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The Effects of Management practices on the Health and Welfare of traction Animals: A study of Taraba state Nigeria.

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Abstract

To investigate the effects of management practices on the health and welfare of these traction animals in Taraba state. structured questionnaires complemented with un key informant interview were used to collect data from a sampled size of 200 traction animal owners across the study area. The data collected were analyzed using descriptive statistics. Four tables were made which consist of the first, demography of the respondent, ($P<0.05$). second table focused on the socio-economic characteristics, such as qualification, occupation, year of experience in the AT practices. Table 3 deal with management practices 122 out of 200 respondents practiced semi-intensive, 188 give supplementary feeding, 130 supplement with bran and offal's from cereal crops and the last table present health management practices such as cases of outbreak, (111 yes others no) the use of vet personnel in handling heath issues (151 yes others no). The studies shown that most of the owners are managing the animals properly whereas few still need more orientation on husbandry, health and welfare leading to attitudinal change. These management practices not only hamper the handling of animals, or rather endangers human caregivers and animals, but also has negative effects on animals´ welfare, increasing disease susceptibility and decreasing productivity. There is need for a better legislation in order to safeguard the welfare of these traction animals which is in line with one health goal (healthy animal, healthy human and healthy environment).

Key words: Animal-traction, disease, health, husbandry, production, welfare.

Introduction

About four (400) million large animals still toil throughout the world working for humankind (Okurut, *et al.,* 2004), contributing more than half of the energy needed in Agricultural processes. Basically, humans, animals and machines provide the power needed in Agricultural production. These comprises of crop production, transport services, harvesting and post-harvest processing activities (Pal et al, 2013; Assis et al, 2017). Interestingly, Animal traction (AT) is gradually regaining grounds in rural areas in Nigeria and the use of other means of tillage activities such as human power and the use of tractors are reducing (Umar, et al, 2013) perhaps this may be due to higher cost of tractor and the lesser cost of animal traction. Additionally, Animal traction (AT) is affordable, easily accessible and could be locally managed by women and children moreover, its maintenance and sustainability are easy for small-scale farm holders, who have been into the business of world's food production (Umaru et al, 2013). The use of animal power give room for men and women to increase their efficiency and reduce drudgery, compared to human power (Bello et al., 2012). The working animals like other farm or production animals also contribute to food production through beef and dairy, manure and offspring (Bello et al., 2012). Animal traction is the most popular means of traction in developing countries like Nigeria, it is so because of reasons such as reliability, availability as well as affordability (Singh, 2013). Most importantly, it forms part of primary source of livelihood of the rural societies which can be controlled at family level and can easily be manage by women and children (Tadich et al, 2016). As source of livelihood traction animals has the capacity to convert natural resources into food production, income or wealth generation and job creation in rural areas (Mota-Roja et al, 2016; 2019). It is imperative that Animals have been used for years in rural areas for drawing water from the well (Marshall *et al.,* 2014) and transportation of farm produce in rural areas (Jahnke, 1982; Katsina, 1990). However, with these hard and laborious tasks little attention is given to their effects on the health and wellbeing of these working animals (Luna and Tadich, 2019) thus shortening their longevity as well as terminating their lives (Gebreab and Fanta, 2007; Amene et al, 2015). This not only affects the handling of animals, which may likely endanger human caregivers and animals, but also has negative impact on the animals´ welfare, thereby decreasing disease resistibility and its productivity (Breuer et al, 2000; Hemsworth et al, 1981; Hemsworth et al, 2011; Hemsworth and Coleman, 2011). It is therefore, imperative to conduct an

investigation on the impact of these agricultural activities carried out by Animals (Cattle and donkeys) as well as the attitude of the stakeholders involved (herders, owners, AT operators) towards achieving a humane and healthy environment for both human and animals.

