

A Closer Look at Indiana's Livestock Industry

Introduction

The livestock industry has changed dramatically over the past 25 years, but in many ways it has stayed the same. Modern production systems allow farmers to increase the number of animals they raise at a lower cost while adhering to the highest environmental standards. At the same time, most Hoosiers' remember the farms of their grandfather's days and are concerned about changes. Yet the values and principles of family farming that were seen in previous generations have been passed down through the generations and the vast majority of today's modern farms are run by the children and grandchildren of the same farm families. This document will address both the myths and the facts surrounding livestock farming in our state and provide a sound resource to enable communities to learn more about this important sector of our economy.

The Economic Face of Modern Livestock Agriculture

With recent success in the state's initiatives to increase livestock production to aid in economic development there have been many unanswered questions and much misinformation about livestock farms. The following information from the United States Department of Agriculture (USDA) National Agriculture Statistics (NASS) is a sampling of how livestock impacts our Hoosier economy:

- The gross receipts for all Indiana livestock in 2005 were more than \$2 billion.
- Indiana exported more than \$346 million in livestock products in 2005.
- The value-added output multiplier for dairy production in Indiana is 2.87. That means for every dollar grossed in dairy production, local economies gross \$2.87.
- The value-added output multiplier for hog production in Indiana is 1.24. For every dollar grossed in hog production, local economies gross \$1.24.

Doubling pork production in Indiana is one of the *Possibilities Unbound: The Plan for 2025* strategies. Increasing livestock in the state would regain market share lost over the past 30 years, and bring the state back to levels seen in previous decades.

For example:

- Hog inventory peaked in Indiana in 1962 with 5,393,000 head. In 2006 there were 3,300,000 hogs--*only 61 percent of that peak inventory*.
- Beef cattle inventory peaked in 1975 with 1,976,000 head. The 677,000 beef animal inventory in 2006 is *only 35 percent* of the 1975 number.
- Dairy cattle peaked in 1944 with 810,000. In 2006 the total is 165,000, which is *20 percent* of the 1944 high.

Source: United States Department of Agriculture (USDA)
National Agriculture Statistics (NASS)

Therefore, all recent efforts to develop livestock farming will simply return Indiana to previous levels, in tandem with much more environmentally-friendly practices.

Myth: Large farms are bad for the community.

Fact: Agriculture is the driving force in most of Indiana's rural economies. For every \$1 of property taxes paid by agricultural land/farms, \$0.40 is used in local services (*American Farmland Trust*). Also, a survey by the Indiana Soybean Alliance found that an 8,000 head swine facility generates \$17,000 annually in property taxes and will produce \$40,000 in valuable organic crop nutrients.

For many counties, the best way to increase economic activity and tax revenue is to develop agriculture. To assist counties in maximizing their opportunities in agriculture, ISDA launched the Agriculture Economic Development Initiative (AEDI) program, which gives counties and regions the tools to incorporate agriculture into their own economic development plans while at the same time developing partnerships with non-traditional or non-agricultural groups and businesses.

AEDI brings together key stakeholders at the county level and encourages regional collaboration. What these counties have learned is that agriculture has a dramatic multiplier effect on local economies. For every dollar in direct wages and income from farm, food and forestry workers, more than 2.5 times that amount flows into the local economy. Nearly 1,000 proactive, concerned citizens have participated in AEDI through regional and county teams in three regions (Southwest, East Central and Southeast).

Myth: Farms today are too large.

Fact: In today's economy, farms that produce commodity crops and livestock are better off if they take advantage of economies of scale by producing large amounts of their products. To become more competitive and meet the growing demand for more abundant and affordable food, these farmers must increase and expand the scale of their operations. Large livestock farmers who specialize in only raising livestock are better equipped to handle domestic market fluctuations, while at the same time benefiting their small farm neighbors who contract with them to raise the livestock.

Myth: Corporate farms have taken over the family farm.

Fact: According to the most recent USDA "Structure of Family Farms" report, 98 percent of U.S. farms are still family farms. Although most farms are incorporated for tax and estate purposes, they are still run by a handful of family members. According to the Indiana Agricultural Statistics Service, in 2005, there were 60,000 family farms in Indiana. The average farm size is 253 acres.

