

## Broiler Breeder Research in Kuwait

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**Abstract.** The objective of this report is to examine the structure and the development of the Kuwait poultry industry over the past 15 years and explain the increasing consumption of poultry meat. 40,000 tonnes of poultry meat were produced in Kuwait 2016 with a value of \$56.1 million, however this represented 30% of the total poultry meat consumption (57.5 kg/person). The Kuwait poultry industry is economically competitive with imported poultry meat, but the expansion is limited because of the availability of suitable land and water resources. The poultry companies therefore, increase revenues by producing a higher proportion of higher value products (fresh and chilled meat, further processed chicken products, and live bird sales). The industry currently gives practically the entirety of its requirements for broiler chicken hatching eggs; however the productivity is decreased in the late summer months when the combinations of high temperatures and high humidity make outrageous climatic conditions. There is a need for research in the future to improve production efficiency and training, and instruction of staff to guarantee a proceeded with expertise base for the industry.

**Key words:** Kuwait, broiler chicken, hatching eggs, temperatures

### 1. Introduction

Kuwait is an independent state situated in the northern Persian (Arabian) Gulf and has land borders with Saudi Arabia and Iraq. As of 2016, Kuwait has a population of 4.5 million people: 1.3 million are Kuwaitis and 3.2 million are expatriates. Expatriates account for 70% of the population (World Bank 2017). Approximately 41% of the population is below the age of 15 years. Per capita income is high.

The population keeps on developing and there was about 26% expansion in 18 years between 2000 to 2018. The Kuwaiti population has one of the highest total meat intake (77.4 kg/per individual every year in 2016) in comparison to most other nations, yet it is likewise surprising for the most part in that intake (over 80%) is poultry meat (57.5 kg per individual every year in 2016).

The total meat intake increased by 4% from 2013 to 2017 but this was mostly due to increase in the intake of poultry meat (Figure 1). Some frozen poultry meat is now at maintained low prices to Kuwaiti nationals as part of a government-funded food subsidy programme (Trostle et al, 2011). The Kuwait population currently has the highest per capita poultry meat intake compared to all the other nations of the world (The Economist, 2012). National food security is a major long-term concern for the Kuwaiti Government and so it has encouraged the development of the poultry meat industry within Kuwait.

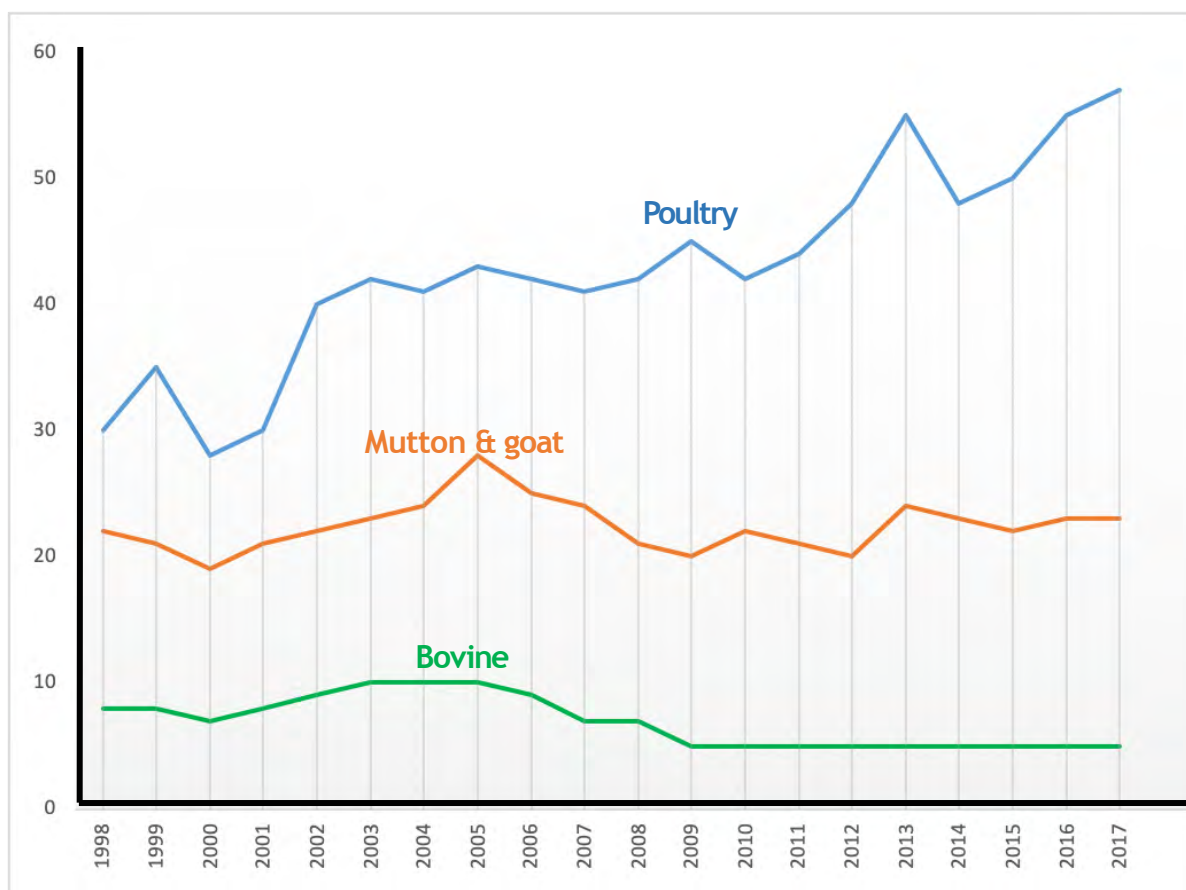
The objective of this study is to examine the structure and the development of the Kuwaiti poultry industry over the recent years and to determine the limits of meat production as well as examining the reasons for this expansion and evaluate the problems faced in this area.

