Global Veterinaria 24 (1): 01-09, 2022
ISSN 1992-6197

DOI: 10.5829/idosi.gv.2022.01.09

# Assessment of Major Managemental and Health Problems of Horses at Horro District in Horro Guduru Wollega Zone, Oromia Region, Ethiopia

*[1]Tefera Getahun and [2]Hika Waktole*

[1]Jimma University College of Veterinary Medicine and Agriculture,
P.O. Box: 307, Jimma Ethiopia
[2]Addis Ababa University College of Veterinary Medicine and Agriculture, Bishoftu, Ethiopia

**Abstract:** *Background*: The socio-economic aspect of horses in Horro highlands of Oromia Region were highly significant and of paramount importance for transportation of people and materials, threshing crops, recreation on festivals, wedding and to get income by selling and rent giving. The study was conducted in order to assess major managemental and health problems of horses in Horro district. *Methodology*: Cross-sectional study with purposive sampling technique of semi-structured interview and retrospective health study of horses were conducted on 384 horse owners and from Sekela and Shambu veterinary clinics. *Results*: The result of interview showed that 59% housed horses with cattle, kept horses' shepherd (66.7%), tethered (26%) and left free (7.3%). Feeds provided were grass (100%), concentrates (13%). Watering frequency were mostly once (84%), twice (13%) and three times (3%) per day. Owners treated diseased horses by taking to clinic (93.8%) and by using traditional medicine (3.9%). The Curability status after treated at clinics was found to be 78.9%. Most physical problems of horses in the study area include back sore (19.5%) due to improper saddle (13%) and over loading (19.5%) and lameness (2%) due to hoof over growth and abusive hitting.. Horses were used for various activities including transportation of people and materials (100%), threshing crops (20.6%), for recreation on festivals (60.9%), for wedding (96.6%) and to get income (83%) by selling and rent giving. The analysis of the retrospective health problems of horses seen in both Shambu and Sekela veterinary clinics were ecto- and endo-parasitism, anthrax, colic, aspiration pneumonia, AHS, strangles, wound, back sore and paraphimosis. *Conclusion*: This finding indicated occurrence of major managemental problems and health problems of horses in the study area that need intervention.

**Key words:** Health Problems · Horro · Horses · Management · Oromia · Ethiopia

## INTRODUCTION

The world equine population is estimated at 44 million donkey, 11 million mules and 95 million horses [1]. More than 72% of the world's horse population is found in developing countries specifically kept for draft purposes. These vast numbers of working equids play crucial roles in both urban and rural areas, providing agricultural energy and transport [2]. It is estimated that 80 per cent of the world's equine population, 90 million animals, are found in the developing world, including 97% of all mules, 96% of donkeys and 60% of horses [3, 4].

Ethiopia has the largest livestock population in Africa. The overall livestock population was about 43.1 million cattle, 23.6 million sheep, 6.5 million equine (5.42 million donkeys, 1.78 million horses and 373, 519 mules [5]. The country has the largest equine population with 6.9 % of the world and 42.4 % of the African equine population. Moreover, 65% of all African mules, 50% horses and 80% of donkeys are found in Ethiopia [6]. Despite their huge numbers and significant contribution to the communities and national economy, the attention given to study the health aspect of equids in Ethiopia is quite minimal. Among the multiple health and welfare problems affecting working equids, infectious diseases are one of the major constraints to their productivity and work performance; this often leads to high morbidity and mortality [7].

**Corresponding Author:** Tefera Getahun, Jimma University College of Veterinary Medicine and Agriculture, P.O. Box: 307, Jimma, Ethiopia.

Due to poor infrastructure, transportation by vehicle is virtually inaccessible and hence the role of equines in the socio-economics of the country is substantial [8]. Despite the valuable services in livelihood in rural and peri-urban Ethiopian's, much of healthcare services are directed towards cattle than equines. This resulted in multiple welfare problems associated with inaccessible water, feed and shelter at the working sites and suffering several lesions [9].

