



The principles of poultry husbandry

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ABSTRACT

There are a number of requirements by which animals should be managed so that the best performance is achieved in a way acceptable to those responsible for the care of the animals and to the community generally. These requirements are the keys to good management and may be used to test the management of a poultry enterprise in relation to the standard of its management. These requirements are also called Principles. The importance of each Principle changes with the situation and thus the emphasis placed on each may alter from place to place and from time to time. This means that, while the Principles do not change the degree of emphasis and method of application may change. Every facet of the poultry operation should be tested against the relevant principles.

KEY WORDS: poultry, management, husbandry, principles

Overview

The quality and class of stock

If the enterprise is to be successful it is necessary to use stock known to be of good quality and of the appropriate genotype for the commodity to be produced in the management situation to be used (Gentle et al., 1982). The obvious first decision is to choose meat type for meat production and an egg type for egg production. However, having made that decision, it is then necessary to analyse the management situation and market to select a genotype that suits the management situation and/or produces a commodity suitable for that market. A good example is that of brown eggshells (Havenstein et al., 1994). If the market requires eggs to have brown shells, the genotype selected must be a brown shell layer. Another example would be to choose a genotype best suited for use in a tropical environment. The manager must know in detail the requirements of the situation and then select a genotype best suited to that situation (Kuenzel, 2001).

Good husbandry

The following are of major importance when considering the health, welfare and husbandry requirements for a flock:

Confine the birds

Confining the birds provides a number of advantages:

- Provides a degree of protection from predators
- Reduces the labour costs in the management of the birds
- Increases the number of birds that can be maintained by the same labour force
- Reduces the costs of production
- Better organization of the stocking program
- Better organization management to suit the type and age of the birds housed

Importantly, the confinement of the birds at higher stocking densities has a number of disadvantages also including:

1. Increases the risk of infectious disease passing from one bird to another
2. Increases the probability that undesirable behavioural changes may occur
3. Increases the probability of a significant drop in performance
4. Birds housed at very high densities can often attract adverse comments

Protection from a harsh environment

A harsh environment is defined as one that is outside of the comfort range of the birds. In this context high and low temperature, high humidity in some circumstances, excessively strong wind, inadequate ventilation and/or air movement and high levels of harmful air pollutants such as ammonia are examples of a harsh environment (Lunam et al., 1996). Much effort is made in designing and building poultry houses that will permit the regulation of the environment to a significant degree.

It is the responsibility of those in charge, and responsible for, the day-to-day management of the birds that the environment control systems are operated as efficiently as possible. To this end, those responsible require a good knowledge of the different factors that constitute the environment and how they interact with each other to produce the actual conditions in the house and, more importantly, what can be done to improve the house environment.

Welfare needs

A successful poultry house has to satisfy the welfare needs of the birds which vary with the class, age and housing system. Failure to satisfy these needs will, in many cases; result in lower performance from the birds. These needs include:

- The provision of adequate floor space with enough headroom
- The provision of good quality food with adequate feeding space
- The provision of good quality water with adequate drinking space
- The opportunity to associate with flock mates
- The elimination of anything that may cause injury
- The elimination of all sources of unnecessary harassment

The maintenance of good health

The presence of disease in the poultry flock is reflected by inferior performance. It is essential that the flock is in good health to achieve their performance potential (Havenstein et al., 1994). There are three elements of good health management of a poultry flock. These are:

1. The prevention of disease

2. The early recognition of disease
3. The early treatment of disease

Prevention of disease

Preventing the birds from disease is a much more economical way of health management than waiting for the flock to become diseased before taking appropriate action. There are a number of factors that are significant in disease prevention. These are:

1. Application of a stringent farm quarantine program:

- The isolation of the farm/sheds from all other poultry.
- The control of vehicles and visitors.
- The introduction of day old chickens only onto the farm.
- The prevention of access to the sheds by all wild birds and all other animals including vermin.
- The provision of shower facilities and clean clothing for staff and visitors.
- The control of the movement of staff and equipment around the farm.

2. The use of good hygiene practices:

- The provision of wash facilities for staff, essential visitors and vehicles prior to entry.
- The use of disinfectant foot baths at the entry to each shed.
- The thorough cleaning and disinfection of all sheds between flocks.
- Maintaining the flock in a good state of wellbeing by good stockmanship, nutrition and housing.
- The use of a suitable vaccination program.
- The use of a preventive medication program.
- The use of monitoring procedures to keep a check on the disease organism status of the farm, to check on the effectiveness of cleaning and sanitation procedures and to test the immunity levels to certain diseases in the stock to check the effectiveness of the vaccination program.