HEALTH AND WELFARE OF WORKING CATTLE

Generally, working Cattle are more engaged in traction activities in Nigeria than transport. Animal traction demand more energy than transport, however, the act of traction and transport are both tedious and laborious, hence with the poor attitude of some stakeholders (handlers), these animals stand the risk of sustaining injuries (Pearson and Krecek, 2006;) and also be subjected to every form of stressors and fatigue (Minka and Ayo, 2007) this is because the work is multi-tasking and high energy demanding. When the handling is poor and proper care is not put in place it may cause deformity (Gebreab and Fanta, 2007) consequently reducing longevity (Amene et al, 2015). Previous studies on health and welfare of working animals have discussed much on causes and effects of health and welfare of these working animals among which are; Lack of vaccinations these is because some diseases such as viral diseases and some bacterial diseases are better managed when vaccinations are being carried out. In the study area (Taraba state Nigeria) the commonest diseases of cattle are Foot and disease, Contagious Bovine Pleuro pneumonia (CBPP). Black quarter (there is need for related research). Nevertheless, if the cattle are vaccinated against these diseases the animals stay safe. Moreover, other welfare related issues are that of shelter this is because majority of cattle in Nigeria are not sheltered and the working animals are not exempted. The often exposed to every form of natural torture such as the scutching sun, been beaten by rain, killed or stroked by lightening, and exposed to other form of dangers such as Predation for those leaving in areas closed to the wild (forest). Perhaps these factors can cause pain, stress, injuries and loss of the animals and if the animal survived it could lead to deformity and may reduce longevity (Gebreab and Fanta, 2007; Amene et al, 2015). Although, not common but working animals do get involved in road accident such as being knocked down by Motor-vehicles and at times by either Tricycle and motor-cycle these could lead to varying degree of injuries and wounds, it may be as simple as bruises, abrasions or lacerated wounds or more severe ones like fracture. However, these could be averted or controlled if the handlers managed the animals properly (Biffa and Woldemeskel, 2006). Proper management is another means of properly managing the health of animals, in this case the attitude of the personnel involved in handling the animals is the most important. Some working cattle are handled by children of much younger age who have no knowledge of animal health and welfare, humane education as well as no much experience if not closely monitored and properly train the wellbeing is at risk in

their custody. Some handlers are hired laborers who doesn't care about the animals instead their mind sets are on the wages only some don't even have passion for the work as well as passion towards the animals (Madzingira, 2018). Considering all these it is obvious that the health and welfare of these animals could be compromised (Madzingira, 2018) as the activities involved are detrimental to the health and wellbeing of these working animals (Luna and Tadich, 2019). Animals are said to be in good health, when they are sound in body, free from disease and pain. health and welfare are fundamental to a productive working animal. Hence achieving this help to maximized productivity and wellbeing. It is then imperative to note that the health and welfare of these working animals is fundamental and needed to be guarded with outmost care (Starkey et al 1995; Pearson et al,1997). However, it should be ensured that traction animals are consistently kept in good health.

PROPER WELFARE

Issues regarding proper animal welfare cannot be properly treated without reconsidering the concept of five freedom; perhaps, it is because it has dealt with the major areas concerning health and welfare of animals especially the working animals; The five freedom of animal welfare present a standard of care that is followed across the globe. Included in the UK. Governments Animal Welfare act of 2006, they state that every living being deserve the right to humane treatment. An investigation was carried out in the UK, in the year 1965, regarding the welfare of farm animals at the end of the inquiry people were informed of the need for animals to stand up, to lie down, to turn around, to stretch and be able to groom (Madzingira, 2018). This concept was adapted few years later. Hence it addresses the physical and mental need of the animals. However, this brings about the Five Freedoms it is indeed a concise and precise but focuses on Animal Welfare. The concept of five freedom were adapted in the 1993 to explain to farmers how animals how they can meet each of the five freedoms.

1. Freedom from hunger and thirst; it is so crucial that animals always have fresh water available as well as a suitable diet that keeps them healthy and energetic. These diets should be specific to the animal. Taking into consideration the age, gender, breed, and whether they have any specific health conditions.
2. Freedom from discomfort; All animals should be kept in a safe and healthy environment that has protection from the elements of discomfort and a comfortable resting area, soft bedding access to natural light, an appropriate temperature and suitable noise level should also be monitored and supplied. Care must be taken to ensure food and water bowls are properly maintained.
3. Freedom from pain, injury and disease; Vaccinating animals to prevent diseases and illness is a must as is providing treatment and medication it

needed. The constant monitoring or animals is also necessary to pick up injury or illness quickly.