Horses play important role in Ethiopia in the transportation of farm products, fodder, firewood, agriculture inputs, construction and waste materials in both rural and urban transport system which is low cost and viable which provides the best alternatives in places where the infrastructure is insufficiently developed [6]. On the other hand, many factors contribute to the poor performance and health of equidae. Among the most important ones are nutritional disorders, parasitic, bacterial, fungal, protozoal and viral diseases. A viral disease like African horse sickness (AHS) characterized by high morbidity and mortality rates is worth enough to be mentioned hence, it is the viral diseases as any other animal; equines are also vulnerable to a variety of diseases of biological origin, nutritional diseases or disorders and miscellaneous causes. Among which the most common entities leading to ill-health, suffering and early demise and finally death are infectious diseases and parasitism, which resulted in considerably reduced animals work output, reproductive performance and most of all their longevity availability is limited and low vegetation coverage. And the other major reason is the lack of weakness of animal health services [6].

The misuse, mistreatment and lack of veterinary care for equines have contributed enormously to early death, majority of which currently have working life expectancy of 4 to 6 years. However, in countries where animal welfare is in practice, the life expectancy of equine reaches up to 30 years [10]. The term "fit and feeling good" is to illustrate that animal welfare includes both emotional and physiological components. Physical wellbeing includes health and is affected by injury and disease while emotional wellbeing encompasses minimizing negative mental states such as fear, pain and distress as well as maximizing positive states such as happiness and comfort. A third component which overlaps with the previous two is naturalness and in the context of working animal welfare, this can be described as expression of normal behavior [11]. Therefore, the objective of this paper is to identify major health and managemental problems of horses in Horro highlands of Oromia Region.

## MATERIALS AND METHODS

**Study Area:** The study was conducted in Horro district Shambu town. Shambu is located in Horro Guduru Wollega Zone of Oromia regional states. The study was conducted within ten PA's of Horro district. Namely Akaji sabat, Gitilo dale, Rifenti chabir, Alchaya dado, Haroaga, Oda buluk, Decha chabir, Burkitu obora, Gudina abuna and Abile igu from October 2014 to April 2015. Shambu is located 316 kms west of Addis Ababa. The area is located with a latitude and longitude of 9°10'53''N and 36°39'36''E and with an elevation of 3000 meters above sea level. It has a subtropical highland climate with a uni-modal rainfall ranging between 1200mm to1800mm. The rainy season occurs from April to mid-October where maximum rain is received in months of June, July and August. Maximum temperature of 23-27°C are reached from January to March and minimum temperature of 7-15°C are normal from October to November [5].

**Study Animals:** The study animals were horses from ten different PA's of Horro district of Horro Guduru Wollega Zone of Oromia region. Purposively the horse owners were interviewed in different PA's of the district to assess any health and managemental problems prevailing in horses were assessed in the study area.

**Study Protocol**

**Sampling Procedure:** Purposively (based on willingness and accessibility) the horse's owners were interviewed to assess the managemental and health problem of horses. Not only the interviewing, but also analysis of the retrospective health problems of horses from the clinical case book records kept at Shambu and Sekela veterinary clinics.

**Sample Size and Sampling Method:** Purposive sampling method was employed and sample size was determined by voluntary horse owners' involvement and retrospective health problems assessment of horses in Horro district.

**Questionnaire Survey:** A semi- structured and comprehensive questionnaire format that addresses a number of issues related to management and health problems of horses were prepared and administered to owners of horses based on their consent. They were briefed about the objective and the benefit of the study. The interview was conducted at veterinary clinic, working place, mail house and market. The survey was carried out in a total of ten PA's of HORRO highlands.

