

Study of Behavioral Aspects of Broiler Chicks Reared Under Light Sources in Different Poultry Farming.

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Abstract

The present paper deals with the study of behavioral aspects of broiler chicks reared under light sources. The study was conducted to analyze the behavioral aspects of broiler chicks reared under light sources in three different poultry farms according to the bird rearing capacity. The work is carried out from the three different poultry farms ranges from small to large size poultry farms situated in Aurangabad district during winter season from the period of October 2016 to January 2017. During the study period it was recorded that major behavioral changes of broiler chicks found in small poultry farm followed by medium and large poultry farms. It also showed that the major behavioral changes of broiler chicks faced by the farmers those are insufficient light sources in their farming. It is concluded that the major behavioral changes of broiler chicks occurred due to the light sources and its management by the farmers in the study area is improper, and use of light sources in various intensities during the rearing of broiler chicks in winter season. So it is necessary to manage the behavioral changes of broiler chicks with proper lightening sources in the poultry farms. Other related aspects will discuss in the text.

Keywords: Behavioral aspects, Light sources, Broiler Chicks, Poultry farms, Aurangabad.

Introduction

Broiler poultry production is becoming increasingly organized, specialized and shaping in to an industry of national economic importance. In many developing countries small-scale poultry farmers are the main producers of the poultry farming. Poultry farming provides employment at the rural area, it is highly labour intensive having high employment potential, the industry help to increase the income and also to minimize the need for migration to overcrowded cities. It provides protein rich food for deadly growing poor population. Particularly in the Marathwada region which is reeling under repeated drought spell, the poultry farming can provide an alternate source to the farmers.

Light is one of the important environmental factors in determining animal behavior, influence animals life cycles and control their behavior to a great extent Kristensen et al^[1]. Light is a tiny portion of the total electromagnetic spectrum, which includes radio waves, microwaves, x-rays and gamma rays. Light exhibits characteristics of both an electromagnetic wave and a particle. However light in the environment is usually made up of a mixture of wavelength, which complicates the calculation of the energy emitted by a light source. The light environment can be classified in three ways, wavelength, intensity and duration, www.uconn.edu/poultry/NE-127^[2]. Light is an important source for broiler chicks during the rearing process. It is very important for various body activities of the broiler chicks. Light is one of the powerful factors for controlling various body processes. It influences the growth and development of the broiler chicks. It has been recently reported that the intensity, wavelength and light source influence the behavioral and physiological responses of birds Kristensen et al^[1]. Light is an environmental factor it consist of three different aspects

like intensity, duration and wavelength. Light intensity, color and photoperiodic regime can affect the physical activity of broiler chickens Lewis and Morris^[3]. Several studies have been demonstrated that light is an important factor for the management of poultry health and behavior, it may affect them through interaction between physiological and behavioral responses Tavares et al^[4].

Light sources, distribution and duration of the lightning period affect the broiler behavior, Kristenses et al^[1]. Lightning sources of different intensities according to the rearing management normally used in poultry farming as a result broiler chicks shows normal behavior during the rearing period in the poultry farming. Light intensity and their interaction with the broiler chicks affect the various behavioral aspects. To establish normal and proper behavior of broiler chicks are the important concern of poultry farming for the overall performance of the birds. Therefore, the present study was conducted to analyze the behavioral aspects of broiler chicks reared under light sources in three different poultry farming in Aurangabad district of Marathwada region.

Materials and Methods

To study the behavioral aspects of broiler chicks reared under light sources from three different selected poultry farms. The poultry farms in district Aurangabad were selected and categorized as small, medium and large poultry farms depending on the bird rearing capacity. The three poultry farms were randomly selected as sample for this study. The present study was conducted during the winter season from the month of October 2016 to January 2017. The data of lightning pattern in poultry farming and its effect on the behavioral aspects of broiler chicks is collected from all the selected farms during the study period by personal visit and by observing the lightning pattern and interaction with the broiler chicks with various behavioral aspects at the farm sites during the study period at different intervals. Information and data was obtained about lightning pattern and intensity of light, to evaluate the effect of light of various intensities on the behavioral aspects of broiler chicks. The detailed studies were undertaken with a view to find out the behavioral aspects of broiler chicks reared under light sources in the study area.

