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INCREASING INFECTIOUS DISEASES IN LIVESTOCK BIRD (*GALLUS GALLUS DOMESTICUS*) WITH SPECIAL REFERENCE TO HELMINTHIASIS

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ABSTRACT:

India is a country with variety of Flora and Fauna. Livestock animals and birds are useful for various purposes like milk, meat, bones, and skin. Poor farmers rear these animals and birds as their income source. Certain reports given by various researchers are proved that Livestock animals and birds are getting affected by different infectious diseases such as bacterial diseases, viral and parasitic diseases. Helminthiasis is one of the endoparasitic diseases which has become a serious problem in animals and birds, which may be responsible for death in serious cases, and they can transfer from one host to another when they got favorable conditions which can be considered as an emerging problem for domestic birds and animals. Present study deals with the collection and isolation of helminth parasites from domestic chicken (*Gallus gallus domesticus*) which is a domestic bird reared for meat and egg. The study was carried out in the period of June 2015 to May 2016. Prevalence of helminth parasites in domestic chicken reported was (94.61) in the summer season which was more abundant as compare to remaining seasons. The study helps in understanding the severity of helminth infection in domestic chicken which should be control. The study also gives certain control strategies to protect these birds from infectious diseases and specially Helminthiasis.

KEY WORDS: Domestic animals and birds, *Gallus gallus domesticus*, Helminthiasis.

INTRODUCTION:

Livestock animals and birds are used as income source by poor peoples, but these livestocks are getting affected by various infectious diseases due to variety of bacteria, and various viruses, and different parasitic infections. These parasites are helminthes and other ecto parasites. Parasitic diseases are due to different ecto and endo parasites. Among endoparasites, the helminth parasites are those which live in the host body and causes infections and which belongs to phylum Platyhelminths, while ectoparasites causes infection by living on host body. These parasitic diseases may also leads to increase in mortality rate of host organisms. Helminthiasis is an infection of worm helminth which caused infection to any of humans and other animals or birds in which a part of the body is infected with parasitic worms. These parasites are broadly classified into flukes, roundworms, and tapeworms. Tape worms are the flat ribbon like parasites having hooks and suckers for attachment of internal organs of host body. They specially live in the gastrointestinal tract of their hosts, and also have a capacity of burrowing into other organs, and which leads to economic losses

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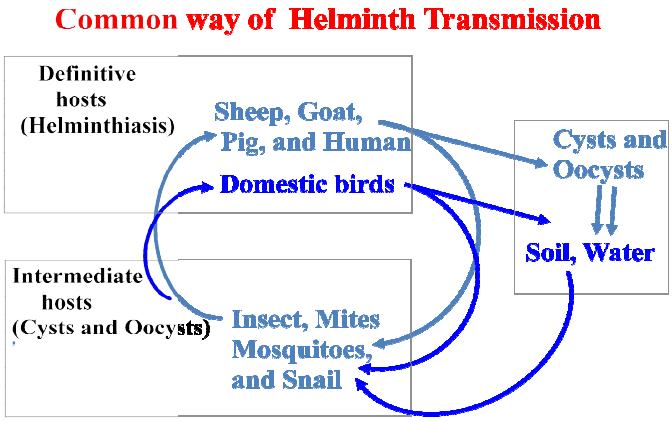
because they affect meat and egg quality of host. A very high prevalence of Helminth infection in free-range chickens from many developing countries has been reported by different researchers (Mukaratirwa *et al* 2010). Infections by gastrointestinal helminth parasites are the most common, economically important diseases of livestock animals (Perry *et al* 2002). Therefore there must be a control on these parasitic diseases and there should be proper treatment for these parasitic infections. The transmission of Helminthiasis from one host to another through different ways is described in present study and the prevalence of cestode infection in *Gallus gallus domesticus* is studied which will help in providing awareness among the peoples about this disease and protection of livestocks from Helminthiasis.