Myth: Large farms are putting small farms out of business.

Fact: Farms have been growing larger and consolidating since 1900, but that rate has slowed to almost zero in recent years. The smaller farms are becoming more competitive either by expanding their operations, or by filling niches in the marketplace. In today's agricultural economy, there are real opportunities for farmers to take advantage of consumer-driven, niche markets in their local communities. Through these new opportunities, diversified farming operations can improve farm family income, reduce reliance on federal farm programs and serve emerging non-traditional markets. For example, the Halter's Farm demonstrates what can be done with just 240 acres. In 1970 they had a traditional open-air produce stand. An out-of-town produce buyer suggested they start selling flowers and the Halter's gave it a try. They built a small greenhouse and over the years saw their flower business bloom. Today they grow plants and hanging baskets in 15 greenhouses. Through ingenuity, this relatively small farm comfortably supports three generations.

Other examples include:

- The Double T Ranch that found a market in the sale of deer and elk meat.
- The Hunter's Honey Farm that plans to increase gift shop sales over the Internet and do more tours of the farm.
- The Rhoads Farm that produces organic salad greens, leafy greens and herbs with "cutting edge" technology.
- And the County Line Orchard that adds something new each year including fresh baked apple cinnamon donuts, a Kids Barn and observation bee hive.

These are just a few examples of the many, many innovative products produced by Indiana farmers. They and the hundreds of other small Hoosier farmers prove there is plenty of opportunity in Indiana for a mix of farms both large and small.

Case Studies in Hog Production: How It Benefits the Indiana Economy

Summary of Randolph County

In 2006, the Indiana Department of Environmental Management permitted construction of new swine Confined Feeding Operations (CFOs) and Concentrated Animal Feeding Operations (CAFOs) in Randolph County capable of housing an increase of 115,026 head of swine. (Source: the Star-Press, October 11, 2006). Based on preliminary findings from Ball State University's Office of Building Better Communities, these operations will triple hog production in Randolph County and cause other economic "ripple" effects.

An analysis of hog production in Randolph County prepared for the Randolph County Area Plan commission from Ball State University's Office of Building Better Communities found the economic value per hog in Randolph County to be \$142.50. In other words, for every additional hog in Randolph County, \$142.50 is added to the economy.

<p style="text-align: center;">2003</p>	<p style="text-align: center;">2007</p>
<p style="text-align: center;">Estimated Economic Impact Randolph County Hog Production</p>	<p style="text-align: center;">Estimated Economic Impact Randolph County Hog Production*</p>
<ul style="list-style-type: none"> • \$15.6 million in total output 	<ul style="list-style-type: none"> • \$61.7 million in total output
<ul style="list-style-type: none"> • 335 workers 	<ul style="list-style-type: none"> • 1,264 workers
<ul style="list-style-type: none"> • \$946,000 in employee compensation 	<ul style="list-style-type: none"> • \$3.7 million in employee compensation
<ul style="list-style-type: none"> • \$994,000 paid for rent, interest and other properties 	<ul style="list-style-type: none"> • \$3.9 million paid for rent, interest, and other properties
<ul style="list-style-type: none"> • \$263,000 in indirect business taxes 	<ul style="list-style-type: none"> • \$1,038,952 in indirect business taxes

*Based on analysis from Ball State

Summary of Jay County

In 2002, Jay County had just over 95,000 head of swine. In 2006, the industry expanded rapidly. If all who received operation permits begin business in 2007, the value of the economic impact to the county is estimated to be \$62 million – a 93 percent increase from 2004.

<p style="text-align: center;">2004 Estimated Economic Impact Jay County Hog Production</p>	<p style="text-align: center;">2007 Estimated Economic Impact Jay County Hog Production</p>
<ul style="list-style-type: none"> • \$24.2 million in total output • 450 workers • \$1 million in employee compensation • \$1.6 million paid in rent, interest and other properties • \$407,237 paid in indirect business taxes 	<ul style="list-style-type: none"> • \$46.7 million in total output • 838 workers • \$2 million in employee compensation • \$3 million paid in rent, interest and other properties • \$785,474 paid in indirect business taxes

*Based on analysis from Ball State

Sources of IMPLAN agricultural data is from the Census of Agriculture, USDA, NASS.