4. Freedom to express normal behavior; Normal behavior, like moving as freely as possible in sufficient space being able socialized with another animal and being kept in proper facilities is the fourth freedom.
   Animals must be able to stretch every part of their body, run jump and play. If they are happier with other animals around, they must also have the option to interact with them. Some animals want to avoid others, and this must be respected too.
5. Freedom from fair and distress; Animal owners should ensure that the treatment and condition of their animals prevent any form of mental suffering. The fifth freedom made it clear that mental health of an animal is as important as the physical health. Preventing overcrowding and providing a safe space for all animals are ways to ensure they feel safe and protected.
   Following the Five Freedoms of animal welfare means that owners support the health and welfare of the animals they care for, whatever their purpose. The Five Freedoms educate animal owners so that they know how to provide the best possible care to their animals.
   Proper welfare or good animal welfare can be evidence good husbandry, disease prevention, and routine treatment, humane handling and slaughter, when necessary, provision of suitable nutrition and shelter (Bousfield and Brown, 2010). It also includes low level of disease exhibiting behavioral repertoire normal reproduction and high longevity (Madzingira, 2018).

IMPROPER WELFARE

The word improper (not proper, dishonest) which means ‘not in accordance with accepted standard’’ especially of morality and honesty or in short lacking in modesty and decency or being morally wrong (Oxford Dictionary and Wikitionary). however, a welfare status of an animal is said to be improper when the set standard is compromised (Farhat et al, 2020) This could be as a result of so many factors related to poor husbandry management e.g., poor nourishment, poor housing, lack of clean water, high levels of disease, infestation and infection by external and internal parasites, high mortality, exposure to predation and exposing animals to pains, suffering and distress (Madzingira, 2018; Bousfield and Brown, 2010). All these have negative effects on the animal’s health and wellbeing as a whole (Madzingira, 2016) Animal’s welfare status is said to be satisfactory when the animals are managed with little resources and effort. There are situations, in which animals may fail to cope with conditions in their environment leading to a poor, negative or bad welfare status (Broom, 1991; Broom, 2016; Madzingira, 2018).

Globally, animal handlers vary with regards to their attitudes toward animals, perhaps because of their passion to the work (animal handling) and their desire to do what is right (Biswas et al, 2013; Ashinde, et al, 2017). Moreover, the handlers of working animals interact more with the animals than the ones handling farm animals. It is so because their responsibility towards working animals tends to be much compared to that of farm animals (YADE, 2021). The interaction between the handlers of farm animals and the animals is simply the normal routine management (Madzingira, 2018). Whereas, that of the working goes beyond that as it involved training/teaching the animals how to work e.g., tilling the soil, carrying load, how to respond to directives (YADE, 2021). Generally, animals have individual differences as some may be quick learners while others may not some adapt easily whereas others don't (YADE, 2021). Nevertheless, for this and other reasons force are being applied in the course of the training and the work. E.g., there are instances where animals are pulled by their appendages like the tail, horns, limbs, testicles (), not minding whether animal is feeling pain or discomfort, or is in good state of health. This therefore, happened with the purpose of forcing them to either work or move. Honestly, such attitude is improper as it is compromising the set standard and it has negative effects on the health and the welfare of the animals such as (Farhat et al, 2020; Minka and Ayo, 2007). Some the handlers shout at the animals frightening them just to make sure the animals meet their set target in such situation the animal is denied the freedom from pain and injury and freedom from fair and distress.

Some of the interactions affects the psychological well-being of these animals, this is so crucial because animals are sentient beings, that is, they have feelings and emotions (Broom, 2016) and can therefore suffer psychological trauma. Good and bad experiences are acceptable part of an animal's life as long as animals are able to adapt. However, physical and mental suffering that exceeds of animal welfare (FAWC, 1993) can be used as a framework for defining and assessing animal.

