



Patrolling Police Horses (Sawari) Welfare, Khartoum State, Sudan: Management, Housing and Health

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ABSTRACT

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Patrolling police horses (Sawari) represent one of the most important security lines in Khartoum State .There for , a surveillance was carried out during 2013 (February -April) to highlight their general welfare conditions. Six stables were surveyed with randomly selected 104 horses (97 male and 7 females) in different cities of Khartoum State (Khartoum, Khartoum North and Omdurman). Observations on management, feeding, housing and health conditions were recorded and some photos that reflect these observations were taken .Blood, fecal and skin scraping samples were randomly obtained for brucellosis, internal and external parasites, respectively. The hygiene measures were below the standard in the surrounding environment and some horses were kept either in broken shades or under direct sun rays. Positive cases for internal and external parasites infestation and brucellosis were detected. Feeding and veterinary care were limited and the medical supervisors were veterinary technicians not veterinary doctors in some stables. Patrolling Horses (Sawari) should have a standardized uniformed program of management, disease control, medical care and balanced feeding applied in all stables for their ultimate performance.

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INTRODUCTION

Khartoum city is the capital of Sudan; it lies at the North Eastern part of the central Sudan. Khartoum is considered as the centre of industries, services and business opportunities. All these necessitate the provision of essential services such as security and social welfare. Police Force is one of the important forces in the Ministry of Interior to ensure the security of the country and citizens.

One of the important Police Forces is the horse-mounted police unit which had been started in 1852 during the Turkish rule on Sudan. The first police stable was constructed in Darfur in (Nyala Town) followed by another one in Kordofan region (Elobied Town) (Abdelrahim, 2011)

Mounted horses (patrolling) play important roles in combating crimes and catching criminals. They undertake the responsibilities of securing the markets and residential areas as well as the national and sport occasions. Patrolling horses are known in Sudan as Sawari horses; there are many stables of Sawari scattered in Khartoum State at Omdurman, Khartoum and Khartoum North (Khartoum Bahri) cities.

Aspects of animal welfare include proper housing, management, nutrition, disease prevention, medical and responsible care, humane handling and when necessary euthanasia. Many authors were concerned with animal welfare (Gelpi, 1991, Pick, 1999, Crook, 2007, Dey *et al.*, 2010, and Holcomb *et al.* (2010). In Sudan The National Council passed The Animal Welfare Law in 2015.

The huge role played by Sawari horses requires special nutritional, health and management conditions so as to be able to fulfill their activities requirements. Horses may suffer from improper housing, feeding and mal-management which result in many

health problems. Internal, external (Urquhart *et al.*, 1996) and blood parasites infestation (Ali, 2014), hoove and leg affections (Murray *et al.*, 2009) and starvation or malnutrition (Kndronfield, 1993) are problems associated with horses' low performance.

Moreover, brucellosis came to be one of horses' serious problems caused by *B.abortus* (Miller, 1961, Carmlet and Berhanu, 1979), it is associated with fistulus withers and poll evil (Cohen *et al.*, 1992) which are common clinical signs in addition to bursitis and arthritis (Tahamtan *et al.*, 2010).

The objectives of this study were to highlight Sawari horses welfare in different Khartoum State stables as there was no traced previous study conducted for this purpose.

Surveillance, sampling (faeces and blood) and Photographing were performed according to the permission obtained from the High authorities of Sawari Horses Administration, Khartoum State, and Ministry of Interior.

MATERIALS AND METHODS

Study Area:

The study was conducted at Khartoum State, it lies between 15° 33' N, 32° 31' E. The stables in the three cities of Khartoum state (Khartoum, Khartoum North and Umdurman) were investigated.

Animals:

A total number of 104 horses, of apparently normal physical and health conditions (97 male and 7 females) of night patrolling police (Sawari) horses with age ranged between 3-6 years old were randomly selected from different police horse stables at Khartoum (KH), Khartoum North (Almazad (ALZ) and Omdurman (Almulazmin (ALN), Ummbada Janob

(UMJ), Ummbada Shamal (UMSH) and Almuhandesin (ALH).

Housing and Management:

According to the records, a routine program of deworming and grooming were applied. Horses were fed sorghum (*Ferterita*) and barseem (*Lucerne hay*), which are rich in protein (Sulieman and Mabrouk, 1999) and allowed free access to water. Some horses were kept in stables and others outside in the yard or under the trees.