Regulation: Is Anyone In Charge?

Myth: Today's farmers don't care about the environment.

Fact: Both from a business and an ethical standpoint, farmers have every motivation to conserve and protect the natural resources they rely upon. Farmers understand that clean air, land and water are crucial to the long-term success of the state's industry.

Modern farmers' use no-till and conservation tillage practices to protect the soil, as well as precise application of fertilizers based on soil type, production capacity and crop to be produced. They also use buffers and filter strips to protect the surrounding surface water. These techniques better protect the environment than what many Hoosiers envision as traditional farms.

It is interesting to note that "grandpa's farm" was not regulated before 1971. On farms with old technology and animals grazing out on the land, the manure was much more likely to run off into our lakes, rivers and streams.

Large livestock farms (CAFOs and CFOs) are held to a higher water quality standard as compared to manufacturing or waste treatment facilities; they can discharge nothing. Currently, approximately 26 percent of beef cattle, 45 percent of dairy animals, and 94

percent of all hogs in Indiana are on regulated farms. In 2006, only 11 of 2,250 large livestock operations faced formal enforcement action as a result of a discharge. At the same time, it is estimated that 15.3 billion gallons of raw sewage was discharged into the environment from septic systems alone. Clearly, the bigger sources of concern for our environment does not lie with our farmers where the vast majority are sound stewards of their land and water.

Myth: Livestock farms are not regulated like factories and produce huge amounts of waste that pollute our water.

Fact: Today Hoosier livestock farms are held to the highest environmental standards; they are required to have zero discharge into state waters. This means that on large farms, all manure is required to be contained in approved engineered storage structures and when application takes place, the manure is only at a rate that can be used by growing crops.

The Indiana livestock industry is highly regulated by four government agencies:

- Indiana Department of Environmental Management (IDEM)
- U.S. Environmental Protection Agency (EPA)
- Office of the Indiana State Chemist (OISC)
- Indiana Board of Animal Health (BOAH)

IDEM has been regulating Confined Feeding Operations (CFOs) or Concentrated Animal Feeding Operations (CAFOs) since 1971, and was one of the first states to do so. The IDEM CFO/CAFO approval/permit program is based on the Confined Feeding Control Law administered through regulations adopted under the Water Pollution Control Board. The focus of the regulations is to protect water quality. The process is designed to make certain that waste storage facilities are designed, constructed and maintained to be structurally sound and that manure is handled and applied in an environmentally responsible manner.

IDEM also requires all livestock farms to submit an accurate and detailed annual report each year that includes how much manure was generated and where it was applied or distributed.

The **U.S. Environmental Protection Agency (EPA)** was established in 1970 and consolidated into one agency a variety of federal research, monitoring, standard-setting and enforcement activities. The mission of the EPA is to protect human health and the environment.

In 2003, federal regulations for Concentrated Animal Feeding Operations (CFOs) were revised. Under the Clean Water Act, the National Pollutant Discharge Elimination System Program (NPDES) was created to protect and improve water quality by

regulating point source dischargers. CAFOs are point sources, as defined by the Clean Water Act.

The EPA also has preset minimum regulations that go into CFO permits called “effluent limitations guidelines” (ELGs). The ELGs consist of required management and record-keeping practices as well as limits on any pollutants. States often set additional requirements that work in tandem with the ELGs to protect water quality.

The Office of the Indiana State Chemist (OISC) was created in 1881 by the General Assembly to regulate the sale and distribution of fertilizer in the state.

Because manure is an organic fertilizer, OISC has authority over its application. OISC is currently developing a certification program for individuals who broker, transport or apply fertilizer material in Indiana. The certification program is tentatively expected to be in place by the end of 2008.

The **State Board of Animal Health (BOAH)** was established more than 100 years ago and provides an important link in Indiana's food chain. Every day, BOAH inspectors scrutinize the cleanliness and handling of meat and poultry products in state-certified processing plants. The adoption of new, safer food-handling methods (known as HACCP) gives BOAH inspectors even more opportunity to identify any existing food-borne contaminants before the meat reaches the consumer. Meat and poultry products meeting Indiana's standards of inspection bear the Indiana legend mark.

