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STUDIES ON SOME COMMON PARASITIC DISEASES IN BACKYARD CHICKENS IN AJANTA HILL RANGES FROM SILLOD TAHSIL OF AURANGABAD DISTRICT IN MARATHWADA REGION (M.S.) INDIA.

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ABSTRACT

The present communication deals with the study of some common parasitic diseases in backyard chickens. The study was conducted to investigate the common parasitic diseases of backyard chickens in Ajanta hill ranges from Sillod tahsil of Aurangabad district in Marathwada region of Maharashtra during the period of June 2016 to May 2017. The work is carried out from the different small scale backyard chicken farming having different range of rearing capacity in Ajanta hill ranges from Sillod tahsil of Aurangabad district in Marathwada region. During the study period it was recorded that the major common parasitic diseases faced by the small scale backyard chicken farming and its effects on the health status of the poultry birds. According to the season it showed that the major common parasitic diseases and health status problems of backyard chickens faced by the small scale backyard chicken farming in rainy season followed by summer and winter season. It is concluded that the common parasitic diseases and health status problems of backyard chickens farming and its management by the farmers in the study area is inadequate, it is due to the less awareness among the farmers about common parasitic diseases and health status problems of backyard chickens. Additional research work is required to manage the common parasitic diseases and health status problems of backyard chickens and necessity of awareness among the farmers. Other related aspects will discuss in the text.

Keywords: *Parasitic diseases, health status, backyard chickens, Aurangabad, Marathwada.*

INTRODUCTION

In India the poultry production enterprise started as the household type in the rural areas as a subsidery occupation to obtain some additional income but in the private sector the poultry become management intensive enterprise which gives high income and emerged as an industry in many of the smaller poultry units in the recent years. From rural areas are essentially based upon the local fowls. Such units normally have a very limited number of birds varying from 20 to 100 and are seen as means to supplement the household income. Such smaller units are run by agricultural landless labour, the smaller and marginal dry land farmers etc. The birds are generally reared in the rural areas and are depends essentially upon local material, often the bird essentially scavenging on the feed locally available in the rural areas.

Small-scale poultry farmers are the main producers of the poultry in many developing countries. The poultry farming provides employment at the village level, it is highly labour intensive having high employment potential the industry help to increase the per capta income and also to minimize the need for migration to overcrowded cities. It provides protein rich food for deadly growing poor population.

The poultry farming can provide an alternate to the farmers in the region reeling under repeated drought spell. Maharashtra is amongst the leading states for commercial layer farming and broiler farming. Sources indicated that government of India has focused on promoting "desi" poultry along with bio-secure environment. It intends to create an opportunity for small farmers specially in the weaken sections of the society. The government has taken decision to promote poultry farming in tribal and backward regions of north Maharashtra and Marathwada. (Shubhangi Khapre, 2015)

Prior to 1960 when poultry in India were reared by traditional extensive methods, there occurred few diseases namely Ranikhet (New castle) disease, fowl pox, fowl cholera, fowl spirochaetosis, salmonellosis and coccidiosis which used to manifest in a well ordered fashion and posed not much problem in their control since effective

prophylactic measures were available and the birds were have the disease resistant health.

During 1960 to 1980 many small to fairly large poultry units under varying degrees of intensive system of management, sprang up. With this intensification several diseases viz., infectious bronchitis, mild infectious laryngotracheitis, Marek's disease, avian encephalomyelitis, mild infectious bursal disease and adeno virus infection, posed problems and became well established in the poultry production in addition to prevailing diseases. The methods of control have been the preventive vaccination for infectious bronchitis and Marek's disease. Some organisations are avian encephalomyelitis vaccine to immunise parent flocks. Mild IBD was controlled by use of mild live vaccine in chicks and inactivated in breeder flocks. Subsequently some more higher-to-unknown diseases emerged and some of the existing disease, Gumboro and Ranikhet appeared in poultry, causing considerable economic losses by increasing mortality rate on farms. Vaccination remains the best answer for the prevention and control of poultry diseases. The majority of the vaccines are either live attenuated or are inactivated forms of infectious agents.

In India, a huge loss of birds due to diseases is being faced by farmers due to management related problems. Poultry carry heavy infection of varied types of parasitic infections, i.e. Helminths, Protozoans, Viruses, Arthropods etc. Parasitic infection has a serious impact on poultry health, productivity, quality and quantity of meat. The varied types of parasitic infection are found in backyard chickens locally known as gavran, which reduces the food value and increase the mortality. Which inturn affects on total production causing high economic loss to farmers as well as Nation too.

The most important parasitic protozoan disease of poultry is coccidiosis which is most significant and dangerous and is related to managemental practices. It is one of the major diseases of poultry, mostly affecting the early aged birds. There are several species of genus *Eimeria*, a sporozoan parasite which have many fold effects on poultry production. The *E. tenella*, which causes caecal coccidiosis in poultry and found in almost all the area of country among all the chickens; causing significant financial losses which are mainly due to high rate of morbidity and mortality, poor weight gain and feed conversion. This is one of the most prevalent consistant problems in poultry, particularly tropical countries like India. This disease produces a substantial stress on the economy of poultry enterpreneur resulting in huge economic losses. The mortality rate is too high and may collaps the complete poultry industry if proper steps are not taken.

Efforts to control this disease through the use of anticoccidial proved futile due to development of drug resistance in the long run and also it is costly having much limitation on use. Though, several anticoccidial drugs are avialable (Singh *et al.*, 1982) for the control of caecal coccidiosis in poultry, which is caused by pathogen *Eimeria tenella*, majority of such drugs fail to check completely the disease, especially in case of mixed infection and such as a result there will be emergence of resistant strains of the protozoan parasites. (Gill and Bajwa, 1979). The occurrence of common parasitic diseases and health status problems in backyard chickens and their relative importance have been related to various factors. Therefore, the present research work was conducted to study common parasitic diseases and health status problems in backyard chickens in Ajanta hill ranges from Sillod tahsil of Aurangabad district in Marathwada region of Maharashtra.

MATERIALS AND METHODS

To study the common parasitic diseases and health status problems in backyard chickens from the study area. For analysis and collecting the information about some common parasitic diseases among the backyard chickens the survey methods including questionnaire and field spot observations were used in different backyard chicken farming depending on the bird rearing capacity of different range is conducted in Ajanta hill ranges from Sillod tahsil of Aurangabad district in Marathwada region of Maharashtra. The backyard chickens farming were randomly selected as sample for this study. Different category of backyard poultry farm according to the rearing capacity of birds was selected in this study area. These are categorized in small (about 25 birds capacity), medium (about 50 birds capacity), and large (about 100 birds capacity) backyard poultry farming. In this study the farmers were involved from small, medium and large poultry farming. To collect the relevant information, a semi-structured questionnaire was prepared. The information of some common parasitic diseases and health status problems in backyard chickens is also collected from the study

area through personal interview during the annual cycle (June 2016 to May 2017) and by observing at field level at the farming sites during the study period at different intervals. Data was obtained through the available information and field spot observations to evaluate the knowledge level about some common parasitic diseases and health status problems in backyard chickens. The detailed studies were undertaken with a view to find out some common parasitic diseases and health status problems in backyard chickens and awareness among the poultry farmers.