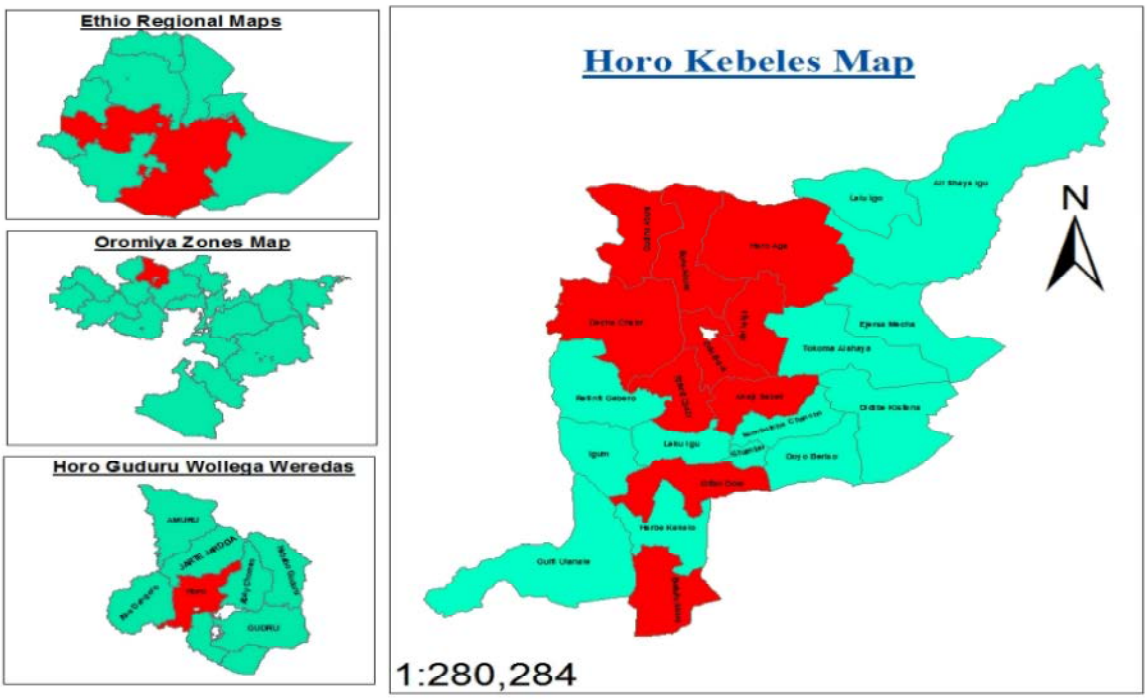


Fig. 1: Map of the study area
NB- Red color indicates area in which the study was conducted

Namely, Akajisabat, Gitilo dale, Rifentichabir, Alchaya dado, Haroaga, Odabuluk, Dechachabir, Burkituobora, Gudinaabuna and Abileigu. A total of 384 horse owners were purposively interviewed using a structured questionnaire that was aimed to know the major managmental and health problems of horses in Horro district.

**Retrospective Health Problems of Horses:** This was an exploratory assessment which was carried out to ascertain occurrence and magnitude of disease of horses in the study area. Data was collected from daily clinical records of each study sites in order to summarize the major health problem in the study area. Diseases which are recorded in case record keeping during the January 2020 to the march 2021 were recorded from two veterinary clinics, namely Shambu and Sekela veterinary clinic.

**Data Analysis:** The data that has been collected by questionnaire survey and retrospective health problem record of horses were entered into Microsoft Office Excel spread sheets program and was analyzed by statistical software SPSS Version 20. Descriptive statistics was used to predict the frequency and percentages of the managemental and health problems of horses at Horro district in Horro Guduru Wollega Zone of Oromia Region.

## RESULTS

**Housing System of Horses in Horro Highlands of Oromia Region:** According to respondents 59% horses were housed with cattle and others housed their horses in separate house (40%) with tamped soil type floor (98%), concrete floor with 0.3% and stones floor (0.7%). A few respondents kept horses with no house (1%) (Table 1).

**Watering and Feeding Management of Horses in Horro Highlands of Oromia Region:** Proper feeding is critical to the overall health of the horses. According to respondents the most type of feed provided for horses in the study area was forage diets (grass, hay) 100% and only minor numbers of respondents provide concentrate fed 13% to horses. The majority of owners provided water one times per day (84%) followed by two times per day (13%). A minority (3%) of respondents supplied their horses with water one time per day (Table 2, 3).