The early recognition of disease

Early recognition of disease is one of the first skills that should be learned by the poultry flock manager. Frequent inspections of the flock to monitor for signs of sickness are required. It is expected that inspection of all the birds is the first task performed each day, to monitor for signs of ill health, injury and harassment. At the same time feeders, drinkers and other equipment can be checked for serviceability (Sherwin et al., 2010). If a problem has developed since the last inspection, appropriate action can be taken in a timely manner.

The early treatment of disease

If a disease should infect a flock, early treatment may mean the difference between a mild outbreak and a more serious one. It is important that the correct treatment be used as soon as possible. This can only be achieved when the correct diagnosis has been made at an early stage. While there are times when appropriate treatment can be recommended as a result of a field diagnosis i.e. a farm autopsy, it is best if all such diagnoses be supported by a laboratory examination to confirm the field diagnosis as well as

to ensure that other conditions are not also involved. When treating stock, it is important that the treatment be administered correctly and at the recommended concentration or dose rate. Always read the instructions carefully and follow them. Most treatments should be administered under the guidance of the regular flock veterinarian.

Nutrition for economic performance

Diets may be formulated for each class of stock under various conditions of management, environment and production level. The diet specification to be used to obtain economic performance in any given situation will depend on factors such as:

1. The cost of the mixed diet
2. The commodity prices i.e. the income
3. The availability, price and quality of the different ingredients

Maximizing production is not necessarily the most profitable strategy to use as the additional cost required to provide the diet that will give maximum production may be greater than the value of the increase in production gained. A lower quality diet, while resulting in lower production may bring in greatest profit in the long term because of the significantly lower feed costs. Also the food given to a flock must be appropriate for that class of stock – good quality feed for one class of bird will quite likely be unsuitable for another (Duncan et al., 1989).

The following are key aspects in relation to the provision of a quality diet:

- The ingredients from which the diet is made must be of good quality.
- The weighing or measuring of all ingredients must be accurate.
- All of the specified ingredients must be included. If one e.g. a grain is unavailable, the diet should be re-formulated. One ingredient is not usually a substitute for another without re-formulation.
- The micro-ingredients such as the amino acids, vitamins and other similar materials should not be too old and should be stored in cool storage – many such ingredients lose their potency over time, and particularly so at high temperatures.
- Do not use mouldy ingredients – these should be discarded. Mould in poultry food may contain toxins that may affect the birds.
- Do not use food that is too old or has become mouldy. Storage facilities such as silos should be cleaned frequently to prevent the accumulation of mouldy material.

The practice of good stockperson ship

The term “stockperson ship” is difficult to define because it often means different things to different people. However, “stockperson ship” may be defined as ‘the harmonious interaction between the stock and the person responsible for their daily care’ (Devor et al., 1990). There is no doubt that some stock people are able to obtain much better performance than others, under identical conditions. The basis of good stockperson ship is having a positive attitude and knowledge of the needs and behaviour of the stock under different circumstances, of management techniques and a willingness to spend time with the stock to be able to react to any adverse situations as they develop to keep stress to a minimum. Having the right attitude is also a very important element. The stockperson who spends as much time as possible with the stock from day old onwards by moving among them, handling them and talking to them, will grow a

much quieter bird that reacts less to harassment, is more resistant to disease and performs better (Breward et al., 1985).

The maximum use of management techniques

There are a number of different management techniques available for use by stockpersons that, while not essential for the welfare of the stock, do result in better performance. Examples of these are the regulation of day length, the management of live weight for age and of flock uniformity (Appleby et al., 2004). The good manager will utilize these techniques whenever possible to maximize production efficiency and hence profitability of the flock (Foer, 2009).

The use of records

There are two types of records that need be kept on a poultry enterprise:

1. Those required for financial management – for business and taxation reasons
2. Those required for the efficient physical management of the enterprise

For records to be of use in the management of the enterprise, they must be complete, current and accurate, be analysed and then used in the decision making process. Failure to use them means that all of the effort to gather the information will have been wasted and performance not monitored. As a result many problems that could have been fixed before they cause irreparable harm may not be identified until too late.

Marketing

There are three important elements to good marketing practice:

Produce the commodity required by the consumer – this usually means continuous market research must be carried out to relate production to demand (Breward, 1984).

Be competitive – higher price is usually associated with good quality and/or specialized product. Therefore, it is necessary to relate price to quality and market demand and to operate in a competitive manner with the opposition.

Reliability – produce a commodity for the market and ensure that supply, price and quality are reliable.

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