Traditional veterinary knowledge and practices in Northern Region of Ghana

P. K. TURKSON & J. NAANDAM

Animal Science Department, School of Agriculture, University of Cape Coast, Cape Coast, Ghana

ABSTRACT

Traditional veterinary practices and knowledge have been in existence for many years. Ethnoveterinary medicine is gradually being promoted as one solution to animal health care, especially in marginalized communities. A study was done in three districts in the Northern Region of Ghana to determine the extent of knowledge of signs of ill-health in animals, vernacular names of common animal diseases, the level of use of herbs and other local medicaments, diseases treated and the modes of treatment. The results showed that farmers were very knowledgeable about signs of diseases in their animals, several vernacular names existed for some animal diseases, the use of herbs was not as widespread as envisaged, and various herbs and local preparations were available for use in treating animal diseases. The study concludes that farmers are likely to continue to use ethnoveterinary knowledge and practices, even if veterinary services are readily available, and argues for more work to be done in this area.

Original scientific paper. Received 03 Jul 02; revised 16 Dec 02.

RÉSUMÉ

TURKSON, P. K. & NAANDAM, J.: *Connaissance et pratiques vétérinaires traditionnelles dans la région du nord du Ghana.* La connaissance et les pratiques vétérinaires traditionnelles existent depuis plusieurs années. Le médicament ethnovétérinaire est en train d'être encouragé comme une solution aux services médicaux des animanx surtout dans les communautés marginalisées. Une étude était faite en trois districts dans la région du nord du Ghana pour déterminer l'étendue de connaissance des signes de mauvaise santé des animaux, des noms vernaculaires des maladies communes des animaux, le niveau d'utilisation d'herbes et d'autre médicaments locaux, les maladies traitées et les modes de traitement. Les résultats montraient que les éleveurs étaient très bien informés à propos de signes des maladies de leurs animaux; un nombre de noms vernaculaires existaient pour quelques maladies des animaux; utilisation d'herbes n'était pas aussi répandue qu' envisagée; et des diverses herbes et les préparations locales étaient disponibles pour être utilisé dans le traitement des maladies des animaux. L'étude tire la conclusion que les éleveurs vont probablement continuer à utiliser la connaissance et les pratiques ethnovétérinaires, même si les services vétérinaires sont facilement disponible et affirme que plus de travail doit être fait dans ce domaine.

Introduction

Ethnoveterinary medicine is gaining recognition worldwide as an important component in the promotion of primary health care, especially in marginalized and poor communities. Among the reasons given for the use of traditional veterinary treatment methods are the low cost nature of the technology, absence of side effects, and lack of accessibility to modern veterinary facilities and treatments (Padmakumar, 1998). Many farmers in India use ethnomedicine as a form of first aid, before using the services of a veterinarian or veterinary clinic, where available (Padmakumar, 1998). Farmers combined traditional and modern methods of treatment by starting with ethnomedicine. They resorted to veterinarians when the animal failed to respond, if the animal was valuable, or when the symptoms were severe. Furthermore, the long distances travelled by animal owners to visit government veterinary dispensaries have encouraged people to rely on traditional veterinary practices as a first line of treatment in India (Rajan & Sethuraman, 1997).

In Ghana, although ethnoveterinary medical

practice has been known for many years, there are few reports on this practice. The most prominent were by Annan-Prah (1992, 1994). According to Ibrahim (1994), the high cost and scarcity of some drugs had made veterinary treatments costly in Nigeria. In Ghana, Adam *et al.* (1995) reported that the main reason why small ruminant farmers in the Assin and Gomoa Districts resorted to unorthodox medicaments, including use of herbs, was the high cost of drugs rather than the unavailability of conventional drugs. Turkson (1992) reported high rates of self-medication (including the use of herbs and plants) in treating small ruminants by women in three districts in southern Ghana for similar reasons.

This paper sets out to provide information on traditional knowledge and practices in animal health in three districts in the Northern Region of Ghana. This information could be used as part of a primary animal health care programme at the community level. Annan-Prah (1994) has noted that traditional knowledge would be more acceptable to rural farmers than entirely novel or foreign technologies. Further, enthnoveterinary knowledge, skills, and experiences are passed from one generation to another by word of mouth. This paper attempts to document some of these practices and knowledge for future reference.