RESULTS AND DISCUSSION

To study of some common parasitic diseases and health status problems the survey of parasitic diseases in backyard chickens /desi birds (*Gavran*) which are not grown up under managed condition, but naturally they are reared and have chance to exposure to the parasitic diseases is carried out for the annual cycle (June 2016 to May 2017), from Ajanta hill ranges in Sillod tahsil of Aurangabad district in Marathwada region of Maharashtra. Different category of backyard poultry farm according to the rearing capacity of birds was selected in this study area. These are categorized in small (about 25 birds capacity), medium (about 50 birds capacity), and large (about 100 birds capacity) of backyard poultry farming. In this study the farmers were involved from small, medium and large poultry farming. The birds of large and medium poultry farming exposed to positive more or less various parasitic diseases and also show variation in their health status according to the rate of infections of parasitic diseases as compare to small poultry farm.

The parasitic diseases found in this study area include both type of diseases farming through the ectoparasites and endoparasites. It consists of ectoparasites like various species of arthropods as well as endoparasites like various species of helminths and protozoans. So that major parasitic disease and health status problems of backyard chickens faced by the farmers of large poultry farm followed by medium and small poultry farms. Farmers of large and medium poultry farms were faced health status problems related to common parasitic diseases and birds in these farms also suffers from some abnormalities about health like intake of food and loss in their weight and it was observed that the farmer of small poultry farm they never faced any disease problem. (Talukder *et. al.*, 2010) reported that improper environments reduced the chickens' defenses, making them more vulnerable to diseases. (Adesji *et. al.*, 2013) reported that the climatic conditions encouraged the distribution and development of diseases. Farmers of large and medium poultry farms and birds in these farms faced health status problems as compare to small poultry farms. Higher intensity of these problems found in rainy season followed by summer and winter season. (Ali *et. al.*, 2015) reported that hot weather in summer, high humidity and excessive cold with fogging in winter and load shedding were the major constraints for the rural farmers.

Table: Exposure of common parasitic diseases and health status problems in different poultry farms. (Abb: P. D.: Parasitic diseases)

Season	Exposed to parasitic diseases			Health status problems faced		
Farm type	**Small**	**Medium**	**Large**	**Small**	**Medium**	**Large**
Rainy	P. D. _ ve	P. D. + + ve	P. D. + + + ve	Never faced	Major problem faced	Major problem faced
Winter	P. D. _ ve	P. D. + ve	P. D. + ve	Never faced	Minor problem faced	Minor problem faced
Summer	P. D. _ ve	P. D. + + ve	P. D. + + + ve	Never faced	Major problem faced	Major problem faced

In this study area large and medium poultry farmers considered that due to the parasitic diseases the health conditions of the backyard chickens become change. They faced some health status problems related to parasitic diseases. The small poultry farmer's convey their massage about the parasitic diseases that they never faced any health problems related to the diseases. The large and medium farmer faced several health status problems of backyard chickens. The more health problems and parasitic diseases faced by large poultry farm followed by medium and small poultry farms in the form of different types of parasitic infections. (Maheshwari S., 2013) reported that most of the issues associated with poultry production, as environmental impacts related to backyard or mixed extensive systems. (Naphade S. T. *et. al.*, 2016) reported that due to improper environmental conditions of poultry farms farmers and birds of this farms have faced environmental and health related problems.

CONCLUSION

From the above study and observations, it can be concluded that the common parasitic diseases found in this poultry farms due to that farmers and birds of this farms have faced health status problems. For that to implement the awareness among the farmers about the parasitic diseases occurred in the poultry farms is one of the most important part of caring system of poultry farming. Therefore sustainable ways to minimize the parasitic infection in poultry farming and further detail studies need to design for improvement of farm conditions. It also helpful to improve the health status of poultry farming as well as health status of backyard chickens.

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HISTOCHEMICAL OBSERVATIONS PARTICULARLY PROTEIN CONTENT IN CAECAL TISSUE DURING EXPERIMENTAL CAECAL COCCIDIOSIS OF BROILER CHICKS.

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ABSTRACT

The present communication deals with the study of efficacy of homoeopathic medicine Mercurius corrosivus against experimental caecal coccidiosis of broiler chicks (by induced the dose of 50,000 sporulated oocysts of Eimeria tenella). The studies on histochemical examination of caecal tissue were undertaken in different group of birds (treated and untreated) and observed that the histochemical examination particularly protein content in the caecal tissue from all group of birds have the protein content in their tissue. The concentration of protein was variable from different region of the caecal tissue and found different traces like low, moderate and high traces of protein content in the tissue of different group of birds. It was also observed that high traces of protein content in the heavily infected caecal tissue as compare to the normal group of birds. From the histochemical observations it is clear that parasitic stages showing the utilization and absorption of protein from the host tissue whereas the treated groups has also shown the histochemical changes in groups treated with allopathic amprolium and homoeopathic medicine Mercurius corrosivus, other related aspects are also discussed in the text.

Keyword: *Histochemical observation, Caecal tissue, Coccidiosis, Amprolium, Mercurius corrosivus, Broiler chicks.*

INTRODUCTION

Coccidiosis is the important and major disease of poultry, mostly affecting the early aged bird which is most significant and dangerous disease. Broiler chicks are susceptible to at least nine species of coccidia. The most common species are *Eimeria tenella*, which causes the caecal coccidiosis. Coccidiosis is one of the most important and major disease in poultry, (Pellerdy L.P.1974) and most important causes of economic losses within the poultry industry (Williams et al, 1999). The disease found in almost all the area of country among all the chickens; causing significant financial losses which are mainly due to high rate of morbidity and mortality, poor weight gain and feed conversion. This is one of the most prevalent consistant problems in poultry, particularly tropical countries like India. This disease produces a substantial stress on the economy of poultry enterpreneur resulting in huge economic losses. The mortality rate is too high and may collaps the complete poultry industry. This disease is caused by *Eimeria* parasites, which infect epithelial cells of the intestinal and caecal tissue of the birds. For the effective treatment and control of caecal coccidiosis and to combat the development of drug resistance, new types of anticoccidial drugs are being manufactured and tried from time to time. (Madrewar B.P. 1996) has given the use of some homoeopathic drugs to combat different diseases in animals. The importance of homoeopathic drugs and their effective sustainable use other than in humans is explained well by (Naveen 2005). Many authors have studied the histopathology of different birds (Hodges R.D., 1974). In this light during the present study, the homoeopathic medicine *Mercurius corrosivus* was tried against experimental caecal coccidiosis of broiler chicks and its effect was analyzed on different parameters, eg. histochemical observations particularly protein content in caecal tissue are studied in the present paper.

