



Learning Module 1

Introduction to the South African Poultry Farming Industry



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The poultry industry in South Africa

Note to the learner

The following module serves to give you a brief introduction and understanding of the Poultry Industry in South Africa and will cover aspects such as why the poultry sector is divided into two main divisions, the supply chain of poultry meat, why companies do not share parent stock and broiler chick hatcheries, the poultry meat and table egg industries, systems (housing types) for meat and egg production and finally the role of the South African Poultry Association and the role of the Developing Poultry Farmer Organisation.

Introduction

After reading and studying these notes you will be able to see where your industry fits into the bigger picture of either poultry meat production or commercial egg production, you will be able to demonstrate an understanding of the origin of the present day breeds that are being used for meat and egg production as well as the supply chain for the production of meat and eggs. You will also have the opportunity to familiarize yourself with the most popular housing systems used for poultry production.

The poultry industry can be divided into two main divisions:

- **Poultry meat production**
Pure meat-type breeds were used by overseas companies to develop lines with outstanding characteristics to put on weight fast and use feed efficiently.
- **Commercial egg production**
Pure egg-type breeds were used by overseas companies to develop lines with outstanding characteristics to put on weight fast and use feed efficiently.



Male and female White Plymouth Rock and male and female Indian Game

White Leghorn male and female and New Hampshire male and female

The development of lines: Males of one of the pure breeds, White Plymouth Rock, were mated (cross-bird) with females of the Indian Game breed to obtain a male line for meat-type birds.

A female line was developed by mating females of the White Plymouth Rock with males of the Indian Game breed to serve as the female meat-type bird. Nowadays these lines are called breeds and bear the names of their companies: Ross, Cobb, Arbor Acres, Hubbard etc. The very same procedures were followed by companies to develop the commercial egg-laying birds. These birds bear names such as Lohmann Silver, Lohmann Brown, Hy-Line and Amber-Link.

The lines developed by the breeding companies by mating pure breeds are most valuable and are therefore maintained under very strict conditions of bio-security and remains the property of a particular company. Selection of the best performers is constantly taking place and only limited numbers of males and females, known as great-grand parents (GGPs), of either a meat-line or a commercial egg-line, will be sold to reputable organisations to use them as parents of breeding flocks (known as parent flocks) to produce hatching eggs from which chickens can be hatched and reared as either broilers or pullets for commercial egg production.

Broilers:

Is the term that is always used for meat-type poultry, they include males and females. Broilers are reared from day-old to 33 - 35 days of age before being processed at an abattoir and the meat sold to supermarkets.

Commercial layers:

Produce eggs that are sold in the supermarkets. Hens that produce fertile eggs for the production of day-old broilers or pullets for the table egg market are referred to as breeders. Some companies use the term breeder laying farm where females are mated with males to produce fertile eggs for day-old chicken production).

