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Muhammad Zahid

Department of Zoology, GPGC
College, Karak, KPK, Pakistan

Muhammad Umer

Department of Zoology, GPGC
College, Karak, KPK, Pakistan

Nisar Ahmad

Department of Zoology, GPGC
College, Karak, KPK, Pakistan

Zain Ullah

Department of Zoology, GPGC
College, Karak, KPK, Pakistan

Momina Mehmood

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Hina Shaheen

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Hooriya

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Seraj Afridi

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Hamid Ullah

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Nasir Naseeb

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Shamid Khan

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Muhammad Yaseen

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Ubaid Rasheed

Department of Microbiology, Kohat
University of Science & Technology,
KUST-26000, Kohat, KP, Pakistan

Correspondence

Muhammad Zahid

Department of Zoology, GPGC
College, Karak, KPK, Pakistan

Endoparasitic Fauna in Quails population KP, Pakistan

Muhammad Zahid, Muhammad Umer, Nisar Ahmad, Zain Ullah, Momina Mehmood, Hina Shaheen, Hooriya, Seraj Afridi, Hamid Ullah, Nasir Naseeb, Shamid Khan, Muhammad Yaseen and Ubaid Rasheed

Abstract

In the modern era in some area of Pakistan quails trade play vital role economically. Due to greater role of quails for society in term of commercial value, their protection regarding disease is the utmost responsibility of citizen. Quails are susceptible to parasitism. Therefore the current research was conducted on KPK deals with parasites relates with intestine of couternix. The current study was conducted on 10 districts of KPK. All the quails captured from these 10 districts were killed by decapitation. Blood film prepared for detection of blood cells abnormalities. After that slide smears for helminthes and protozoan parasites were made from rectal and cecal region of intestine, then both were fixed. The remaining sample of intestine was then proceeded for separation of Salmonella Specie with the help of selenite broth. Total six helminthes and three protozoan parasites were collected from examined quails. The examined helminthes in current study are *Raillietina echinobothrida*, *Choanotaenia infundibulum*, *Subulura brumpti*, *Heterakis gallinarum*, *Raillietina cesticillus* and *Raillietina tetragona*, while the three diseases observed on Quails of KPK are coccidiosis, histomoniasis and cryptosporidiosis, for these three diseases, protozoan parasites were responsible which are recovered from the Quails in the current research work. No ectoparasite were found in the study.

Keywords: parasitic infection, quail

Introduction

The parasitic infection in Quails have been presented by many authors ^[1] worldwide. However there is no published data available about the parasitic infection in quails in KP, Pakistan. Quails are small ground nesting game and median sized birds usually placed in the order galliforms and family phasianidae ^[2]. In many Countries of the world Quails has noticeable economic importance ^[3], chiefly due to less need for housing space and feed allowance analogized with their domesticated SPPS including chicken and turkey ^[4]. Moreover the mortality rate of Quails are low and their egg and meat are highly valuable, Due to these reasons Quails farming have beneficial and advantageous trade ^[4-9].

Quails migrate from north to south and reaching province Sindh around mid-August and then spread in other province of Pakistan ^[5]. The current project was conducted for identification of intestinal Helminths, Protozoan, Salmonella SPPS Separation & Ecotoparasite in Quails KPK Province of Pakistan.

Materials and Methods

The study was conducted on the 10 districts of Khyber Pakhtoon Khawa and Quails captured from these 10 Districts Karak, Kohat, Bannu, Lakki, Sawabi, Mardan, Nowshera, Peshawar, Haripur and Abbottabad by means of net in month of August, Sep. and October 2017. The details of capturing quail are shown in Table-2.

All the collected Quails were transferred to the Laboratory of Government Post Graduate College Karak, KP, Pakistan. Quails were brought to Laboratory for further processing. Live birds were killed by decapitation. Blood films were made immediately, and stained with Wright stain for detection of WBC, RBC and platelets abnormalities. The birds then necropsied and the large and small intestine opened. Slide smears for protozoan parasite were made from rectal and cecal sample obtained with the help of dissecting box. These smears were then fixed in schaudin fixative and stain with trichrome stain. The whole intestine were then opened and examined all the Helminthes and protozoan and then individually collected and

fixed by means of permanent slide technique on slide for later identification. The dissecting sample which was recovered from rectal and cecal contents were proceed for separation of Salmonella Specie with the help of Selenite broth. In the study more emphasis was placed on the collection of ectoparasite from head, feather and wings. All were examined with the aid of dissecting microscope (7x-4x) in lab of GPGC KK.

Results

Helminthes examination

Helminthological examination raveled that 26% of Quails

harbored one or more species of Helminthes. Totally Six species of Helminthes were found in intestine. Out of these 26%, 21% Quails small intestine contaminated with *Raillietina echinobothrida* and *Choantaenia infundibulum* in which the ratio of Male and female were almost equal. The helminthes *subulura brumpti* only found in all quails of southern district of KPK Lakki Marwat (2%). The *Heterakis gallinarum* found in 6% Quails while the *Raillietina cestisillus* and *Raillietina tetragona* were examined in 11% of Quails. In these 21% Quails 16% Contains only Helminthes and 5% contaminated with Helminthes and protozoans shown in Table 1.