MATERIALS AND METHODS

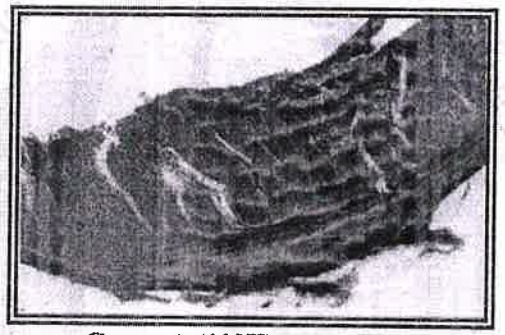
Two hundred and ten a day old white leghorn broiler chicks vaccinated against Mareks disease were procured from a commercial hatchery. The birds were maintained in a coccidia free atmosphere with coccidiostat free starter ration up to three weeks of age followed by finisher ration for next three weeks with free access to normal drinking water. The birds were randomly divided in to seven groups (30 each) Group A served as

healthy control, group B to G was infected with 50,000 sporulated oocysts of *E. tenella* on 23rd day of age. Group B was infected untreated and group C was infected and allopathic drug amprolium treated. Group D to G was infected and homoeopathic medicine Mercurius corrosivus 30X, 200X, 1M and 10 M potency treated respectively. The treatment was given from 3rd day of post-infection to 5th day of post-infection. For histochemical studies the caeca of dead and scarified birds were subjected to histochemical observations for protein contents suitable pieces of caeca were collected and fixed in Carnoy's fluid (Singh, U.B, and Sulochana, S.C, 1997). The tissues were processed to obtain paraffin sections of about 7 micron thickness (Mukharji, 1990). The sections were stained by mercury bromophenol blue. Protein content of the tissues stains blue in colour. (After Bonhag, 1955)

RESULTS AND DISCUSSION

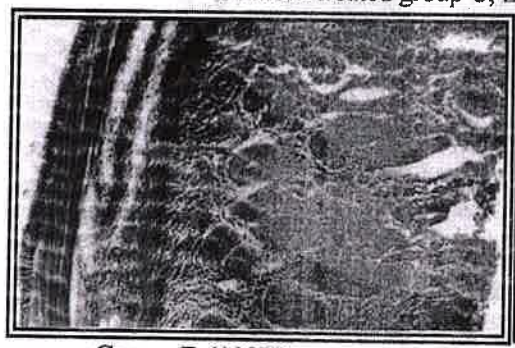
Histochemical examination of normal caeca shows, high concentration of serosal layer, sub mucosa and mucosa. There are high traces of protein in the glandular tissue of mucosa. (Plate No1)

Plate 1: Transverse section of normal caeca uninfected (healthy) showing the distribution of protein content (Group A)

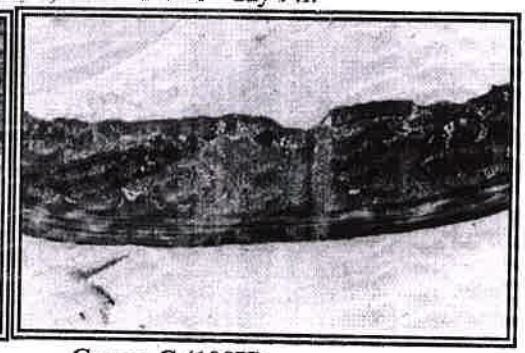


Group A (100X)

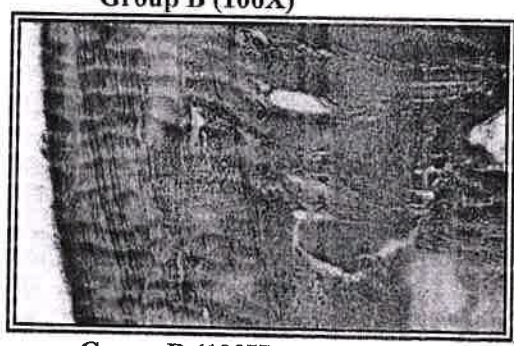
Plate 2: Transverse section of caeca showing distribution of protein content in infected group B and infected treated group C, D, E, F and G on 5th day P.I.



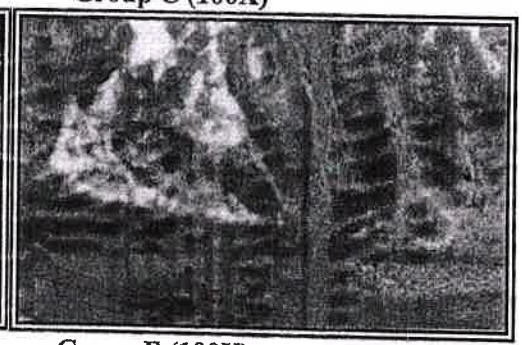
Group B (100X)



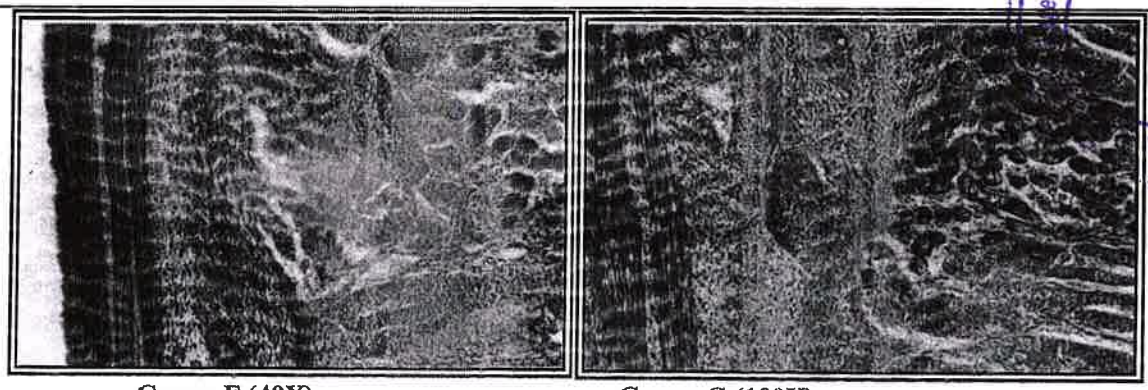
Group C (100X)



Group D (100X)



Group E (100X)



Group F (40X) Group G (100X)

On 5th day of post infection caecal tissue of infected and untreated group B shows the concentration of protein is differs with different region of the tissue high in the longitudenal muscles, and submucosal layer, in the internal epithelium it is showing dark staining reaction suggesting high content protein and the schizont of parasites also have high content. The caecal tissue of infected and allopathic amprolium treated group C shows the amount of protein is high in external most layer of caecum, and muscular layer. In the villi the concentation of protein is moderate than muscular layer, mucosa and submucosa.

The caecal tissue of infected and homoeopathic medicine Mercurius corrosivus 30X potency treated group D shows the amount of protein is differs with different region of the tissue. It is high in the external most covering, moderate in muscular layers, in submucosa at some places accumulation of protein is seen with strong staining reaction. The schizont and other stages of parasite show high protein content. The caecal tissue of infected and homoeopathic medicine Mercurius corrosivus 200 X potency treated group E shows the epithelial cells of the villi contained oocysts and goblet cells and muscular layer, mucosa and submucosa is high concentration of the protein content. The villi lining have low protein content showing weak staining reaction i.e. light / pale colour. R. M. Eyhab Al Samawy et. al. (2017) reported that intestinal mucosal lining revealed no response towards mercury bromophenol blue staining while the sub mucosal connective tissue revealed positive reaction for this technique. Adel Jabbar Hussein et. al. (2016) observed that the histochemical results in the two species of birds were weakly positive to periodic acid Schiff (PAS) while they were positive to mercury bromophenol blue reaction (MBB)

The caecal tissue of infected and homoeopathic medicine *Mercurius corrosivus* 1 M potency treated group F shows the amount of protein is high in muscular layer, mucosa and submucosa. Also moderate in goblet cells and connective tissue, and high in oocysts and low in the villous epithelial cells. The caecal tissue of infected and homoeopathic medicine *Mercurius corrosivus* 10 M potency treated group G shows the concentration of protein is high in goblet cells, oocysts and other stages of parasite. In muscular layer, mucosa also high content of protein is seen. The submucosa have the moderate protein content. (Plate No: 2)

CONCLUSION

From above observation it is concluded that the protein content is demonstrated by weak and strong staining reaction but the protein content is very high the parasite showing the utilization of protein and absorption of protein from host tissue. The host tissue also shows at few places high protein content when compared with the normal or healthy caecum, it is may be due to the hosts reaction against pathogen, *Eimeria tenella*. From the histochemical observations it is clear that parasitic stages could able to acquire the protein content from the host tissue.