Basic example of transmitting the Helminthiasis:

There are various ways of transmissions of Helminths to their host such as through undercooked meat, through consumptions of contaminated vegetables and drinking water. The cysts, oocysts and eggs of Helminth parasites such as Ascaris, Enterobius, and Trichuris (nematodes), Taenia, Hymenolepis, and Echinococcus (cestodes), and Fasciola (trematodes) may enter in the body of host through raw or contaminated food which can cause Helminthiasis. Undercooked or raw or meats of beef, pork, fish, are the major sources of causing the disease in humans. Livestock birds like domestic fowl and poultry fowl are kept in same cages in poultry farms which are also responsible for cross contaminations from domestic to poultry fowls. Discharge of waste from an infected bird and animal such as domestic fowl or sheep and goat, in open places may also play a role in contaminating environment. Unhygienic conditions are also a cause of disease. The cysts of parasites may be also get transferred by intermediate hosts such as insects, ticks, mosquitoes and mites in main host. Majority of parasitic infections occur in tropical regions, where there is poor sanitation poverty, and unhygienic conditions. Entire communities may be infected with these parasitic organisms which remain untreated because treatment is not accessible and unaffordable.

REVIEW OF LITERATURE:

There are various reports given by researchers about the prevalence and severity of Helminth parasites in birds and animals. (Terregino *et al*., 1999) studied the Helminths of the chicken digestive tract in Somalia. (Permin *et al* 2006), gives consequences of nematode parasite, (*Ascaridia galli*) in

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domestic fowl *Gallus gallus domesticus*. Prevalence of Helminth parasites in ruminants, cattle, sheep, goat, chinkara, blackbuck, in Cholistan desert, Pakistan, was studied and reported by (Zaheed farooq 2009), in his Ph. D Thesis while according to (Permin *et al* 1997), Helminthiasis is one of the most prevalent diseases of the free range chickens. These evidences proves that Helminthiasis has become most prevalent in almost all type of animals, and birds, and hence it should be consider as emerging problem for livestock animals and birds and which should be control.

MATERIALS AND METHODS:

To give evidences of Helminthiasis in domestic bird (*Gallus gallus domesticus*) of Solapur city, the present study deals with the isolation and collection of helminth parasites from host *Gallus gallus domesticus* (domestic chicken) as it is used as the protein rich food. The study was carried out in the period of June 2015 to May 2016. Total of 550 chickens were examined for the helminth parasites. Intestines of freshly slaughtered chicken were collected from local shops of city and brought to the laboratory, and dissected for isolation of cestodes and nematodes from infected birds. Observations are shown in the table.

Table 1: Observation table for prevalence of cestodes and nematode parasites in Gallus gallus domesticus

Season	Total Number of host examined	Total number of host infected	Total number of cestode collected	Total number of nematode found	Prevalence of parasites (in %)
Rainy (June 2015 - September 2015)	203	179	897	176	(88.17)
Winter (October 2015 - January 2016)	180	161	590	154	(89.44)
Summer (February 2016 - May 2016)	167	158	750	322	**(94.61)**

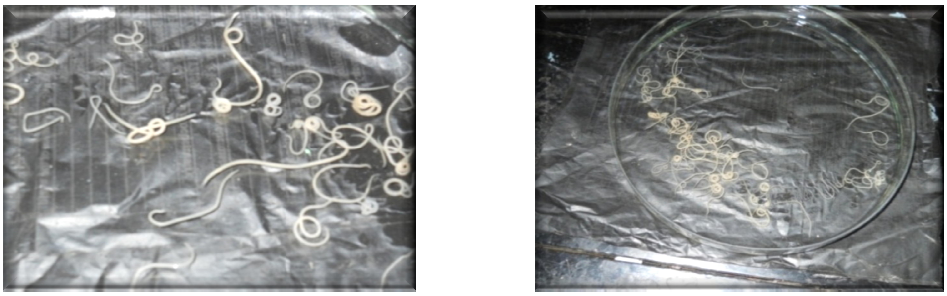

Figure 1: Nematode parasites found in *Gallus gallus domesticus*

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Figure 2: Cestode parasites found in *Gallus gallus domesticus*

RESULTS AND DISCUSSION:

The figures 1 and 2 show the severity of cestodes and nematodes in *Gallus gallus domesticus*. Table no. 1 gives the prevalence of helminth parasites in *Gallus gallus domesticus*, which is more abundant in the Summer season (94.61). This proves that domestic fowls are getting affected by helminth infection and which may lead to production loss and this problem should be considered as emerging issue for protection of these domestic chickens from Helminthiasis.

