

Industrial agriculture



From http://en.wikipedia.org/wiki/Industrial_agriculture

Industrial agriculture is a form of modern [farming](#) that refers to the [industrialized](#) production of [livestock](#), [poultry](#), [fish](#), and [crops](#). The methods of industrial agriculture are [technoscientific](#), economic, and political. They include [innovation](#) in agricultural machinery and farming methods, [genetic technology](#), techniques for achieving [economies of scale](#) in production, the creation of new markets for consumption, the application of [patent](#) protection to genetic information, and [global trade](#). These methods are widespread in [developed nations](#) and increasingly prevalent worldwide. Most of the [meat](#), [dairy](#), [eggs](#), [fruits](#), and [vegetables](#) available in [supermarkets](#) are produced using these methods of industrial agriculture.

Historical development and future prospects

The birth of industrial agriculture more or less coincides with that of the [Industrial Revolution](#) in general. The identification of [nitrogen](#) and [phosphorus](#) as critical factors in plant growth led to the manufacture of synthetic [fertilizers](#), making possible more intensive types of agriculture. The discovery of [vitamins](#) and their role in animal [nutrition](#), in the first two decades of the [20th century](#), led to vitamin supplements, which in the 1920s allowed certain livestock to be raised indoors, reducing their exposure to adverse natural elements. The discovery of [antibiotics](#) and [vaccines](#) facilitated raising livestock in larger numbers by reducing disease. Chemicals developed for use in [World War II](#) gave rise to synthetic [pesticides](#). Developments in shipping networks and technology have made long-distance distribution of agricultural produce feasible.

Agricultural production across the world doubled four times between 1820 and 1975^[1] to feed a global population of one billion human beings in 1800 and 6.5 billion in 2002.^[2] During the same period, the number of people involved in farming dropped as the process became more automated. In the 1930s, 24 percent of the American population worked in agriculture compared to 1.5 percent in 2002; in 1940, each farm worker supplied 11 consumers, whereas in 2002, each worker supplied 90 consumers.^[2] The number of farms has also decreased, and their ownership is more concentrated. In the U.S., four companies kill 81 percent of cows, 73 percent of sheep, 57 percent of pigs, and produce 50 percent of chickens, cited as an example of "[vertical integration](#)" by the president of the U.S. National Farmers' Union.^[3] In 1967, there were one million pig farms in America; as of 2002, there were 114,000,^[4] with 80 million pigs (out of 95 million) killed each year on factory farms, according to the U.S. National Pork Producers Council.^[2] According to the [Worldwatch Institute](#), 74 percent of the world's poultry, 43 percent of beef, and 68 percent of eggs are produced this way.^[5]

According to Denis Avery of the [Hudson Institute](#), Asia increased its consumption of pork by 18 million tons in the 1990s.^[6] As of 1997, the world had a stock of 900 million pigs, which Avery predicts will rise to 2.5 billion pigs by 2050.^[6] He told the College of Natural Resources at the [University of California, Berkeley](#) that three billion pigs will thereafter be needed annually to meet demand.^[7] He writes: "For the sake of the environment, we had better hope those hogs are raised in big, efficient confinement systems."^[6]

Challenges and issues

The challenges and issues of industrial agriculture for global and local society, for the industrial agriculture industry, for the individual industrial agriculture farm, and for [animal rights](#) include the costs and benefits of both current practices and proposed changes to those practices.^{[9][10][11]} Current industrial agriculture practices are temporarily increasing the [carrying capacity](#) of the Earth for humans while slowly destroying the *long term* carrying capacity of the earth for humans necessitating a shift to a [sustainable agriculture](#) form of industrial agriculture. This is a continuation of thousands of years of the invention and use of technologies in feeding ever growing populations.

While the point of industrial agriculture is lower cost products to create greater productivity thus a higher standard of living as measured by available goods and services, industrial methods have side effects both good and bad. Further, industrial agriculture is not some single indivisible thing, but instead is comprised of numerous separate elements, each of which can be modified, and in fact is modified in response to market conditions, government regulation, and scientific advances. So the question then becomes for each specific element that goes into an industrial agriculture method or technique or process: What bad side effects are bad enough that the financial gain and good side effects are outweighed? Different interest groups not only reach different conclusions on this, but also recommend differing solutions, which then become factors in changing both market conditions and government regulations.^{[9][10][11]}

Short answer questions *(Write six words or fewer for 1-8)*

1. What is industrial agriculture? Write a definition in your own words.
2. What historical event happened along with (and was a cause of) the start of industrial farming?
3. What development between 1900 and 1920 led to improvements in livestock productivity?
4. If agricultural production were 10 units in 1820, what would it be in 1975?
5. Why did the number of people doing farm-related jobs fall after 1820?
6. Give an example of more concentrated ownership (or vertical integration) in the US.
7. List two advantages of industrial agriculture *(in the text or from your head)*
8. Give two disadvantages of industrial agriculture *(in the text or from your head)*
9. Which do you think is better, traditional agriculture or modern (industrial) agriculture? Why?

Short answer questions *(Write six words or fewer for 1-8)*

1. What is industrial agriculture? Write a definition in your own words.

Modern food production using industrial methods

2. What historical event happened along with (and was a cause of) the start of industrial farming?

Industrial Revolution

3. What development between 1900 and 1920 led to improvements in livestock productivity?

vitamins discovered – keep animals healthy

4. If agricultural production were 10 units in 1820, what would it be in 1975?

160 units (10 to 20 to 40 to 80 to 160 – “doubled 4 times”).

5. Why did the number of people doing farm-related jobs fall after 1820?

Process became more automated / industrialization

6. Give an example of more concentrated ownership (or vertical integration) in the US.

four companies kill 81% cows/ 73% sheep// 57% pigs/ four companies produce 50% chickens

7. List two advantages of industrial agriculture (*in the text or from your head*)

more food /increase earth's carrying capacity/ cheaper food//higher living standard(s)/larger size items(tomato)

8. Give two disadvantages of industrial agriculture (*in the text or from your head*)

destroying earth in long term/ poor quality meat/produce /fewer jobs /GM food/poor taste/fewer green areas

9. Which do you think is better, traditional agriculture or modern (industrial) agriculture. Why?

(You can write more than six words)

This is a matter of opinion, but, since I (TJ) grew up on a small farm and had fresh goat milk, eggs, and chicken and goat meat from the farm, I prefer traditional agriculture. It seems healthier to me but I realize not everybody can live on a farm.