

## Assessment Of Welfare And Health Related Problems Of Working Equines In Wogera District, Northern Ethiopia

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**Abstract:** A cross-sectional study was conducted from November 2015 to April 2016 with the objective of assessing the welfare and health related problems and management activities on working equines in five selected kebeles of Wogera woreda. Both direct (animal based) and owner interview were used to collect data. Out 390 working equine comprising 246 (63.1%) donkeys, 108 (27.7%) horses and 36 (9.2%) mules were observed for the presence of wound lesions, ectoparasites and lameness. Among the observed equine 19.7%, 72.1% and 8.2% were used for draught, pack and ridden type of work, respectively. Across all species, 51.8 % of animals had a poor body condition score of less than 2; whereas 61.1% of horses and 51.6% of donkeys were in poor body condition. The wound prevalence in the present study area were Lesions resulting from limb/ leg sore (4.9%), lameness (20.7%), lesions affecting the lips (11.8%), girth/belly (13.1%), back/spine (24.3%) and Tail/tail base (4.9%) were most frequently observed lesions were significantly associated with species ( $p < 0.01$ ). Few handlers were known to provide water (20.8%) and feed (30.5%) at market or working sites, but only few provided shelter at working sites. 43.4% of the respondents provided feed for horses once daily while 31.3%, 14.8% and 10.5 % of the respondents provided feed, two, three, or four times daily, respectively. In conclusion, working equines in the present study area were experiencing a compound health and welfare problems. Awareness creation through mass education, training and extension service should be promoted in the study area in order to ensure better equine welfare.

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### 1. Introduction

According to recent CSA (2014), there are about 2.03 million horses, 7.43 million donkeys, 0.4 million mules, and about 1.16 million camels in the sedentary areas of the country. 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 (DFID, 2006). Farmers use alternative means like draught animals especially donkeys and mules to transport crops, fuel wood, water, building materials and people by carts or on their back from farms and markets to home (Mohammed, 1991; Fentie *et al.*, 2014).

Ethiopia possessed approximately half of Africa's equines population with 37%, 58% and 46% of all Africa, donkeys, horses and mules, respectively (FAO, 2003). Recent information regarding the contribution of draught animal power to the economies of developing countries is scarce, although in 1998 it was estimated that working animals, including horse, produced 75% of traction energy in the developing world (OTA, 1998) and it has been suggested that more than half of the world's population depends on

animal power as its main energy source (Wilson, 2003). Today, draught animals and humans provide an estimated 80% of the power input on farms in developing countries (Pearson, 2005), but traction animals are often neglected in the allocation of resources such as food, shelter and appropriate equipment, because members of the poorest section of the society, who cannot afford motorized transportation.

Despite their invaluable contributions, equines in Ethiopia are the most neglected animals, accorded low social status, particularly the male working equines. Horses involved in pulling carts often work continuously for 6 to 7 hours/day, carrying 3 to 4 persons (195–260 kg) in a single trip. They are provided with grasses during the night and allowed to graze on pasture in the town fringe during the day. Donkeys often are involved in more multipurpose activities than horses. They transport goods to and from markets, farms, and shops, traveling long distances. They also pull carts carrying heavy loads 3 to 4 times their body weight. They work from 4 to 12 hours/day, depending on the season and type of work.

Unlike horses, donkeys are not provided with feed supplements. Some methods of hobbling to restrain cause discomfort and inflict wounds (Alujia and Lopez, 1991; Mohammed, 1991) and poorly designed harnesses or yokes that may be heavy and ragged have an effect on the animal's health and safety. In addition, from the animals in Ethiopia, donkeys are the major mode of transport. They transport at least 12 different commodities including food to remote areas during war and peace as well as guns and ammunition during war. Some rural Ethiopians recall that in famines of the past they survive by someone bringing in food on donkeys (Marshal *et al.*, 1997).

Feed shortage and disease are the major constraints to productivity and work performance of equines in the region. They are brutally treated, made to work overtime without adequate feed or healthcare. They are suffering from lack of shelter from sun, rain or biting insects at markets or working sites. These have a potential to negatively affect their welfare and quality of life. This was justified by low number of donkeys presented annually to the clinic compared to other domestic animals, 270 donkeys vs. 20,000 head of other domestic animals such as cattle, between 1987 and 1988 (Yilma *et al.*, 1991). This misuse, mistreatment and lack of veterinary care for the animal 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 (Fred and Pascal, 2006).

The increasing human population, demands for transport of goods to and from far, remote areas, and construction activities around the towns are making equines highly demanded animals. Though often been described as sturdily animal (Play significant role) in the farming system they are livelihoods of farmers, but the health and welfare problems are a visible constraints. Studies to elucidate the magnitude of this problem are lacking. Such information would be useful for designing strategies that would help improve equine health and welfare.