Methodology

Surveys were done in three districts (East Mamprusi, Tamale and Savelugu-Nanton) in the Northern Region of Ghana. The districts were chosen purposively because of specific interest in them. The study used the participatory rural appraisal methodology involving the administration of questionnaire to livestock farmers and focus group discussions. The respondents from East Mamprusi, Tamale and Savelugu-Nanton Districts who were involved in the questionnaire administration were 486, 87 and 99, respectively. The questionnaire asked for responses on the signs seen in animals suspected to be ill, use of herbs for animal treatment, the ailments or conditions for which herbs were used, and brief descriptions of local or herbal preparations used for some conditions/diseases in animals. Veterinary technical officers or agricultural extension agents in the localities usually administered the questionnaires, with a few being done by the second author.

Also, focus group discussions were held in two districts (Tamale and Savelugu-Nanton) and involved selected livestock farmers, opinion leaders, and two veterinary technicians. The numbers of participants were 11 and 18 for Savelugu-Nanton and Tamale, respectively. A veterinary technical officer who spoke the local dialect was used as the translator, while another technical officer participated to provide technical backstopping on the local veterinary issues. The issues discussed included the vernacular names of common diseases of cattle, goats, sheep and chicken in the localities, the traditional treatment of some of these diseases, and the use of herbs and other local preparations for treating animals. Attempts were made to ascertain the information provided by participants by probing further and asking for concurrence from other participants and the veterinary technicians in the area.

Statistical analysis

The data were mostly qualitative. Responses to open-ended questions were collated, tallied manually, and proportions calculated. Those that were quantitative were summarized as proportions. A test of significance for differences in proportions (χ^2 test) was done using Epilnfo^R (version 6.04b, Center for Diseases Control and Prevention, Atlanta, USA and World Health Organization, Geneva, Switzerland).

Results and discussion

Farmers' knowledge of signs and symptoms of animal diseases

To assess the farmers' knowledge of the health status of an animal, respondents were asked: "What signs make you suspect that an animal is not well?" This is because this knowledge is the basis for rational decision-making to improve the

health of the animals. Provision was made for 5 signs per respondent in East Mamprusi and 3 signs per respondent in Tamale and Savelugu-Nanton, as the study in East Mamprusi was more detailed.

Table 1 shows the proportions of respondents in the three districts who mentioned the signs as indicative of ill-health. The respondents knew common signs of ill health. Loss of appetite, diarrhoea, starry/rough coat and dullness were the most frequently mentioned. Hall (1977) noted that the visible reactions produced in an animal as symptoms, signs, or lesions observed at ante-mortem or post-mortem examination allow a disease to be identified and then dealt with.

The respondents in this study were well informed and had the requisite knowledge to identify sick animals. Most of the signs they mentioned are similar to those used in conventional veterinary practice to diagnose

TABLE 1

Proportions of Farmers Mentioning Sign of Disease

Sign	*East Mamprusi (n=1975) (%)*	*Savelugu-Nanton (n=273) (%)*	*Tamale (n=227) (%)*
Off feed/loss of appetite	16.3	16.5	30.0
Rough/starry coat	7.8	15.7	10.2
Diarrhoea/soiled hindquarters	15.0	15.4	8.5
Dullness/lethargy/weakness	9.8	4.0	18.3
Slow walk/abnormal posture	0.6	6.6	6.2
Loss of weight/emaciation	5.9	2.6	1.3
Running eyes/nose	11.4	5.5	2.6
Isolates itself/stands in one place	7.9	1.5	7.0
Coughing	4.4	5.5	0.0
Difficulty in breathing	4.4	4.0	1.9
Restlessness/frequent crying	1.1	0.7	5.8
Animal does not chew cud	0.0	6.2	2.6
Loss of hair	0.7	1.5	1.3
Recumbency	3.4	1.8	2.3
Bloating	1.8	1.1	0.0
Groaning/grinding of teeth	0.4	0.4	0.0
Lagging behind during grazing	0.0	0.7	0.4
Limping	3.9	4.4	0.0
Potbelly	0.0	1.5	0.0
Faeces not normal	0.0	0.7	0.0
Difficulty in/no defaecation	0.1	0.4	0.0
Ticks on body	0.5	1.8	0.0
Foam/discharge from mouth	3.4	0.7	0.4
Swollen body parts	1.0	0.0	0.0
Shivering	0.1	0.0	0.0
Body feels hot	0.0	0.0	1.3
Abnormal discharges from body openings	0.0	0.7	0.0

diseases. Once the farmers can identify these signs, then it is likely they would seek help either through traditional or conventional practices to rectify the situation.