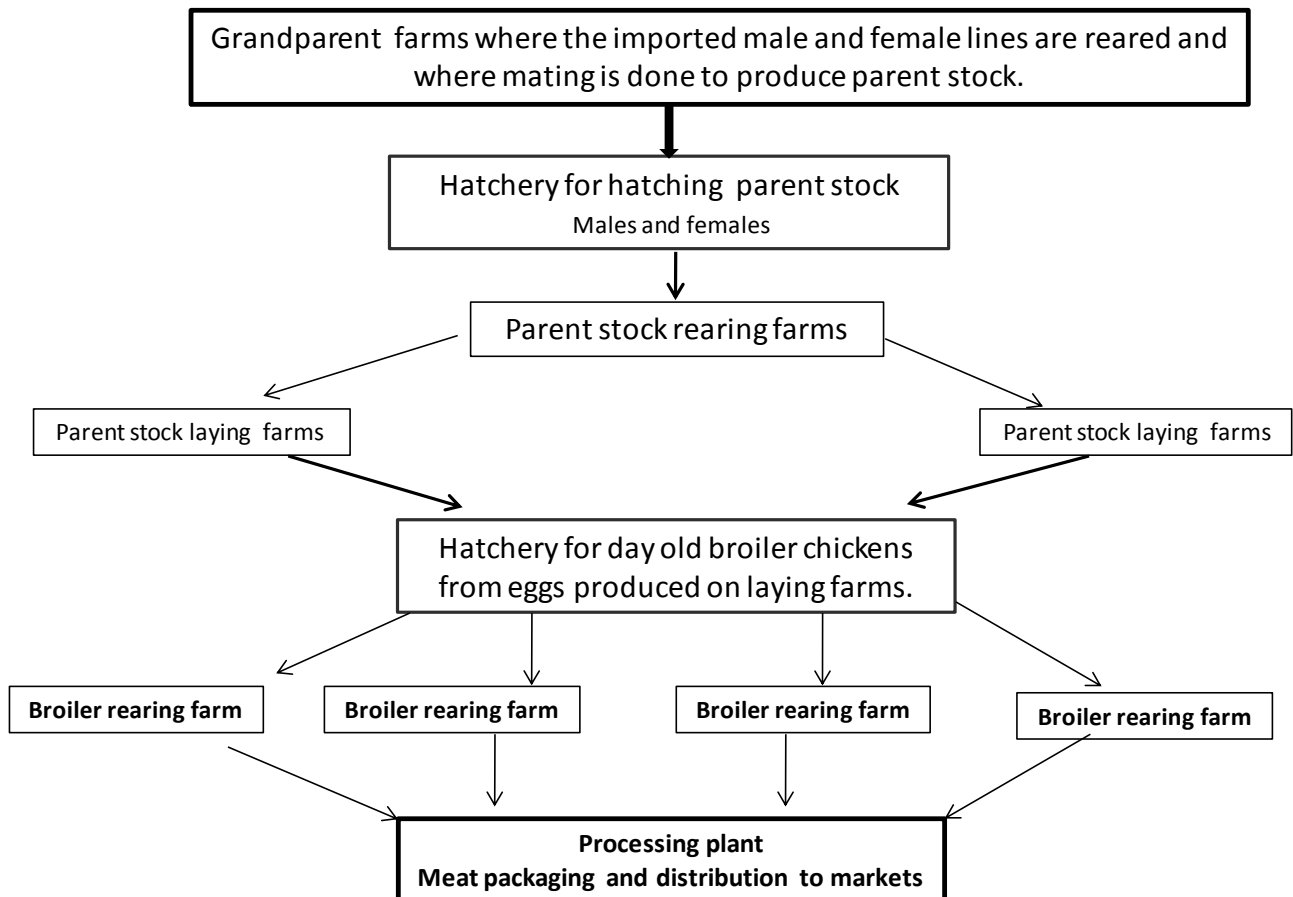


The supply chain for poultry meat

Broiler production

An illustration in Figure 1 shows the involvement of different divisions of the broiler industry to ensure a constant supply of meat to the consumer.

Figure 1 Supply chain for poultry meat



The supply chain for production of eggs for the fresh egg market (table eggs) is in essence the same as the scheme in Figure 1 for the production of poultry meat. Instead of a hatchery for day-old broiler chickens one would find a hatchery for the production of day-old pullets. **(The term pullets is used for female chickens until they reach sexual maturity and start laying eggs)**

Why a company does not share parent stock and broiler chick hatcheries.

1. The hatchery for the production of day-old chickens for broiler production delivers to a large number of rearing farms. Travelling to such farms by feed trucks and lorries during depopulation pose a high risk to contaminate equipment at their hatchery.
2. People and equipment can contaminate a parent stock hatchery which on turn will contaminate the breeding farms. This can result in a collapse in the supply chain of hatching eggs for the production of broilers for the market.

The Poultry meat and table egg industries

Poultry industries worldwide are playing a huge role to supply mankind with high quality food as well as the means for people to make a living. Some of these aspects are summarized in the following section.

Role of Poultry to feed mankind

- **Conversion of feed to food**

Maize, soybeans, offal from animal industries, minerals, vitamins and many other products not readily acceptable by humans, are mixed and fed as balanced diets for broilers and layers to produce meat and eggs. Thus converting low quality products into highly nutritious food for mankind. Poultry meat is one of the best sources of protein for mankind. The low fat content of the breast meat, so-called white meat, is regarded as healthy meat. Eggs are the most balanced source of nutrients for humans. The proteins in eggs are used as standard against which all other proteins are evaluated in their ability to support growth in young animals and humans. It is also a good source of all vitamins and micro-minerals for healthy development as well as fats and oils as source of energy.

- **Efficient converters of feed to food**

Poultry, compared to cattle, has low energy requirements to maintain their own bodies and are therefore very efficient converters of feed to meat and eggs. That is why the price of these products has remained relatively low in relation to the cost beef and mutton.

- **Consumption of poultry meat and eggs**

Since 2010 more poultry meat was produced and consumed, 36.1 kg per person per year, than the combined figure for beef, mutton and pork viz 23.5 kg. Consumption of eggs is 156 per person per year.

- **Marketing of meat and eggs**

Marketing is done by the individual producers themselves and they would normally be under contract to supply a certain amount of meat or eggs over a certain period of time. The producer is thus under obligation to deliver their goods according to a specified program and this requires exceptional good planning to place orders for replacement stock, feed and packing material, transport etc. Health management of poultry flocks therefor needs to receive the highest priority to ensure a constant level of production of meat or eggs to satisfy demands from the consumer.

Systems for meat and egg production

Housing of broilers

Structures vary a lot; from open-sided buildings to mechanically ventilated broiler sheds with insulated panels forming the side walls and roofs. The most important consideration for the latter type of construction is to save on fuel cost during the brooding period and to be able to cool buildings during hot summer conditions by means of extraction fans. Providing optimum environmental conditions enable chickens to put on weight rapidly and they would reach a marketing weight of 1.85 kg at 34 days of age. (Emergency generators in cases of power failures are an essential part of the operation.)