**Management of Horses During Grazing at Pasture in Horro District:** The management of horses during grazing at pasture used by most respondents was shepherd (66.7%) followed by tethered (26%) which induces wound

Table 1: Survey of housing type of horses in Horro district

| Housing system | Total respondents | Positive Response | Negative response | Percentage of positive response |
|---|---|---|---|---|
| Housing type | | | | |
| With cattle | 384 | 227 | 157 | 59 |
| In separate house | 384 | 155 | 229 | 40 |
| No house | 384 | 2 | 382 | 1 |
| Floor type | | | | |
| Concrete | 384 | 1 | 383 | 0.3 |
| Soil | 84 | 377 | 7 | 98 |
| Stones | 384 | 4 | 380 | 1.7 |
| Roof type | | | | |
| Grass | 384 | 3 | 381 | 1.04 |
| Iron sheet | 384 | 14 | 370 | 3.65 |
| Open | 384 | 367 | 17 | 95.6 |
| Wall type | | | | |
| Mud | 384 | 129 | 255 | 34.6 |
| No wall | 384 | 255 | 129 | 65 |
| No Bedding | 384 | 4 | 183 | 0.3 |

Table 2: Survey of feeds and feeding practices of horses in Horro district

| Feeds | Total respondents | Positive responses | Negative Responses | Percentage of positive responses |
|---|---|---|---|---|
| Grass | 384 | 384 | 0 | 100 |
| Concentrates | 384 | 50 | 334 | 13 |

Table 3: Survey of watering practices in horses in Horro district

| Watering frequency | Total respondents | Positive responses | Negative Responses | Percentage of positive responses |
|---|---|---|---|---|
| Once per day | 384 | 326 | 58 | 84 |
| Twice per day | 384 | 50 | 334 | 13 |
| Three times per day | 384 | 8 | 376 | 3 |

Table 4: Survey of management system during grazingat pastureof horsesin Horro district

| Management during grazing | Total respondents | Positive responses | Negative Responses | Percentage of positive responses |
|---|---|---|---|---|
| Tethered | 384 | 100 | 284 | 26% |
| Left free | 384 | 28 | 356 | 7.3% |
| Shepherd | 384 | 256 | 128 | 66.7% |

on the tethered parts of animal body. A minority (7.3%) of respondents manage their horses during grazing at pasture by allowing their horses to be left free throughout the years (Table 4).

**Socio-Economic Importance of Horses in Horro District:** Horses in the study area were used 100% for transportation of people and materials followed by for wedding ceremony purposes (96%), Threshing crops (20.6%) and recreation festivals (60.9%) and to gain income (Table 5).

The major importance of horses in Horro highlands of Oromia Region used for transportation of materials to the markets, for transportation of sick people to hospitals and for recreation on festivals as it tried to be shown with real pictures which were captured while they were working in different activities (Figure 2).

**Physical Health Problems of Horses in Horro Highlands of Oromia Region:** Back sore and lameness were the major physical problems of horses that were encountered in the Horro highlands of Oromia region. Most respondents owned horses which experienced back sore (19.5%) that were caused by loading (19.5%) and improper use of saddle (13%). Respondents who owned lamed horses were 2% which were caused by abusive hitting (1.6%) and by hoof over growth (9.4%) (Table 6).

**Health Care of Horses Followed in Horro District:** Diseased horses were treated by taking to veterinary clinic 93.8% as interviewed from the study area or treated at home by using different traditional medicine (3.9%). The horses which were treated at veterinary clinic were found to have good curability status (78.9%), few owner did not allow their horses to be treated although the horses were in a serious situation (2.3%; Table 7).