Vernacular names of some common diseases

Table 2 gives the vernacular names of common animal diseases in Dagbani in the Savelugu-Nanton and Tamale Districts. The difference in names may be due to dialect differences as noted by Ibrahim (1994) in Nigeria.

Ibrahim (1994) stated that the absence of a standard glossary or dictionary has made the scientific interpretation of disease terms in the vernacular difficult and unreliable. He noted that free interpretation of ethnoveterinary information by investigators without due recourse to any previously established norms, and the use of vernacular names of diseases and plants that vary widely from settlement to settlement even in the same geographical area as well as among different dialects or ethnic groups, make it difficult to correlate information gathered by different investigators, or even by the same investigator from different sources or areas. This could explain why even though Dagbani was spoken in Tamale and Savelugu-Nanton, there were differences in the names as the dialects differed.

The existence of vernacular names for common diseases in the various animal species in the two districts indicated that these diseases have been prevalent in the locality for some generations and could point to their endemicity.

Level of use of herbs and other preparations

Table 3 gives the proportions of respondents in the districts who used or did not use herbs in treating animals. Among those who used herbs (n = 202), the highest proportion was from East Mamprusi (60.4 %), with 23.3 and 16.3 per cent from the Savelugu-Nanton and Tamale Districts, respectively. The same trend was seen in those who did not use herbs, with East Mamprusi recording the highest proportion (78.5 %),

TABLE 2

Vernacular Names (in Dagbani) for Common Animal Diseases/Conditions

Disease/condition	*Species*	*Name given at Savelugu*	*Name given at Tamale*
Anthrax	Cattle	*yogo*	*yogo/sabliagu*
Pneumonia/CBPP	Cattle	*sapugu*	*sapugu*
Heartwater	Cattle	*garili*	*koshilo*
FMD	Cattle	*wulawula*	*natakarfima*
Lumpy skin disease	Cattle	-	*jaga*
Mange	Cattle	-	*gbani*
Blackleg	Cattle		*nagbari*
Helminthiases	Cattle		*garli*
PPR (ulcers of mouth only)	Sheep/goats	*wulawula*	*nyankarigu*
Diarrhoea/gastroenteritis	Sheep/goats		*binsaa*
Venereal granuloma	Sheep/goats		*buyimi*
Paraphimosis	Sheep/goats		*buyoli*
Newcastle disease	Poultry	*vinovino*	*vilovilo*
Fowlpox	Poultry	*chara*	*khera*
Gumboro	Poultry		*nochebiga*
Helminthiases	Poultry		*gara*

TABLE 3

Proportions of Respondents Using Herbs for Animal Treatment

District	*n*	*Yes (%)*	*No (%)*	χ^2	*p*
East Mamprusi	422	122 (28.9)	300 (71.1)	150.16	0.00
Savelugu-Nanton	90	47 (52.2)	43 (47.8)	0.36	0.55
Tamale	72	33 (45.8)	39 (54.2)	1.00	0.32
Total	584	202 (34.6)	382 (65.4)	110.96	0.00

followed by the Savelugu-Nanton (11.3 %) and Tamale (10.2 %) Districts. The differences in the proportions of users in the East Mamprusi and Savelugu-Nanton or in the East Mamprusi and Tamale Districts were significant ($P<0.05$). The same was true for the proportions of non-users.

These results suggest that the use of herbs in treating animals may not be that popular. Atengdem & Dery (1999) explained that the introduction of "western education" and Christianity could influence the use of herbs because of the associated magico-religious practices in rural areas. Local veterinary technical officers or AEAs were used in collecting the data and could have introduced some bias, as the respondents were unlikely to admit to self-medication using herbs. However, it is strongly believed that the practice is more widespread than admitted in these surveys. In Kerala, India, about 75 per cent of livestock farmers in a milk producers' co-operative union admitted that they used traditional knowledge and therapies in treating their animals (Padmakumar, 1998).

Diseases treated and mode of treatment

The list of animal health problems for which herbs were used included diarrhoea, bloat, tick infestation, skin diseases including mange, retained placenta, snake bite, anthrax, pneumonia, eye discharge, fractures, difficulty in breathing, difficulty in defecating, wounds, maggots in wound and loss of appetite.

Tables 4 and 5 show the herbs or local preparations mentioned as being used for these problems. Brief descriptions and English equivalents are given where possible.