Therefore, Objectives of the study were:

- to assess the welfare status of equines in the study area,
- to investigate the existing health problem in study area and assessment of diversified use of equines in study area.

## 2. Material And Methods

### 2.1. Study Area

The study was conducted from November 2015 to April 2016 in wogera district located in Amhara Regional state of the Semien Gondar Zone, which lies about 778km northern of Addis Ababa. Wegera is bordered on the south by Mirab Belessa, on the

southwest by Gondar Zuria, on the west by Lay Armachiho, on the northwest by Tach Armachiho, on the north by Dabat, on the northeast by Jan Amora, and on the southeast by Misraq Belessa. Towns in Wegera include Amba Georgis and Gedegbe located between 37.3°N and 12.46°E longitude and at altitude of 2900 m.a.s.l in northern high land of Ethiopia. The rain full pattern is bimodal with short rainy season from March to May, followed by long rainy season from June to September. It has an average annual rain fall of 700mm and the mean annual temperature is 12.7°C. Livestock are the major agricultural resources in the area and has livestock population of 821,906 cattle, 51,292 sheep, 11,479 goats, 162,015 poultry and 220,557 equines (WWAO, 2014).

### 2.2. Study Population

The study animals were Donkeys, mules and horses from different five kebeles of Wogera districts. Randomly selected donkeys, mules and horses irrespective of age, sex and body condition of animal at three simple randomly selected kebeles were examined for any health and welfare problems during the study period at the study areas. The sample size of animal were systematic random selection were conducted. Donkey (246), horse (108) and mule (36) ranged among kebeles of Wogera district according to the availability of time limitation 390 animals were examined from three kebeles.

### 2.3. Study design

A cross-sectional study was conducted on 246 donkeys, 108 horse and 36 mule from five simple randomly selected kebeles from working place, market and veterinary clinic in wogera district kebeles. two from towns (Amba georgis and Kosoya) and Three from rural areas (sake daber, Shamkit, Tikel dengaye) from each kebeles proportionally taken, 78 (Amba georgis), 78 (Kosoya), 78 (Sake daber), 78 (Shamkit) and 78 (Tikel dengaye). For this survey 390 equine owners selected in order to assessing equine welfare problems in area.

### 2.4. Data Collection

#### 2.4.1. Direct Welfare Assessment

Data collection format for direct assessment was developed and data were collected by direct physical examination of the equine Prior to the assessment, consent was obtained from animal's owners by introducing the objective of the study. Information regarding general body condition such as wound type, dermatological disease, musculo-skeletal disease, other disease signs and behavior, age categories, body condition score, work type and condition of harnessing were properly recorded on data collection format. Assessment carried out at field level, market and around homestead on the daytime. Animals were allowed to stand for 5-10 minutes after being held by head collar and lead rope before assessment began,

without causing major disturbance to equine routine work. According to Crane, 1997 age profile of equine classified into four (<5, 6-10, 11-15 and >15) and additionally age of the animal also estimated based on the observation of the front teeth (incisors) (Morka *et al.*, 2014; Tamirat *et al.*, 2015).

Body condition score was done according to the criteria described by Pritchard *et al.* (2005) and animals were examined from all sides without touching it. The body condition was scored as 0 to 5 (0 = very thin, 1 = thin, 2 = fair, 3 = good, 4 = fat and 5 = very fat). However, for the purpose of data analysis, body conditions 0 to 5 were categorized into three distinct groups: Categories 0, 1 and 2 were grouped as "poor", category 3 was defined as "medium" and body condition scores 4 and 5 were categorized as "good"(Pritchard *et al.*, 2005).

Wound Assessment was carried out at field level, market and around homestead on the daytime. Body lesions were then recorded with regard to anatomical location as back sore, tail sore, girth sore, bite sore and other sore (mixed) among the three species animal (Donkey, horse and mule). Wound assessments were expressed as a proportion within each age group, within each work type and within each species (Morka *et al.*, 2014).

Based on the types of work animals were categorized as draught, pack, ridden and others. "Draught" animals are those used for transport of goods and people by carts. "Pack" animals are those used for transport of goods by pack. "Ridden" animals are those used by owners for nontourist riding (Pritchard *et al.*, 2005).

Behavior of the animal were assessed as depressed, indifferent, alert and friendly approach, Alert and not friendly approach and anxious which involve an observation of general alertness versus unresponsiveness to the environment to correlate these

behaviors with physical problem and diseases (Biswas *et al.*, 2013).

#### 2.4.2. Indirect Welfare Assessment

Structured questionnaire (Annex 1) was developed to collect data on major welfare problems in working equine such as management practice (feeding, watering, health care and resting time), age of workers and people working on animal. These were questionnaire was randomly administered to all most all available equine owners/user to assess the knowledge and perceptions regarding equine welfare problems in the study area.