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Effect of Homoeopathic Medicine Mercurius Corrosivus and Allopathic Amprolium Against Experimental Caecal Coccidiosis of Broiler Poultry Birds with Reference to Histochemical Changes in Intestinal Tissue

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Abstract

The present communication deals with the study of efficacy of homoeopathic medicine Mercurius corrosivus against experimentally induced the dose of 50,000 sporulated oocysts of Eimeria tenella infected broiler poultry birds. The studies on histochemical examination of intestinal tissue were undertaken in different group of birds (treated and untreated) and observed that the histochemical examination particularly glycogen content of the intestinal tissue from all group of birds have the glycogen content in their tissue. The concentration of glycogen was variable from different region of the intestinal tissue and found different traces like low, moderate and high traces of glycogen content in the tissue of different group of birds. It was also observed that high traces of glycogen content in the heavily infected intestinal tissue as compare to the other group of birds. From the histochemical observations it is clear that parasitic stages could able to acquire the glycogen from the host tissue whereas the treated groups has also shown the histochemical changes in groups treated with homoeopathic medicine Mercurius corrosivus and allopathic amprolium, other related aspects are also discussed in the text.

Key Words: *Caecal coccidiosis, broiler poultry birds, histochemical changes, intestinal tissue, Mercurius corrosivus, Amprolium*

Introduction

Broiler poultry birds are susceptible to at least nine species of coccidia. The most common species are Eimeria tenella, which causes the caecal coccidiosis. Coccidiosis is one of the most important and major disease in broiler poultry birds, Pellerdy L.P. (1974) and most important causes of economic losses within the poultry industry (Williams et al, 1999). This disease is caused by Eimeria parasites, which infect epithelial cells of the intestine of the birds. For the effective treatment and control of caecal coccidiosis and to combat the development of drug resistance, new types of anticoccidial drugs are being manufactured and tried from time to time. Madrewar B.P. (1996) has given the use of some homoeopathic drugs to combat different diseases in animals. The importance of homoeopathic drugs and their effective sustainable use other than in humans is explained well by Naveen (2005). Many authors have studied the histopathology and histochemistry of different birds (Hodges R.D., 1974). In this light during the present study, the homoeopathic medicine Mercurius corrosivus was tried against experimental caecal coccidiosis of broiler chicks as a treatment of control. Its effect was analyzed on different parameters, eg. the histochemical observation in intestine particularly glycogen content of the intestinal tissue are studied in the present paper.

Materials And Methods:

Two hundred and ten a day old white leghorn broiler chicks vaccinated against Mareks disease were procured from a commercial hatchery. The birds were maintained in a coccidia free atmosphere with coccidiostat free starter ration up to three weeks of age followed by finisher ration for next three weeks with free access to normal drinking water. The birds were randomly divided in to seven groups (30 each) Group A served as healthy control, group B to G was infected with 50,000 sporulated oocysts of E.tenella on 23rd day of age. Group B was infected untreated and group C was infected and allopathic drug amprolium treated. Group D to G was infected and homoeopathic medicine Mercurius corrosivus 30X, 200X, 1M and 10 M potency treated respectively. The treatment was given from 3rd day of post-infection to 5th day of post-infection. For histochemical studies the intestine of dead and scarified birds were subjected to histochemical observations for glycogen contents suitable pieces of intestine were collected and fixed in Carnoy's fluid (Singh, U.B, and Sulochana, S.C, 1997). The tissues were processed to obtain paraffin sections of about 7 micron thickness (Mukharji, 1990). The sections were stained by Best carmine stain, glycogen stained pink red to red in colour. (Best, 1906).

Results And Discussion:

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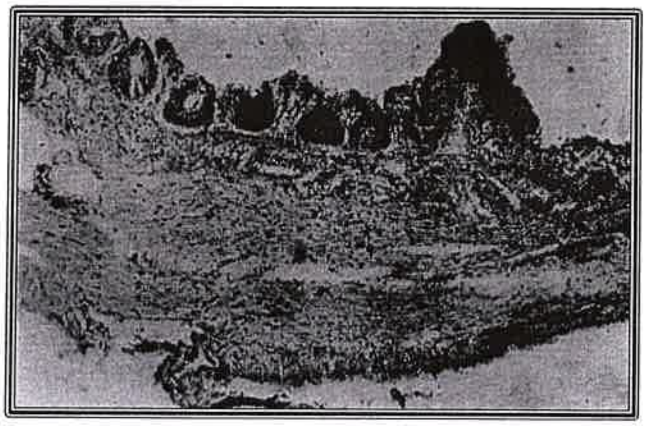
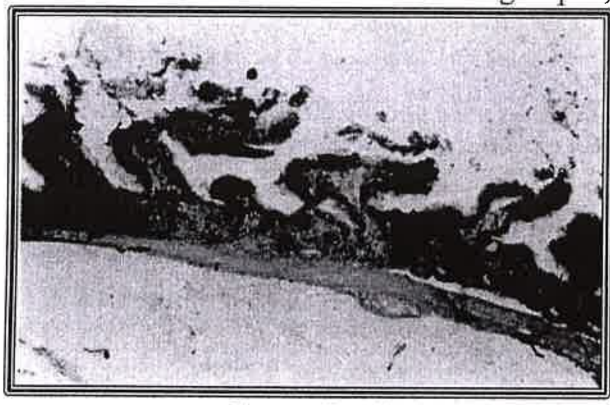
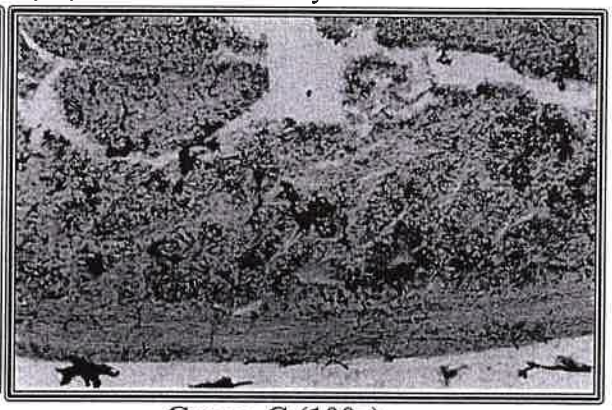


Group A (100x)

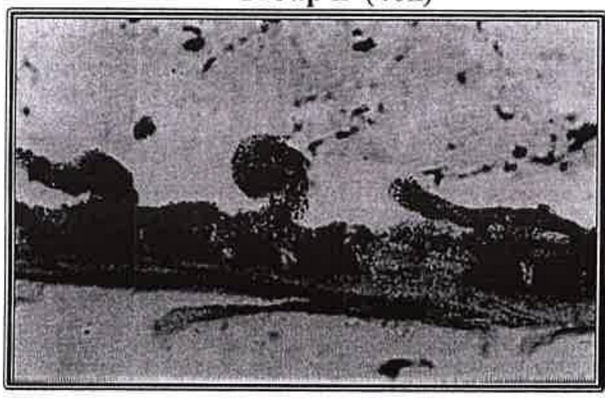
Plate 2: Transverse section of intestine showing glycogen distribution in infected group B and infected treated group C, D, E, F and G on 5th day P.I.



