

China's poultry industry rapidly moving forward



Up until only 30 years ago, poultry production in China was mainly a backyard business. Today, however, it is a modern large-scale business, playing a major role in the global market. Both commercial strains as well as indigenous breeds, producing eggs and meat, are widely kept.

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China is one of the domestication centres of poultry species with over 3,000 year history for poultry husbandry. Poultry meat and eggs have been serving as important sources of food and nutrition for people in China all the time. Traditional backyard poultry production has been an essential and integrated component of rural life. Modern poultry production in China was initiated in city suburbs by some mechanised farms over 30 years ago. Since then, the industry has been developing very fast, driven by a huge market need and economic growth. The Chinese government has played an essential role in promoting the poultry industry with encouraging policy, services and financial support to the key elements of the industry chain. At present China is one of the most important countries for the world's poultry industry.

There are very strong feed industry and veterinary services, which provide solid support to the sustainable development of the Chinese poultry industry. Native producers of compound feeds, feed additives, vaccines, medicines, environment control and equipment are growing along with the poultry industry. At the same time, foreign manufacturers and traders in all sectors of the poultry industry are doing good business in China.

Various layer species

Table egg are among the best quality and cheapest sources of animal protein in China. Laying chickens are the main supplier of table eggs, while ducks, quails and geese also contribute to egg production in the country. The Chinese egg industry is very strong and competitive. Currently there are

over 1.5 billion egg layers, and annual egg production was over 25 million tonnes in 2006, which represents more than 40% to the world's total egg production (Figures 1 and 2).

Chinese customers prefer brown eggs, rather than white eggs. Almost all egg layers are commercial hybrids developed from imported pure lines as well as Chinese indigenous breeds. In recent years the indigenous breeds have been used to develop new strains of chickens, which lay the tinted or blue eggs. These new products are popular commodities in the markets. While small-scale chicken farming still remains an important segment in the Chinese egg industry, large companies are developing very fast with better priced, packaged and branded products.

Chicken egg production is becoming more concentrated in grain feed production areas in North China. The six largest egg producing provinces - Hebei, Shandong, Henan, Liaoning, Jiangsu and Sichuan - account for nearly 65% of the total production of the country.

Giant broiler industry

Poultry meat is regarded as important food for common people and the quantity of poultry meat is only less than that of pork in China. Since the broiler - one of



Modern techniques are widely used in commercial poultry farming.

the most efficient domestic animals for their feed conversion ratio - was introduced into China 30 years ago, the production of broilers has become a giant industry, which accounted over 3 billion commercial broilers in 2007. In recent years, around 300 thousand tonnes of broiler meats are exported every year. The integrated production system of broiler industry has been adopted from an American system, in which modern breeding farms, hatchery, feed mills and processing plants have been established. Many contract farms have helped small-scale farmers improve their own living (Figures 3 and 4).

Colour feathered

White-feathered broilers dominate world poultry meat production owing to their rapid growth and high feed efficiency. However, consumers’ preference for colour feathered and slow-growing meat-type quality chickens is growing in certain regions of the world, including China. In response to the demand for quality chicken meat, production of colour-feathered quality chickens, mainly the so-called three yellow (3Y, yellow feather, yellow skin and yellow shank), has significantly developed with an annual 15% increment in quantity. Generally, quality chicken is developed from the genetic improvement and hybridisation of Chinese indigenous chicken breeds, of which the meat is more tasty and popular than broilers.

Quality chicken popular

China is rich in chicken genetic resources, and there are many local breeds being distributed throughout the country. For breeding practice in China, quality chickens were initially produced by

direct use of indigenous chicken breeds. Well-known breeds are Shiqiza 3Y, Qingyuan Partridge, Beijing-you, Jiangxi White-eared, Wenchang, among others. These original breeds are characterised by lovely appearance and excellent flavour, as well as slow growth and poor feed conversion. It will take around 120 days for these breeds to reach marketing weights at 1.2~1.5 kg, and the production cost is much higher than conventional broilers. At present, there is still a strong need for these high-end products of quality chickens. At the same time, cross-breeding between native breeds and commercial lines, either developed from improved colour-feathered chickens or highly selected lines with rapid growth rate or relatively high egg production, has been widely applied. Some large chicken companies now have their own breeding programmes. These companies work constantly to produce genetic improvement in their breeding stock. The breeding objectives focus on improving growth rate and reproductive efficiency while maintaining original appearance and characteristics of native chicken such as plumage colour, body shape, comb shape, skin and shank colour, etc.

High quality chicken is especially popular in southern China. Currently, the gross production of quality chickens reaches around 1 billion birds a year in Guangdong province. At the same time, the consumption trend of quality chicken is expanding to other parts of the country.