Table 5: Survey of socio-economic importance of horses in Horro district

| Importance of horses | Total respondents | Positive responses | Negative Responses | Percentage of positive responses |
|---|---|---|---|---|
| Transportation of people and materials | 384 | 384 | 0 | 100 |
| Threshing crops | 384 | 79 | 305 | 20.6 |
| Recreation on festivals | 384 | 234 | 150 | 60.9 |
| For wedding | 384 | 371 | 13 | 96.6 |
| To get income | 384 | 320 | 64 | 83.3 |
| By selling | 384 | 321 | 63 | 83.6 |
| By rent giving | 384 | 16 | 368 | 4.2 |

Table 6: Survey of physical problems of horses in Horro district

| Physical problems | Total respondents | Positive responses | Negative Responses | Percentage of positive responses |
|---|---|---|---|---|
| Back sore | 384 | 75 | 309 | 19.5 |
| By Saddle | 384 | 50 | 334 | 13 |
| By Loading | 384 | 75 | 309 | 19.5 |
| Lamed horses | 384 | 9 | 375 | 2 |
| By hitting | 384 | 6 | 378 | 1.6 |
| Hoof overgrowth | 384 | 36 | 348 | 9.4% |

Table 7: Survey ofowner's health care of horses in Horro district

| Treatment | Total respondents | Positive responses | Negative Responses | Percentage of positive responses |
|---|---|---|---|---|
| Taking to vet clinic | 384 | 306 | 78 | 93.8% |
| By traditional medicine | 384 | 1 | 379 | 3.9 |
| Not treat | 384 | 63 | 321 | 2.3% |
| Curability | 384 | 303 | 81 | 78.9% |

**Retrospective Health Problems of Horses in Horro District:** The retrospective health problems of horses were taken from case book records during April 2020 to April 2021 in Sekela and Shambu veterinary clinics. Accordingly, there were immense existences of ecto (45%) and endo parasites (64%), back sore (34%), epizootic lymphangitis, AHS (30%), hoof over growth (27%) and wound (27%).

**Survey of Horse Diseases in Horro District**

Survey of some of the important diseases of horses occurring in Horro district

| Horse diseases | No. interviewed | Positive response for the case | Frequency (%) |
|---|---|---|---|
| AHS | 384 | 191 | 49.7 |
| Strangles | 384 | 145 | 37.8 |
| Epizootic lymphangitis | 384 | 110 | 28.6 |
| Colic | 384 | 124 | 32.3 |

## DISCUSSIONS

The findings of the present study disclosed that a number of management problems and important diseases of horses were widespread and prevalent in Horro highlands of Oromia Region, Ethiopia. The results of this investigation demonstrated that the housing system followed in the study area was mostly, housing of horses with cattle (59%) which exposes the horses to physical injuries by horn of cattle. The appropriate housing type should be in separate house, 40% of interviewed owners housed their horses separately in the Horro highlands of Oromia Region. This result was in agreement with Cooper *et al.* [12] where 76.6%; respondents provide separate shelter at home during night to protect from predators' or other factors. A reasonable area allowance in $m^2$ for a single horse is 2 to 2.5 times the height of the horse [13]. The floor type was almost soil type (98%) and with few concrete (0.3%) and stones (1.7%). Suitable flooring materials for indoor stalls include rubber mats, artificial turf, packed clay, gravel, stone dust, asphalt, concrete, sand and wood [12]. The roof type was almost left open (95.6%) with few grass (1.04%) and iron sheeted (3%) type. Few of the owners in the Horro district of Oromia region don't allow as their horses had house (1%) in the study area.

The feeds and feeding practices followed in the area was almost grass (100%) and additional concentrate provision was exercised by few owners (13%). This observation is in agreement with research done by Harris [14] as 100% respondents used to provide available feed mainly grass and few cereal by-products at home, however very few (10.5%) respondents provide feed at market or working sites. The concentrate type mostly provided for horses in the Horro highlands of Oromia Region was barley; especially for male horses to make it strong enough in transporting people and win in competition. The watering practice for the horses provided during morning, mid-day and noon. The owners allowed their horses to gain access to water predominantly with the frequency of once per day (84%), twice per day (13%) and few owners allowed their horses to gain access to water three times per (3%). These findings were in opposition with a research done by Mekuria *et al.* [15] as the majority of owners provided water 3 times per day (53.33%) followed by two times per day (41.6%). A minority (3.3%) of respondents supplied their horses with water one time per day. Clean water should be continuously available or made available ad libitum at least twice daily [16].

