

## The Most Prevalent Diseases Affecting the Health of Horses in The Western Region of Libya

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### الأمراض الأكثر انتشارا التي تؤثر على صحة الخيول في غرب ليبيا

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#### Abstract

The population of horses in Libya is significantly growing with more people interested in racing, and endurance horses. However, the available data on common management, nutritional, and health factors that impact the horse industry is limited. The goal of this study was to explore factors that impact horse sports with emphasize on management, nutrition, and common diseases. A written survey was carried out between January 2023 and December 2024 that covered 60 farms located in the western region of Libya. Located in West Zawia, Surman, Sabratah, and Al Ajaylat. The majority of the farms were racing thoroughbred horses followed by racing, and endurance horses. The housing system was mostly individual stalls, 77%, that used sand flooring, 90%. Deworming programs showed even distribution with farms that apply no treatment around (45%), those using equlan (30%), and the use of mixed treatments around (43%). Feeding was focused on the use of crushed barley (64%) as well as vitamin 12% and supplements before racing. The most common disease conditions were colic at 90%, cough at 50%, lameness at 55%, and dysuria at 20% while the least commonly reported conditions were diarrhea at 10%, EIPH at 3%, tying up at 6%, and pigmented urine in 2% of examined farms. These findings suggest that management and nutritional protocols are satisfactory. Further attention is required to provide the necessary veterinary care for horses suffering from common diseases such as colic which can be fatal and cough and lameness that impact the performance of horses.

**Keywords:** Horses, management, health, western region, Libya.

#### الملخص

ينمو عدد الخيول في ليبيا بشكل ملحوظ، مع تزايد اهتمام الناس بخيول السباق والتحمل. ومع ذلك، فإن البيانات المتاحة حول العوامل الإدارية والتغذية والصحية الشائعة التي تؤثر على صناعة الخيول محدودة. كان هدف هذه الدراسة استكشاف العوامل التي تؤثر على رياضة الخيول مع التركيز على الإدارة والتغذية والأمراض الشائعة. أجري مسح مكتوب بين يناير 2023 وديسمبر 2024 غطى 60 مزرعة تقع في المنطقة الغربية من ليبيا. تقع في غرب الزاوية وصرمان وصبراتة والعجيلات. كانت غالبية المزارع تربي خيول أصيلة، تليها خيول السباق والتحمل. كان نظام الإسكان في الغالب عبارة عن حظائر فردية، 77%، تستخدم أرضيات رملية، 90%. أظهرت برامج إزالة الديدان توزيعًا متساويًا مع المزارع التي لا تطبق أي علاج حوالي (45%)، وتلك التي تستخدم إيكولان (30%)، واستخدام المعالجات المختلطة حوالي (43%). ركزت التغذية على استخدام الشعير المطحون (64%) بالإضافة إلى فيتامينات (12%) والمكملات الغذائية قبل السباق. كانت الحالات المرضية الأكثر شيوعًا هي المغص بنسبة (90%) والسعال بنسبة (50%) والعرج بنسبة (55%) وعسر

التبول بنسبة (20%) بينما كانت الحالات الأقل شيوعًا هي الإسهال بنسبة (10%) والنزيف الرئوي الناجم عن ممارسة الرياضة بنسبة (3%) والاجهاد العضلي بنسبة (6%) وتصبغ البول بنسبة (2%) من المزارع التي تم فحصها. تشير هذه النتائج إلى أن بروتوكولات الإدارة والتغذية مرضية. هناك حاجة إلى مزيد من الاهتمام لتوفير الرعاية البيطرية اللازمة للخيل التي تعاني من أمراض شائعة مثل المغص الذي يمكن أن يكون مميتًا والسعال والعرج الذي يؤثر على أداء الخيل.

**الكلمات المفتاحية:** الخيل، الإدارة، الصحة، المنطقة الغربية، ليبيا.

## Introduction

Epidemiologic surveys are required to understand the prevalence of illnesses and the variables that have a major impact on a horse's health. The West Nile virus is a real-world illustration of the value of epidemiologic surveys. This disease has been extensively studied in humans in the United States [1], and in horses and humans in France [2]. Moreover, in Libya from horses and dogs [3]. Respiratory disorders have a big influence on equine athletes and are commonly listed as the second most prevalent reason of their poor performance. Lower respiratory tract problems are widespread in adult horses, ranging from mild virus infections to serious bacterial infections [4,5].