Myth: Large farms only do what is required by law.

Fact: ISDA has long recognized that most livestock farmers go above and beyond regulatory requirements. Because of this, ISDA is moving forward with plans for the **Certified Livestock Producer Program (CLPP)**, a voluntary certification program to recognize progressive livestock producers.

CLPP will showcase measures already taken by much of the industry that are more stringent than legal requirements. Livestock producers will receive recognition for using the latest technology and practices in environmental controls, animal health and food safety. CLPP will incorporate educational modules on environmental impacts of livestock production, compliance with national association guidelines for animal health and guidelines for food safety and biosecurity. ISDA anticipates this program to be implemented by early 2008.

Environmental Concerns: **Solutions in Air and Water Quality**

Myth: Livestock farms stink and they can't do anything about it.

Fact: Farmers can and do minimize odor by implementing odor abatement technologies such as:

- Shelterbelts (planting trees)
- Incorporating manure in land application
- Diet formulation (use feeds that reduce odor and nutrient excretion)
- Reducing manure loading rates for lagoons (solids separation)
- Manure additives
- Other strategies approved by the Purdue Agricultural Air Quality Laboratory (PAAQL)

Myth: Livestock manure is considered toxic waste. When farmers spread manure on the fields for fertilizer, it goes into our water supply.

Fact: Livestock manure is an important fertilizer. When applied on a field according to federal and state regulations from EPA and IDEM, animal waste is a very economic fertilizer for the farmer and recycles nutrients back onto the land to replace the nutrients lost from growing crops, increase soil productivity and add resistance to drought.

It is true a few unprogressive farmers have not been thorough in their practices. However, the vast majority of farmers implement very safe technological practices to ensure that they cause no land or water pollution or other environmental problems for the community.

Most farmers have an agronomist (an expert in the science of soil management and crop production) analyze the fields to determine what nutrients the crops need. A nutrient management plan is developed, which determines when, where and how much of the manure is to be applied. All amounts are based on agronomic (soil management) rates. When applied, many farmers then use a mechanism to literally inject the manure 3 – 4 inches into the soil. Because of the precise calculations, there is no danger of it seeping down into ground water or of excess runoff into surface water.

Smaller operations can also use Manure Management Planner, a computer program developed at Purdue University that creates manure management plans for crop and animal feeding operations. The farmer enters information about the operation and the program helps allocate manure (where, when and how much) on a monthly basis for the length of the plan (1-10 years). This helps determine if the current operation has

sufficient crop acreage, seasonal land availability, manure storage capacity and application equipment to manage the manure in an environmentally responsible manner.

Animal Welfare

Myth: Confined livestock feeding operations are bad for the animals' well-being.

Fact: If livestock are stressed in their environment, they start to show it with loss of appetite, weight loss and susceptibility to illness. Maintaining an animal's well-being is not only beneficial from an ethical standpoint, but also from an economic view. Conditions for animals that were common on farms decades ago could be quite harsh. Often animals were exposed to extreme weather conditions often with minimal shelter. The farmer works hard to keep his animals healthy in order to provide for his family. According to the 2006 *Hog Breeding Herd Structure* report from the National Agricultural Statistics Service, farmers using modern livestock practices are able to save more pigs per litter now than during any time in the last fifteen years.

Livestock producers are individuals who enter the field because they want to work with animals. Many have been around livestock their entire lives and are experts in animal care. They want to provide good care to their animals from both a moral and financial point of view.

Land Regulation/Zoning

Myth: Farmers just start a farm wherever they want without regard to other non-farming neighbors.

Fact: Farmers expand or establish livestock farms in rural locations near feed sources, near land used to recycle manure as soil nutrients and on land they already own. Most farmers use good management practices and are considerate of their non-farming neighbors. However, livestock farming does have some inherent odor and noise. Neighbors and farmers should communicate and work together to build trust and understanding.