Many of the diseases treated in Kerala, India, with traditional remedies were husbandry-related

TABLE 4

Traditional Treatments for Certain Diseases/Conditions in Savelugu-Nanton and Tamale Districts

Problem/disease	*Preparation/herb used*
Anthrax	*Yogu* plant Mahogany bark and roots in water for drinking
Wounds/Sores	Dried and ground mahogany roots + shea butter oil Mahogany bark and roots in water Wood ash Ground and powdered neem leaves applied to wound
Worms	Peels of baobab tree soaked in water Peels of *dawadawa* tree/roots soaked in water for drinking
Newcastle disease	Mango/mahogany bark
Skin disease	Shea butter oil Dirty engine oil Mahogany bark and roots in water *Dawadawa* bark
Diarrhoea	Mahogany bark and roots in water Wood ash
Ticks	Boiled neem tree leaves for washing
Bloated stomach	Saltpetre in water for drenching
Snake bite	*Palik* herb

TABLE 5

Traditional Treatments for Certain Diseases/Conditions in East Mamprusi District

Condition/sign	*Local preparation*	*Local language*	*Brief description*
Diarrhoea	*Dikpinyokin (soot)*	B	Activated charcoal
	Kuka (mahogany)	M	Tree
	Yaant (dawadawa husk)	B	Empty *dawadawa* pods
	Nyokir	B	Tree
	Jieng (salt petre)	B	A filtrate
	Pelinkook	B	Tree
	Naa-kinkani	M	Tree
	Yelban	B	A concoction
	Mpoom	K	Unknown
	Tuokara	B	Pounded baobab leaves
Bloat	*Gatri*	M	Unknown
	Brikpaligu	M	Unknown
	Groundnut oil & Okro solution	-	-
	Jieng (Salt petre)	B	A filtrate
	Yaant	B	Empty *dawadawa* pods
	Kuka (mahogany)	M	Tree
Ticks	*Kpeek (Akee-aple)*	B	Tree
	Jakperkpekii	B	Herb
	Nanaayuruk	B	Herb
	Badoli	M	Unknown
	Clay smear	-	-
	Dikpinyokin (soot)	B	Activated charcoal
Mange	*Kisik* roots	M	Unknown
	Bockinuana	B	Herb
	Clay smear	-	-
Skin disease (not mange)	Clay smear	-	-
Retained placenta	*Salian*	B	Herb
	Dikpinyokin	B	Activated charcoal
	Akpeteshi	-	A local brew
	Pounded okro stem + Salt	-	-
Anthrax	*Brikpaligu*	M	Unknown
	Kuka	M	Tree
	Yoo	M	A concoction
	Yuoga	M	Unknown
Snake bite	*Yelban*	M	A concoction
	Kisik roots	M	Unknown
	Gberik	B	Shrub
	Mpoom	K	Unknown
	Tisala	M	Charcoal
Fractures	Tie with rope	-	-
Pneumonia	*Brikpaligu*	M	Unknown
	Yoo	M	A concoction
	Pawpaw leaves (boiled)	-	-
Eye discharge	Wash face with sugar solution	-	-
Difficulty in breathing	*Gatri*	M	Unknown

Condition/sign	*Local preparation*	*Local language*	*Brief description*
Difficulty in defecating	*Gatri*	M	Unknown
	Brikpaligu	M	Unknown
Wounds	*Jakperkpekii*	B	Herb
	Nayiang	B	Tree
	Kuka (mahogany)	M	Tree
	Palgu	M	Unknown
	Dawadawa bark	M	Tree
Loss of appetite	*Brikpaligu*	M	Unknown
	Jieng + dawadawa	B	A filtrate
	Jetili	M	Unknown
Worms	*Dawadawa* powder		

Note: B = Bimoba language; M = Mamprusi language; K = Komba language

ailments such as mastitis, bloat, and diarrhoea (Padmakumar, 1998). The Indian farmers explained that these conditions could be adequately treated with local knowledge and no outside expertise was necessary. However, they acknowledged that the effectiveness of the treatment depended on the stage and severity of the disease. A similar situation was found in the surveys.