Leading in waterfowl

China is the leading country in waterfowl production, with annual duck and geese productions over two thirds of the world’s total. China is thus regarded as the kingdom of waterfowl. The large

Figure 1 - Growth of chicken egg production in China (source: FAO)

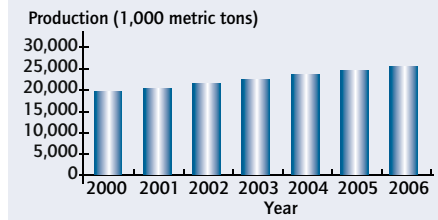


Figure 2 - World's poultry egg production (source: FAO)

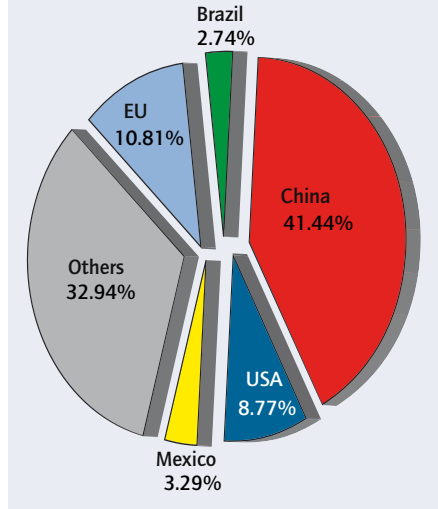


Figure 3 - Growth of poultry meat production in China (source: FAO)

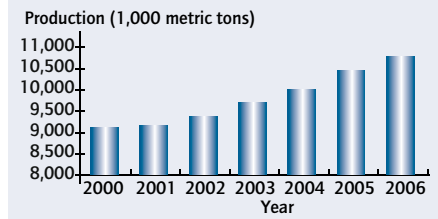
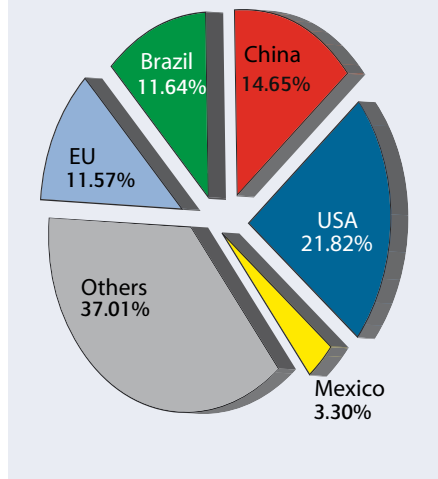


Figure 4 - World's poultry meat production (source: FAO)





China is rich in genetic resources and there are many local breeds all over the country.



Traditionally, China is well-known for duck production.

waterfowl industry in China has adapted from its long history of waterfowl production and the need for specific cuisines based on waterfowl products. Chinese people have achieved numerous landmarks in waterfowl production, such as development of the famous breeds like Peking duck, Shaoxin duck, Gaoyou duck, Huoyan geese and Shitou geese, the invention of waterfowl-rice co-production intensive farming system, and famous Chinese cuisines such as Beijing roast duck, and many more.

Feather and down from waterfowls are important material for making warm clothes, and the annual exportation of related products could be more than US\$1 billion.

In southern China, waterfowls are mainly raised in open water surface of ponds, lakes, rivers and rice fields. Fish ponds are widely used for waterfowl production. In Northern China, indoor housing systems, similar to the broiler industry, are popular in most seasons. Further processing is becoming popular for meat-type ducks. There are more and more large integrated duck companies similar to broiler production.



Roasted Peking duck is often seen on the menu in many restaurants and households.

Modern industry

Poultry production involves many complicated tasks and thus requires the advancement and application of multi-discipline technology. The fast development of poultry production in China is mainly supported by introduction, absorption and application of modern poultry technology. Research and education, as two main themes of the World's Poultry Science Association, are also important elements in the poultry community. Many scientists, researchers, educators, managers, and technicians have contributed their joint efforts to form the present poultry production system.

There are more than 50 agricultural universities or colleges in China, where many animal science programmes are offered. More than 5,000 new undergraduate students are enrolled in an animal science major each year. Additionally, over one third of them will engage in poultry related business or research. This huge human resource guarantees the sustainable development of the poultry industry in the country.

Research all over

In addition, there are several national and many provisional research institutes of animal science or veterinary medicine, where poultry related research forms important projects. Postgraduate programmes in poultry genetics and breeding, nutrition and feed processing, physiology and reproduction, microbiology and immunology, disease control and diagnosis, environment control and protection, as well as food processing, are offered in many universities and institutes. A new generation of young scientists and managers are now the major players in related fields.

Research and development has been a focus of the whole country. Tremendous public and private research funds have been invested in various fields

of poultry research. Genetic research covers genetic evaluation, selection programmes, molecular markers for important traits, identification of major genes in the valuable genetic resources. The progress has made it possible for industry geneticists to develop new strains of layers, quality chickens and ducks for large-scale commercial application.

Information exchange

Nutrition studies have suggested the nutritional requirements of different poultry populations, and trained many nutritionists who can formulate balanced feed for any type of poultry production. New feed ingredients and premixes are also developed to meet the needs of the industry. Veterinary research also provides comprehensive tools and resources for bio-security and disease control. Almost all vaccines needed by the poultry industry can be developed by Chinese institutions and manufactured locally. The timely supply of HPAI vaccines has helped the Chinese poultry industry to overcome the difficult time of HPAI outbreaks. Engineers can also design and manufacture suitable poultry houses and equipment, and develop efficient systems for environment control and protection. Processing of poultry products is also an important field of research.

International exchanges in the field of poultry science in China have become more and more importance over the past 20 years. In recent years, the publication of poultry research is increasing significantly. A rough statistic shows that the number of papers by Chinese researchers published in the World's Poultry Science Journal, Poultry Science and British Poultry Science in 2007 is over 50, which is a strong indication that Chinese poultry scientists are now exchanging their knowledge worldwide. ■