#### *1.1. Poultry production in Kuwait*

Most of poultry production in Kuwait focuses on chicken meat and eggs due to consumers' demand. An estimated 60% of the local broiler production is marketed live, 5% processed as chilled, and the rest frozen (Kizirian and Hennery, 2004; Taha and Henney, 2005). The poultry industry in Kuwait is one of

the main food industries in the country. It has a noteworthy role in food security as the primary wellspring of poultry meat and eggs.

Chicken meat is popular in Kuwait and constitutes a major dish in the Kuwaiti’s meal. Due to the high demand for poultry meat and eggs, the government has granted assistance to poultry producers by providing them with feed and land subsidies, in addition to some veterinary service. In 2019, Kuwait’s broiler meat production is required to stay at 40,000 metric tons (MT) in light of foreseen lukewarm poultry request as a result of AI concerns among consumers, especially those consumers who are most likely to consume locally produced poultry. Two major producers represent 80 percent of local production, a third; smaller producer represents another 10 percent, with five to six small farms accounting for the balance.

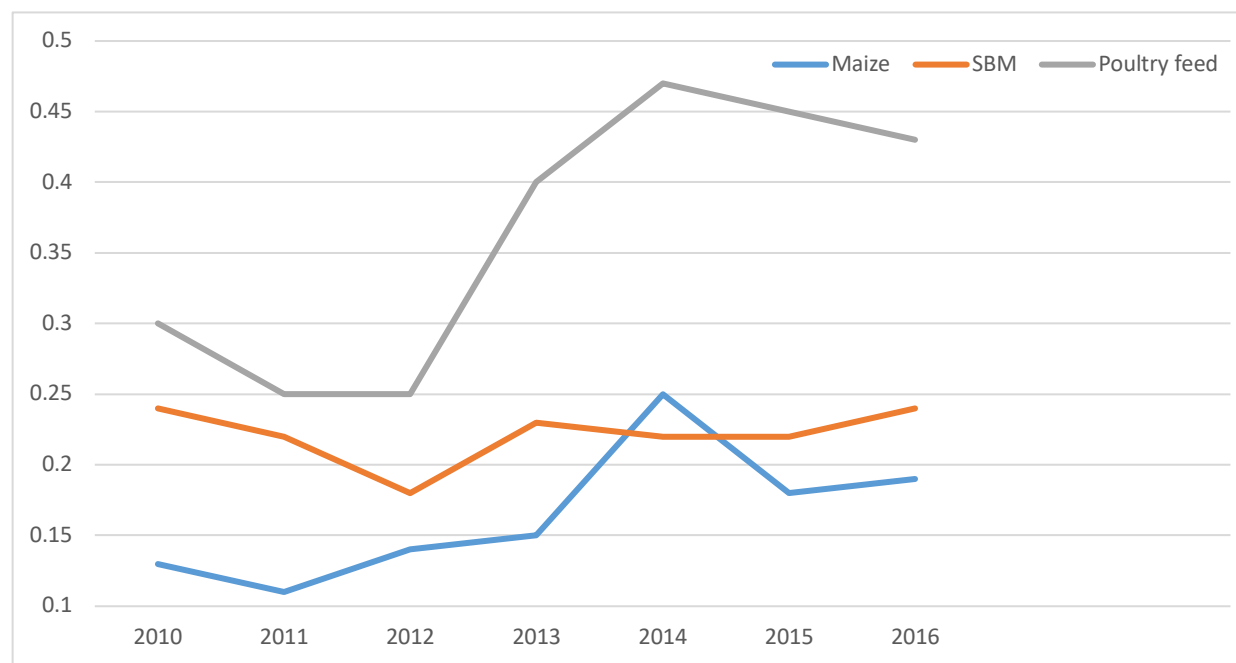


**Figure1.** Supply of poultry and red meat in Kuwait 1998 – 2017 (kg/capita/year).

An estimated 40 to 60 percent of the production is sold live with nearly all remaining poultry marketed as frozen or chilled whole birds. Only one percent of production goes for further processing. The demand for live chickens is declining due mainly to the convenience of frozen or chilled birds and health concerns. Mortality runs at 8-10 percent annually. Harsh climatic conditions are the principal cause of high mortality, but rates would likely decline with enhanced veterinary oversight. Local broiler production does not compete directly with imported broilers. Local entire frozen chicken retails at prices about 50-60 percent higher than imported frozen chicken, while chilled local chicken retails at more than double the price of imported frozen chicken. Value contrasts are driven by high production costs, as most data sources must be imported.

### 1.2. Major farms prepare their own feed from imported ingredients

Corn is imported by the government-owned Kuwait Flour Mills Company and is sold to farmers at a subsidized price. Other ingredients, such as soybean meal, concentrates and pre-mixes, are imported by private companies and sold to poultry farms at market rates (Figure 2). The use of growth hormones is not permitted. The feed conversion rate runs at about 2 to 1 as most farms, but falls to 1.8 to 1 on well-managed farms. Birds are usually slaughtered after 35 days weighing 1.2 kg, on average. Dressed weight is typically about 850 gms, on average. All major farms run modern well-equipped operations and routinely upgrade and expand facilities with the latest technology and equipment. Aside from reduced corn prices, the Government of Kuwait does not provide any direct support to the poultry sector. However, the cost of water and electricity is the cheapest in the Middle East.