The prevalence of fungal spores in the environment makes it practically impossible to prevent fungal infections and difficult to treat fungal respiratory illness in horses. Because *Aspergillus* spp., pneumonia is rarely diagnosed early and frequently coexists with a serious underlying disease; treatment outcomes are poor [6]. It is not just infectious diseases that make epidemiologic surveys important. But there have also been studies on other conditions like colic [7], and stomach ulcers that have a significant influence on the horse's health [8].

Some survey studies were conducted on parasites and their resistance to the methods of overcoming this type of resistance in the strategies in the western region of Libya [9]. As for horses in a study conducted on parasites in the western region and treatments with medicinal herbs used locally, good results were shown in response to medicinal herbal treatment [10]. Research and various surveys from the western region in Libya showed that the administration affects either negatively or positively on the health of the animal [11]. Nutrition also has clear and clear effects on animal health, whether it is routes, a simple stomach, or birds [12,13].

Little information is available regarding common diseases and factors that impact the horses' health in Libya. Health records at the private veterinary clinics in the western region could be utilized to obtain some of this information. However, the lack of an organized system in record keeping and the shortage of diagnostic parameters used on routine cases render the use of these records.

In addition, the study was not limited to horses that came to veterinary clinics; rather, the research extended to veterinarians going out to various and individual farms to obtain the largest amount of data regarding the health of horses residing on horse farms, which provides more reliable information. Previous studies from Libya focused on each disease individually, and there was no previous comprehensive survey of these diseases and the extent to which management and nutrition affect the spread of these diseases. The goal of this study was to determine the incidence of common diseases in horses and to explore nutritional and management factors associated with such diseases among horses in farms in the western region of Libya.

## Materials and methods

### Study area and design

A written survey was carried out between January 2023 and December 2024 to obtain data regarding the incidence of the most common health conditions impacting horses in the western region of Libya. Factors related to nutrition and management that might affect horses' health were assessed. The study population included 60 horse farms located in West Zawia, Surman, Sabratah, and Al Ajaylat. A veterinarian who was monitoring farms filled out a questionnaire. Due to the clustering of animals by sampling locations in the cities, prevalence of diseases to all pathogens was adjusted for clustering with estimates derived from intercept-only models with sample location included as a random effect. Horse- and owner-level associations with case history were investigated. The clinical records of racehorses referred for poor performance evaluation to the veterinary clinic between 2023 and 2024 were retrospectively reviewed.

As all the procedures were performed on clinical patients for diagnostic purposes and included informed owner consent for the use of clinical data, ethical review and approval were waived. All horses were in full training upon treatment and underwent the diagnostic protocol. Horses showing signs of systemic illness, lameness, clinically significant cardiac arrhythmias or valvular regurgitation, dynamic upper airway obstructions (DUAO) or rhabdomyolysis were confirmed in the study, since these disorders may influence athletic performance.

## Feeding regime

The feeding and accommodation system in Libyan horse farms varies according to the type of horses, whether they are ordinary horses for pleasure, riding and breeding, or racing horses. In addition to regular hay meals during the day or grazing during the winter and spring, non-racing horses are routinely fed twice a day on a concentrated diet of barley and bran. A three-time concentrate diet and an (*ad libitum*) continuous hay diet, usually consisting of alfalfa and oat hay, are the norm for racing horses, which are primarily housed inside.

Additionally, veggies or fresh grass were frequently provided throughout the week. For racing and training horses, deworming is often done regularly; for non-racing horses, it is done sporadically. Various multinational corporations produce the vitamins, minerals, and other components and energy supplements needed in feeding regimens. The beneficial ingredients listed above are present in most of them in varying amounts.

## Results and discussion

Small farms with less than eight horses per farm (77%) and thoroughbred horses (55%) used for racing made up the bulk of the farms. There are (40%) Arabian horses, which are used for pleasure riding, endurance, and racing. The majority of the housing system consisted of individual stalls (69%) with 90% sand flooring. Non-racing horses are most regularly fed twice on a concentrated diet of barley and bran (62%), which is crushed (64%) or soaked in water (14%), with frequent hay meals during the day. On the other hand, racing animals are mostly kept indoors with a three-time concentrate diet and continuous hay diet (*ad libitum*); typically, alfalfa and oat hay (27%). Moreover, green grass or vegetables were regularly offered during the week. Vitamins, minerals, and other elements and energy supplements used in feeding regimes are products of different international companies (12%) as supplements before racing [14].

Most animals (62%) wean at 4-5 months of age. Cough (51%) and EIPH (3%), two respiratory diseases, were reported more often. Colic was the most frequently found gastrointestinal illness, occurring in more than 90% of the farms under investigation. The second most common disease was diarrhea in (10%) of farms.

