Original Research Article

ASSESSMENT OF ETHNO-VETERINARY PRACTICES AMONG CATTLE HERDERS IN ZURU, KEBBI STATE, NIGERIA

ABSTRACT

This paper evaluated some ethno-veterinary practices among cattle herders in Zuru, Kebbi State, Nigeria. One hundred and ten (110) questionnaires were used purposively to generate data on demographic information, cattle ownership, knowledge of ethno-veterinary practices, ethno-botanical plants of veterinary importance and their uses in treating various cattle diseases. The study covers only four villages in the study area because of the high density of cattle herders. The results revealed that cattle herding is a sole activity of males with majority (41.82%) fallen between the age group of 41-50 years old, and 79.09% having informal education while 74.55% of them have more than 11 households. Among the respondents (47.27%), have 21-30 heads of cattle and majority (92.73%) of them are aware of ethno-veterinary practices. The knowledge of ethno-veterinary practice and the use of available ethno-botanical plants help the respondents to treat 19.09% cases of dermatophylosis, 17% parasitic infections 16% Contagious Bovine Pleuro-pneumonia, 12% trypanasomiasis and diarrhea respectively in the study area. The existence of ethno-veterinary knowledge and practices contributes immensely to the development of livestock sub sector in the study area. This necessitates proper identification and conservation of ethno-botanical plants of veterinary importance for improved animal health care system in the study area.

Key wards: Ethno-veterinary practice, Ethno-botanical plants, herdsmen, treatment and cattle.

INTRODUCTION

Domestication of livestock started since the Neolithic time for the desire of food for man and to safeguard against poor hunting seasons [1]. Dog was the first animal to be domesticated and used for companionship while horse for work [2]. Man herded livestock for food and to cater for the increasing population of his household [1].

Ethno-veterinary practice as a sum total of all practice methods has enabled man to protect his livestock from sickness, alleviate and relieve suffering so as to bring about healing and increased

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production and productivity of livestock within a minimum cost for improved intake of animal protein [3]. Several studies from the developed and developing countries of the world showed that ethno-botanical plants are routinely used as remedies for animal diseases [4]. Ethno-veterinary practice is referred to as a method of healing livestock traditionally using various parts of different species of plants, especially the roots, stem, leaves and grasses. Ethno-botanical plants on the other hand are plants of medicinal importance [5]. There are abundant plants and undocumented traditional knowledge of herbal remedies used for the treatment of various livestock diseases in many cultures [6]. Most of the herdsmen use traditional husbandry practices to keep their animals healthy. These practices involve the use of preparations from different parts of available medicinal plants and simple surgical procedures to treat different types of diseases affecting their animals [7].

The knowledge of ethno-veterinary practices evolved due to strong ties between man and his animals and it extends from generation to generation [1]. Traditional healers have received powers and knowledge to heal livestock from their ancestors and grandparents through visions or dreams and others by inheritance [8]. Most herdsmen are aware of diseases that affect their livestock and have the knowledge of various signs of cattle diseases [3].

In Nigeria, livestock production is faced by many challenges which include poor nutrition, management and diseases. Among these problems, livestock diseases have been reported to cause more economic damage in recent times [9]. Treatment of livestock diseases by means of orthodox is almost beyond the capabilities of ordinary livestock farmers due to high cost of drugs, therefore they recognize the use of available plants for treating their livestock [8]. Traditional, medicinal-veterinary practices could be relevant and vital in various parts of Nigeria due to poverty and absence or inadequate provision of modern livestock health care services particularly in the rural areas. This may compel herdsmen to treat their animals using the knowledge of ethno-veterinary practices and available medicinal plants in the study area. It is against this background that this paper seeks to evaluate the use of ethno-botanical practice among cattle herders in the study area.

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METHODOLOGY

Study area

This study was conducted in Zuru Local Government area of Kebbi State, Nigeria. Zuru is located in the extreme South-Eastern part of Kebbi state on a hilly terrain on latitude 11^0 35' and $11^0$55' North and longitude $4^0$45' and $5^0$25' East of the equator. It covers an area of approximately 9,000 square kilometers [10]. The climatic condition of the area is characterized by a hot and wet season as in the tropics and a harmattan period around the month of November to January and a rich sandy-loam soil type that is suitable for agricultural purposes [11].

Sample size and sampling technique

Multi-stage sampling technique was employed for the study. Purposive sampling technique was used for the first stage to select four districts out of the six districts in the local government area due to the concentration of cattle herders. While the second stage was the selection of one village in each district selected due to population of the respondents that employed the use of ethno-botanical practices. The third stage was the selection of 50% of the respondents from the sample frame of the population, thus making a total of one hundred and ten (110) respondents as the sample size for the study. This is summarized in the sampling frame below:

Table1: Sampling frame for the study

LGA	District	Village	Population	Sample size	Percentage
Zuru	Dabai	Dadai	41	20	20.83
	Manga	Sarku	47	24	22.50
	Rafin Zuru	Bedi	58	29	40.00
	Sanchi	Sanhi	74	37	16.67
Total	**4**	**4**	**220**	**110**	**100**

Data collection

The instrument used for data collection in this study was structured questionnaires. Data were collected on demographic information of the respondents, number of cattle owned, knowledge of ethno-botanical plants of veterinary importance, ethno-botanical practice and cattle diseases treated using ethno-botanical practice.