Sampling:

Blood samples were once collected from the jugular vein of each horse. From each sample 3 ml were transferred to a plain test tube and 2ml were transferred to a test tube with an anticoagulant (EDTA). One hundred and four fecal samples were randomly collected and one sample of skin scrape from a horse with skin lesion was taken from Karari stable in Ommduramn city.

Laboratory work:

Samples in plain test tubes were centrifuged and obtained sera were kept at -20°C for brucella determination according to Alton *et al.* (1975) and OIE (2008), fecal samples and blood smears were prepared and examined according to the method applied by Zajac and Conboy (2006). Skin scraping was prepared according to the methods applied by Fthenakis *et al.* (2000).

Statistical analysis:

Percentages of cases of brucellosis and numbers of infested animals with different types of parasites are presented in figures.

RESULTS AND DISCUSSIONS

Most horses suffered from bad management, housing and some of them were exposed to direct sun rays (Fig.1) which induce extra stress responses to their routine activities in night patrolling and other security duties. Similar results of heat induced stress were reported by Gaughan *et al.* (2013). Some horses were kept in sandy yards and ingest

their food from the sandy grounds which may expose them to sand colic which is one of the serious health conditions in horses (Figure 1). Kendall *et al.*, (2008) reported that, feeding from sandy ground renders horses susceptible to sand ingestion. The accumulation of sand in the large colon results in sand impaction which requires surgical intervention (Hart *et al.*, 2013). Proper bedding was missing and hard concretes may predispose to orthopedic problems. Landman *et al.* (2004) indicated the prevalence of lameness and back problems in horses in response to unsuitable bedding. The drainage system in Khartoum stable for manure and other dirt was exposed and opened in many places which increased the risk of pollution and infections. Horses situated outside the stables under the trees were surrounded by manure and insects; they showed granulomatous lesions around the eye with yellowish granules and excessive discharges (Figure 2). These wounds could be related to the presence of high number of house and stable flies around horses with their larvae feeding on horses manure. The common house fly is an intermediate host in the disease process of mucocutaneous habronemiasis known as summer sore caused by *Habronema spp.* and *Draschia megastoma* (Merck, 2015). Serious wounds can also develop due to irritation and itching (Figure 3) if not well treated and became chronic cases.

All horses were fed concentrates (*Ferterita*) and barseem (*Lucerne hay*), but the amount given was not formulated according to body weight and job requirements which resulted in starvation. Starved or partially starved horses were referred to malnutrition or associated with parasitic infestation (Figure 4) which results in poor performance. Malnutrition associated with low performance was also reported by Inokum *et*

al. (2003). Moreover, Dohm *et al.*, (1987) stated that exercise horses need a certain level of dietary protein to build and repair

muscle tissue and to replace the protein lost in sweat and face the decrease in protein synthesis during exercise.

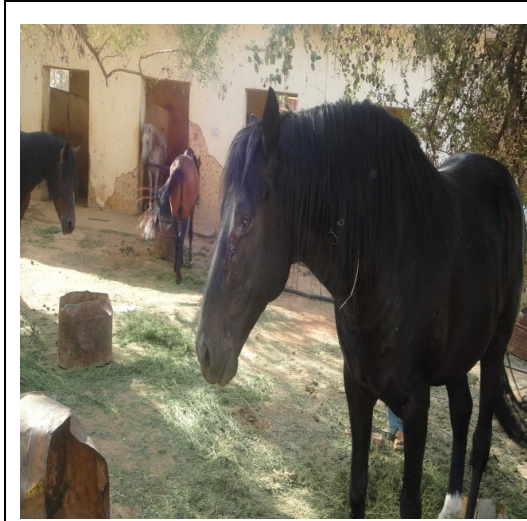


Figure 1. Sun rays, food on sandy ground -Khartoum Stable



Figure 2: Habronemiasis-Khartoum Stable

Feed was observed to be mixed with horses' manure (Figure 5) encourage parasitic infestation and bacterial infection. Random fecal samples obtained from different stables showed different types of parasitic eggs , *Parascaris equorum*, *Anoplocephala perfoliata*, *Oxyuris Equi*, *Strongyles spp.* and *Strongloidies Westerii* (Figure 6) .Similar results for the prevalence of these parasites, associated with the presence of fecal materials, were reported by Reinemeyer (2009) , Back *et al.*(2013) and Hasson (2014). Skin scrape from a horse with skin lesions at Karari stable,(Figure 7a.) revealed mite infestation(Figure 7 b). This was related to the bad environmental condition of the stable .Mange is a contagious and zoonotic infection; the prevalence of mite infestation depends upon management and environmental conditions (Qadoos *et al.*, 1995).Similar findings were reported by (Osman *et al.*, 2006). Moreover, one of the random blood smears obtained, revealed a

