AgriCos e-Newsletter
ISSN: 2582-7049
AgriCos e-Newsletter
Open Access Multidisciplinary Monthly Online Magazine
Volume: 03 Issue: 07 July 2022 Article No: 22

Feeding System in Poultry: A Overview

Lokendra[1] and Manisha Doot[2]
[1]M.V.Sc Scholar- Department of Veterinary and Animal Husbandry Extension Education at College of Veterinary Science & Animal Husbandry, Kamdhenu University, Junagadh, Gujarat
[2]Ph.D. Scholar- Department of Veterinary Public Health & Epidemiology at College of Veterinary and Animal Science, RAJUVAS, Bikaner, Rajasthan

SUMMARY

Feeding strategies can be used to maintain poultry. Up until recently, organizing poultry feeding seemed like a simple task to carry out. However, there are currently quite a few feeding programmes available. The main feeding programmes that draw many people involved in the poultry industry are the "whole grain feeding system," "grain and mash method," "all mash method," "pellet feedings," "nutrient (mineral and vitamin) withdrawal," "replacer finisher feed" (withdrawal supplement feed), and "enrichment feed." With so many various feeding programmes available, creating an efficient feeding plan may seem like a challenging task. In order to select a poultry feeding plan more skillfully, the effectiveness and drawbacks of such programmes are explored.

INTRODUCTION

Poultry birds are generally reared either under intensive semi intensive or extensive system. In intensive system of Production birds may be reared either on Deep litter or cage system.

A well balanced ration improperly fed will not give the most satisfactory results unless proper method is followed. Some of the popular methods of feeding poultry are given below:

Whole grain feeding system (cafetaria or free choice system of feeding)

In the earlier days of chicken keeping, this system was ambiguous. By using this technique, the birds are permitted to have their specific ingredients kept in front of them in separate hoppers. To balance the ration in accordance with personal demands, this technique, however, allows birds to eat items as they like. It seems unlikely, though, as the birds might not be able to regulate their own food intake. The consequence of this system is that the bird intentionally balances its diet by choosing which foods to eat. This outdated technology has naturally lost favour because it has no specific advantages and necessitates the use of multiple feed hoppers and a significant amount of effort to keep them all full.

Grain and mash method

This approach is marginally superior to the earlier one. It calls for feeding balanced mash and grain or a grain blend. This allows one to adjust the protein content to their liking. The procedure will produce subpar results unless the poultryman is highly skilled. But for feeding layers, this was the most typical method. The layers receive a combination of cereal grains through this approach, along with a mash comprised of pulverised grains to which additional protein, minerals, and vitamins are added, as part of their diet. Typically, growing birds are only given mash for the first few weeks of their lives before being given enough mixed grains as their growth progresses.

All mash method

It is now the most selective way of feeding poultry. Either dry or wet food is fed to the mush. Here, the texture of the dry mash is crucial, so all the ingredients are ground to the right size without flouring them, combined in the right amounts, and fed as a single, well-balanced mixture. For all varieties of chicken raised in cages and with litter, this method is preferable. This prevents the birds from having the option of selective eating, and the eggs produced are also of uniform quality. However, compared to unground feeds, ground feeds are less appealing and do not maintain their nutritional value as well.

The dry mash is thoroughly dampened and wetted with water in the wet mash (dough) mechanism, as the name suggests. However, the texture should continue to be crumbly and not squishy. However, this approach requires more labour, and the benefits might not always outweigh the costs. Wet mash feeding, on the other hand, is said to increase feed consumption and decrease feed waste during the drier months of the year. Adopting this approach when there are vast flocks to feed is not practical.

Pellet feedings

It entails pressing the dry mush into pellets. These are often utilised in western nations and are quite rigid and cylindrical in shape. The average farmer cannot produce pellets on the farm like he can mash since it requires significant technology and sophisticated equipment; instead, he must rely on outside sources. The biggest benefit of employing pellets is that there is very little food waste in addition to the removal of the birds' selective eating, lack of dustiness, and a propensity towards higher feed consumption. Pelletizing is also said to make mash more useful, to increase the availability of energy, and to have the added benefit of improving the attractiveness of relatively unappealing ingredients. Feeding with pellets has numerous benefits over wet mash feeding.

- Pelletizing reduces the amount of feed needed to produce a market duck or table turkey by 15–25%.
- (It is practical because it can be fed directly from the bags.
- Lower labour costs and feed handling expenses.
- Less feed is wasted.
- Drinking fountains remain spotless.
- No moist feed is present to harbour mould and draw flies.

Nowadays, most western nations transform the pellets into crumbles, particularly for starter chick feeding. The drawback is the high cost of pellets. Compared to feeds without pellets, it costs roughly 10% more.

To help the pellets stay together, mashes meant for pelleting should either have 2% additional fat or 2.5% molasses. The mash is first prepared, heated by steam, which also slightly moistens it, and then put through the pelletizer. The pellets are prepared for bagging after cooling in open air circulation. Bentonites and guar meal are two other pellet binders that impact the stiffness and texture of pelleted feed.