#### 2.5. Data Analysis

In each district, Data were collated according to species, age, sex and work type and were recorded by hand and results (welfare and health parameter ) was inserted in to MS- excel spread sheet program to create a data base and transferred to the SPSS software version 17 program and analyzed by using descriptive statistical.

### 3. Result

During the study period a total of 390 equine that comprises 246 (63.1%) donkeys, 108(27.7%) horses and 36(9.2%) mules were thoroughly observed for the presence of lesions on different parts of the body, ectoparasites and body condition status. Most horse were kept for draught purposes (57.4%) followed by mules and donkeys. Draught type of work included farming and goods using handmade carts. The majority of horses revealed a thin body condition (61.1%). In general, 72.1%, 8.2% and 19.7%of working equids were involved in pack, draught and ridden type of work, respectively. From these, 41.5% revealed 51.8%, 30.3% and 17.9% of animals were thin (Poor), medium and good body condition, respectively as shown in Table 1.

Table 1. Species of working equines, work types and body condition score proportion.

Species	Working type proportion			Body condition score proportion		
	Draught	Pack	Ridden	Poor	Medium	Good
Donkey (n=246)	-	246(100%)	-	127(51.6%)	76(30.9%)	43(17.5%)
Horse (n=108)	62(57.4%)	33(30.6%)	13(12.03%)	66(61.1%)	26(24.1%)	16 (14.8%)
Mule (n=36)	15(41.6%)	2(5.6%)	19(52.8%)	9(25%)	16(44.4%)	11(30.5%)
Total	77(19.7%)	281(72.1%)	32(8.2%)	202(51.8%)	118(30.3%)	70(17.9%)

There was a variation among different age groups in draught work type, where age group less than or equal to 5 years had 26.2% when compared with in between 6 and 10 years, 11-15 years and greater than 16 years showed that 18.2 %,13.3%, 22%

accordingly. There was also an association between sex and work type; a higher proportion of males were engaged in draught type of work than females (21.7% vs. 13.7%), whereas more male were involved in pack than female (73.4% vs. 68.4%) as showed in Table 2.

Table 2. Description of species, age and sex of the observed animals expressed as a proportion within each work type

Variable		working type with percentage			
		No animal affected	Draught No. (%)	Pack No. (%)	Ridden No. (%)
Species	Horse	108	62(57.4%)	33(30.6)	13(12.8)
	Donkey	246	-	246(100%)	-
	Mule	36	15(41.6%)	2(5.6%)	19(52%)
Age	<5 year	103	27(26.2%)	69(66.99%)	7(6.7%)
	6-10 year	154	28(18.2%)	112(72.7%)	14(9.1%)
	11=15 year	83	11(13.25%)	65(78.3%)	7(8.4%)
	>15 year	50	11(22%)	35(70%)	4(8%)
Sex	Male	295	64(21.7%)	216(73.2%)	15(5.1%)
	Female	95	13(13.7%)	65(68.4%)	17(17%)

Variations in body condition were also recorded among animals with different age categories and work type. Concerning work type, draught animals showed

high proportion of thin body condition (55.8%) compared to pack (51.9%) and ridden (40.6 %) as shown in Table 3.

Table 3: Description body condition of working expressed as a proportion within species, age group and work types

Variable		Proportion of body condition			
		No. of animal observed	Poor	Medium	Good
Species	Donkey	246	127(51.6%)	76(30.9%)	43(17.5%)
	Horse	108	66(61.1%)	26(24.1%)	16 (14.8%)
	Mule	36	9(25%)	16(44.4%)	11(30.5%)
Age	<5 year	103	48(46.65)	33(32.03)	22(21.3)
	6-10 year	154	70(45.5%)	47(30.5%)	37(24.02%)
	11-15 year	83	44(53.01%)	29(34.9%)	10(12.04%)
	>15 year	50	40(80%)	9(18%)	1(2%)
Working type	Draught	77	43(55.8%)	21(27.3%)	13(16.9%)
	Pack	281	146(51.9%)	87(30.9%)	48(17.1%)
	Ridden	32	13(40.6%)	10(31.25%)	9(28.12%)

From the total sample 77.5% of equine were found with wound on different body parts. Bit sore and back sore were found in both species, though the proportion was higher in horses (2.7% and 30.5%) than in donkeys (13.4% and 19.9%) as shown in Table 4.

limb associated abnormality (lameness) were highly prevalent across all species, with 14.2% of

working donkeys, 16.6% of working mules and 37.03% of working horses showing some degree of gait abnormality, ranging from mildly lame Immobile lame and associated with hoof over growth highly prevalent in donkey than horse and mule with 18.3%, 9.3% and 5.6% respectively.