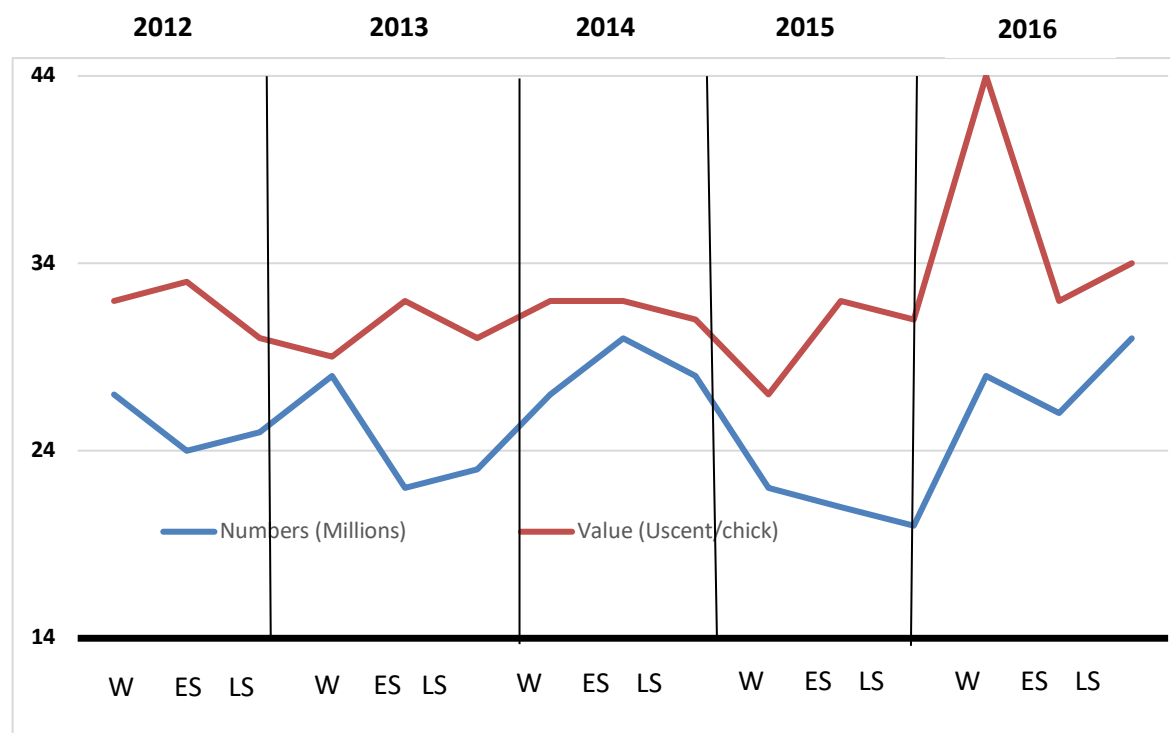


**Figure 2.** Cost (US\$/kg) of maize and soybean meal (SBM) imported into Kuwait and cost of poultry feed (US\$/kg) in Kuwait (Central Statistical Bureau 2017)

### 1.3. Broiler breeder and hatching egg production

Broiler breeder production and hatching egg production have only recently begun in Kuwait. The lack of available housing increased difficulties of managing broiler breeders in the extreme climatic conditions of Kuwait, and the lack of experienced stockmen to manage the flocks were previously the main limitations to develop this part of the production process (Paul and Alsaffar, 2014). Hatching eggs or day old chicks were then imported primarily from India or Egypt. Since the discovery of high by pathogenic H5N1 avian influenza virus in the gulf region, the Kuwait Public Authority for Agricultural Affairs and Fish Resources has taken measures to improve the biosecurity of the national flock by, when necessary, restricting imports of poultry and poultry products into Kuwait. These temporary bans have included both hatching eggs and day old chicks. Therefore, poultry companies had to consider establishing broiler breeder flocks to ensure the continuity of supply of day old chicks for their own broiler production units. The change has been rapid: There was little hatching egg production before 2000, and in 2006 the companies produced approximately 40% of their requirements of day old broiler chicks ( AL-Nasser, 2006), whereas they were almost 100% sufficient by 2016. Figure 3 indicated that hatching egg production can be variable throughout the different seasons of the year and this can affect economic value of the day old chicks. Both Naif Poultry and KUPCO have established broiler breeder flocks to supply to their own hatcheries. Naif Poultry has the capacity to supply a small surplus of hatching eggs than what

their company requires. KUPCO started their broiler breeder operations in 2008 and by 2018 had the capacity to provide only 80% of their needs. Further expansions of the number of broiler breeders were planned for 2019. The present shortfall of hatching eggs within KUPCO is solved mostly by buying them from Naif Poultry but they also continue to import a small proportion of their requirements from Saudi Arabia and Europe. In 2016, Naif Poultry had the capacity for 350,000 broiler breeders and KUPCO 180,000.