The five freedoms in other words, animal welfare refers to the physical and emotional state that is produced in animals by human attitudes and practices, the amount and quality of resources available to an animal and by the environment in which the animal lives. welfare. The five freedoms are applicable to farm animals, but require prior knowledge of species-specific wants for successful implementation. The focus of four of the five freedoms is on relieving suffering or doing away with the negative components that have the potential to impair the well-being of animals. However, one of the 'five freedoms' seeks to promote the positive aspects by advocating for animals to be provided with conditions that enable them to express normal behavior. The 'five freedoms' are essential as a basis for preventing animal suffering and poor welfare. They have gained widespread acceptance by regulatory bodies or organizations.

Considering the present realities, the use of tractors for cultivation of land is not easy to come by this may be as a result of its affordability, accessibility and management. In order to achieved maximum productivity and to sustain it issue of health and welfare of these animal have to be considered properly addressed. welfare related issues such as shelter are not properly taken care of this is because majority of cattle in Nigeria are not sheltered and traction animals are not exempted. They are often exposed to every form of natural torture such as the scutching sun, been beaten by rain, killed or stroked by lightening, and exposed to other forms of danger such as Predation for those leaving in areas closed to the wild (forest). Perhaps these factors cause pain, stress, injuries (Broom, 2016; Minka and Ayo, 2007) and loss of the animals and if the animal survived it could lead to certain conditions such as deformity and may reduce longevity (Gebreab and Fanta, 2007; Amene et al, 2015) Several types of draft animals are used in Nigeria. But the Bulls (mature male cattle) are the most commonly used (Abubakar and Ahmad, 2010). However, breeds of cattle such as white Fulani, Sokoto Gudali and the Zebu breeds are the most commonly used in Animal traction (Abubakar and Ahmad, 2010). Hence this study is designed to investigate the effects of health and husbandry management practices on the health and welfare of traction animals in Taraba state.

Methodology

Taraba state is located in the northeastern part of Nigeria. Covering a total of 54,428 Square km with a population of 2,688,944. The state is bordered to the east by Adamawa state, bordered to the north by Gombe, Bauchi and Plateau state and republic of Cameroon to the south (Britanica.com, 2021). Like other parts of the country, Taraba state has a wet and dry season. The wet season last on the average from April to October with mean annual rainfall that varies between 1056m in the north around Jalingo and Zing, to over 1300m in the south around Serti and Takum. The wettest month is August and September whereas the dry season last from November-March. (Britanica.com).

A Primary form of data such as questionnaires alongside personal interview was adopted. A total of 200 questionnaires was distributed to the 16 local Government areas of the state, 12 questionnaires per each local government area and random sampling techniques was adopted to distribute the questionnaires. The researcher employed descriptive statistics to analyzed the dataset. SPSS statistical package and the result is presented in form of tables (Hoeks et al, 2013).

OBJECTIVES OF THE STUDY

The main objectives of this study is to examine the effects of management practices on the health and welfare of traction animals: A case study of Taraba state Nigeria.

The specific objectives will be to;

1. Examine the impact of husbandry management practices on the health and welfare of traction animals in the study area.
2. Examine the effects of health management practices on the health and welfare of the traction animals.
3. Ascertain the attitude of stakeholders as it affects the health, welfare and performance of the working animals in the study area.
4. Proffer solution on improving the health and welfare of working animals in order to improve the economic wellbeing of farmers in the study area as.

Result and Discussion

Presented in table 1 is the demography of the respondent. For gender, males are the majority with 170 owner and female are fewer with 30. It also shows that 127 traction farmers fall between the age bracket of 31-40. 39 of the respondents fall between the age range of 20-30 and 11 of the respondents fall within the range of 50 and above. In terms of Marital status 134 of the respondents 134 of the respondents are married, 38 are single, 17 are divorced and 11 widow and widowers hence married are the majority. For household size 122 of the farmers fall between the range of 6-10, 42 fall between the range of 1-5 and 36 fall within the range of 10 and above.