Table 4: Description of working horses, donkeys and mule expressed as a proportion within each species

Skin wound type	No animal affected	Species		
		Donkey (n=246)	Horse (n=108)	Mule (n=36)
Back sore	95	49(19.9%)	33(30.5%)	13(36.1%)
Girth sore	51	40(16.3%)	10(9.3%)	1(2.77%)
Leg sore	19	10(4.06%)	9(8.3%)	-
Lip sore	46	-	26(24.1%)	20(55.6%)
Tail sore	54	39(15.8%)	14(12.9%)	1(2.77%)
Bite sore	37	33(13.4%)	3(2.7%)	1(2.77%)
Non wounded	88	75(30.5%)	13(12.03%)	-
Ecto parasite	78	69(28.04%)	12(11.1%)	-
Other health problem				
Ocular discharge	101	85(34.6%)	13(12.03%)	3(8.33%)
Abnormal mucosa membrane	123	65(26.4%)	47(43.5%)	11(30.5%)
Skeletal problem				
Hoof over growth	57	45(18.3%)	10(9.3%)	2(5.6%)
Lameness	81	35(14.2%)	40(37.03%)	6(16.7%)
Fracture	25	10(4.06%)	15(13.88%)	-

Out of the interviewed, about 43.1% households had one donkey, 13.9% had 2-3 donkey 10.5% households had 4-5 donkeys and 23.5% had two or more donkeys at all. The remaining 10% of households had two or more data were collected on the traditional management system (housing, feeding and health care) of equine; indicated that all animal owners

do provide water and feed to equine at home, only 92.5% provide shelter to equine at home and 7.4%(29) of the owners of horses in Amba georgis. Only few were known to provide water (20.8%) and feed (30.5%) at market or working place, but no one provide shelter as shown in Table 5.

Table 5. Proportions of household respondents on local management practice of equine

Site of service	Type of service	No. of interviews	No. of respondents said "yes"	Proportion of respondents, %
At home	Shelter provision	390	361	92.5
	Feed provision	390	390	95.7
	Water access	390	349	89.5
At working place	Shelter provision	390	-	-
	Feed provision	390	119	30.5
	Water access	390	81	20.8

Accordingly, 43.3% of the respondents provided feed for horses once daily while 31.3%, 14.8%, and 10.5% of the respondents give twice, three times and four times daily, respectively. Concerning the health care, out of interviewed equine owners' 28(7.2%) treats their animal traditionally (Plant juice). The

present showed that most of the respondents (78.5%) of the study area had no knowledge and information on equine welfare. The minority of the respondent of the study area separately feeding their animal and give care and rest for sick animal showed in Table 6.

Table 6. Distribution of respondent knowledge on equine welfare (n=390)

Respondent knowledge		Frequency	Percent
Animal welfare	Yes	84	21.5
	No	306	78.5
Animal welfare	Free from thirsty and hunger	79	20.3
	Free from injury and disease	1	0.3
	Free from pain and discomfort	4	1
	No information	306	78.5
Beating of animal	Yes	104	26.7
	No	286	73.3
Care given for sick animal	Yes	344	88.9
	No	46	11.1
Type of care given for sick animal	Taking to vet. Clinic	258	66.2
	House medication	59	15.1
	Giving traditional medication	28	7.2
	No thing	46	11.8

Among the respondents interviewed for this survey 45.6 % of persons working on equine were in adult age group. Regarding persons working on animals 83.1 % of the participants responded as they

were working by themselves with their own equines whereas only 16.9 % respondents allow other persons to work on their animals.

Table 7: Distribution age of workers and peoples working on animal (N= 390)

Attributes	Frequency	Percent (%)
Age persons working on animal		
Young	41	10.5
Adult	137	35.1
Old	212	54.4
Person working on animal		
Owner	324	83.1
Other	66	26.9

## Discussion

In this study, it was appreciated that the majority of equine observed (100%) were used for work, mainly used for farming especially horse and mule and transporting goods and people by cart, packs or ridding. The previous study was 97.8% This observation is in closely agreement with reports by Morka *et al.* (2014), Salim *et al.* (2015); Mekuria *et al.* (2013); describing that equids are mainly kept for transport purposes and only rarely as source of meat or milk.

The current studies were wide spectrum of welfare problems on the study animals, most of which were significantly associated with the assumed risk factors. The observation on the body condition of the animals showed that 51.8%, 30.3% and 17.9% were under thin, medium body and good condition category accordingly But the previous finding was this 31.6%,47.3%and 20.3% were under thin, medium and good body condition This finding is disagree with, reports by Morka, *et al.* (2014). This may be due to husbandry system and topography of the area.