**Figure 3.** Annual data for hatching egg numbers in the Kuwait broiler chicken industry from 2012 to 2016. (W= winter period (December – end February), ES = Early summer ( April – end June), LS = late summer (August – end October).

A major long-term threat to the Kuwait broiler breeder industry is the non-availability of skilled workers. Broiler breeder management, particularly in challenging environmental conditions, requires experienced, intelligent and motivated staff. A considerable lot of the present and previous staff individuals are migrant specialists, basically from India. Be that as it may, as of late it has turned out to be progressively hard to enrol adequately qualified staff.

The poultry industry needs to address this problem and establish routes to train and educate present staff from within their companies to enable them to manage broiler breeder units in the future. Yet no formal training programmes exist within the companies. It is possible that the establishment of the KISR broiler breeder research centre could have some future involvement in giving practical training and experience to these staff.

## 2. Conclusion

There is high poultry meat consumption in Kuwait. The Kuwaiti poultry meat industry is able to supply only about 30% of this total demand. The industry’s ability to expand is limited by the non-availability

of suitable land. The Kuwaiti poultry companies have increased their revenue by selling a greater proportion of fresh (chilled) meat and further processed poultry meat products. In the past 15 years, the companies have rapidly expanded into broiler breeder production and are presently supplying almost all their domestic requirements. This expansion has solved the main threat of continuity of supply, but problems of reduced efficiency because of the harsh climatic condition need to be solved for future developments.

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