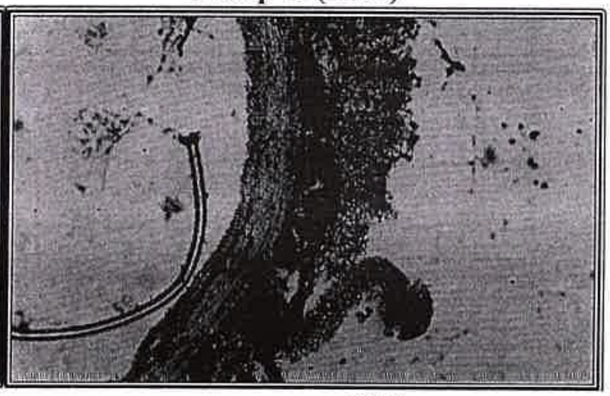
Group B (40x)



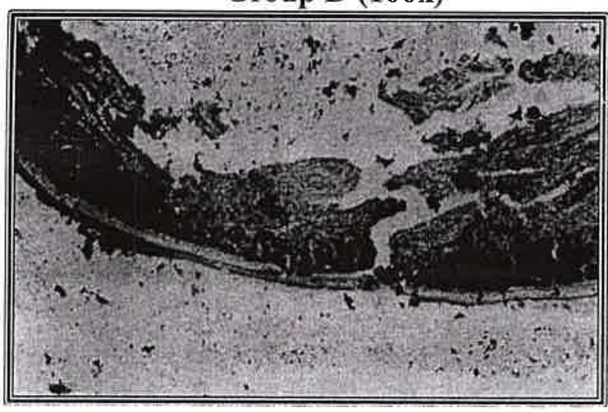
Group C (100x)



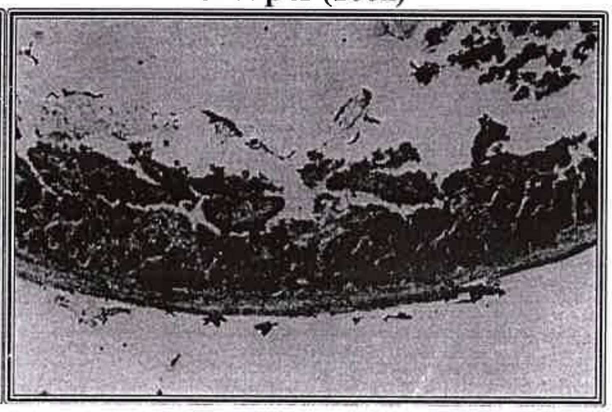
Group D (100x)



Group E (100x)



Group F (40x)



Group G (40x)

The intestinal tissue of infected and homoeopathic medicine Mercurius corrosivus 30X potency treated group D shows the concentration of the glycogen content in the villi is relatively high in muscular layer. The villi epithelium stains dark, showing high percentage of glycogen content. The glycogen content is very high which stains deep in colour i.e. parasites stages found in the villous area.The intestinal tissue of infected and homoeopathic medicine Mercurius corrosivus 200X potency treated group E shows particularly in the muscular layer, mucosa shows low amount of glycogen content as it stains light in colour, but the glycogen content is in large quantity at the villi and goblet cells.

The intestinal tissue of infected and homoeopathic medicine Mercurius corrosivus 1M potency treated group F showsthe concentration of glycogen content is in large quantity at all region in the tissue, which stain deep red in colour. The intestinal tissue of infected and homoeopathic medicine Mercurius corrosivus 10M potency treated group G shows the concentration of glycogen content is variable with different region. The glycogen content in the villous tissue is having relatively high traces of the glycogen content than other part of the tissue. (Plate: 2)

Conclusion:

From the above observation it is concluded that the intestine from all group have the glycogen content in their tissue, low, moderate or high traces but it is high as seen in the heavily infected tissue of intestine it is may be due to the effect of parasite and its stages in the host.

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Effect of Homoeopathic Medicine Mercurius Corrosivus and Allopathic Amprolium Against Experimental Caecal Coccidiosis of Broiler Poultry Birds with Reference to Histochemical Changes in Intestinal Tissue

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Abstract

The present communication deals with the study of efficacy of homoeopathic medicine Mercurius corrosivus against experimentally duced the dose of 50,000 sporulated oocysts of Eimeria tenella infected broiler poultry birds. The studies on histochemical examination intestinal tissue were undertaken in different group of birds (treated and untreated) and observed that the histochemical examination rticularly glycogen content of the intestinal tissue from all group of birds have the glycogen content in their tissue. The concentration of ycogen was variable from different region of the intestinal tissue and found different traces like low, moderate and high traces of glycogen ntent in the tissue of different group of birds. It was also observed that high traces of glycogen content in the heavily infected intestinal sue as compare to the other group of birds. From the histochemical observations it is clear that parasitic stages could able to acquire the ycogen from the host tissue whereas the treated groups has also shown the histochemical changes in groups treated with homoeopathic ed'-ine Mercurius corrosivus and allopathic amprolium, other related aspects are also discussed in the text.

Key Words: *Caecal coccidiosis, broiler poultry birds, histochemical changes, intestinal tissue, Mercurius corrosivus, Amprolium*

ntroduction

Broiler poultry birds are susceptible to at least nine ecies of coccidia. The most common species are Eimeria nella, which causes the caecal coccidiosis. Coccidiosis one of the most important and major disease in broiler oultry birds, Pellerdy L.P. (1974) and most important causes f economic losses within the poultry industry (Williams et , 1999). This disease is caused by Eimeria parasites, which fect epithelial cells of the intestine of the birds. For the ffective treatment and control of caecal coccidiosis and to ombat the development of drug resistance, new types of nticoccidial drugs are being manufactured and tried from me to time. Madrewar B.P. (1996) has given the use of some omoeopathic drugs to combat different diseases in animals. he importance of homoeopathic drugs and their effective ust...able use other than in humans is explained well by Javeen (2005). Many authors have studied the histopathology nd histochemistry of different birds (Hodges R.D., 1974). In his light during the present study, the homoeopathic medicine Mercurius corrosivus was tried against experimental caecal occidiosis of broiler chicks as a treatment of control. Its effect as analyzed on different parameters, eg. the histochemical bservation in intestine particularly glycogen content of the ntestinal tissue are studied in the present paper.