Deworming programs were either no antiparasitic being used (45%), equestrian (30%), or mixed (43%). Disease of the musculoskeletal included lameness in (55%) and tying up in (6%). Lastly, the most often reported urinary system disorder was dysuria (20% of farms), which was followed by pigmented urine (2% of farms). Over 45,000 horses were estimated to be in Libya in 2016 by the country's Ministry of Agriculture [15].

In this project, the study was limited to only 60 farms. However, these farms were distributed over the western region of Libya. The majority of these farms were small farms with less than 8 horses/farm that have thoroughbred horses used for racing. However, the interest in Arabian horses is remarkable which are used for racing, endurance, and pleasure riding. The system of flooring was mostly based on the use of sand since it is easily available and provides a healthy and comfortable environment in horse barns.

It was noted that the number of horses infected with parasites was higher on individual farms with horses kept for pleasure or breeding, due to the neglect of the parasite treatment program, than on horse farms used for racing, which are well maintained through a strict parasite treatment program, changing the soil in the stables, and removing manure from the pasture. The infection with different gastrointestinal helminthic in horses *Moniezia* spp., *Trichostrongylus* spp., *Parascaris equorum*, *Oxyuris equi*, and the infection with different protozoan species in horses *Cryptosporidium parvum*, *Blantidium coli*, *Entamoeba coli*, *Eimeria* spp. [16].

The respiratory system diseases that were reported most frequently were EIPH at 3% and cough at 50%. Horse owners and trainers can quickly identify these issues. In addition, diseases of the guttural pouches, including guttural pouch tympany and guttural pouch emphysema, have been detected in cases referred to the veterinary clinic. These conditions are less described by owners since they require additional diagnostics [17].

It is still necessary to investigate the reasons that affected this distribution. Colic was the most often found gastrointestinal ailment, occurring in more than 90% of the farms under investigation. However, there was a discernible link between the usage of an antiparasitic control program, feeding practices, sand flooring, and colic.

The second most common disease was diarrhea which was described in (10%) of farms. Disease of the musculoskeletal included lameness in 55% and tying up in (6%). The prevalence of lameness varied from 30% in standard-bred horses to 93% in thoroughbred yearlings [18]. Determination of the exact cause of lameness and initiation of the appropriate treatment has not been accurately performed.

Lastly, the most often reported urinary system disorder was dysuria (20% of farms), which was followed by pigmented urine (2%) of farms. The type of feeding and watering are more likely to contribute to these conditions since they tend to have regional clustering.

Deworming programs showed even distribution with farms that apply no treatment around (45%), those using equlan (30%), and the use of mixed treatments around (43%). Owners, regrettably, used several ivermectin products under the mistaken impression that they were taking a range of medications. Over time, the effects of this might cause parasites to become resistant. Nevertheless, fecal counting revealed a low frequency of gastrointestinal parasites in a small number of horse farms, suggesting that the incidence of parasites is low regardless of the program being followed.

### Conclusion

This study highlights the growing interest in horse-related sports in Libya, particularly in racing and endurance disciplines, accompanied by a notable increase in the horse population. Despite this growth, there remains a significant gap in comprehensive data regarding management practices, nutritional strategies, and prevalent health conditions affecting horses in the region. Through a survey conducted across 60 horse farms in western Libya, the study sheds light on current practices and challenges within the industry. While the findings indicate that general management and nutritional protocols are largely adequate—characterized by individualized housing, sand flooring, and consistent feeding practices—there are clear areas requiring improvement. Notably, the high prevalence of colic, cough, and lameness suggests an urgent need for enhanced veterinary intervention and health monitoring systems. Addressing these health challenges through targeted veterinary support, improved disease prevention strategies, and continued education of farm owners and caretakers will be crucial to sustaining and advancing the equine industry in Libya.