Controlled feeding practices

A. **Forced feeding**: - When turkey poults do not learn or attempt to pick up their feed during the first week, it is occasionally attempted for a brief period of time. If feed and water are withheld for longer than 36 hours to prevent bodily dehydration, forced feeding may be used on other species. Feed them a mashwater mixture, sweetened milk, skim milk, etc. To drive the slurry down the gullet below the wind pipe entrance, one can use a 25 ml syringe or a laboratory pipette equipped with a rubber catheter or smooth tube. Force feeding and handling the chicks should be avoided because doing so could lead to eventual death.

In order to achieve rapid early growth with low mortality, the freshly hatched poults should be exposed to feed and water as soon as possible after being placed in the brooder house. On clean boards, card-board coverings, or other surfaces, spread the first feed (pre-starter). Colored elements in feeders and waterers, such pebbles, encourage early feed consumption.

B. **Restricted feeding**:- Restricted feeding throughout the growth phase actually lowers the amount of nutrients consumed than what birds need. The amount of feed supplied is limited to between 85 and 90 percent of the typical fed intake, or it is diluted with fibrous material that has a poor nutrient density, or it is followed by skipping a feeding day. In skip-a-day feeding, birds are not fed on the second day, however some whole grain may be sprinkled on the litter. On the first day, feed is delivered at a level of 85 to 90 percent of the two-day ration. Feed limitation is advised up to a 5 percent egg production level till 21 or 22 weeks of age.

C. **Phase Feeding**: - From the perspective of saving feed and increasing egg production, the phase feeding concept looks to have promise. The concept of "Phase feeding" chicken is not new when it comes to defining the nutrient needs of poultry. There are three stages to the production cycle in this (popularly called phases).

Phase I: The birds are anticipated to achieve zero to a peak egg production of about 85% during the first phase of a 20-week period between the ages of 22 weeks and 42 weeks. Additionally, this results in a rise in body weight of additional 500 g and an increase in egg size of roughly 40 g to 60 g. In order to ensure optimum egg production during this time as well as to give adult chickens the vigour and tissue reserves necessary for maximum output during the succeeding phases of her productive life, the initial phase of reproduction is most vital. During this "max out time," an average of 10.2 g of protein per day is needed (5.6 g for egg production, 3.0 g for body maintenance, 1.6 g for body growth including feather). The daily need for protein would be roughly 19 g if the efficiency of protein utilisation is 56%. Depending on the daily feed consumption, the energy content of the

poultry ration should be modified to ensure that the needed amount of protein is consumed. The ratio of calories (M.E) to protein during the first phase should fall between 166 and 170 during the winter and between 150 and 155 during the summer. If these ratios are adjusted for the feed's energy content, they will ensure that the animal consumes enough feed to supply the necessary amount of protein and other nutrients.

Phase II is the time between 42 and 62 weeks of age, during which the chickens have reached their mature body weight and are still producing eggs at a 60% level or higher. Given that the average egg production rate is 72%, all the eggs are large, and the efficiency of protein use is roughly 56% during this phase, the daily protein requirement for hens will be 16.9 g. In order to maintain adequate food intake to support above-average performance, the Cal/P ratio should be 193–195 in the winter and around 10% lower in the summer.

Phase III: It varies in age from 62 to 76 weeks, or until the spent birds are discarded. Production of eggs is less than 60% during this time. 15 g or less of protein should be consumed throughout this phase. If Cal/P ratios are maintained at 196–200 in the winter and about 175–180 in the summer, these requirements could be satisfied.
Phase feeding can be used for energy in a limited capacity. For laying hens, the daily energy demand ranges from 310 Kcal M.E. in the dead of winter to 265 Kcal in the height of summer. However, 260 to 280 Kcal M.E. per bird per day in a thermoneutral range will typically result in great egg production throughout the first several months of productive life. After birds have reached their maximum body size, an intake of 240 to 260 Kcal per day seems to be sufficient. In most cases, the requirement is calibrated so that more energy is consumed than is necessary.

Feeding high energy rations, as is frequently done today, may lead to excessive energy consumption. In other words, birds' neutral control mechanisms might not always function perfectly. The end effect is a higher than necessary energy intake.

CONCLUSION

Prior to the turn of the millennium, the three internationally accepted phases of chicken feeding were followed on a regular basis. Numerous complementary and/or alternative feeding programmes have been implemented recently, albeit it is unclear if all of them are helpful. However, as the amount of time it takes for poultry to grow in the market shortens, their function may become more clear. It would be interesting to do research to assess the combined impact of these feeding techniques. The following decade appears to be much more exciting based on changes in broiler chicken feeding programmes over the previous ten years.

REFERENCES

Karunajeewa H. (2013). A review of current poultry feeding systems and their potential acceptability to animal welfarists. Department of Agriculture and Rural affairs, Animal research institute, Werribee, Victoria, 3030, Australia.

Shariatmadari F. (2011). Plans of feeding broiler chickens. World's Poultry Science Journal, Vol. 68, Pp 21-30

Ogle B, Pousga S and Boly H (2005). Choice feeding of poultry: a review. Livestock Research for Rural Development 17 (4).

Rose S. P., Fielden M. and Gardin P. (1993). Sequential feeding of whole grain wheat to broiler chickens. The British Society of Animal Production (1972), Vol. 1993:Winter meeting, Pp.66