The management system practiced during grazing of horses at pasture were mostly, shepherd (66.7%) followed by tethered (26%) and with less number was left free (7.3%). The socio-economic importance of horses in the Horro highlands of Oromia region used horses 100%, for the purposes of transportation of people and materials. Sick peoples were taken to hospitals by using horses as vehicles in the study area. This observation is in agreement with reports by Pritchard *et al.* [4] and Dinka *et al.* [17], describing that equids are mainly kept for transport purposes and only rarely as source of meat or milk. The other importance of horses in the study area were, for wedding purposes (96.6%), to gain income (83.3%), by selling the horses (83.3%) and by rent giving (4.2%). Horses are also used by the farmers in the study area for recreation on festivals (60.9%) and threshing crops (20.6%).

Physical problems of horses which were encountered in Horro district of Oromia Region were mostly back sore (19.5%), which was caused by improper saddle usage (13%) and by loading (19.5%) without using proper pad result in back sores of horse. This observation is in agreement with Tesfaye and Curran [18] in Hawassa who reported that 28.7% of back injuries were caused by overloading in southern Ethiopia. Out of the interviewed farmers (owners) 2% of them own lamed horses that were caused primarily by hoof over growth (9.4%) and abusive hitting by sticks (1.64%) result in abnormal gait of horses in ten PA's of Horro highlands of the Oromia region. Research done by Mekuria *et al.* [15] shown that the draught type of work is likely to induce lameness in horses (73.5%) and it was associated with continuous movement in various landscapes and on bumpy roads. Brooke welfare assessments have found that between 90 and 100 percent of working equine animals suffer lameness and foot abnormalities while 80 percent have eye abnormalities which may contribute to poor physical and mental welfare [19].

The health care of horses practiced by the owners in the study area prevailed most of the times as the owners treat their horses by taking to veterinary clinic (93.8%) and locally by using traditional cultural medicine (3.9%) to treat different diseases of horses. Few owners did not yet treat their horse (2.3%) which implies they had awareness problems how to keep the health of animals or due to financial problems they faced. The Shelima *et al.* [20] also made health care related observation where 38.3% of diseased horses treated by taking to veterinary clinic and others, using traditional medicine (36.2%) of wounded horses and those had no chance to go to veterinary clinic (17.7%) due to financial constraint. The curability of after being their horses were treated at veterinary clinic was good (78.9%) as the owners in the study area were being interviewed.

Result of retrospective study revealed existence of the parasitic diseases such as endo-parasitism (64%), ecto-parasitism (45%) and dourine (12%). The overall prevalence of GIT parasites (70.4%) recorded in the current study was relatively lower than some of the earlier reports of 92.71% [21], 96.9% [22], 98.2% [23] and at around Gonder, around Hawassa Town, Dugda Bora district respectivelyand report from Ethiopia by Tolossa and Ashenafi [24] in horses of Arsi-Bale highlands of Oromia Region and Uslu and Guçlu [25] in Turkey also reported prevalence of GIT parasites 84.4% and 100%, respectively.

Infectious diseases mainly AHS (30%), aspiration pneumonia (18%), strangles (18%) and epizootic lymphangitis (37%) and physical problems such as wound (12%), paraphimosis (2%) and hoof over growth (13%) was found most health problem within Sekela veterinary clinic. In Shambu veterinary clinic the parasitic diseases such as endo-parasitism (18%), ecto-parasitism (34%), colic (25%) and dourine (32%) were major health problems of horses in the Horro highlands of Oromia Region; Whereas Infectious diseases mainly AHS (23%),

aspiration pneumonia (9%), strangles (14) and epizootic lymphangitis (16%) and physical problems of horses such as wound (27%) and hoof over growth (27%) were also found most health problem of horses in Shambu veterinary clinic. In general endo and ecto-parasitism, AHS, epizootic lymphangitis, colic, dourine and hoof over growth were a major health problem of horses in the HORRO highlands of Oromia Region that were inferred from retrospective case book records at Shambu and Sekela veterinary clinics.