Table 1: shows their full detail.

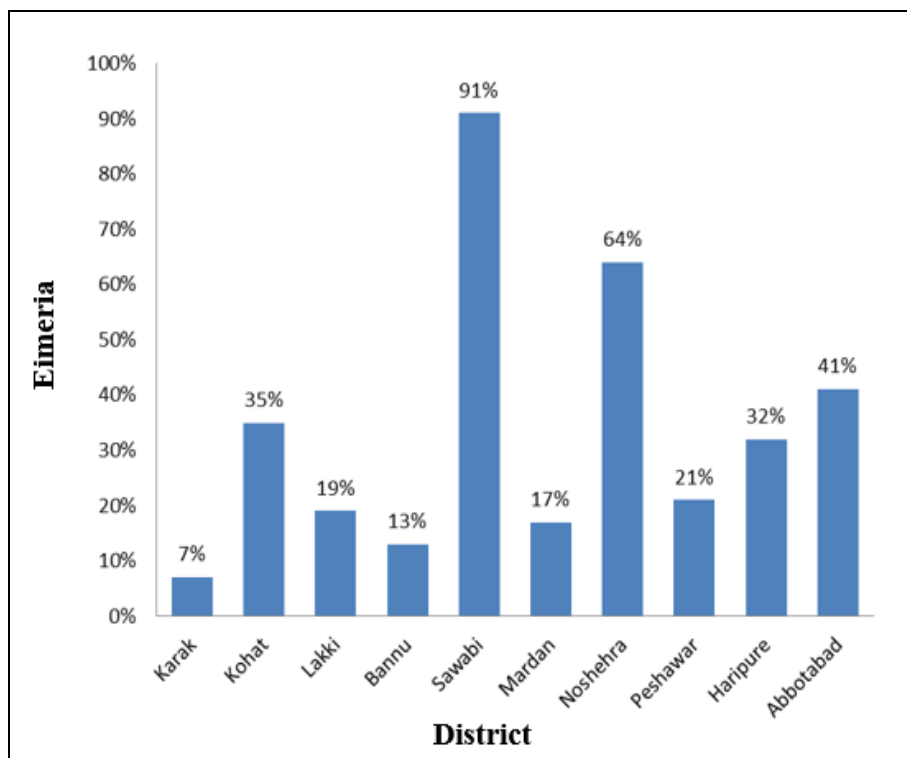
District	Helminthic Examination						% in Male	% in Female
	1	2	3	4	5	6		
Karak	√	√	X	√	√	√	15%	15%
Kohat	√	√	X	√	√	√	20%	27%
Lakki	√	√	√	X	√	√	8%	24%
Bannu	√	√	X	X	√	√	22%	22%
Sawabi	√	√	X	X	X	X	9%	32%
Mardan	√	√	X	X	X	√	18%	5%
Nowshehra	√	√	X	X	√	X	14%	4%
Peshawar	√	X	X	X	X	X	16%	2%
Haripure	X	X	X	X	X	X	3%	0%
Abbotabad	√	√	X	√	√	√	22%	12%

- 1 – Raillietina echinobothrida
- 2 – Choanotaenia infundibulum
- 3 – Subulara Brumpti
- 4 – Heterakis gallinarum
- 5 – Raillietina cestisillus
- 6 – Raillietina tetragona