In the present study, the overall prevalence of wound in working equines was 77.5% which was in disagreement with prevalence reported by Tamirat *et al.* (2015) in Wolaita Soddo Zuria District (58%) and Burn *et al.* (2007) in Jordan (59%). In the present study revealed that beat sore, tail base sore, back sore and bite sore were among the major type of wound identified in the area. These wounds are often caused by a combination of multi-factorial reasons. The difference in management and husbandry practices environmental factors, like bumpy roads and rugged land-landscape, the fit of the type of harness material used (natural or synthetic) and saddle not cover all parts; gravitational force directed back ward pulling, the frequency of work and the load all contribute to the onset of health problems. Other possible reasons might also due to the fact that animal owner do not train their equines before using for draught power and animal do not adapted the work easily that result on beat by owner, self-trauma with wheel tree and breeches.

The study revealed that there were different wounds such as back sore, girth sore and hind quarters 24.3%, 13.1%, 13.8% and 4.5% accordingly. These

were mostly affected body part of equine. Most of this injuries were resulted due to improper fitting saddle, laceration, abrasion and some of the owners injured equine specially cart horses to treat their animal and others deliberately create wound to beat directly on it so that the equine move very fast. Most of the owners force their animals to work despite the presence mechanical injuries although all owners believe that injuries could reduce the working efficiency of the animal. This is due to lack of alternative income generating mechanism.

Horse demonstrated as insignificantly higher proportion of lip lesions (24.1%) than donkey (0%). The previous studies revealed that 3.4% and 0.3% reported by Nawaz *et al.* (2007) the current study is disagree. This might be associated with the bit used for leading and braking of draught and ridden mules. Tether/hobble lesions on the limbs were highly prevalent across all species, work types and age groups, although there was a significant difference with in each of these factors. In present finding higher tether/hobble lesions were more common in horse (63%) and ridden type of work. Observation in this study area shows that horse was kept usually by tethering hobbling around homestead. As a result, all horse inevitably experienced hobbling lesion at least once in their life. Earlier studies has also mentioned that some method of hobbling to restrain equine cause discomfort and even wounds by Alujia and Lopez (1991) and Mohammed (1991). Pritchard *et al.* (2005) and Solomon and Rahmeto (2006) also reported contrary findings where ridden animals showed significantly higher prevalence ( $p < 0.01$ ) of tether/hobble lesions than those doing draught and pack works. The prevalence of ectoparasites was significantly higher in donkeys (28.04%) than horses (11.1%) which was disagree with the prevalence of ectoparasites in donkey (11.4%) and horse (5.6%) reported by Mekuria *et al.* (2013) these were higher in present studies. This might be due to owner's poor knowledge of medication for parasites. Most equines were observed in this survey mainly related to the musculo-skeletal system including lameness, fracture, hoof overgrowth and abnormal gait. Overall problem of 41.8%, which not close to Kumar *et al.* (2014) finding in Mekelle city (18.2%) and higher than Sameeh *et al.* (2010) finding in Jordan (32.2%). This is likely due to many reasons such as overloading, lack of hoof care and continuous movement in various landscapes and on rough roads were the main reasons for the occurrences of musculo-skeletal problems. This implies that any type of interaction between limb abnormalities in these animals may have serious welfare and health problems.

From the present study it was observed that among other disease problems the most frequently

encountered in the study areas were eye problems such as ocular discharge (25.9%). This finding disagree with the report done by Tamirat *et al.* (2015) in Wolaita Soddo Zuria District (20.9%) these differences might arise due to be difference in topographical nature and misuse; low level of equines health care, keeping characteristics of the equines. The current study was 43.3% of the respondents provided feed for horses once daily while 31.3%, 14.8% and 10.5% of the respondents gave two, three and four times daily, respectively. But previous finding were 40% of the respondents provided feed for horses once daily while 25%, 24.7% and 10.3% of the respondents gave two, three and four times daily, respectively. This finding was closely in agreement with in reported by Morka *et al.* (2013), Dinka *et al.* (2007) which stated that the majority of the respondents (92.5%) in the study sites provided feed at different frequencies in a day.

The type and amount of feed fed requirement varies according to the workload of the horses Harris (1999); Anderson and Denni (1994) suggested that animals, which are being used year round for transport, need more feeds than animals that are only worked for short periods seasonally. In this study 95.7% respondents used to provide available feed mainly grass, straw and few cereal by-products and 92.5% provide shelter at home, however few (30.5%) and 20.8%) respondents provide feed and water respectively at market or working sites. The finding probably was a good indicator about the level of awareness of equine users or owners, where less attention was given to animals at working site.

The current studies that draught animals, only 14.1% provide shelters were sloping floor to allow run off to keep them dry and clean and dung should be removed daily to reduce the problem of flies. Houses need to be periodically disinfected and clean bedding provided the previous studies were 24.3% reported by Morka *et al.* (2013); Matthewman *et al.* (1993); Dinka *et al.* (2007) this is disagree because the current study were lower than the previous finding this might be due to lack of awareness of the owner. The current finding was 76.6%; respondents provide shelter at home during night to protect from predators' or other factors. The community also clean dung daily and provide clean beddings such as dry grass or wheat straw; but none of the respondents did show up the importance of provision of shelter at working site/market site.

