The Rise of the CAFO: Consolidation, Antibiotics, Feed, and Outbreaks

Although food-borne illness in the United States causes relatively few deaths, according to Rob Volansky, a Loyola University graduate and author for Infectious Disease News, it costs a staggering $150 billion dollars in lost productivity and decreased life expectancy annually. This problem can be attributed primarily to the prominence of Confined Animal Feeding Operations (CAFOs), or large factory farms where poultry, such as broiler chickens, or other livestock are kept in a high density inside a factory rather than grazing naturally on a pasture, where over three-quarters of the country's billions of chickens are produced today (Gurian-Sherman 2; Nierenberg). These CAFOs cause a staggeringly large part of the food-borne illness problem: according to a Consumer Reports study that involved hundreds of randomly selected chickens from the largest broiler chicken CAFO operations in the United States, two thirds of the chickens tested harbored Campylobacter or Salmonella, causing millions of cases of sickness annually (Consumer Reports). This is a direct consequence of putting chickens in such a high density in such a small space: although it is more efficient in terms of costs to produce chickens in this manner because factors like temperature and light can be controlled in a CAFO unlike on an open pasture, the chickens' proximity to one another causes disease to easily pass from chicken to chicken. The real problem of a CAFO is that, while it costs less for a chicken to be produced within a CAFO, the cost of a factory-produced chicken including the cost of disease caused by their close proximity and other costs, deemed “negative externalities” by Doug Gurian-Sherman of the Union of Concerned Scientists, is far more than just the price an American consumer sees when they buy a chicken (24). Thus, although Americans may not directly be familiar with how

costly a CAFO is in terms of price, it is important to analyze the problems of a CAFO, and what events led to their successive advances in magnitude, and ultimate formation as we see today.

The problem of bacterial contamination and its associated costs hasn't always been as prominent as is seen today, and can be definitively traced back to the shift from pasture-raised chickens to factory farms, which began in the early 20th century. Before the 1940s, a disease known as Fowl Typhoid made it impossible to raise chickens in large numbers, because it was so contagious that any large population of chickens would be likely to die if any member carried the disease. This disease was eventually eradicated through the extensive use of antibiotics in the chicken industry in the 1950s, allowing chickens to initially be healthy in relatively large population densities and sizes (Waltner-Toews 47). Then, with the introduction of cheap corn in 1974 due to subsidies, CAFOs were further expanded, because corn-feed made up a large percentage of broiler-chicken costs, and a huge reduction in corn prices caused a huge increase in chicken production in factories. The final event that allowed CAFOs to expand to their current size was the corporate consolidation of chicken corporations from millions of small chicken farms to thousands of CAFOs primarily under the supervision of only a few corporations in the 1980s. Thus, antibiotics used widely beginning in the 1950s, along with corn subsidies in the 1970s and corporate consolidation in the 1980s led to the dominance of the costly and pernicious CAFOs in the United States today.

The use of antibiotics in factory farmed broiler chickens since the 1950's was perhaps the first step towards modern CAFOs in the United States, and greatly increased their prominence over smaller chicken farms. In the early 19th century, a form of the Salmonella bacteria, S. Typhi, caused a disease known as Fowl Typhoid to spread rampantly throughout large chicken

populations, killing chickens in numbers significant enough to make breeding several hundred chickens on the same farm impossible, since only a small number of chickens needed to be infected with the relatively common disease to infect nearly the entire population (Wray). This remained unchanged for decades, with USDA compiled data showing nearly insignificant chicken production in the late 1930s (Background of Poultry Production). However, in the 1940s, a low-level class of antibiotics called tetracyclines was first discovered and used on broiler chickens to “stimulate growth and improved production and performance” (Putting Meat on the Table). The commercialization of several other performance-enhancing, disease-ridding antibiotics began in 1950, with the FDA approving the use of tetracyclines in chicken feed as growth promoters in 1951 (Jukes; Animal Bugs). CAFOs who used antibiotics on their chickens discovered an unintended side effect that allowed them to keep chickens in an even greater concentration than before: the eradication of Fowl Typhoid. Indeed, by the mid 1950s, Fowl Typhoid prevalence in chicken and human populations was declining, and by the 1960s, it was almost completely gone (Wray). It is no mere coincidence that while in the mid 1940s, chicken production was limited at only a few million chickens, by the year 1954, over a billion chickens were being produced annually in the United States **(**Background of Poultry Production). This is also in conjunction with Tyson's first chicken CAFO being built in the late 1950's, and Foster Farm's first CAFO being built in 1959, which marked the beginning of two of the largest corporations today (Era: 1950s; Growing to Guarantee Quality). Thus, the introduction of antibiotics such as tetracycline into CAFOs was a critical first step, and it led the chicken industry into a new era of development, only limited by how quickly the chickens could be raised and killed.