## CONCLUSION AND RECOMMENDATIONS

The animal users and owners are trying to improve managemental and health conditions of horses in Horro district although horses are still suffering from multiple managemental and health problems.The managemental problems of Horses prevailing in Horro district of Oromia Region were housing of horses with cattle, abusive hitting, the use of un appropriate saddle, over loading, lameness and hoof over growth and lack or minimum allowance of concentrates together with limited allowance of animals to access water. There were also major health problems of horses in HORRO highlands of Oromia Region. Some of the diseases are AHS, epizootic lymphangitis, ecto and endo-parasitism, strangles and colic. Themisuse, mistreatment and lack of veterinary care for equines seen in the area because, some of the owners treat their horses at home with cultural local medicine and others were never given treatment option for the animal even though their hoses were seriously sick. It is hence imperative to increase the awareness of owners and users in regard to these unresolved issues. Further investigations on the risk factors associated with horse management and health care of horses are warranted as to improve the situation of these working animals. The herein presented findings may help in initiating training programs aiming at accustoming owners and users to improve management and health issues related problems.

Based on the above conclusions the following points are forwarded:

- Creation of awareness and provision of training to animal owners in the Horro highlands of Oromia Region in order to alleviate misuse, mistreatment, over loading, abusive hitting and improving health and managemental conditions of horses
- The Veterinary service in the study area should be further strengthened and be well equipped with necessary diagnostic and therapeutic materials
- There should be further epidemiological investigation of the major diseases of horses reported in the study area in order to determine their prevalence, distribution, economic importance and thereby formulate intervention and control strategies.

## REFERENECES


1. FAOSTAT, 2012. Food and Agriculture Statistical data base. http://www.fao.org/crop/statistics/ access on line.
2. Swaan, W., 2006. Improving the welfare of working equine animals in developing countries. Appl. Anim. Behav. Sci., 100: 148-151 using health and behaviour parameters Prev. Vet. Med., 69: 265-83.
3. Wilson, R., 2002. The environmental ecology of oxen used for draught power. agr. Ecosysts. Environ., 97: 21-37.
4. Pritchard, J., A. Lindberg, D. Main and H. Whay, 2005. Assessment of the welfare of working horses, mules and donkeys using health and behavior parameters. Prev. Vet. Med., 69: 265-283.
5. CSA, 2009. Federal democratic Republic of Ethiopia, Central Statistical Authority, Agriculture sample survey, Report on livestock and livestock characteristics. Addis Ababa, Ethiopia, pp: 120.
6. Alemayehu, L. and D. Benti, 2009. Study on Reproductive Activity and Evaluation of Breeding Soundness of Jacks (Equisasinus) in and around DebreZeit, Ethiopia. Live Res. Rural Dev., 21: 42- 45.
7. Knottenbelt, D., 2009. Creeping closer; a strategy for the control of infectious diseases in the developing world. In proceeding of the 48th British equine veterinary association congress Birwingham, UK, pp: 228-230.
8. DFID (Department for International Development), 2006. DFID Ethiopia Country Assistance Plan, 2006-2010. Consultation draft, [www.dfid.gov.uk].
9. Solomon, M. and A. Rahmeto, 2010. Observation on Major Welfare Problems of Equine in Meskan district, Southern Ethiopia, Livestock Research for Rural Development., 22: 23-34.
10. Fred, O. and K. Pascal, 2006. Extension Approaches to improving the welfare of working equines. Kenya Network for Dissemination of Agricultural Technologies (kendat), 1-28. Nairobi, Kenya.
11. Webster, A., D. Main and H. Whay, 2004. Welfare Assessment: indices from clinical observation. Animal Welfare, 13: 93-98.