The current study showed that 88.9% of respondent provide care for their sick animal out which 66.2% of respondents took their animals to nearby veterinary clinic, 15.1% provide house medication (treat with medication purchased from local market) and 7.2% gave traditional medications.

This result was disagreed with the findings of (Kumar *et al.*, 2014) in Mekelle city that 31.6% of diseased donkeys were taken to the nearby veterinary clinics, 10.5 % were treated traditionally and 57.9% did not get any help from their owner and forced to work regardless of their health problem. Other study also identified that low number of donkeys in Ethiopia presented annually to the clinic compared to other domestic animals by Mohammed (1991). This difference might be influenced by owner economic status and knowledge on donkey welfare issues as the majority of working animal owners are poor, illiterate and most of them were not aware of animal welfare issues and engaged in earning extra money with the animal.

### Conclusion And Recommendations

In conclusion present study revealed that welfare problems were the major problems encountered in working equines in Wogera district. Beat sore, tail base sore, back sore gither and bite sore were among the major type of wound identified in working equines in the study area. Others like musculo-skeletal, dermatological diseases and eye problem were commonly encountered health problems in equin. Owner's poor awareness owners to provide good nutrition, veterinary care and animal beating practice were among indicators of poor equine welfare.

Therefore based on the current finding it can be recommended that:-

- comprehensive awareness creation on equine welfare problems should be promoted through training, extension service by the government and different NGOs.
- Policies and legal frameworks that used to support animal welfare issues and
- inspect animal facilities should be promoted in order to ensure animal welfare related problems.

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### References

1. Alujia. A. and Lopez, (1991): Donkeys in Mexico. In: Fielding. D, and Pearson. R.A., (ed). Donkeys, Mules and Horses in Tropical Agriculture Development CTVM, Edinburgh, Pp:1-7.
2. Anderson. M, and Dennis. R, (1994): Improving animal based transport options, approaches, issues and impact. In: Paul Starkey. E., manual. M., wenyu and John. S., (eds). Improving animal traction technology. Proceeding of the first workshop of the animal traction network for Eastern and Southern Africa (ATNESA) held 18-23 January 1992 Lusaka Zambia. Pp, 378-395.
3. Anon, (2007): FAO Statistical Database Website. Food and Agricultural Organization of the United Nations. <http://faostat.fao.org/> (Accessed 22 October, 2009).
4. Biswas. P., Dutt. T., Patel. M, Kamal. R., Bharti. P. K, and Sahu. S, (2013): Assessment of pack animal welfare in and around Bareilly city of India, *Vet. World.*, 6(6),332-336.
5. Burn C. C., Pritchard J., Farajat. M. waissi. A. T, and Whay. R, (2007): Risk factors for strap related lesions in working donkeys at the World Heritage Site of Petra in Jordan. *Vet. J.*, 178(2): 263-271.
6. Crane. M, (1997): Medical. In: Svendsen, E. (ed.): The professional hand book of the donkey. 3 ed. w140 by London: White Books LTD, Pp: 29.
7. CSA, (2014): central statics agency Livestock and Livestock Characteristics in Ethiopia.
8. Dennison. T. L., Khan. G. S., Khan. A. R., Pritchard. J. C., Whay. H. R, (2007): A comparative study of the welfare of equines working in the brick kilns of Multan and Peshawar, Pakistan. In: Pearson. R. A., Muir. C. J., Farrow. M, (ed): The Future for Working Equines; The fifth International Colloquium on Working Equines. Proceeding of an International Colloquium held at the Addis Ababa University, Ethiopia. Pp: 153-160.
9. DFID, (2006): DFID (Department for International Development) Ethiopia Country Assistance Plan 2006 2010. *Consult. Draft*, [www.dfid.gov.uk](http://www.dfid.gov.uk).
10. Dinka. H. B., Shelima. A., Abalti. T., Geleta, Mume. T, and Chala. R, (2007): Socio-economic importance and management of carthorses in the mid rift valley of Ethiopia. In: R. A. Pearson, Muir. C. J., and Farrow. M. 2007. (eds). he Future for Working. The fifth International Colloquium on Working. Proceeding of an International Colloquium held at the Addis