On the other hand open-sided buildings with curtains that can be closed during brooding of day-old chickens and raised during warm weather are much cheaper to erect. Ventilation of these buildings, the so-called naturally ventilated buildings however, are dependent on air movement by wind. During summer mortalities might occur if no wind is blowing. Cost and efficiency of production play an important role when deciding on a particular type of housing. Normally broiler production is practiced under intensive conditions, in which the birds are confined to the inside of the building for the entire growing period. However, due to consumer demand, there are organizations that will allow the birds to move out of the building after the brooding period onto grassland, the so-called free-range system.

The three types of buildings used for Broiler production



Mechanically ventilated broiler house with cooling pads



Naturally ventilated Poultry House



Free Range Broilers.



Housing of layers

Similar to the broiler industry housing of commercial layers will be housed in two types of buildings: mechanically ventilated in which climate control is possible by means of extraction fans and cooling pads or naturally ventilated depending on air displacement by current winds. Pullets at point-of-lay are placed in battery cages at 17 to 18 weeks of age and will remain in production for approximately one year before being replaced by a new flock of point-of-lay pullets.

The rearing of point-of-lay pullets¹ is done specialist organizations to ensure that the correct lighting patterns are being followed and that the body mass at point-of-lay is according to the breed standards.

Similar to the broiler industry the production of eggs under a free range system is also very commonly practiced. The production cost of eggs under free range is higher because of the higher feed intake by hens due to the higher energy requirements for energy spent on walking.



Modern battery cage system with automatic egg collection.



Floors of high-rise layer houses are elevated with openings for droppings to fall down to the ground.



Free range hens outside a laying house, inside view of layers and nest boxes.

Some useful terminology

Eggs	This product of the poultry industry is regarded as the most balanced source of nutrients for humans
Broilers	The term used for meat-type poultry slaughtered for meat
Breeders	Those birds that lay fertile eggs for day-old broilers or day-old pullets
Hatcheries	The places where chickens are hatched and they play an important role to maintain biosecurity in the supply chain of poultry meat and eggs
Mechanically	The term used for those broiler houses that are ventilated by electric fans
Naturally	This term describes the type of ventilation that depends on wind for air movement
Pullets	The word used for female birds from hatch to the point of lay



South African Poultry Association

The South African Poultry Association (SAPA) was established in 1904 in Kimberley, mainly as a body of poultry “fanciers” to co-ordinate and promote show holding and later to stage egg laying tests, and to provide an instrument to voice the feelings of the industry.

Historically, poultry was very much part of the South African scene. Thousands of people kept poultry, and it was seen as backyard industry. Of the largest units kept between two and four thousand birds under extensive conditions. Therefore, poultry clubs consisted of people from all walks of life who considered poultry also as a hobby. A number of poultry clubs were in existence, arranging competitions and shows. The main functions of the South African Poultry Association would thus be composing and formulating show rules and regulating the appointment of judges.

Early Years

The early years were difficult and turbulent, and the main issues always emerged as area representation and decentralization of management. Despite clashes between exhibitors and “commercial producers” – a bad word at the time – the Association forged ahead. A South African Poultry Breeders Register was established in 1926, and in 1936 assurance was given that Government would definitely recognize SAPA as the representative organization of the industry. At SAPA’s request the Egg Control Board was established in 1951. The Poultry Bulletin was published by SAPA as its mouthpiece since 1937. Previously the Association selected various existing outside magazines to air its views.

SAPA Vision and Mission

- **SAPA Vision**

To create a viable and sustainable industry contributing to economic growth and development, employment and food security, based on successful producers adhering to environmental and ethical production norms and generating sustainable profits.

- **SAPA Mission**

To create an enabling environment to achieve sustainable producer profits in the domestic and global village market. As a representative association, the South African Poultry

Association (SAPA) serves the interests of the poultry industry in a number of ways. SAPA acts as a medium and catalyst for any matter the industry wishes to collectively address. It acts as the face of the industry, addressing and maintaining a presence in society without which opposing groups could play havoc with the industry's interests - without opposition.

The role of the Developing Poultry Farmer Organisation in the poultry industry''

To facilitate the entry of emerging poultry farmers especially those from the PDI's into the main stream economy.

How

This will be by providing poultry farmers with the resources necessary for managing successful poultry farming enterprises.

Aim

To promote access to finance for members, lobbying for the establishment of resource centres in each region to ensure sustainable poultry and egg production in each area, train and develop emerging farmers in their communities on all egg and allied industries including production, grading, packaging, transport, storage & marketing, assist farmers in securing profitable production and supporting sustainability of businesses, organise seminars and courses to establish and enhance a learning culture amongst all poultry farmers, publish literature, journals pamphlets and circulars dealing with all matters pertaining to the developing poultry sector, conduct and assist in practical and scientific investigative work, facilitate, lobby and communicate with national and provincial government agencies and the donor communities highlighting the plight of all developing farmers in south Africa an to lobby government to implement legislation and regulations that are beneficial to developing farmers and allied industries and negotiate discount on production inputs on behalf of its members.

Note to the learner

Congratulations you have completed the first module introducing you to the South African Poultry Industry. Take some time to reflect on where you currently fit into the industry and what role you would like to play in this exciting industry.