Materials And Methods:

Two hundred and ten a day old white leghorn broiler hicks vaccinated against Mareks disease were procured om a commercial hatchery. The birds were maintained in coccidia free atmosphere with coccidiostat free starter ation up to three weeks of age followed by finisher ration or next three weeks with free access to normal drinking vater. The birds were randomly divided in to seven groups 30 each) Group A served as healthy control, group B to G was infected with 50,000 sporulated oocysts of E.tenella on 23rd day of age. Group B was infected untreated and group C was infected and allopathic drug amprolium treated. Group D to G was infected and homoeopathic medicine Mercurius corrosivus 30X, 200X, 1M and 10 M potency treated respectively. The treatment was given from 3rd day of post-infection to 5th day of post-infection. For histochemical studies the intestine of dead and scarified birds were subjected to histochemical observations for glycogen contents suitable pieces of intestine were collected and fixed in Carnoy's fluid (Singh, U.B, and Sulochana, S.C, 1997). The tissues were processed to obtain paraffin sections of about 7 micron thickness (Mukharji, 1990). The sections were stained by Best carmine stain, glycogen stained pink red to red in colour. (Best, 1906).

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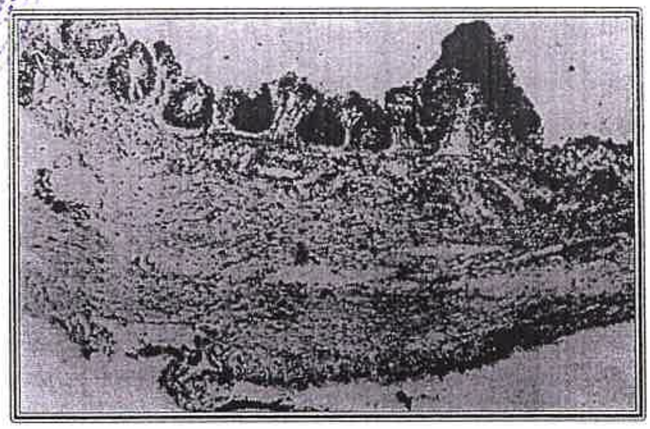

Group A (100x)

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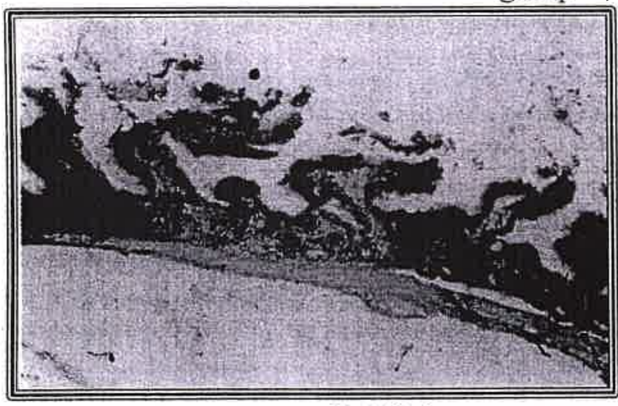
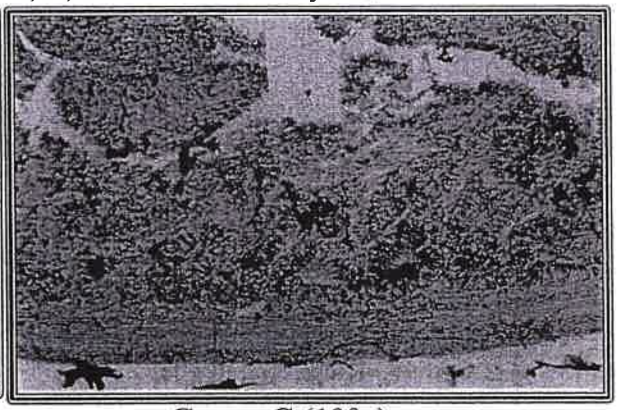


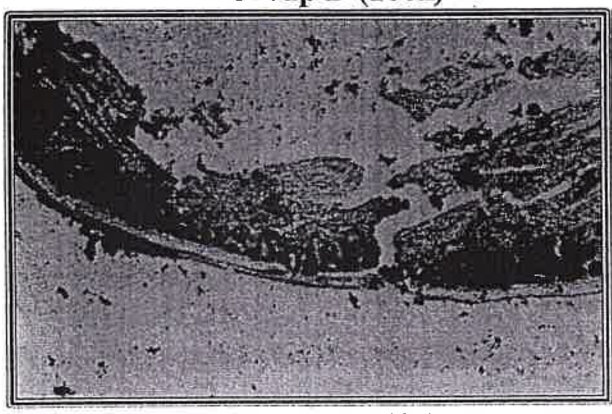
Group B (40x)



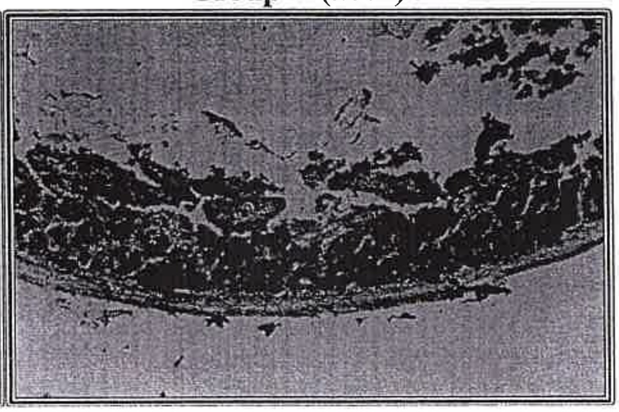
Group C (100x)

Group D (100x)

Group E (100x)



Group F (40x)



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STUDIES ON SOME COMMON PARASITIC DISEASES IN BACKYARD CHICKENS IN AJANTA HILL RANGES FROM SILLOD TAHSIL OF AURANGABAD DISTRICT IN MARATHWADA REGION (M.S.) INDIA.

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ABSTRACT

The present communication deals with the study of some common parasitic diseases in backyard chickens. The study was conducted to investigate the common parasitic diseases of backyard chickens in Ajanta hill ranges from Sillod tahsil of Aurangabad district in Marathwada region of Maharashtra during the period of June 2016 to May 2017. The work is carried out from the different small scale backyard chicken farming having different range of rearing capacity in Ajanta hill ranges from Sillod tahsil of Aurangabad district in Marathwada region. During the study period it was recorded that the major common parasitic diseases faced by the small scale backyard chicken farming and its effects on the health status of the poultry birds. According to the season it showed that the major common parasitic diseases and health status problems of backyard chickens faced by the small scale backyard chicken farming in rainy season followed by summer and winter season. It is concluded that the common parasitic diseases and health status problems of backyard chickens farming and its management by the farmers in the study area is inadequate, it is due to the less awareness among the farmers about common parasitic diseases and health status problems of backyard chickens. Additional research work is required to manage the common parasitic diseases and health status problems of backyard chickens and necessity of awareness among the farmers. Other related aspects will discuss in the text.

Keywords: *Parasitic diseases, health status, backyard chickens, Aurangabad, Marathwada.*

INTRODUCTION

In India the poultry production enterprise started as the household type in the rural areas as a subsidery occupation to obtain some additional income but in the private sector the poultry become management intensive enterprise which gives high income and emerged as an industry in many of the smaller poultry units in the recent years. From rural areas are essentially based upon the local fowls. Such units normally have a very limited number of birds varying from 20 to 100 and are seen as means to supplement the household income. Such smaller units are run by agricultural landless labour, the smaller and marginal dry land farmers etc. The birds are generally reared in the rural areas and are depends essentially upon local material, often the bird essentially scavenging on the feed locally available in the rural areas.