- Ababa University, Ethiopia, 30th October to 2nd November 2006, Pp: 181-188.
11. FAO, ( 2003): FAO statistical data base website. Food and agriculture organization, Rome, Italy (*FAO STATS: <http://apps.fao.org>*).
  12. Fentie. G., Teka., Fikadu. A., Ayalew. N. and Tsegalem A, (2014): Injuries in Donkeys and Mules: Causes, Welfare Problems and Management Practices in Amhara Region, Northern Ethiopia. *Am- Euras. J. Sci. Res.*,9 (4): 98-104.
  13. Fred. O, and Pascal. K, (2006): Extension Approaches to improving the welfare of working equines. Kenya Network for Dissemination of Agricultural Technologies (KENDAT), Pp: 1-28.
  14. Harris. P. A., (1999): Review of equine feeding and stable management practices in the UK concentrating on the last decade of the 20 century. *Equine Veterinary Journal Supplement*, 28: 46-54.
  15. Kumar, N., Fisseha. K. K., Shishay. N., and Hagos. Y, (2014): Welfare assessment of working donkeys in Mekelle city, Ethiopia. *Global Veterinaria* 12(3): 314-319.
  16. Marshal. K., Ali. Z, and Tefera. B, (1997): Socioeconomic issues of donkey use in Ethiopia: a case study of changing relationships. Paper prepared for ATNESA workshop on improving donkey utilization and management held 5- 9 may, Debrezeit, Ethiopia.
  17. Matthewman. R. W., Dijkman. J. T, and Zerbini, E., (1993): The Management and Husbandry of Male and Female Draught Animals: Research Achievements and Needs. Research for Development of Animal Traction in West Africa. West Africa Animal Traction Network and International Livestock Centre for Africa, Addis Ababa, Ethiopia, Pp: 125-136.
  18. Mekuria S., Mulachew M. and Abebe R. (2013): Management practices and welfare problems encountered on working equids in Hawassa town, Southern Ethiopia.. *J. Vet. Med. Anim. Health*:5. 243-250.
  19. Mohammed, A., 1991. Management and Breeding Aspects of Donkey around Hwassa, Ethiopia. In: fielding and R. A. Pearson, (Editors). *Donkeys, Mules and Horses in Tropical Agricultural Development*. CTVM, Edinburgh UK, pp: 185-188.
  20. Morka. A., Adisalem. H., Bojia. E., Eyob. H, and Bedasso. M, (2014): Health and Welfare Assessment of Working Equine in and Around Nekemte Town, East Wollega Zone, Ethiopia. *Am-Euras. J. Sci. Res.*, 9 (5): 163-174.
  21. Nawaz. S., Gondal. Z., Habib. J. I., and Shaw. M. A, (2007): The Influence of Cart and Bit Characteristics on presence, size and severity of lip lesions in draught in MARDAN-PAKISTAN. In: Pearson, R. A., Muir. C. J., and Farrow. M, (Ed): *The Future for Working. The fifth International Colloquium on Working. Proceeding of an International Colloquium held at the Addis Ababa University, Ethiopia, 30 October to 2 Pp: 181-188.*
  22. OTA, (1998): Enhancing Agriculture in Africa: a Role for U.S. Development Assistance, OTA-F-356. U.S. Government printing office, Washington, DC, September 1988, chapter10. Pp,238.
  23. Pearson, R. (2005): Contributions to Society: Draught and Transport. *Encyclopedia of Animal Science. Marcel Dekker Inc., USA.*, Pp: 248-250.
  24. Pritchard, J. C., Lindberg, A. C., Main. D. C. J, and Whay, H. R, ( 2005): Assessment of the welfare of working horses, mules and donkeys, using health and behavior parameters. *Preventive veterinary medicine*, 69: 265-283.
  25. Salim U., Haimanot. D., Tadele. K., Tilahun. Z., and Girma. K, (2015): Health and Welfare Related Assessment of Working Equine in and Around Batu Town, East Shoa, Central Ethiopia. [http://www.sciencepub.net/nature13\(10\)](http://www.sciencepub.net/nature13(10))
  26. Sameeh, M., M. Dirar, H. Zain and F. Sarah, 2014 Equine rd diseases and welfare in Jordan: A retrospective study (1261 cases) in Jordan. *J. Agri. Sci.*,10(3): 21-24.
  27. Solomon, M. and Rahmeto. A, (2010): Observation on Major Welfare Problems of Equine in Meskan District, Southern Ethiopia, *Livestock Research for Rural Development*, 22(3).
  28. Swann, W. J., (2006). Improving the welfare of working equine animals in developing countries. *Applied animal behavior science*, 100: 148-151.
  29. Tamirat. H., Mulisa. M., Ayalew. N. and Teka F, (2015): Assessment on Working Donkey Welfare Issue in Wolaita Soddo Zuria District, Southern Ethiopia . *Global Veterinaria* 14 (6): 867-875.
  30. Wilson, R. (2003): The environmental ecology of oxen used for draught power. *agr. Eco systs. Environ.*,97, 21-37.
  31. Yilma. J., Feseha., G., Svendsen. E. and Mohammed. A, (1991): Health problems of working donkeys in Debrezeit and Menagesha Regions of Ethiopia. In: D. Fielding and R. A. Pearson (Editors). *Donkeys, Mules and Horses in Tropical Agricultural Development*, CTVM, Edinburgh.; Pp: 151-155.