12. Cooper, J., M. Donald and D. Mills, 2006. The effect of increasing visual horizons on stereotypic weaving: Implications for the social housing of stabled horses. Appl. Anim. Behav. Sci., 69: 67-83.
13. Raabymagle, P. and J. Ladewig, 2006. Lying behavior in horses in relation to box size. J. Eq. Vet. Sci., 26: 11-17.
14. Harris, P., 1999. Review of equine feeding and stable management practices in the UK concentrating on the last decade of the 20th century. Equine Vet. J. Suppl, 28: 46-54.
15. Mekuria, S., M. Mulachew and R. Abebe, 2013. Hawassa University Department of Veterinary Medicine, Hawassa Ethiopia. J. Vet. Med and Anim. Health., 5: 243-250.
16. NRC (National Research Council), 2007. Nutrient Requirements of Horses. 6th Rev. ed. Natl. Acad. Press, Washington, DC.
17. Dinka, H., B. Shelima, A. Abalti, T. Geleta, T. Mume and R. Chala, 2006. Socio-economic importance and management of carthorses in the mid rift valley of Ethiopia. In: Pearson R A, Muir C J and Farrow M 2006 (Eds). The future for working equines. The fifth International Colloquium on Working Equines. Proceeding of an International Colloquium held at the Addis Ababa University, Ethiopia, 30th October to 2nd November 2006. pp: 181-188.
18. Tesfaye, A. and Curran, 2005. A Longitudinal Survey of Market Donkeys in Ethiopia, Trop. Anim. Health. Prod., 37: 87-100.
19. The Brooke, 2008. Bearing a Heavy Burden. Available online at http://www.fao.org/fileadmin/user upload /animal welfare/ Brooke report.
20. Shelima, B., H. Dinka, A. Abalti, T. Geleta, T. Mume and R. Chala, 2007. Socio-economic importance and management of carthorses in the mid rift valley of Ethiopia. In: R.A. Pearson, C.J. Muir and M. Farrow, 2007 (Editors). The future for working. The fifth International Colloquium on Working. Proceeding of an international colloquium held at the Addis Ababa University, Ethiopia, 34: 181-188.
21. Mezgebu, T., K. Tafess and F. Tamiru, 2013. Prevalence of Gastrointestinal Parasites of Horses and Donkeys in and around Gondar Town, Ethiopia. Open J. Vet. Med., 3: 267-272.
22. Ibrahim, N., T. Berhanu, B. Deressa and T. Tolosa, 2011. Survey of Prevalence of helminth parasites of donkeys in and around Hawassa town, Southern Ethiopia, Global Veterinarian, 6: 223-227.
23. Ayele, G., F. Gebreab, B. Endabu and J. Anzuino, 2006. Prevalence of gastro-intestinal parasites of donkeys in Dugda Bora District, Ethiopia. Livestock Research for Rural Development, 18(10). http://www.lrrd.org/lrrd18/10/ayel18136.htm.
24. Tolossa, Y. and H. Ashenafi, 2013. Epidemiological study on Gastrointestinal Helminthes of horses in Arsi-Bale highlands of Oromia Region, Ethiopia. Ethiop. Vet. J., 17: 51-62.
25. Uslu, U. and F. Guçlu, 2007. Prevalence of endoparasite in horses and donkeys in turkey, Bull Vet. Inst. Pulawy, 51: 237-240.

**ANNEXES**

Questionnaire survey format for assessment of major managemental and health problems of horses in Horro district of oromia region.

Name _____Kebele_____ Age _____ Sex: M □ F □
Housing system of horses:
How is the housing of horses? _____
What about floor? _____Bedding_____
What about roof _____ wall_____
Feeds and feeding practices:
1. What type of feed is provided to horse? _____
2. When does watering practice takes place?_____Frequency _____
Socio-economic importance of horses:
1. What is the use of horse? _____
2. Do you get income from horses? _____If yes how? _____

Management of horses during grazing at pasture:
How do you manage horses during grazing at pasture? _____
Physical problems of horses:
1. Do your horses have a back sore? _____If yes, what is the cause? _____
2. Do your horses have the problem of lameness? _____
If yes, what is the cause? _____

**Diseases of Horses:**
What are the common diseases in horses?

Local name English name, if any

How do you treat your horses? _____
Is the treatment given at vet clinic effective? _____
Retrospective major health problem record of horse in shambu and sekela veterinary clinics in 2020/2021

Name of diseases Frequency of diseases record /year