Control Strategies on Helminthiasis: Efficient control requires "mass intervention strategies" against the disease and everyone should have knowledge about the severity of infections.

Better Sanitation: proper discharge of sewage waste, Protection of wells from mixing of pollutants, regular clinical check-up of domestic animals and birds, and their vaccination should be done.

Vector Control: use of residual insecticides, proper drainage system and control on vectors is more important.

Educate the People: Program of drug administration and Mass screening and also programs regarding the protection of animals and birds should be taken.

Use of Anthelmintics: This is the most important control strategy for treatment of parasitic infection. The drugs which are used for controlling these parasites should be easily available, cheap, and without any side effect, as well as a common man can also use for his domestic animals and birds. There are variety of chemical anthelmintics are used for controlling these parasites but these parasites are getting resist to chemical anthelmintics and they have high cost and certain side effects hence researchers are getting interest to produce alternative to chemical anthelmintics by using medicinal plants.

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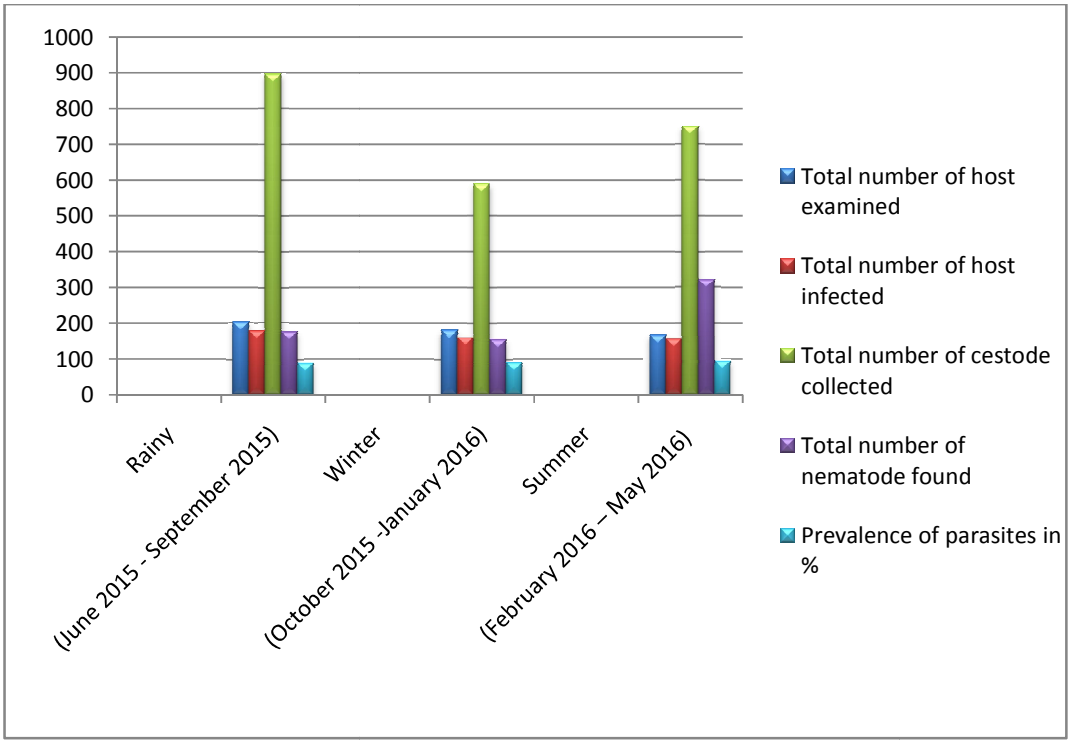
1: Graph for prevalence of cestodes and nematode parasites in *Gallus gallus domesticus* from June 2015 to May 2016



CONCLUSION:

Formation of natural anthelmintics from medicinal plant will provide a new platform in the field of research and it will help to protect the livestock birds from infectious diseases and especially from Helminthiasis and there is a necessity of understanding the severity of Helminth infection in *Gallus gallus domesticus*.

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