INCIDENCE OF ENDOHELMinTH PARAsITES IN THE ALIMENTARY CANAL OF DOMESTIC FOWL (GALLUS DOMESTICUS), BUTCHERED AT PIPAR CITY, JODHPUR

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ABSTRACT

This investigation was carried out to assess the prevalence and species diversity of helminths in domestic fowl (Gallus domesticus). For this purpose, 120 gastrointestinal tracts of fowls butcheted at the local market of Pipar city, were gathered and screened for helminth parasites. A high rate of helminth infection (53.33%) was observed. Three types of cestode parasites were recovered from the gastrointestinal tract of tainted fowls. One cestode Raillietina tetragona and two nematodes, Heterakis gallinarum and Ascaridia galli were recovered throughout the present investigation. A galli was the most common nematode in checked alimentary tracts of fowls. The prevalence of identified helminth species were, Raillietina tetragona (9.16%), Heterakis gallinarum (13.33%), and Ascaridia galli (30.83%). Parasite inclination in regard to sex was additionally recorded. Females (42.5%) were more contaminated than males (10.83%). Single kind of contamination was discovered more pervasive than double and triple infection.

Keywords: Endohelminths, Prevalence, Incidence, Gallus domesticus.

INTRODUCTION

The domestic fowl feeds on a wide range of nutrition substance extending from grains, organic products, and insects which may harbor infective phases of gastrointestinal parasites. Helminth infection was thought to be critical issues in chickens (Jansen and Pandey, 1989 and Abebe et al., 1997). Helminth parasites are a significant reason for the decrease in wellbeing of Gallus domesticus.

An extensive number of helminths are generally spread all through the world in unfenced poultry. Helminth parasites of fowls are wide-ranging in numerous parts of the world (Hodasi, 1969). Fowls endow with high dietary esteem and other financial advantages to people which cannot be over emphasized (Matur, 2002). The chicken production is compelled by numerous extraneous aspects among which ailing health, poor administration and the nonattendance of veterinary care. The incidence and intensity of helminth contaminations in fowls might be impacted by a few factors as the dispersion of intermediate host and their infectivity. Insects and houseflies play a significant role as transitional host for most types of cestodes (Baba and Oveka, 2004). Consequently, studies led in various parts of the world showed that the extent of chicken contamination with gastrointestinal helminths is high, in this manner helminths are thought to be an imperative reason for sick wellbeing and declining in poultry yield (Ajala et al., 2007). Saxena and Nama (1976) made an attempt to reveal helminth infections in domestic fowls of Jodhpur, Rajasthan.

Looking to the economic importance and absence of any work in this area an attempt has been made to investigate the helminth parasites found in domestic fowls of Pipar city, Jodhpur. This examination is intended to giving data on helminth dispersion, incidence, dominance and parasite load.

MATERIALS AND METHODS

Study area: Jodhpur district is among the biggest districts in the state of Rajasthan. It is halfway arranged in the western region of the state, and covers an aggregate geological territory of 22850 Sq. Km. This area goes under the parched zone of the Rajasthan state. Pipar City is a city and a municipality in Jodhpur district (Rajasthan) and 65 km away from Jodhpur. Its geographical coordinates are 26° 23’ 8” North and 73° 32’ 16” East.

Examination procedure: The alimentary canal of fowls were collected from February to July, 2017, i.e., for six months from different butcher shops at Pipar City, Jodhpur. Collected samples of alimentary canals were transported to the Parasitology Laboratory, Department of Zoology, J.N.V.University Jodhpur for parasitological examinations. The recovered helminth parasites were collected, preserved, processed to a permanent slide and identified under compound microscope. Helminths recovered from the gastrointestinal tract were counted and preserved in 70% alcohol with 5% glycerine. For identification, the cestodes were stained with aceto-alum carmine and the nematodes were cleared with lactophenol. Parasites were identified according to the keys and description given by Yamaguti (1958) and Soulsby (1982).
OBSERVATION

Out of a total of 120 alimentry tract samples of fowls (35 males and 85 females) examined, 64 (14 males and 48 females) were found to be infected. The overall infection was 53.33% (10.83% in male and 42.5% in female). The infection was higher in females than males (Figure 1). In all three helminth species, one of cestode, Raillietina tetragona and two of nematodes, Heterakis gallinarum, and Ascaridia galli, were recovered. No trematode or acanthocephalan was found during study period.

The quantitative structure of helminthes ascertained consisted of number of infected hosts, number of individual helminth species recovered, prevalence, average intensity, index of invasion and dominance percentage, as shown in table 1. The overall helminthes prevalence was 53.33%, average intensity 14.95, index of invasion 4.25 and dominance percentage 100. Of the three helminth species, A. galli was most common with highest burden of worms, prevalence, average intensity, index of invasion and dominance percentage while R. tetragona has least for the same (Table 1). Of 64 infection cases, infection with single helminth comprised 55 cases (85.93%), infection with two helminth species 8 (12.5%) and triple helminths infection 1 (1.56%). The percentage of single infection was higher in females than males. The double and triple invasions were restricted to female hosts only.