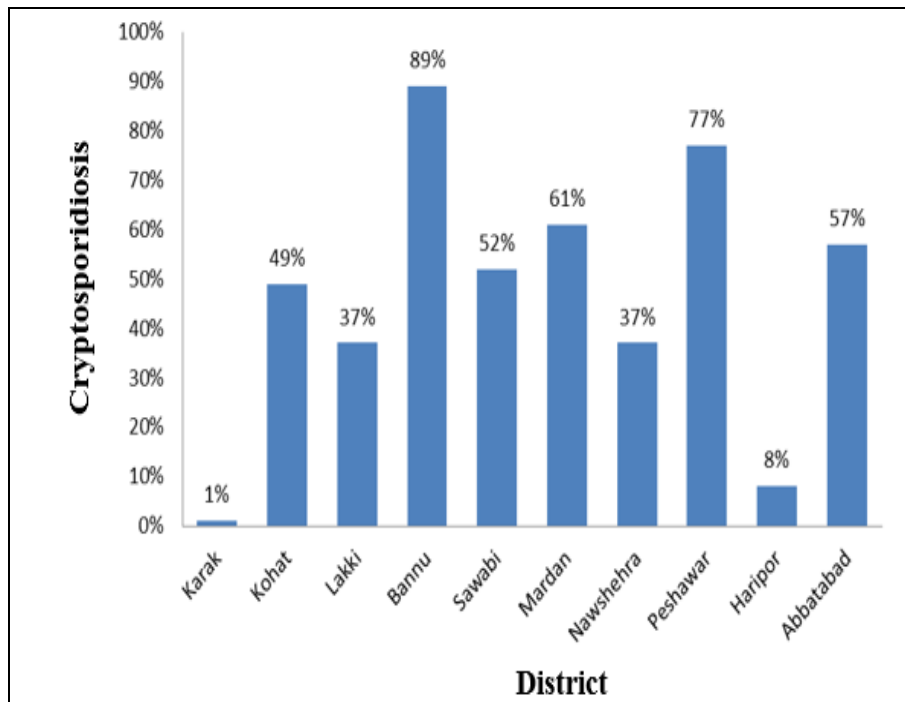
Protozoan examination

24% Quails out of 92 Quails Harbored intestinal apicomplexan Eimeria causing coccidiosis. Eimeria are mostly found in those Quails who captured from river and pond containing region. Mostly female are coccidiosis. 13% Quails harbored intestinal and tracheal cryptosporidiosis. 7%

are tracheal cryptosporidiosis and 6% are intestinal cryptosporidiosis. But the ratio of female were little high. 21% birds in current studies harboring histomonas meleagridis causing histomoniasis. Graph A, B, C Show their details.



Graph A.



Graph B.



Graph C.

Bacterial Culture and Infection

All the Quails were cultured for salmonella species. All examined Quails free from salmonella except two Quails

which belong from district Swabi. While in few Quails the SPPS clostridium perfringens were also observed. 16% Quails totally free from any infection. No ectoparasite were found.

District	Total Quail	Male	Female	Month of Capturing
Karak	11	6	5	16 Aug to 19 Aug 2017
Kohat	7	3	4	21 Aug to 25 Aug 2017
Lakki	9	5	4	2 Sep to 5 Sep 2017
Bannu	6	3	3	11 Sep to 18 Sep 2017
Sawabi	11	7	4	24 Sep to 28 Sep 2017
Mardan	8	4	4	2 Oct to 5 Oct 2017
Nowshehra	17	13	4	12 Oct to 14 Oct 2017
Peshawar	8	4	4	17 Oct to 22 Oct 2017
Haripur	7	4	3	25 Oct to 27 Oct 2017
Abbottabad	8	5	3	29 Oct to 3 Nov 2017

Discussion

In the modern era in some area of Pakistan quails trade play vital role economically. The continued rise in Human population in the developing countries necessitates the need to establish additional sources of animal protein. In this situation, the demand for poultry products has been increasing. To meet up the growing demand for poultry product without importing them, the development of poultry product /industry is very important. Quails does not only supply animal protein in the form of meat and eggs, but also provide a source of income. Due to greater role of quails for society in term of commercial value, their protection regarding diseases is the utmost responsibility of citizen. Therefore the current research done on KPK deals with parasites relates with intestine of coutemix. In the present research work the helminthological examination revealed that 26% of quails harbored one or more species of helminthes, out of these 21.81% quails small intestine contaminated with Raillietina echinobothrida and choanotaenia infundibulum, while this was also reported by o.w. Gamra *et al.* (2015) shemshadi *et al.* 2014 and otify (1989) ^[10-12]. While in remaining four uncommon helminthes SPPs the ratio of subulara brumpti and Hererakis gallinarium are little high from the other two helminthes spp, which is also reported by Alan Kocan *et al.* (1979), Shamshadi *et al.* 2014 ^[9-10].

All the quails of district Mardan and Haripur were seriously infected by Raillietina Cesticillus. In the present study the 6% quails small intestine harbored by Raillietina tetragona which was not found in any reported data, may be this will be the new case in era of parasitic infection. Three protozoan spp (Eimeria, Histomona meleagridis and Cryptosporidiidae family spp) were examined in quails in current research work, which is also reported by Shemshadi *et al.* 2014 and Alan Kocan *et al.* 1979. In the current research work we have examined 24% quails out of 92 quails harbored intestinal apicomplexan. Eimeria causing coccidiosis, while this data is agreed with the data reported by several researchers like Alan Kocan *et al.* (1979) ^[9]. Histomanas meleagridis was found in 21%. Quails of KPK, while researchers stated that it is prevalent all over the world such as Alan Kocon *at al.* (1979) ^[9] and G. Farjanikish and A. Bey raghi (2016). In current work 13% quails infected with cryptosporidiosis, further more in 13% quails 6% quails are intestinal cryptosporidiosis and 7% tracheal cryptosporidiosis which is also reported by shemshadi *et al.* 2014 ^[10]. Parasitic infection cause loss of weight in birds and it is important in economic aspect. It is suggested that hot weather is in this area must by produced limited parasitic infection in quails of KPK especially in warm season of the year.

Conclusion

From the above study it may be concluded that parasitic infection cause loss of weight in birds especially in Quails. It is suggested that hot weather in the selected area must be produced limited parasitic infection in quails of KP, especially in warm season of the year.

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