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Data analysis

The analysis of data for this study was done using simple descriptive statistics such as frequency counts and percentages.

Results and discussion

The results on ethno-botanical practice for this study are presented in the tables 2, 3 and 4 below:

Table 2: Demographic characteristics of the respondents

Variable	Frequency	Percentage
Gender		
Male	110	100:00
Female	0	00:00
Total	110	100:00
Age		
20-30	7	6.36
31-40	36	32.73
41-50	46	41.82
Above 50	21	19.09
Total	110	100:00
Educational status		
Primary	12	10.91
Secondary	6	5.45
Tertiary	5	4.55
Religious	87	79.09
Total	110	100:00
House hold size		
1-5	8	7.27
6-10	20	18.18
Above 11	82	74.55
Total	110	100:00

Table3: Distribution of respondents according to Cattle ownership, ethno-botanical knowledge and diseases treated

Variable	Frequency	Percentage
Number of cattle owned		
1-10	6	5.45
11-20	39	35.46
21-30	52	47.27
31andabove	13	11.82
Total	110	100.00
Awareness on ethno-botanical practice		
Aware	102	92.73
Unaware	8	7.27

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Total	110	100.00
Use of ethno-botanical plants		
In use ethno-botanical	98	89.09
Not in use	0	0.00
Use ethno-botanical plants and orthodox	12	10.91
Total	110	100:00
Diseases treated*		
Trypanasomiasis	85	15.83
Mastitis	15	2.79
Diarrhea	90	16.76
CBPP	91	16.95
Parasites	102	18.99
Snake bite	13	2.42
Swollen joints	10	1.86
Brucellosis	7	1.30
Foot rot	5	0.93
Foot and mouth disease	4	0.75
Dermatophylosis	108	20.11
Epilepsy	3	0.56
Insufficient milk production	2	0.37
Otitis	2	0.37
Total	537	100

*Multiple responses

Table4: Diseases treated and ethno-botanical practices in the study area

Disease	Plant name		Part used	Preparation	Administration
	Common	Botanical			
Trypanasomiasis	Mahogany	*Khaya senegalensis*	Bark	Dry & crush to powder	Orally
	Mango	*Mangifera indica*	Bark	Crush to powder, add salt	Orally
	Sterculia	*Sterculia setigera*	Bark	Crush to powder add table salt	Orally
		Lennea microcarpa	Root	Boil to oxblood & cool	Orally
	Tallow	*Detarium microcarum*	Bark	Crush, boil & cool	Orally
	Mitragyna	*Mitragyna inermis*	Bark	Crush, boil & cool	Orally
Mastitis	Senna	*Senna occidentlis*	Roots	Dry & crush to powder Mix with shea butter	Topical (Udda)
CBPP	Tallow & Mango	*D.microcarum* & *M. indica*	Bark	Crush, boil & cool	Orally
	Mahogany & Parkia	*K. senegalensis* &*P. biglobosa*	Bark	Crush, boil & cool	Orally
	Mahogany	*K. senegalensis*	Bark	Crush & add table salt	Orally
	African pearch	*Sercocephalus latifolius*	Bark	Crush & add table salt	Orally
		Lennea kerstingii	Roots	Crush, boil & cool	Orally
	Baobab	*Adansonia digitata*	Bark	Crush, boil & cool	Orally
Swollen joints	Mahogany	*K. senegalensis*	Bark	Crush & add table salt	Orally
		Oplia celtidifolia & K. *senegalences*	Bark	Crush & add table salt	Orally
	Bustyruspermum	*B. paradoxum*	Root	Crush & add table salt	Orally
	Dry zone cedar	*Pseudocedrela cotshyi*	Bark	Crush, boil & cool	Orally
Brucellosis	Tamarind	*Tamarindus indica*	Leaves & bark	Crush & add water	Orally