Results and Discussion

For the study of behavioral aspects of broiler chicks reared under light sources three different categories of poultry farms according to the rearing capacity of birds were selected in this study area. Those were small, medium and large poultry farms. The broiler chicks of small poultry farming shows that they faced major behavioral changes, because they are usually reared by the farmers under low management practices.

The broiler chicks of the small poultry farms shows major behavioral changes like inactive behavior (sleeping, resting and standing), locomotive behavior (walking, running and jumping), consummative behavior (feeding and drinking), explorative behavior (with feet and beak), aggressive behavior etc. so these birds are showing very less comfort behavior. In the small poultry farm did not use any proper lightning pattern and thus the broiler chicks shows major behavioral changes. While in the medium and large poultry farms they prefer proper lightning patterns according to the number of broiler chicks reared in the respective farms as compare with small poultry farm, due to that the chicks of these farms shows comfort behavior as compare to small poultry farm. Alvino et al^[5] reported that the broiler chickens under high intensity light period tended to increase behavioral types. Tasaduk Khaliq et al^[6] reported that the rearing of birds under different colours of light found to be fruitful in exploitation the expression of behavior and welfare of birds.

Table: Observation about behavioral aspects of broiler chicks reared under light sources in different poultry farms.

Sr. No.	Behavioral Patterns and activities of broiler chicks	Behavioral changes in Small farm	Behavioral changes in Medium farm	Behavioral changes in Large farm
1	Inactive Behavior (Sleeping, Resting and Standing)	+++	++	+
2	Locomotive Behavior (Walking, Running and Jumping)	+++	++	+
3	Consummative Behavior (Feeding and Drinking)	+++	++	+
4	Explorative Behavior (With feet and beak)	+++	++	+
5	Aggressive Behavior	+++	++	+
6	Comfort Behavior	+	++	+++

(+++ More, ++ Moderate, + Normal or Less)

The major behavioral changes of broiler chicks particularly inactive behavior, locomotive behavior, consummative behavior, explorative behavior, aggressive behavior etc. faced by the farmers of small poultry farm followed by medium and large poultry farms. The lightning pattern type use in the poultry farm is directly related to the number of birds reared in the poultry farms. Mohammed et al ^[7] reported that pecking and aggressive behavior were significantly higher in high light intensity, while Araujo et al ^[8] there was no effect of the light source on any of the evaluated behavior found in their study.

For proper behavior of the broiler chicks management of lightning pattern of the poultry farms requires necessary automated facilities within the poultry farms. It is directly benefited for the overall behavior of the broiler chicks. During this study it was observed that the proper necessary facilities of lightning pattern is found in the large poultry farms followed by medium and small poultry farms. According to the report of Senaratna et al ^[9] rearing color of light affected bird behavior than growth and the performance of poultry have been assessed for different light intensities suggested by Davis et al ^[10]. During this study it was found that the lightning pattern in the large poultry farm is proper or sufficient light source due to that the behavioral pattern of broiler chicks become mostly comfort behavior as compare to medium and small poultry farm. The broiler chicks of small poultry farms faced major behavioral changes due to the improper lighting pattern with in the farming. Therefore more behavioral problems of broiler chicks faced by the birds of small poultry farm followed by medium and large poultry farm in the form of different behavioral aspects or changes. Nara Kimet al ^[11] reported that the behavior of broiler chickens were found to be strongly affected by the presence of light while there was no discernible difference in the behavior of broiler chickens exposed to the different lights.

Conclusion

From the above study and observations, it can be concluded that the insufficient lightening pattern found in the small poultry farm due to that broiler chicks of this farm have faced major behavioral changes as compare to the medium and large poultry farms. For the proper or comfort behavior of the broiler chicks it is necessary to implement the proper and

sufficient lightening patterns with in the poultry farming. Therefore it is necessary to manage the sufficient lightening patterns and to reduce the behavioral changes in poultry farming. Further detail studies about the behavioral aspects of broiler chicks need to design for improvement of lightening patterns in the poultry farming in the study area. It is ultimately helpful to improve the lightening patterns in the poultry farming as well as behavioral patterns of broiler chicks.

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