### References

1. Centers for Disease Control and Prevention (CDC), 2004. West Nile virus activity. United States, Morb Mortal Weekly Rep., 53 (37): 875-876.
2. Durand, J.P., F. Simon and H. Tolou, 2004. West Nile virus: In France again, in humans and horses. *Rev. Prat.*, 54 (7): 703-710.
3. Ben-Mostafa, K. K., Savini, G., Di Gennaro, A., Teodori, L., Leone, A., Monaco, F., & Eldaghayes, I. (2023). Evidence of West Nile virus circulation in horses and dogs in Libya. *Pathogens*, 13(1), 41.
4. Melo, U. P., & Ferreira, C. (2022). Bacterial pneumonia in horses associated with *Escherichia coli* infection: report of five cases. *Arquivo Brasileiro de Medicina Veterinária e Zootecnia*, 74, 862-868.
5. Melo, U. P., Ferreira, C., Feijó, F. M. C., & Santos, C. S. (2021). Pleuropneumonia séptica em potro. *Brazilian Journal of Animal and Environmental Research*, 4(3), 3818-3831. <http://dx.doi.org/10.34188/bjaerv4n3-089>.
6. Stewart, A. J., & Cuming, R. S. (2015). Update on fungal respiratory disease in horses. *Veterinary Clinics: Equine Practice*, 31(1), 43-62.
7. Stephen, J.O., K.T. Corley, J.K. Johnston and D. Pfeiffer, 2004. Small intestinal volvulus in 115 horses: 1988- 2000. *Vet. Surg.*, 33 (4): 333-339.
8. Begg, L.M. and C.B. O'Sullivan, 2003. The prevalence and distribution of gastric ulceration in 345 racehorses. *Aus. Vet. J.*, 81 (4): 199-201.
9. Mohamed, A. R. A., & Sirtiyah, A. M. A. (2023). A Field Study to Evaluate the Efficacy of Changing the Type of Anthelmintic on Nematodes in Sheep in the Western Area of Libya. *African Journal of Advanced Pure and Applied Sciences (AJAPAS)*, 200-205.
10. Mohamed, A. R. A., Sirtiyah, A. M. A., Othman, S. S. B., Barkha, A. A. S., Jalboub, F. A. M., & Alshaybani, K. A. M. (2025). A Field Study to Evaluate the Efficacy of Medicinal Plants, *Artemisia Herba Alba*, *Coriandrum sativum*, *Allium sativum*, and Their Combination on Internal Parasites in Horses in The Western Region of Libya. *مجلة شمال إفريقيا للنشر العلمي (NAJSP)*, 124-131.
11. Mohamed, A. R. A., & Jabreil, F. E. (2023). Comparison Study of Some Hematological and Biochemical Blood Characteristics Between Domestic and Barn Chickens. *African Journal of Advanced Pure and Applied Sciences (AJAPAS)*, 77-85.
12. Mohamed, A. R. A., & Almashat, K. M. A. (2025). The Impact of Varying the Amounts of Thyme, Rosemary, and Garlic and Their Combination on Local Chickens' Carcass Characteristics and Productive Performance. *African Journal of Advanced Pure and Applied Sciences (AJAPAS)*, 337-345.
13. Mohamed, A. R. A., Jabreil, F. E., & Madi, M. S. A. (2024). The Effect of Potato Peels and Ascorbic Acid on The Internal Organs of Poultry. *African Journal of Advanced Pure and Applied Sciences (AJAPAS)*, 188-194.

14. Sawesi, O. K., Elbaz, A. K., Mahmoud, A. S., Duro, E. M., Alteab, A. A., Milad, K. K., & Bennuor, E. M. (2023). Hematological reference values of horses in Western Libya and their relationship to breed, age, and management. *Open Veterinary Journal*, 13(12), 1696.
15. Ministry of Agriculture. Agriculture Statistical Year Book, (2017), Libya. Negash, W., Erdachew, Y. & Dubie T. (2021). Prevalence of Strongyle Infection and Associated Risk Factors in Horses and Donkeys in and around Mekelle City, Northern Part of Ethiopia. *Veterinary Medicine International*.
16. Mohamed, A. R. A., Sirtiyah, A. M. A., Othman, S. S. B., Barkha, A. A. S., Jalboub, F. A. M., & Alshaybani, K. A. M. (2025). A Field Study to Evaluate the Efficacy of Medicinal Plants, Artemisia Herba Alba, Coriandrum sativum, Allium sativum, and Their Combination on Internal Parasites in Horses in The Western Region of Libya. *NAJSP*, 124-131.
17. Al-Ghamdi, G., 2006. Guttural Pouch Diseases in Three Foals. *J. Anim. Vet. Adv.*, 5 (12): 1172-1174.
18. Preston, S.A., T.N. Trumble, D.N. Zimmer, T.L. Chmielewski, M.P. Brown and J.A. Hernandez. 2008. Lameness, athletic performance and financial returns in yearling Thoroughbreds bought for the purpose of resale for profit. *J. Am. Vet. Med. Assoc.*, 232 (1): 85-90.