## Annexs

### annex I. Questionaries

**Assessment Of Welfare And Health Related Problems In Working Equines In Wogera Disterict, Northern Ethiopia.**

- 1) Region \_\_\_\_\_  
District \_\_\_\_\_ Keble \_\_\_\_\_  
Id \_\_\_\_\_
- 2) Educational status of the owner A) illiterate B) elementary school C) high school D) above.
- 3) What is age of the worker on the animal? A) Young B) adult C) old.
- 4) How many numbers of equines per household A) One B) Two C) Three and above.
- 5) Sex of animal A) male B) female.
- 6) Species A) donkey B) mule C) horse.
- 7) Age categories of animal A) age 1-5 B) age 6-10 C) age 11-15 D) age >15.
- 8) Body condition score A) very thin B) thin C) fair D) good E) fat F) very fat.
- 9) Work type A) pack/saddle B) cart/drought C) ridden.
- 10) Do you use harness/ saddling material when working your horse/mule/donkey? A) Yes B) No.
- 11) Can you Harnessing on your equines? A). Proper harnessing B) Insufficient C). No harnessed.
- 12) Do you put sore padding under load? A). Yes B). No.
- 13) If you yes what is it made of? A). Blanket B). Fertilizer sac C). Jute sac... with/without straw D). Skin..... with/without E). Wool with cotton.
- 14) What materials do use to tie up your donkey/mule/horse? A). Sisals rope B). Leather rope C). Thin nylon rope d. thick nylon rope.
- 15) Have you ever loaded your donkey/mule/horse hot flour? A). Yes B). No.
- 16) If you yes.... what happens your donkey /mule/horse after loading A) Swelling on back B). Sweating C). hot the body D). Hooting.
- 17) Do you use pregnant animal for work? A) Yes B) no.
- 18) Can you trimming the Hoof your animal a) Yes b) No.
- 19) Presence of wound (present, absent) A) beat sore B) back sore C) tail base sore/ramp D) breast/girth/chest sore E) side wound (hind quarter) F) proud flesh G) hobble/lip sore H) hock/carpel/joint swelling I) hyena/donkey bite.
- 20) Dermatological diseases (present, absent) A) Ecto- parasites B) habronemiasis C) sarcod D) others.
- 21) Instant behavior A) Depression B) Indifferent C) Alert and friendly approach D). Alert not friendly approach E). Anxious.
- 22) Other diseases signs (present, absent) A) coughing B) ocular discharge C) nasal discharge D) abnormal mucus membrane E) rough coat F) diarrhea G) colic sign H) rectal prolapsed.
- 23) Muscle skeletal problem A) lameness B) Hoof overgrowth C) fracture.
- 24) Is there any care for sick animals? A) Yes B) No.
- 25) If your answer is yes, how do you give care? A) Taking to vet clinic B) house medication C) giving traditional medication.
- 26) What are the traditional treatment practices? A). Branding B). Washing with salt, water C). Leaves, plant root D). ash, feces.
- 27) Are you give Feed in your equines at working place? A) Yes B) No.
- 28) If you yes how many times A) One B) twice C) three D) four.
- 29) What do you feed your equine? A) Crop residue B) Crop after math C) roughage D) Only grazing.
- 30) How do feed your horse/mule/donkey? A) Feeding separately B) with other animal.
- 31) Can you give water at work place? A) Yes B) no.
- 32) If you yes how many times? A) Once B) twice C) three.
- 33) How do water your horse/mule/donkey? A) Separately B) with other animals 36) Can you provide shelter at work place A) Yes B) No.
- 34) 34) Can you shoeing your equines? A) Yes B) No.
- 35) Do you know about animal welfare? A) Yes B) No.
- 36) If your answer is yes what do aware of it? A) Freedom from thirst and hunger B) freedom from injury and disease C) freedom from pain and discomfort D) freedom to express normal behavior and free space to move.
- 37) Who is responsible for animal welfare A) yourself B) Veterinarians C) gov't D) other.
- 38) For how long horse/mule/donkey does work once put to it? A) 1-4hr B) 5-8hr. C) 9-12hr.
- 39) Is there practical resting time to animals in between the work time? A) Yes B) no.
- 40) What they do when they get rest? A) Only feed B) only water C) only break D) all.
- 41) How much do you load to your horse/mule/donkey? A) <50kg B) 50-100kg C) 100-150kg D) >150kg.
- 42) Where do you keep your horse/mule/donkey at night? A) In shelter along with other livestock B) Separate shelter.

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