Small-scale poultry farmers are the main producers of the poultry in many developing countries. The poultry farming provides employment at the village level, it is highly labour intensive having high employment potential the industry help to increase the per capta income and also to minimize the need for migration to overcrowded cities. It provides protein rich food for deadly growing poor population.

The poultry farming can provide an alternate to the farmers in the region reeling under repeated drought spell. Maharashtra is amongst the leading states for commercial layer farming and broiler farming. Sources indicated that government of India has focused on promoting "desi" poultry along with bio-secure environment. It intends to create an opportunity for small farmers specially in the weaken sections of the society. The government has taken decision to promote poultry farming in tribal and backward regions of north Maharashtra and Marathwada. (Shubhangi Khapre, 2015)

Prior to 1960 when poultry in India were reared by traditional extensive methods, there occurred few diseases namely Ranikhet (New castle) disease, fowl pox, fowl cholera, fowl spirochaetosis, salmonellosis and coccidiosis which used to manifest in a well ordered fashion and posed not much problem in their control since effective

prophylactic measures were available and the birds were have the disease resistant health.

During 1960 to 1980 many small to fairly large poultry units under varying degrees of intensive system of management, sprang up. With this intensification several diseases viz., infectious bronchitis, mild infectious laryngotracheitis, Marek's disease, avian encephalomyelitis, mild infectious bursal disease and adeno virus infection, posed problems and became well established in the poultry production in addition to prevailing diseases. The methods of control have been the preventive vaccination for infectious bronchitis and Marek's disease. Some organisations are avian encephalomyelitis vaccine to immunise parent flocks. Mild IBD was controlled by use of mild live vaccine in chicks and inactivated in breeder flocks. Subsequently some more higher-to-unknown diseases emerged and some of the existing disease, Gumboro and Ranikhet appeared in poultry, causing considerable economic losses by increasing mortality rate on farms. Vaccination remains the best answer for the prevention and control of poultry diseases. The majority of the vaccines are either live attenuated or are inactivated forms of infectious agents.

In India, a huge loss of birds due to diseases is being faced by farmers due to management related problems. Poultry carry heavy infection of varied types of parasitic infections, i.e. Helminths, Protozoans, Viruses, Arthropods etc. Parasitic infection has a serious impact on poultry health, productivity, quality and quantity of meat. The varied types of parasitic infection are found in backyard chickens locally known as gavran, which reduces the food value and increase the mortality. Which inturn affects on total production causing high economic loss to farmers as well as Nation too.

The most important parasitic protozoan disease of poultry is coccidiosis which is most significant and dangerous and is related to managemental practices. It is one of the major diseases of poultry, mostly affecting the early aged birds. There are several species of genus *Eimeria*, a sporozoan parasite which have many fold effects on poultry production. The *E. tenella*, which causes caecal coccidiosis in poultry and found in almost all the area of country among all the chickens; causing significant financial losses which are mainly due to high rate of morbidity and mortality, poor weight gain and feed conversion. This is one of the most prevalent consistant problems in poultry, particularly tropical countries like India. This disease produces a substantial stress on the economy of poultry enterpreneur resulting in huge economic losses. The mortality rate is too high and may collaps the complete poultry industry if proper steps are not taken.

Efforts to control this disease through the use of anticoccidial proved futile due to development of drug resistance in the long run and also it is costly having much limitation on use. Though, several anticoccidial drugs are avialable (Singh *et al.*, 1982) for the control of caecal coccidiosis in poultry, which is caused by pathogen *Eimeria tenella*, majority of such drugs fail to check completely the disease, especially in case of mixed infection and such as a result there will be emergence of resistant strains of the protozoan parasites. (Gill and Bajwa, 1979). The occurrence of common parasitic diseases and health status problems in backyard chickens and their relative importance have been related to various factors. Therefore, the present research work was conducted to study common parasitic diseases and health status problems in backyard chickens in Ajanta hill ranges from Sillod tahsil of Aurangabad district in Marathwada region of Maharashtra.

MATERIALS AND METHODS

To study the common parasitic diseases and health status problems in backyard chickens from the study area. For analysis and collecting the information about some common parasitic diseases among the backyard chickens the survey methods including questionnaire and field spot observations were used in different backyard chicken farming depending on the bird rearing capacity of different range is conducted in Ajanta hill ranges from Sillod tahsil of Aurangabad district in Marathwada region of Maharashtra. The backyard chickens farming were randomly selected as sample for this study. Different category of backyard poultry farm according to the rearing capacity of birds was selected in this study area. These are categorized in small (about 25 birds capacity), medium (about 50 birds capacity), and large (about 100 birds capacity) backyard poultry farming. In this study the farmers were involved from small, medium and large poultry farming. To collect the relevant information, a semi-structured questionnaire was prepared. The information of some common parasitic diseases and health status problems in backyard chickens is also collected from the study

area through personal interview during the annual cycle (June 2016 to May 2017) and by observing at field level at the farming sites during the study period at different intervals. Data was obtained through the available information and field spot observations to evaluate the knowledge level about some common parasitic diseases and health status problems in backyard chickens. The detailed studies were undertaken with a view to find out some common parasitic diseases and health status problems in backyard chickens and awareness among the poultry farmers.

RESULTS AND DISCUSSION

To study of some common parasitic diseases and health status problems the survey of parasitic diseases in backyard chickens /desi birds (*Gavran*) which are not grown up under managed condition, but naturally they are reared and have chance to exposure to the parasitic diseases is carried out for the annual cycle (June 2016 to May 2017), from Ajanta hill ranges in Sillod tahsil of Aurangabad district in Marathwada region of Maharashtra. Different category of backyard poultry farm according to the rearing capacity of birds was selected in this study area. These are categorized in small (about 25 birds capacity), medium (about 50 birds capacity), and large (about 100 birds capacity) of backyard poultry farming. In this study the farmers were involved from small, medium and large poultry farming. The birds of large and medium poultry farming exposed to positive more or less various parasitic diseases and also show variation in their health status according to the rate of infections of parasitic diseases as compare to small poultry farm.

The parasitic diseases found in this study area include both type of diseases farming through the ectoparasites and endoparasites. It consists of ectoparasites like various species of arthropods as well as endoparasites like various species of helminths and protozoans. So that major parasitic disease and health status problems of backyard chickens faced by the farmers of large poultry farm followed by medium and small poultry farms. Farmers of large and medium poultry farms were faced health status problems related to common parasitic diseases and birds in these farms also suffers from some abnormalities about health like intake of food and loss in their weight and it was observed that the farmer of small poultry farm they never faced any disease problem. (Talukder *et. al.*, 2010) reported that improper environments reduced the chickens' defenses, making them more vulnerable to diseases. (Adesji *et. al.*, 2013) reported that the climatic conditions encouraged the distribution and development of diseases. Farmers of large and medium poultry farms and birds in these farms faced health status problems as compare to small poultry farms. Higher intensity of these problems found in rainy season followed by summer and winter season. (Ali *et. al.*, 2015) reported that hot weather in summer, high humidity and excessive cold with fogging in winter and load shedding were the major constraints for the rural farmers.