The next stepping stone in the advancement of high-density chicken factories was the overproduction of feed-grain (primarily corn) due to subsidies that allowed CAFOs to feed their chickens more cheaply, thus allowing CAFOs to expand quickly beginning in 1974. Advancements in farming technology caused farms in the mid-1950s (and on) to experience a sharp decrease in the amount of labor needed to produce grain and other crops, thus effectively decreasing the price of corn, the most common chicken feed-grain used today (Wise; Conkin). The problem of excess of corn production was initially solved in the early 1970s by signing several large exportation contracts of the crop to Russia, a country with a food shortage (The Facts Behind King Corn). The Russian demand was so high, however, that these successive contracts led the price of corn to more than double from 1970 to 1974, when the supply in the United States could not meet the demand from within it's borders, as well as outside (Corn Prices). Beginning in 1974, Nixon and his Secretary of Agriculture Earl Butz began handing out larger subsidies to corn producers to facilitate an even larger corn production in the United States than before (Allen). From 1974 to 1977, this caused the price of corn to drop to artificially low levels that stayed low for many years (Corn Prices). This was very important to the chicken industry at the time: because grain constitutes almost 60% of the cost of feed for broiler chickens, these decreases in grain prices significantly affected the cost of maintaining chickens in a CAFO (Gurian-Sherman). In fact, the increase in corn subsidies in the year 1974 caused chicken production to immediately skyrocket: whereas from 1959 to 1974 – a 15 year span – chicken production increased by an extra billion chickens per year, production also increased by another billion chickens per year from 1974 to 1979 – in a mere 5 years – which was 33% increase from 1974 levels, and was the quickest increase in chicken production recorded at the

time (Background of Poultry Production). This immediate increase in CAFO expansion was a testament to the important of corn to the chicken industry, and how heavily CAFO prominence in the United States relies on the price and availability of corn. Thus, the widespread increase of corn subsidies beginning in 1974 caused CAFOs to significantly increase their production and expand their dominance in the United States, now only limited by competition from other companies.

The final stepping stone that caused CAFOs to develop to their massive size today was the corporate consolidation of thousands of CAFO companies to a mere several companies beginning in the 1980s. Corporate consolidation seems to be an inevitable trend for companies, as the larger a company grows, the more often it tends to purchase other companies. Such is evident with Tyson, the definitive largest broiler chicken CAFO corporation today, which had purchased only small factories before the 1980s, but purchased Holly Farms in 1989 to double its market share and increase its profits more than the sum of Holly Farms and Tyson Foods apart, beginning its inevitable takeover of the poultry industry (Tyson Foods, Inc). One reason for the increased profits is because, with a larger total capital, Tyson was enabled to advertise its product more heavily and efficiently, so that the American population would be more familiar with Tyson than it was before; another reason was that the reduced competition allowed Tyson to focus more heavily on its business strategy, rather than reducing its efficiency by spending its efforts trying to win customers over from Holly Farms (Tyson Foods, Inc). Seeing how successful this acquisition was, Tyson ended up buying out at least twenty more companies, including its latest purchase of giant IBP, which was the moment when Tyson Foods became the largest corporation on earth, and this too marked increased profits for reasons of reduced competition and a more

focused business plan enabled by such large capital (Tyson Foods, Inc; Krebs). This sequence of acquisitions is by no means limited to just Tyson, but is an overall trend of the broiler chicken CAFO industry, and marks the steady and quick increase of chicken production seen today. Consider the graphic below:

Table 1. **Number of Livestock Operations by Size,* 1982–1997**

Farm Size Category	1982	1987	1992	1997	Percent Change 1982 to 1997
Less Than 25 Total AU	660,425	577,488	496,206	474,335	-28
25 to <50 Total AU	263,355	233,366	217,423	203,402	-23
50 to <150 Total	336,505	297,081	275,128	246,220	-27
150 to <300 Total AU	84,041	79,952	80,178	77,219	-8
300 to <1,000 Total AU	35,437	35,697	38,666	41,534	+17
1,000 or More Total AU	5,442	5,757	6,526	8,021	+47
All Operations	1,385,205	1,229,341	1,114,127	1,048,731	-24

*Operation size is measured in animal units (AU); numbers include both confined and unconfined animal operations.

Table 2. **Number of Animals by Operation Size,* 1982–1997**

Farm Size Category	1982	1987	1992	1997	Percent Change 1982 to 1997
Less Than 25 Total AU	7,311,927	6,406,057	5,727,476	5,407,009	-26
25 to <50 Total AU	9,465,723	8,379,402	7,797,699	7,277,610	-23
50 to <150 Total	29,009,019	25,722,744	23,961,311	21,460,328	-26
150 to <300 Total AU	17,142,530	16,352,605	16,483,027	15,967,020	-7
300 to <1,000 Total AU	16,912,228	17,061,674	18,603,343	20,271,518	+20
1,000 or More Total AU	15,779,144	17,285,205	19,364,252	24,925,729	+58
All Operations	95,620,570	91,207,687	91,937,108	95,309,215	0

*Operation size is measured in animal units (AU); numbers include both confined and unconfined animal operations.

Fig 1.

"Number of Livestock Operations by Size, 1982-1997." Copyright Kellogg, R.L. "CAFOs Uncovered." Date of Access 10 Nov 2010.

Fig 2.

"Number of Animals by Operation Size, 1982-1997." Copyright Kellogg, R.L. "CAFOs Uncovered." Date of Access 10 Nov 2010.

Both charts show a steady shift of poultry production from smaller farms with only a few dozen chickens to large CAFOs, with thousands or more chickens. This directly coincides with a clear increase of chicken production during these years, and thus an expansion of CAFOs in the United States: Along with an average of a 50% increase in both poultry operations and the number of chickens in them from the years 1982 to 1997, there was an almost 100% increase of chickens produced in this time span, or 4 billion chickens produced by CAFOs in 1984 and 8 billion chickens produced by CAFOs in 1999 (Background of Poultry Production). Other findings confirm this trend of decreasing numbers of factories and increasing numbers of chickens, such as a CorpWatch report that found that from as early as 1960 to the year 2000, the number of poultry farms declined from 3.2 million to 1.9 million, while their average size increased by 40% (Concentration in the Food Industry). Thus, the corporate consolidation of the chicken industry has been a key event in increasing the prominence of CAFOs in the United States, and is the final cause of the CAFO problem, leading CAFOs to their unglamorous modern status.

The problem of CAFOs has clearly grown in size over the past century through successive uses of antibiotics, corn as feed, and larger companies acquiring many smaller ones fueling the size of CAFOs, and thus fueling the magnitude of the associated problems, such as poor sanitation and misuse of antibiotics which costs our economy billions of unnecessary dollars annually. Perhaps if government regulation became more serious about these event that, when left unregulated, promote the creation of a large, inefficient industry that plagues our otherwise modern society. Indeed, as the problem of CAFOs has developed over the course of a

century without enough government regulation to slow their progress, the problems do not seem as if they are going away very soon; it will just take decades of patience, and widespread knowledge of these problems in order for the rise of the CAFO – due to Consolidation, Antibiotics, Feed, and causing costly Outbreaks – to be finally shut down.

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