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

5 ABSTRACT

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6 This paper evaluated some ethno-veterinary practices among cattle herders in Zuru, Kebbi State, 7 Nigeria. One hundred and ten (110) questionnaires were used purposively to generate data on demographic information, cattle ownership, knowledge of ethno-veterinary practices, ethno-8 botanical plants of veterinary importance and their uses in treating various cattle diseases. The 9 10 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 11 between the age group of 41-50 years old, and 79.09% having informal education while 74.55% 12 of them have more than 11 households. Among the respondents (47.27%), have 21-30 heads of 13 14 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 15 treat 19.09% cases of dermatophylosis, 17% parasitic infections 16% contagious bovine pleuro-16 pneumonia, 12% trypanasomiasis and diarrhea respectively in the study area. The existence of 17 18 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-19 botanical plants of veterinary importance for improved animal health care system in the study 20 21 area.

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

23 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 hislivestock 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 30 protein [3]. Several studies from the developed and developing countries of the world showed 31 32 that ethno-botanical plants are routinely used as remedies for animal diseases [4]. Ethnoveterinary practice is referred to as a method of healing livestock traditionally using different 33 species of plants, especially the roots, stem, leaves and grasses. Ethno-botanical plants on the 34 35 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 36 many cultures [6]. A large number of herdsmen rely on a range of ethno-veterinary practices to 37 keep their livestock healthy. These traditional animal practices include the use of medicinal 38 plants, surgical techniques and management practices to prevent and treat a wide range of 39 diseases and problems encountered by livestock farmers [7]. 40

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, 46 management and diseases. Among these problems, livestock diseases have been reported to 47 48 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 49 drugs, therefore they recognize the use of available plants for treating their livestock [8]. 50 Traditional, medicinal-veterinary practices could be relevant and vital in various parts of Nigeria 51 52 due to poverty and absence or inadequate provision of modern medical services particularly in the rural areas. This may compel herdsmen to treat their animals using the knowledge of ethno-53 54 veterinary practices and available medicinal plants in the study area. It is against this background 55 that this paper seeks to evaluate the use of ethno-botanical practice among cattle herders in the study area. 56

57 METHODOLOGY

58 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].

65 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 ethnobotanical 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:

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

73 **Table1: Sampling frame for the study**

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75 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.

80 Data analysis

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

83 **Results and discussion**

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

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

85 Table 2: Demographic characteristics of the respondents

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89 Table3: Distribution of respondents according to Cattle ownership, ethno-botanical

90 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-botan	ical practice			
Aware	102	92.73		
Unaware	8	7.27		
Total	110	100.00		
Use of ethno-botanical plan	nts			

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	14	12.72
Mastitis	5	4.55
Diarrhea	13	11.82
CBPP	18	16.36
Parasites	19	17.27
Snake bite	3	2.72
Swollen joints	5	4.55
Brucellosis	3	2.73
Foot and rot	1	0.91
Foot and mouth disease	1	0.91
Dermatophylosis	21	19.09
Epilepsy	3	2.73
Insufficient milk production	2	1.82
Otitis	2	1.82
Total	110	100:00

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

Disease	Plant name		Part used	Preparation A	dministration	
	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 sale	t 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	Topical	
				Mix with shea butter	(Udda)	
СВРР	Tallow & Mango	D.microcarum & M. indic	a Bark	Crush, boil & cool	Orally	
	Mahogany & Parkia K. senegalensis & P. b		osaBark	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	
	Opl	lia celtidifolia & K. senegale	nces 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	
	Pawpaw	<i>Carica</i> papaya	Leaves	Crush, add water, stir & deca	int 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. latifoli	us Bark	Crush to powder	Orally
Dermatophylosis	Maize/Ssorghum	Z.maize/S. spp	Stalk	Burn to ash add ground nu/palm	oil Orally
Foot rot	Egyptian thorn	Acacia nilotica	Seed & Pods	Crush to powder	Topically
FMD	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

95 96 CBPP: Contagious Bovine Pleurop-neumonia

FMD: foot and Mouth Disease

The results from Table 2 revealed that the respondents were all males, this shows that cattle 97 98 rearing is a tedious activity that is not affordable to women. The majority (41.82%) of 99 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 100 101 the herdsmen in this case indicated the active participation of middle age in cattle production in 102 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 103 2) had informal education, some few (8.18% and 4.55%) of them were able to attend secondary 104 and tertiary education. This result contradicts [12] who reported 38% of the respondents having 105 informal education with 25 and 20% graduates of tertiary and secondary schools. The literacy 106 level of the respondents in this study indicates some levels of critical reasoning and valid 107 judgments in using ethno-botanical practices and ethno-botanical plants of veterinary importance 108 109 in the study area. It also implies that both of the herdsmen with formal and informal education 110 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. 111 This indicated that cattle production is reliable and their ability to earn living through cattle 112 herding in the study area. 113

Although the herdsmen tried to confine the number of cattle owned per head, the result from 114 Table 3 showed that majority (47.50%) of the respondents in the study area owned 20-30 cattle. 115 The number of cattle owned by the respondents could be attributed to a strategy of reducing herd 116 size as a means of improving herd management in response to shock due to lack of feed or 117 disease incidences. From the results (Table 3), 93% of the respondents are aware of ethno-118 119 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 120 121 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 122 various cattle diseases in the study area. This result agrees with the findings of [5] who reported 123 124 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 125 126 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 127 128 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 129 generation in the study area. 130

The result from Table 4 revealed 19.09% dermatolphylosis, 17.27% parasitic problems, 16.36% 131 Contagious Bovine Pleuropneumonia, 11.82% diarrhea and 12.72% trypanasomiasis respectively 132 as the major disease problems treated using the knowledge of ethno-botanical practices and 133 plants available in the study area. This result is in agreement with [6] and [14], who reported that 134 most farmers and pastoralists rely on traditional knowledge and the use of available plants for the 135 treatment of cattle diseases. It is also in line with [9] and [15] who reported the existence and 136 efficacy of ethno-botanical practices and ethno-veterinary medicine in Nigeria. The treatment of 137 the above cattle diseases in the study area through the knowledge of ethno-veterinary practice 138 and plant in this case could be attributed to lack of access to effective veterinary services or 139 drugs and inability of the respondents to afford the use of orthodox medicine. However, it has 140 141 indicated the efficacy of ethno-veterinary practices and the value of available plants for treating cattle diseases in the study area. 142

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144 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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