positive *Microflaria setaria spp.* reported at Almulazmin Stable (Figure 8). It is associated with the polluted environment; Culicoides are suggested as the potential vector (Ottley *et al.*, 1983). The prevalence of *Setaria equina* was previously reported by Webster and Dukes (1979), Coleman *et al.* (1985), Buchwalder and Schuster (1989) and Sulieman *et al.* (2012). On the contrary, Solismaa *et al.* (2008) did not report *Microflaria setaria spp* in horses.

A case of Skin allergy was reported at Ummbada Shamal stable (Figure 9), this case may be due to the presence of biting flies, commonly culicoides spp.The hygiene measures at the stable and the presence of dairy farm nearby made the environment suitable for sand fly infestation which develop allergy .Geiger *et al.* (2010) indicated that, allergy cases are associated with insect abundance in cow dung in different farm system. Skin allergy due to insect bite was previously reported by Wagner *et al.* (2006),

Marsella *et al.* (2013) and Raskova and Citek (2013).

Brucellosis was reported in four stables .Khartoum 4 cases out of 20 (20%), Almazad 4 cases out of 14 (28.50%), Ummbada janob 2 cases out of 20 (10%) and Ummbada shamal one case out of 16(6.20%) (Fig.10.). Only one case of orchitis was reported in Khartoum stable. These positive cases could be related to the high number of arthritis and bursitis noticed in screened stables, mainly Khartoum.

Similar results were reported by Acosta-Gonzaléz *et al.* (2006) and Ghobadi and Salehi (2013).

Most stables were medically under the supervision of veterinary doctors and others were supervised by technicians graduated from Colleges of Animal Production. The former ones are able to handle pathological, obstetrical and surgical emergencies and technicians are not qualified to do this job, except for ration formulation. However, small –scaled pharmacies were available provided with broad spectrum drugs e.g anthelmintics, antibiotics, bloat and colic remedies. However, the broad spectrum treatment of helminthes and bacteria develop drug resistance which made it impossible to control difficult. Good *et al.*,(2012) indicated that, actions are required to deal with anthelmintic resistance so as to prolong the lifespan of anthelmintics.

Unfortunately, usually unfit police horses are finally sold to work as cart horses. This new job exerts an extra load and may render them absolutely unsuitable for walking for long distances and carrying heavy loads to which leads in their collapse.

CONCLUSIONS

AND

RECOMMENDATIONS

It is worth saying that, the hygiene standards in police (Sawari) stables are modest and the worst conditions were in Khartoum and Ummbada Shamal stables. Different types of internal, external and blood parasites and other bad health conditions reported in this study, need special consideration. A Standardized management, feeding and health program should be applied and a specialized Police Horse Hospital should be established. Expert veterinarians are needed to take care of Sawari horses' health. Further in depth studies are needed to investigate other problems and records for reproductive performance should be available. Unfit police horse should not be recommended for cart work. The Police authorities in cooperation with veterinary authorities should organize a conference to discuss Animal Welfare Aspects in Sudan.

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Figure 3- Chronic wounds -Khartoum Stable



Figure 4: Starved and Emaciated horses-
Khartoum Stable)



Figure 5: Emaciation, skin wounds, bad hygiene, Karari stable

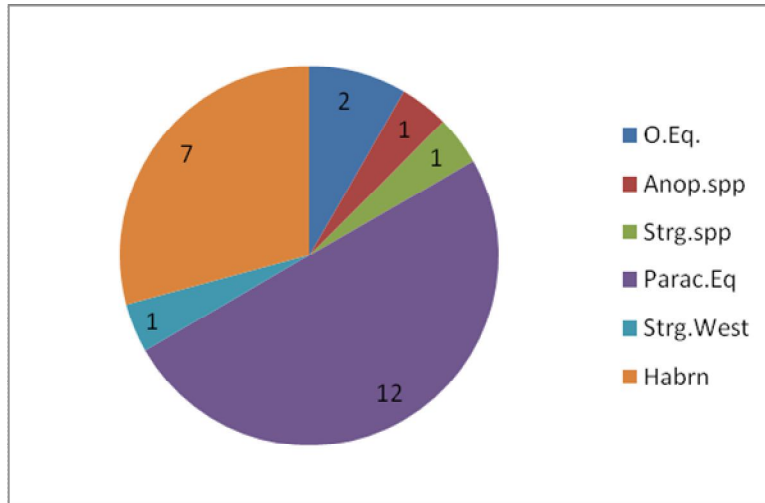


Fig.4, a.KH (no=35)