Table: Exposure of common parasitic diseases and health status problems in different poultry farms. (Abb: P. D.: Parasitic diseases)

Season	Exposed to parasitic diseases			Health status problems faced		
Farm type	**Small**	**Medium**	**Large**	**Small**	**Medium**	**Large**
Rainy	P. D. _ ve	P. D. + + ve	P. D. + + + ve	Never faced	Major problem faced	Major problem faced
Winter	P. D. _ ve	P. D. + ve	P. D. + ve	Never faced	Minor problem faced	Minor problem faced
Summer	P. D. _ ve	P. D. + + ve	P. D. + + + ve	Never faced	Major problem faced	Major problem faced

In this study area large and medium poultry farmers considered that due to the parasitic diseases the health conditions of the backyard chickens become change. They faced some health status problems related to parasitic diseases. The small poultry farmer's convey their massage about the parasitic diseases that they never faced any health problems related to the diseases. The large and medium farmer faced several health status problems of backyard chickens. The more health problems and parasitic diseases faced by large poultry farm followed by medium and small poultry farms in the form of different types of parasitic infections. (Maheshwari S., 2013) reported that most of the issues associated with poultry production, as environmental impacts related to backyard or mixed extensive systems. (Naphade S. T. *et. al.*, 2016) reported that due to improper environmental conditions of poultry farms farmers and birds of this farms have faced environmental and health related problems.

CONCLUSION

From the above study and observations, it can be concluded that the common parasitic diseases found in this poultry farms due to that farmers and birds of this farms have faced health status problems. For that to implement the awareness among the farmers about the parasitic diseases occurred in the poultry farms is one of the most important part of caring system of poultry farming. Therefore sustainable ways to minimize the parasitic infection in poultry farming and further detail studies need to design for improvement of farm conditions. It also helpful to improve the health status of poultry farming as well as health status of backyard chickens.

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Authors are thankful to the Principal, Yeshwantrao Chavan Arts, Commerce and Science College, Sillod, Dist. Aurangabad (M.S.) India and Head Department of Zoology, for providing laboratory and library facilities.

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Effect of light intensity on health status of broiler chicks of selected poultry farms in Aurangabad district, (MS) India

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ABSTRACT

The present paper deals with the effect of light intensity on health status of broiler chicks. The study was conducted to analyze the effect of light intensity on health status of broiler chicks. The work is carried out from the three different poultry farms ranges from small to large size poultry farms situated in Aurangabad district during the period July 2016 to December 2016. During the study period it was recorded that major health status problems of broiler chicks faced by the farmers of small poultry farm followed by medium and large poultry farms. It also showed that the major health status problems of broiler chicks faced by the farmers those are insufficient management practices. It is concluded that the health status problems of broiler chicks occurred due to light intensity and its management by the farmers in the study area is improper, due to lack of knowledge about the issues and use of light in various intensities during the rearing of broiler chicks. Additional research work is required to manage the health status of broiler chicks with proper lightening in the poultry farms. Other related aspects will discuss in the text.
Keywords: Light intensity, Health status, broiler Chicks, Poultry farms, Aurangabad .

INTRODUCTION

Poultry farming provides employment at the village level, it is highly labour intensive having high employment potential, the industry help to increase the per capta income and also to minimize the need for migration to overcrowded cities. Small-scale poultry farmers are the main producers of the poultry in many developing countries. It provides protein rich food for deadly growing poor population. The poultry farming can provide an alternate to the farmers in the region reeling under repeated drought spell.

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, [1]. 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. 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 [2].

Lightning sources normally used in poultry farming as a result broiler chicks shows normal everyday processes during the rearing in the poultry farming. It includes feed consuption, behavior, body weight etc. Light intensity and their interaction affect the health of broiler chicks. To increase the productivity and to establish proper health status of broiler chicks are the major and important concern of poultry farming. Therefore, the present research work was conducted to analyze the effect of light intensity on the health status of broiler chicks in the poultry farming in Aurangabad district of Marathwada region.

METHODOLOGY

To study the effect of light intensity on health status of broiler chicks from three different selected poultry farms. For collecting the information the survey methods including questionnaire was used in these three different poultry farms is conducted in district Aurangabad from Marathwada region. 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. To collect the relevant information, a semi-structured questionnaire was prepared. The information of lightening pattern in poultry farming and its effect on health status of broiler chicks is collected from all the farms through personal interview during the visit in the annual cycle (July 2016 to December 2016) and by observing the management at the farm sites during the study period at different intervals. Information was obtained about lightening pattern and intensity of light, to evaluate the knowledge level about use of light of various intensities. The detailed studies were undertaken with a view to find out the light intensity and effect on health status on broiler chicks and awareness among the poultry farmers.

RESULTS AND DISCUSSIONS

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. In this study the farmers were involved from small poultry, in medium poultry and in large poultry farming. The broiler chick of small poultry farming shows that they faced major health status problems, because they are usually reared by the farmers under low managemental practices.

Table: Information about lightening and health status problems in different poultry farms.

Lightening used			Management of lightening			Health status problems faced		
Small farm	**Medium farm**	**Large farm**	**Small farm**	**Medium farm**	**Large farm**	**Small farm**	**Medium farm**	**Large farm**
Improper lightening used	Partial proper lightening Used	Proper lightening Used	Improper lightening facility	Partial lightening facility	Proper lightening facility	Major problem faced	Partial problem faced	Never faced

The broiler chicks of the small poultry farms show several health problems like poor feed consumption, lower weight, and inactive behavior. In the small poultry farm did not use any proper lightning and thus the broiler chicks grown poorly. For medium and large poultry farms as compare to small farm they prefer proper lightning according to the number of broiler chicks reared in the respective farms. Deep [3] reported that the body weight, feed consumption, feed gain ratio, and mortality were unaffected by light intensity, percentage of live weight decrease linearly with increasing light intensity. The major health status problems of broiler chicks particularly feed consumption and weight gain 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. Olanrewaju, Hammed [4] recorded use of light management is an important component of broiler production it is widely used to improve the production efficiency.

For proper lightening management of the poultry farms requires necessary automated facilities within the poultry farms. This study shows that large poultry farms found the proper necessary facilities of lightening and the medium poultry farms have partial necessary facilities of lightening and small poultry farms had no proper facilities of lightening. According to the report of [5] light plays an important role for vision for release of various hormones which are important for production and reproduction of poultry birds and the performance of poultry have been assessed for different light intensities suggested by [6].

In this study area large and medium poultry farmers considered that due to the light intensity health conditions of the chicks become change if it was manage with the help of sufficient light intensity. They never faced any health associated problems of broiler chicks. The small poultry farmer's faced some health related problems of broiler chicks due to the improper lighting pattern. Therefore more health associated problems of broiler chicks faced by small poultry farmers followed by medium and large poultry farmers in the form of different health and growth related problems like feed consumption, body weight gain, behavioral changes, etc. Ahmad F [7] reported that the birds kept under proper or lower light intensity showed better production performance and more profit than the birds kept under higher intensity of light.

CONCLUSION

From the above study and observations, it can be concluded that the improper lightening conditions found in the small poultry farm due to that broiler chicks of this farm have faced health status problems as compare to the medium and large poultry farms. For that to implement the awareness among the farmers about the lightening patterns and issues occurred in the poultry farms is one of the most important part of management system of poultry farming. Therefore it is

necessary to manage the lightening patterns and to reduce the health status problems in poultry farming and further detail studies need to design for improvement of lightening patterns in the poultry farming in the study area. It also helpful to improve the lightening patterns in the poultry farming as well as health status of broiler chicks.

Acknowledgements

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