Table 1 Demography of the respondent

Effects	No. of Records	Mean	SD	±SE
Gender		*		
Male	170	2.1471	0.6676	0.0512
Female	30	2.3667	0.8087	0.1477
Age		*		
20-30	23	1.1739	0.3876	0.0808
31-40	127	1.1024	0.3043	0.0270
41-50	39	1.3333	0.6213	0.0995
50<	11	1.1818	0.4045	0.1220
Marital status		*		
Married	134	1.1567	0.3649	0.0315
Single	38	1.1567	0.2733	0.0443
Divorce	17	1.2353	0.7524	0.1825
Widow/Widower	11	1.3636	0.5045	0.1521
House hold size		*		
1-5	42	1.1429	0.3542	0.0546
6-10	122	1.1721	0.4396	0.0398
10<	36	1.1389	0.3507	0.0585

*Significant (P < 0.05)

Source: Field survey, 2023.

Presented in table 2 below are the socio-economic characteristics of the animal's traction owners. The result showed that 76 out of 200 respondents had only informal education, 57 of which had primary education, 35 had secondary education and 32 had tertiary education. Which revealed that majority of traction animal owners had informal education. It was also revealed that the occupation of the animal traction owners varies as 119 are basically farmers, 36 of which are civil servants, 32 are business men and 13 are house wives. For experience with the traction animals 90 of the respondents fall between the range 11-20 years. 76 falls within the range of 5-10, 24 between the range of 21-30 and 8 between 31-40. This revealed that more farmers or farm families are delving into the use of animal traction in recent years which agreed with (Umar et al, 2013) who stated that animal traction is gradually gaining ground in northern Nigeria. For species of animals used for traction purpose it was also revealed that 143 are cattle (Bulls) while donkeys are used for other purposes such as transportation of goods and human. Numbers of traction animals owned by individual farmers 126 owned 2-4 traction animals, 43fall between 4-6, 22 between 6-10, 7 between 1020 and 2 above 20. Traction animals are acquired through varying means the result revealed that144 of the famers got theirs through purchase, 28 through rent, 18 inherited it and 10 got theirs through family and community. In terms of labor 125 depend on family labor, 50 depend hired labor and 27 of the respondents used both family and hired labor.

Table 2: Socio-Economic Characteristics of the Respondents

Effects	No. of Records	Mean	SD	±SE
Educational qualification				
Informal education	76	1.1053	0.3089	0.0354
Primary education	57	1.1404	0.3504	0.0464
Secondary education	35	1.2000	0.4053	0.0686
Tertiary education	32	1.2188	0.4200	0.0742
Occupation				
Civil servant	36	1.0833	0.2803	0.0467
Farmers	119	1.1681	0.3755	0.0344
Business man	32	1.1250	0.3360	0.0594
House wife	13	1.2308	0.4385	0.1216
Experiences with working animals (year)				
5-10	76	1.1053	0.3089	0.0354
11-20	92	1.1957	0.3989	0.0416
21-30	24	1.1667	0.3807	0.0777

31-40	8	1.0000	0.0000	0.0000
Species of working animals kept				
Cattle	143	1.1119	0.3163	0.0265
Donkey	38	1.2105	0.4132	0.0670
Both	19	1.3158	0.4776	0.1096
Numbers of traction animals				
2-4	126	1.1508	0.3593	0.0320
4-6	43	1.0930	0.2939	0.0448
6-10	22	1.3182	0.4767	0.1016
10-20	7	1.0000	0.0000	0.0000
20<	2	1.0000	0.0000	0.0000
Means of acquiring working animals				
Inherited	18	1.0556	0.2357	0.0556
Purchase	144	1.1458	0.3542	0.0295
Rented	28	1.2500	0.4410	0.0833
Family/Community	10	1.1000	0.3162	0.1000
Sources of labor				
Family	125	1.1382	0.3465	0.0312
Hired	50	1.1800	0.3881	0.0549
Both	27	1.1481	0.3620	0.0697

Source: Field survey, 2023.