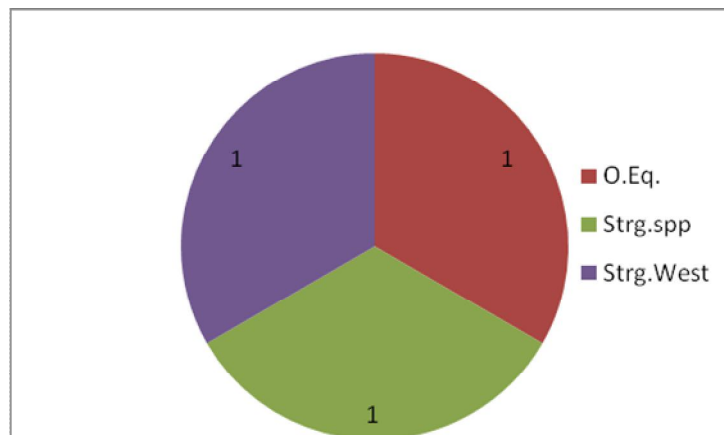
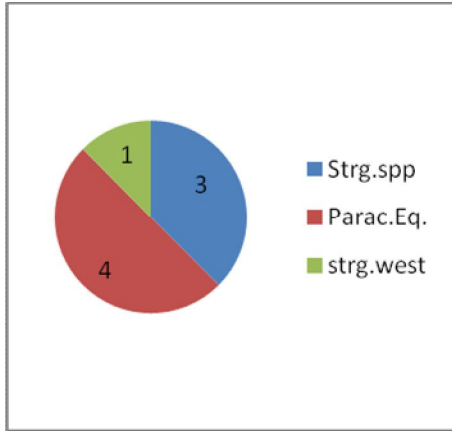


Fig.4.b. ALZ(no=11)

Figure 6: Number of Positive Fecal samples for Different Parasitic Infestation in Different Patrolling Police Horses (Sawari)stables.



**Fig.4.c.ALN(no=30)
f.ALH(no=9)**

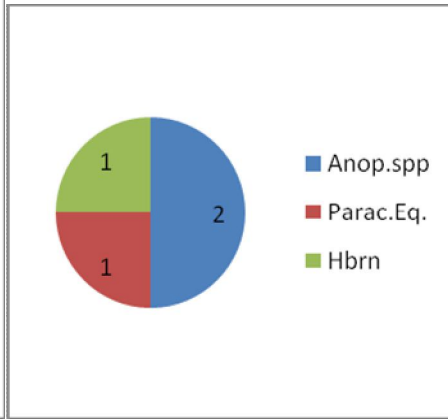


Fig.4. d. UMJ (no=10)

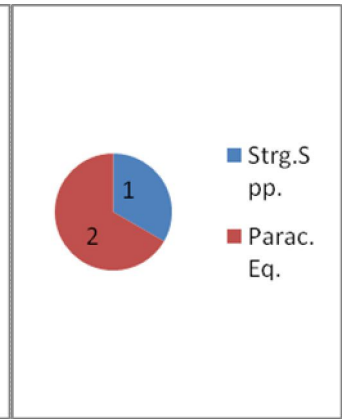


Fig.4.