In order to facilitate communications, and to give local communities better planning tools, the Indiana Land Resource Council and ISDA have developed three models. These models will assist counties seeking guidance on how to update their zoning ordinances to provide for strategic growth of agricultural production while minimizing conflicting land uses.

The Future...What Will Drive Change?

The primary goal and focus for the future in agriculture is to continue to refine and improve the process to provide even more abundant, affordable and safe food for families in the United States and around the world. Consumers are empowered through their everyday purchases to drive livestock production into the 21st Century. Commerce connects consumers with producers, and allows everyone to communicate their demand for modern livestock production to U.S. livestock producers. Today's livestock producers are heeding consumer demands in order to adapt to the changing market without interference from the government. Proactive livestock producers are saving taxpayer dollars by anticipating consumer needs, rather than waiting for costly government legislation.

Consumer Demand: Safety

Modern livestock production practices are imperative to the future success of a safe U.S. food supply. Recent outbreaks in the food supply, including the discovery of melamine in Indiana poultry feed, have led the news media to investigate the effectiveness of our nation's food regulatory agencies. The results are stories that dwell on fear instead of fact, with the objective of increased awareness giving way to the lure of increased ratings.

The reality of the melamine adulteration is that because the chickens and hogs ingested adulterated food, USDA took the precautionary and legally-mandated step of removing those animals from the food supply. FDA performed extensive testing and found that there was a very low risk of a human health threat.

Misinformation about modern livestock production has led many consumers to question their purchases. This is a good thing, because the agriculture industry can respond directly to your questions. Casting a light on livestock production allows modern, ethical and environmentally-responsible producers to shine.

The facts show that disruptions in the food supply are rare in this country, and we have modern production methods to thank for that. The U.S. food supply is one of the safest in the world. Livestock operations in the United States have the highest rate of regulatory compliance, 99.5 percent, among all U.S. industries (*IN Pork*).

In 2008, consumers can expect ISDA will present a message of food safety to Indiana consumers through the Certified Livestock Producer Program, a voluntary certification program to recognize progressive livestock producers who go above and beyond regulated requirements.

Consumer Demand: Affordability

Consistently affordable food will remain available to U.S. consumers as long as modern livestock production practices are implemented. These practices allow farmers to use

economies of scale to build profitable businesses to sustain their families. Without modern production, outdated and inefficient processes must be used, which would cause the cost of food to increase dramatically.

U.S. consumers have one of the most affordable food supplies in the world. In the United States, consumers only use 10 percent of their disposable income on food, while consumers in the United Kingdom use 22 percent, and consumers in India use more than 50 percent. (*United Nations; Economic Research Service – USDA*). Clearly, U.S. consumers have countless options when it comes to food and have the ability to be discriminatory. In order to continue the affordability Americans have come to expect, levels of supply and demand must remain constant. Modern livestock production is essential in order to meet the world's increasing demand for food, while simultaneously providing an abundant supply to keep prices low.

Consumer Demand: Availability

Modern livestock production methods create an abundant food supply that the United States and the world rely upon. Technological advances allow producers to meet the demands of both foreign and domestic markets. Without modern livestock production methods, producers would fall short of the markets' demands, increasing not only food prices, but also the rarity of many foods we take for granted. Modern livestock production methods will sustain an abundant supply of food in the United States and abroad.

The United States tops the list in comparison to the Mediterranean and Northern & Eastern European regions with the availability of meat to consumers, and it is also high on the list in available milk, eggs and sugar (*FAO Food Balance Sheets, US-EU Food and Agriculture Comparisons*). This is directly due to the efforts of U.S. farmers.

To ensure the availability of an abundant food supply in the United States, livestock producers must have the most advanced, most reliable technology available. Advances in livestock production technology will allow producers to continue to offer an abundance of pork and beef while adhering to ethical and environmentally sound production practices.

In summary, ISDA is confident that today's modern farmers will continue to implement new livestock production technology to ensure safe, affordable and abundant food sources for our families and the families of the world. They will continue to address environmental concerns for water and air quality, because they drink the same water and breathe the same air. They will continue to work with local government on land use, as they have for generations, because they are good neighbors. And through our farmers, Indiana will become the global center for food and agriculture innovation and commercialization.