Presented in table 3 below is the husbandry management system feed and feed type. Animal traction owners practiced the 3 commonest management systems such as intensive, semi-intensive and extensive system. 122 out of the 200 respondents practices semi-intensive 70 of the respondents practiced extensive while 8 of the respondents practiced intensive and this revealed that majority of the respondent practiced semi-intensive system of production. 188 respondents give supplementary feed after the traditional grazing in the field whereas 12 of the respondents do not supplement. The types of supplementary feed vary with the farmers as 130 respondents supplement with bran and offal from cereal crops 58 supplement with preserved grasses such as drylage, hay and crop residues

Table 3: Management system/feed and feed types

Effects	No. of Records	Mean	SD	±SE
Type of management practices				
Intensive	8	1.2500	0.4629	0.1637
Semi-intensive	122	1.1393	0.3477	0.0315
Extensive	70	1.1571	0.3666	0.0438

Do you supplement your animals?				
Yes	188	1.1436	0.3516	0.0256
No	12	1.2500	0.4523	0.1306
Types of Supplements				
Whole grain	12	1.5833	0.5149	0.1486
Bran and offal's	130	1.1154	0.3207	0.0281
Preserved grasses (drylage hay & crop residue)	58	1.1379	0.3478	0.0457

Source: Field survey, 2023.

Presented in table 4 below is the health management practices carried out by the various respondents. Working animal owners (traction and transport). Cattle and donkeys. The first effects were the incidence of disease outbreak and 111 farmers within the period of the study experienced outbreak while 89 did not. In terms of veterinary services, 151 respondents managed their disease and health conditions of the help of veterinary personnel, 26 mange it by themselves and 17 of the respondents get help from family members and the community and 6 of them rely on traditional methods of treatment.

Table 4: Health management practices for working animals (cattle/donkeys)

Effects	No. of Records	Mean	SD	±SE
Do you experience any disease outbreak?				
Yes	111	1.2072	0.4071	0.0386
No	89	1.0787	2707	0.0287
how do you handle the situation.?				
Vet personnel	151	1.1854	0.3899	0.0317
Self	26	1.0385	0.1961	0.0385
Family or Community member	17	1.0588	0.2425	0.0588
Traditional methods	6	1.0000	0.0000	0.0000

Source: Field survey 2023.

Conclusion

Animal traction have been of great benefit to the people of Taraba state this is evident in their consistent use of animal in cultivation of land for crop production. Cattle are the animal species used as traction animals in the study area. The health and husbandry management practices such as feeding, supplementary feeding, good housing, good drinking water, secure environment, good rest, are not properly observed by the

owners. Similarly, health management practices such as vaccination, deworming, resting the animals when needed, use oof veterinary drugs for treatment when the animals are ill are also not properly handled. These is because most of the traction animal owners and users leave in rural areas hence is hard to access good veterinary services. Welfare related problems such as forcing the animal to work, trekking long distance, transporting the farming implements, beating the animal during work, using immature or younger animals and using sick or injured animals for traction are detrimental to the health and welfare of the animals. This management practices have great impact on the health, welfare and performance of the animals. Perhaps, the reasons for such poor management practices include: poor attitude towards animals, ignorant of the fact that these animals are sentient being, use of hired labor without supervision, lack of orientation on animal health and welfare, lack of strong animal welfare group, ignorance of the negative effects of poor management on the performance of the animals. All these reasons have reduced performance as well as output. Hence there is need to improve the entire management practices such as to;

- Ensure that the stakeholders involved in animal traction are properly trained on the health and husbandry management practices such as vaccination, treatment, feeding, housing, as explained in the five freedoms.
- Veterinarians and para-veterinarians should render good services such as vaccination, prophylactic medication and treatment of the animals against diseases.
- Government should provide infrastructures such as good road network, veterinary clinics, good drinking water in rural areas as these will better the lives and wellbeing of traction animals in the rural areas thereby increasing the profit margin.
- Attitudinal change on the part of the farmers and other stakeholders interacting animals knowing that animals are sentient being hence should be manage with outmost empathy.
- Government should enact legislation to establish welfare regulations that implements welfare strategies aimed at improving the quality of life of owners and the animals within the communities as these is in line with one health goal (healthy animal, healthy human and healthy environment).

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