

Investigation and Prevalence of Gastrointestinal Parasites of Equestrian clubs Horses in Misurata, Libya

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The digestive system of horses provides a target site for many intestinal parasites species; gastrointestinal parasites are responsible for severe pathological conditions, sometimes fatal, and reduced performance and physical illness, (Love et al., 1999). Also provides the unique type of digestive system compared to other

higher mammals. The stomach have four compartments. Among four compartments, rumen is the largest part in the rumen partially chewed grass is stored and broken down into balls of cud, (Love et al., 1999).

Horses was belonged to the equine group. It is found mainly in temperate, semi-arid or highland areas, Horses is herd animal and will happily live in groups with other animals of a different species such

the number of horses in Libya in 2016 exceeded 45,000 (Ministry of Agriculture, 2017). Parasitic helminths are more prevalent in foals, and young horses (Relf et al., 2013), that is explained by

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but large number pose a risk for colic and other symptoms. As a rule, older horses appear to develop immunity against the common gastrointestinal parasites and tend not be affected by parasite related problems as commonly as younger horses, (Jajere et al., 2016).

Several studies have been conducted on gastrointestinal parasites from horses in many countries, such as Saudi Arabia in 2018, in Turkey (Negash et al., 2021), in Western Australia (Boxell et al., 2004), no gastrointestinal parasite fauna of horse in Libya is to date. According to estimates by the Libyan Ministry of Agriculture, Libya,

from the mixture was taken to prepare on the slide. The specimen was stained with Iodine wet mount solution and examined at 10X and 40X objectives. In this way, two slides were designed from each sample were examined at 10X and 40X objectives of a microscope to detect eggs of helminths, protozoan's trophozoites or cysts of gastrointestinal parasites. For de-tection, the cryptosporidium cysts were made a smear on the slide and were air-dried; stained by modified Ziehl-Neelsen (Majewska et al., 2004) examined using an oil immersion objective.

Data analysis

Data were statistically analyzed using Pearson's Chi-square test

respectively, as Table (2). Statistical analysis found the highly significant difference between the proto-zoan and helminthic infec-

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parasites in horses.

The prevalence of protozoan and helminthic parasites in horses

Overall, horses were infected with protozoan and helminthic parasites. The mixed infection was the highest prevalence rate (63.3%) followed by an independent infection with protozoan parasites (36.7%), whereas, did not find any separate infection with helminths as illustrated in Table (2). Based on horse sex, the mixed infection in female horses was higher than those in males (70.6% and 57.6%), respectively. In contrast, male horses' independent infection was higher than those in females (39.4% and 29.4%),

parasites in horses

The intensity infection was ranged between rarely to heavy density with eggs and cysts, which showed the intensity infection with protozoa was higher than that with helminths. Table (4) illustrated the significant differences ($P \leq 0.01$) between protozoa and helminths' intensity rates.

	Protozoan infection	Helminthic infection

by *Capillaria* sp. and *Gongulo-nema pulcurum* (3.4%). The study showed no effect of sex on the prevalence of helminth infection

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S.E of classes of protozoan and hel-minthic parasites in horses.

Overall protozoan and helminthic species in horses

Among Protozoa parasites, *Blantidium coli* showed the highest prevalence (34.4%) as Figure (1) followed by *Cryptosporidium* sp. (33.3%), *Entamoeba coli* (16.1%), *Eimeria* sp. (13.9%), and the lowest prevalence rate *Isospora* spp (2.15%), (Table 6). The study showed an effect of sex on the prevalence of protozoan infection. In contrast, that indicates a higher prevalence in male horses. On the other hand, *Moniezia* sp. Showed the highest prevalence (20.4%) followed by *Parascaris equorum* as Fig-ure (2), *Anoplocephala* sp. *Trichostongylide* sp. (16.9%), and the lowest prevalence showed

<i>Capillaria</i> spp.	4 (3.4%)	4 (100%)	0
<i>Moniezia</i> sp.	12 (20.4%)	7 (58.3%)	5 (41.7%)

Table 7: Prevalence rate of helminth species in horses based on sex.

Discussion

Gastrointestinal parasites in horses are widespread and affect virtually all grazing animals, and many studies have been carried out regarding the gastrointestinal parasites of domestic livestock. Veterinarians are always interested in research about domestic animals, but very few researches have been carried out to equine populations than other domestic animals. In the present study, the prevalence of horses' gastrointestinal parasites has been carried

out for the first time in Misurata, Libya. The current study revealed a high prevalence of gastrointestinal parasites in horses. The overall



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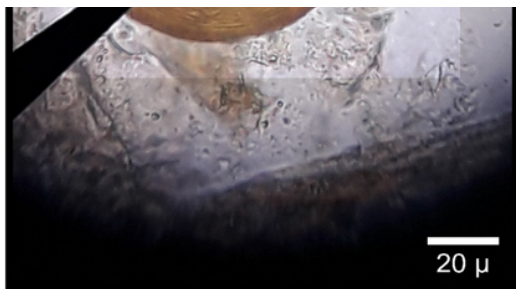


Figure 2: Showing *Parascaris equorum* egg.

6.3% in Nigeria (Umar et al., 2013). On the other hand, it was lower than those in Iraq (40.9%) (Wannans et al., 2012), 43.8% in Ethiopia (Mezgebu et al., 2013) and 55.8% in southern Ethiopia (Tilahun et al., 2022). In the current study, the lower prevalence of *Parascaris equorum* could be due to collecting faecal samples from adult horses and few only from young horses. In young horses, less than three years occur by *Parascaris equorum* (Bucknell et al., 1995). In the current study, the prevalence rate in females was more than those in males with non-significant differences and similarities with other studies, (Yadav et al., 2014; Hassan, 2014 ; Chinwe et al., 2019, and suggested frameless with low body immunities and

more comfortable to get the parasitic infection. The mixed infection rate was higher than that single infection rate and similar in Turkey (Negash et al., 2021; Chinwe et al., 2019). The high mixed infection rate was the less used of anti-parasitic, poor man-agement system

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