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	Pawpaw	*Carica* papaya	Leaves	Crush, add water, stir & decant	Orally
		Grewia *mollis*	Bark & roots	Crush, boil & cool	Orally
	Starculia	*Starculia satigera*	Bark	Crush, boil & cool	Orally
	Acacia	*D. cenerea* & *paper*	Seeds & pods	Powder, add water & stir	Orally
Parasites	Dry zone cedar	*P. cotshyi*	Bark	Crush, boil, cool and decant	Orally
	Mahogany	*K. senegalensis*	Bark	Crush, boil, cool and decant	Orally
Diarrhea	Baobab	*A. digitata*	Leave	Fresh or air dried powder	Orally
	Mahogany & pearch	*K. senegalensis* & *S. latifolius*	Bark	Crush to powder	Orally
Dermatophylosis	Maize/Sorghum	*Z.mays*/*S. spp*	Stalk	Burn to ash add ground nu/palm oil	Orally
Foot rot	Egyptian thorn	*Acacia nilotica*	Seed & Pods	Crush to powder	Topically
F M D	E. thorn	*A. nilotica*	Seed & Pods	Crush to powder	Topically
Snake bite	Anona	*Anona snegalensis*	Bark	Crush, boil and cool	Orally
	Monkey guava	*Diospyrus mespitiformis*	Root	Crush and add water	Orally
	Okra	*Abelmoschus esculenta*	Pod	Crush and add water	Orally
Epilepsy	Tamarind & Opilia	*O. celtidifolia* & *T. indica*	Leaves	Crush, add water & decant	Orally
Otitis	Opilia & Xiromphis	*O. celtidifolia* & *X. nilotica*	Leaves & roots	Crush, boil & cool	Intra nasal

CBPP: Contagious Bovine Pleuro-pneumonia
FMD: foot and Mouth Disease

The results from Table 2 revealed that the respondents were all males, this shows that cattle rearing is a tedious activity that is not affordable to women. The majority (41.82%) of respondents fall within the age bracket of 41-50. This result is in agreement with [12] and [13] who reported the age range of 21-50 being the major herdsmen in their study. The age range of the herdsmen in this case indicated the active participation of middle age in cattle production in the study area. The need for such ages could be explained by climate and the nature of movement involved in the management system adopted. Although the majority (41%) of respondents (Table 2) had informal education, some few (8.18% and 4.55%) of them were able to attend secondary and tertiary education. This result contradicts [12] who reported 38% of the respondents having informal education with 25 and 20% graduates of tertiary and secondary schools. The literacy level of the respondents in this study indicates some levels of critical reasoning and valid judgments in using ethno-botanical practices and ethno-botanical plants of veterinary importance in the study area. It also implies that both of the herdsmen with formal and informal education are aware of the ethno-botanical plants and practices in the study area. The results (Table 2 above) also showed that majority (74.55%) of the respondents have more than 11 households. This indicated that cattle production is reliable and their ability to earn living through cattle herding in the study area.

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Although the herdsmen tried to confine the number of cattle owned per head, the result from Table 3 showed that majority (47.50%) of the respondents in the study area owned 20-30 cattle. The number of cattle owned by the respondents could be attributed to a strategy of reducing herd size as a means of improving herd management in response to shock due to lack of feed or disease incidences. From the results (Table 3), 93% of the respondents are aware of ethno-botanical practice, and 89.09% of the herdsmen used ethno-botanical plants for the treatment of various cattle diseases. This result is in line with [4] and [7], who reported that ethno-botanical plants are routinely used as remedies for various animal diseases. The result also showed about 11% of the respondents combine the use of both ethno-botanical plants and orthodox for the treatment of various cattle diseases in the study area. This result agrees with the findings of [5] who reported that different parts of plants such as the roots, stems and leaves are used for healing of livestock traditionally. The findings of this study also agrees with [6] that there are abundant plants and undocumented traditional knowledge of herbal remedies used for the treatment of various livestock diseases in many cultures. Awareness on ethno-botanical practice and use of ethno-botanical plants in this case, indicated the efficacy of ethno-botanical plants and practices in treating cattle diseases and transfer of the knowledge of ethno-botanical practice and plants from generation to generation in the study area.

The result from Table 3 reveales 19.09% dermatolphylosis, 17.27% parasitic problems, 16.36% Contagious Bovine Pleuro-pneumonia, 11.82% diarrhea and 12.72% trypanasomiasis respectively as the major disease problems treated using the knowledge of ethno-botanical practices and different parts of the plants available in the study area, collected by the respondents. This result is in agreement with [6] and [14], who reported that most farmers and pastoralists rely on traditional knowledge and the use of available plants for the treatment of cattle diseases. It is also in line with [9] and [15] who reported the existence and efficacy of ethno-veterinary practices using available plants in Nigeria. The treatment of cattle diseases in the study area through the knowledge of ethno-veterinary practice and available plants in this case, could be attributed to lack of access to effective veterinary services or drugs and inability of the respondents to afford the use of orthodox medicine for treating their animals. However, this result has indicated the efficacy of ethno-veterinary practices and the value of available plants for treating cattle diseases in the study area.

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CONCLUSION AND RECOMMENDATIONS

From the results of this study, it could be concluded that the herdsmen have vast knowledge of ethno-veterinary practice for treating cattle diseases using different plant parts available in the study area. The study therefore, recommends identification of the plants used and their active ingredients for improved cattle production and conservation of the plants (through policy intervention) for future use in the study area.

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