Padmakumar (1998) stated that the availability or non-availability of ingredients is a major determinant of the popularity of a particular remedy. The low cost and availability of ingredients encourage farmers to try ethnomedicine first. Among the plants used in Kerala, India, for ethnoveterinary treatment were pepper, ginger, turmeric, garlic, and preparations made from neem and tamarind. Marthias-Mundy & McCorkle (1989) observed that medicinal plants used to treat human ailments may also be effective in animal treatment, but in different doses. A perusal of some of the medicaments used in the three districts in this study involving the leaves, barks or roots of mahogany, baobab, mango, *dawadawa,* and neem showed that they are also used for human treatment, especially as "bitters"

Annan-Prah (1994) noted that many plants used in traditional animal treatments were prepared from either fresh or roasted parts of plants–leaves, stems, barks, roots, flowers, fruits, and seeds. These medicaments are prepared either from these plant parts alone or in combinations as decoctions, powders, drops or pastes, and are usually administered orally or topically. He reported the use of charcoal or clay in treating diarrhoea in traditional animal health care. Similar preparations were used in the East Mamprusi District. In the Savelugu-Nanton and Tamale Districts, wood ash was preferred.

Rajan & Sethuraman (1997) reported that fractures were treated by using bamboo sticks to support the broken bones, while cataracts of the eye were treated by sprinkling plain sugar directly onto the eye, twice daily till the condition subsided. Similarly, in the East Mamprusi District, fractures were treated by tying with rope, and eye ailments were treated by washing the face of the animal with sugar solution. The pharmacological basis for the use of sugar solution in treating the eye is yet to be explained.

Conclusion

This study has brought to the fore several traditional practices used in animal health and care in the Northern Region of Ghana. It is reasonable to believe that farmers will still resort to ethnoveterinary knowledge and practices for their animals, even if there is a wide network of modern veterinary services. It will, therefore, be prudent to identify, document and where possible, promote some of these practices and knowledge. However, more work is needed in the area of clinico-pharmacological investigations to develop

acceptably effective drugs from reasonably inexpensive sources and locally available raw materials as advocated by Ibrahim (1994).

Acknowledgement

The information presented on the East Mamprusi District was part of an MPhil Thesis presented by the second author to the Animal Science Department, School of Agriculture, University of Cape Coast, Ghana. The first author collected the information on the Savelugu-Nanton and Tamale Districts as part of a study on privatization of veterinary services in Ghana.

REFERENCES

Adam, I., Turkson, P. K., Apori, S. O., Agbesinyale, P., Awuma, K. S. & Micah, J. A. (1995) Study of traditional small ruminant production systems in two districts of Central Region, Ghana. Phase 1. Diagnostic Survey. *Report submitted to National Agricultural Research Project, Accra.* 146 pp.

Annan-Prah, A. (1992) The potential of the use of plants in veterinary interventions in small ruminants in Ghana. Preliminary report. *Proc. West African Commonwealth Veterinary Association/Ghana Veterinary Medical Association Conference, Accra, September 7-12, 1992.* pp. 41-46.

Annan-Prah, A. (1994) Indigenous knowledge in animal production and health care: scope and role in technology transfer to rural communities. *Proceedings of 22nd Ghana Animal Science Association Symposium, Accra, August 8-13,* 1994. pp. 119-122.

Atengdem, P. B. & Dery, A. B. (1999) Evolution instead of revolution. *ILEISA Newsletter for Low External Input and Sustainable Agriculture* **15**, 38-39.

Hall, H. T. B. (1977) (ed.) Diseases and parasites of livestock in the tropics. London: Longman.

Ibrahim, M. A. (1994) Veterinary traditional practice in Nigeria. Livestock systems research in Nigeria's subhumid zone. *Proceedings of 2nd ILCA/NAPRI Symposium, Kaduna, Nigeria, Oct 29 - Nov 2, 1994.* pp. 189-203.

Mathias-Mundy, E. & McCorkle, C. M. (1989) Ethnoveterinary medicine. An annotated bibliography. *Bibliographies in Technology and Social Change Series No. 6.* Iowa State University, Ames.

Padmakumar, V. (1998) Farmers' reliance on ethnoveterinary practices to cope with common cattle ailments. *Indigenous Knowledge and Development Monitor* **6**, 14 - 16.

Rajan, S. & Sethuraman, M. (1997) Traditional veterinary practice in rural areas of Dindigul District, Tamilnadu, India. *Indigenous Knowledge and Development Monitor* **5**, 7 - 9.

Turkson, P. K. (1992) The practices and problems of rural women involved in small ruminant production. *Proceedings of West African Commonwealth Veterinary Association/Ghana Veterinary Medical Association Conference, Accra, September 7 - 12, 1992.* pp. 20-30.