigs per sow and more pigs per pound of sow feed. Still, firms located in Iowa with the management and technology to achieve this improved feed efficiency have a clear advantage.

A second significant cost item in modern pork production is overhead. This includes the cost to build and maintain the facility, feed processing and manure handling equipment, breeding herd genetics, property taxes, salaried employees, and other expenses. The way to reduce these fixed costs on a per unit basis is to generate more throughput from the same set of assets.

A key measure of this variable is the number of pigs produced per sow per year and the number of pigs produced through the system. This measure is a function of the number of sows farrowing in the herd and the number of litters per sow during a specified period (Figure 2) plus the number of pigs weaned per litter (Figure 3). Increased pigs per litter and increased litters per sow reduces the overhead cost per pig produced. Iowa is currently below the national average in both of these measures. That wasn't the case just five years ago.

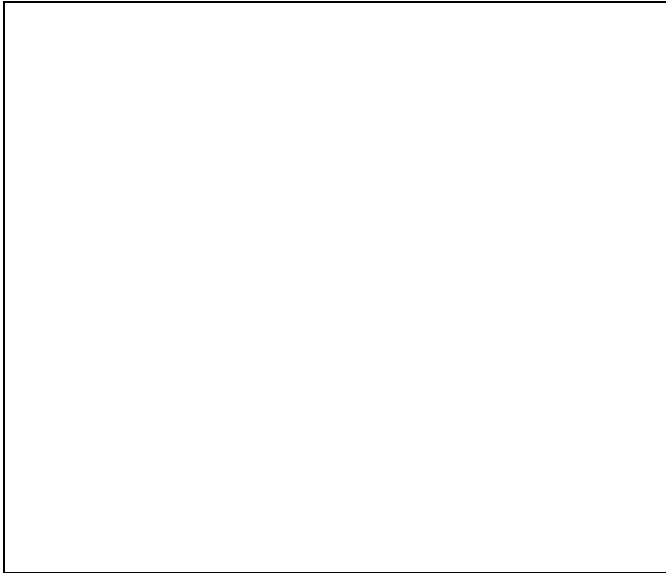
Figure 2.



Source: USDA [Hogs & Pigs](#)

Figure 4.

Figure 3.



Iowa's climate and soils provide both advantages and disadvantages relative to other states. Facility costs are typically higher in the upper Midwest compared to warmer and drier climates. Buildings generally cost more because these must be built with footings below the frost line, must withstand heavier snow loads, require more insulation, and can only be built during part of the year which increases construction costs. Operating costs are higher in the winter due to supplemental heat, but are typically lower in the summer.

Manure management systems in Iowa and the upper Midwest differ from other regions. Properly applied manure can be a valuable resource to Iowa grain producers since it can supply all of the crop's needs for N, P and K. Grain deficient regions must find efficient and environmentally-sound ways to dispose of the excess nutrients that nearby crops cannot utilize. The nutrient recycling systems typically used in Iowa have higher spreading costs, but provide more nutrients that have value in a crop operation.

Nutrient disposal systems are common in warmer or more arid regions where evaporation helps reduce manure disposal cost. These systems release a higher percentage of the N into the air and settle much of the P to the bottom of the lagoon. Lagoons have been widely used in North Carolina and concerns have arisen about potential seepage, overflows and lagoon breaks. A moratorium on hog facility construction in that state has been imposed because of those concerns.

What Does the Future Hold?

Iowa's dominance in the pork industry is no accident. The state has relatively low priced feed grains and relatively high prices for hogs. Iowa producers also have the ability to use the manure nutrients as a fertilizer resource rather than a waste with the related disposal costs. However, the state's cost advantages have been offset by technological advances by some producers in other regions and by the construction of new processing facilities in these regions, not because of any natural advantages.

Iowa's hog prices will remain higher than other regions as long as it maintains excess capacity of modern packing plants. But failure to re-invest in Iowa's pork production and processing technology and facilities may allow competing regions to overcome Iowa's advantages, and the pork industry will shift to the new low-cost production regions.