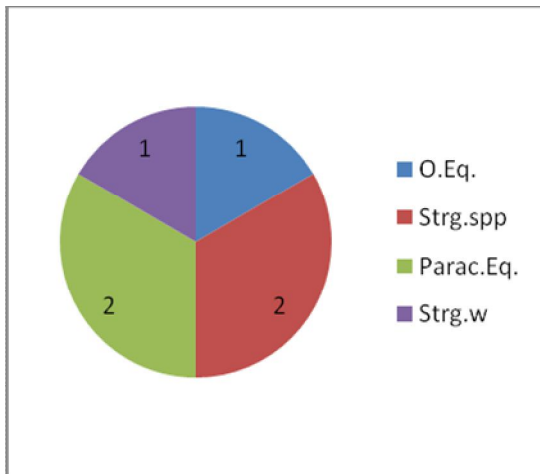


Fig.4. g.UMSH(no=9)



Figure 7: Sarcoptic mange infestation, Karari stable

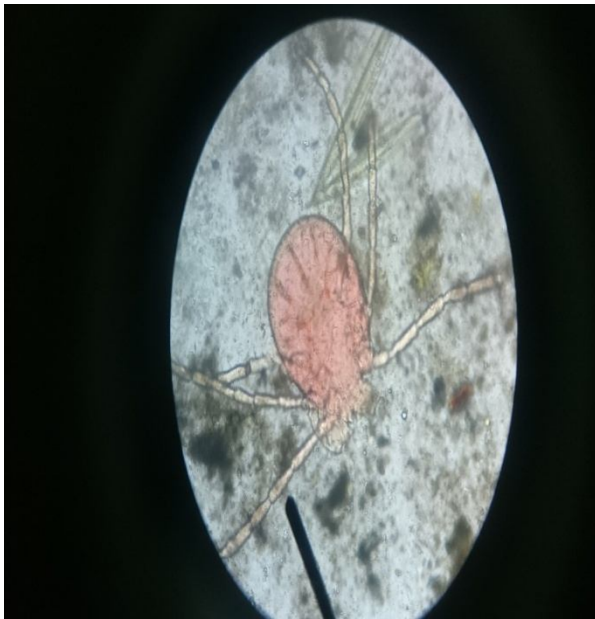


Figure 8: Mite, *Sarcoptes scabiei*, isolated from mange, Karari Stable



Figure 9: *Microflaria setaria* isolated from blood sample, Ummbada Shamal Stable

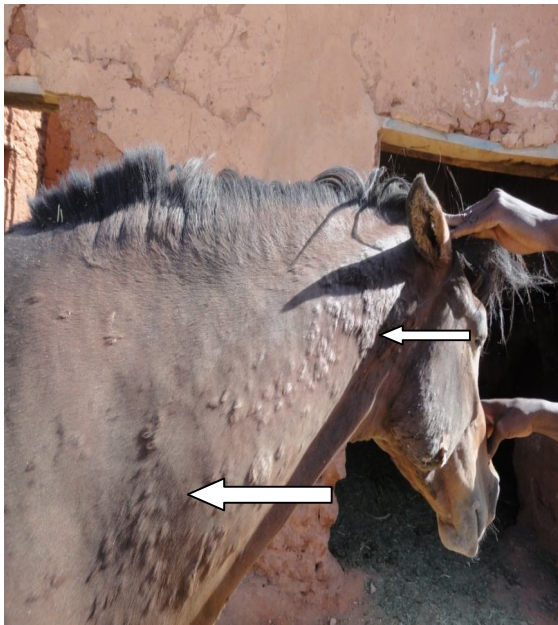


Figure7: Insect bite- Ummbada shamal stable

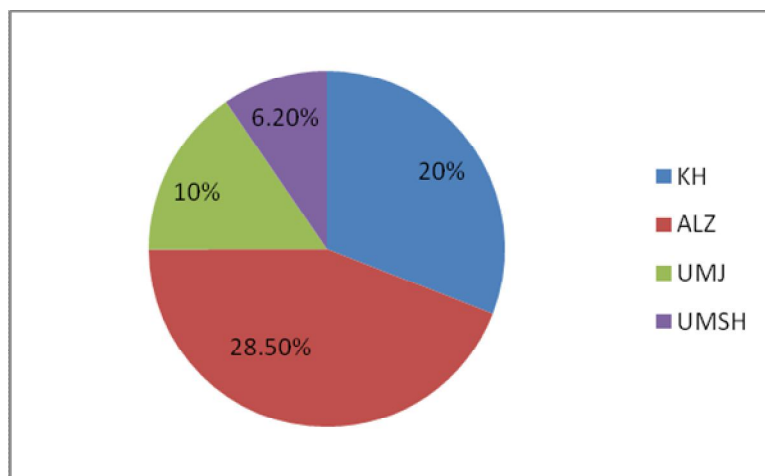


Figure 10: Percentage of Positive cases of Brucellosis in Police Patrolling Horses (Sawari) Stables

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