Table 1. Quantitative structure of helminths infectivity in Gallus domesticus.

<table>
<thead>
<tr>
<th>Helminths</th>
<th>No. of examined hosts</th>
<th>No. of infested hosts</th>
<th>No. of helminths</th>
<th>Prevalence</th>
<th>Average intensity</th>
<th>Index of invasion</th>
<th>Dominance %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cestode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. tetragona</td>
<td>120</td>
<td>11</td>
<td>37</td>
<td>9.1666666667</td>
<td>3.3636363636</td>
<td>0.0282038889</td>
<td>3.866248094</td>
</tr>
<tr>
<td>Nematoses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. gallinarum</td>
<td>120</td>
<td>16</td>
<td>98</td>
<td>13.3333333333</td>
<td>6.125</td>
<td>0.1088888889</td>
<td>10.24033438</td>
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<tr>
<td>A. galli</td>
<td></td>
<td>37</td>
<td>822</td>
<td>30.8333333333</td>
<td>22.162162222</td>
<td>2.1120833333</td>
<td>85.89341693</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>64</td>
<td>957</td>
<td>53.3333333333</td>
<td>14.953125</td>
<td>4.2533333333</td>
<td>100</td>
</tr>
</tbody>
</table>

DISCUSSION

Present study revealed a high prevalence (53.33%) of helminth infectivity in domestic fowl (Gallus domesticus) with 3 helminths, 1 cestode, and 2 nematodes. The high pervasiveness of infectivity observed in domestic fowl can be because of the sort of production system, their consistent contact with intermediate host, free-ranging management and climatic situation (Yadav and Tandon 1989 and Magwisha et al., 2002). As per Frantovo (2000), local chickens feed widely hence; they turn out to be more inclined to infectivity in free range system. The helminth invasion in fowls is not exceptional in view of their unfenced method of management which permits them free access to for all intents and therefore, inclining them to different types of infections. Permin and Nansen, (1996) reported expanded invasion of internal parasites including Heterakis and Ascaridia which are causing non-particular clinical signs, loss of hunger and development. Hedge et al. (1973) recorded 80.6% infection in desi (free range) fowls and 13.6% in farm birds with 10 helminth species in Mysore (India). Mpoame and Agbede (1995) revealed 93.55% of residential fowl infected with gastrointestinal helminthes. Eshetu et al. (2001) found 91.01% chickens tainted with gastrointestinal helminthes from Amhara area Ethiopia. Ayshia and Showkat (2015) reported R. tetragona...
(51.42%) as most common helmint in domestic fowl and *A. galli* (30.71%) as least infecting helmint species.

Numerous researchers reported *Ascaridia galli* as most predominant helmint in domestic fowls. Qureshi (1950) reported a high frequency of *A. galli* (31.02%) in Desi grown-up fowls in U.P India. Saxena and Nama (1976) reported relative findings with 46% prevalence in Jodhpur, Rajasthan. Wilson et al. (1994) revealed the occurrence of *A. galli* was in the range of 40% on commercial farms in the state of Arkansas. Shukla and Mishra (2013) stated *A. galli* as most widespread in both local and exotic species of chickens. Jordan and Pattison (1996), Luka and Ndams (2007) and Sonune (2012) also reported *A. galli* as the commonest and most imperative helmint of chickens, and by present workers. Since the present outcomes are in consensus with those of numerous others, still the dissimilarity can be ascribed to the lacking accessibility of intermediate host ecological conditions in the territory.

In present findings, helminthes tendency in relation to sex was too observed and revealed that the high level of contagion rates saw in females than in the males. Identical kinds of findings are additionally revealed by Saxena and Nama (1976) and Shukla And Mishra (2013). The present investigation uncovers that single kind of infection were more persistent than multiple type infection. Multiple type infections of helmints in domestic fowls were also reported by Saxena and Nama (1976), Yadav and Tondon (1989), Magwisha et al. (2002).

CONCLUSION
After the analysis of observed data, the present study can be presumed that the infections of helmint parasites have happened in domestic fowls of Pipar City, Jodhpur. Sustaining living spaces of the host, accessibility of infective hosts and free-ranging management, and such reasons are liable of influencing the parasitic infections. From the present outcomes, clearly, helmint infection is generally predominant in domestic fowls of Pipar city. In conclusion, more awareness should be focused towards the enhancement of the poultry administration and care of domestic fowls which are generally free ranging.

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REFERENCES


