



Trend in Ethnoveterinary Practice by Urban Farmers in South-West Nigeria

OYEBANJI, B.O.* and OGUNDEJI, O.

*Department of Animal Sciences, ObafemiAwolowo University, Ile-Ife, Nigeria. Correspondence: E-mail: oyebanji.bukola44@gmail.com, Tel: 07032765674

SUMMARY

A survey on the utilization of ethnoveterinary medicine (EVM) for health management of urban farms in South West, Nigeria was undertaken. The study attempted to determine the extent to which EVMs were being used by urban farmers in southwest, Nigeria, and explore the factors necessary for successful farmers' selected characteristics and their extent of use of EVM. The study was carried out at various farms in Oyo and Osun state, South West Nigeria. Primary data were generated through the use of questionnaire and descriptive research design to describe the characteristics of the subject under study for better understanding. The farmers interviewed were all educated with minimum qualification being Secondary School Certificate and 65% of the respondent had practiced EVM and peers are the major source of information (57%). Sixty percent of the farmers treated ectoparasites in livestock with EVM. The major challenge to the use was inadequate knowledge of the appropriate plants to use for treatment. It was inferred that farmers will be favorably disposed to the use of EVM if they have accurate knowledge of the herbs to use for

different health challenges of their animals, if they are sure of the dosage and if it is readily available to them. Hence there is need for adequate research into EVM to scientifically establish the efficacy of medicinal plants, establish proper dosage and establish herbal gardens in the urban areas so as to standardized herbal products for veterinary healthcare.

Keyword: Ethnoveterinary, Urban, Farmers, South west.

INTRODUCTION

Urban agriculture refers to small areas within the city for growing crops and raising small livestock or milk cows for own-consumption or sale in neighbourhood markets (FAO, 2001). According to Husam (2007), Sub-Saharan Africa (SSA) faces more development challenges than any other major region of the World. This region has a growing share of the world's absolute poor. In 1980, one out of every 10 poor people lived in SSA. In 2000, that ratio had risen to one in three. By the year 2011 according to World Bank data, the figure had risen to 46.8%, which is about one in two (World Bank Group, 2014). Currently approximately 38 percent of the SSA population live in urban areas. By 2030, it is predicted that almost half (48.3 percent) of SSA's population will be urban. Most of these people will be living in slums, without access to

adequate food, water, or sanitation. Urban poverty in SSA has a broader meaning of cumulative deprivation, characterized by squalid living conditions, risk to health and life from poor sanitation, air pollution, natural disasters, and the breakdown of traditional family and community safety-networks (FAO, 2008). Urban and peri urban agriculture (UPA) can directly and indirectly contribute in pursuing several of the MDGs. UPA's main direct contribution (over half of its effort) is to Goal 1, which combines the reduction of poverty and the reduction of hunger. A significant proportion (about one-fifth) is directed to Goal 7 concerning environmental sustainability. Smaller percentages of resources are directed to empowering women (Goal 3). There are important indirect effects on goals covering primary education (Goal 2), child mortality (Goal 4), maternal health (Goal 5), and combating diseases (Goal 6), generated primarily by work addressing reduction of hunger and malnutrition (FAO, 2008).

In spite of all the advantages of UPA, the prevention, control and eradication of diseases among domesticated animals are major concerns as diseases in animals lead to economic losses and possible transmission of the causative agents to humans (Swarup and Patra, 2005).

In this era, many had to wrestle with sharply rising cost and the consequently unavailability of expensive synthetic drugs. As a result, livestock keepers in many tropical countries are returning to, or staying with the use of ethno veterinary medicine to treat the health problems of their animals (Rangnekar, 1998). Ethno-veterinary Medicine is gaining popularity because it is affordable to developing countries. Moreover, questionable quality of allopathic drugs, development of chemo- resistance in livestock and companion animals due to indiscriminate use of anthelmintics and antibiotics e.g. ivermectin, ampicillin and tetracycline and their user-unfriendly effects such as antibiotic and hormone residues in the milk and other animal

products are sufficient drawbacks to divert the attention from modern veterinary medicine to EVM (Akhtar, 1988; Akhtar and Ahmad, 1992; McCorkle *et al.*, 1997; Fielding, 1998; Monteiro *et al.*, 1998; Lans *et al.*, 2000; Mathias, 2004; Iqbal *et al.*, 2005). Though EVM's use has been documented among rural farmers but there is paucity of information about its use among urban farmers. Hence this work was carried out to evaluate the present status of ethno-veterinary knowledge in urban areas of South Western Nigeria and how this practice can become integrated for maximum benefit for farmers.

MATERIALS and METHOD

The study was carried out at various farms in Oyo and Osun state, South West Nigeria. The research work made use of descriptive research design to describe the characteristics of the subject under study for better understanding.

Data Collection Technique

This survey made use of primary data. The mode of data collection for the primary data was through the use of structured questionnaire. The self-administered questionnaire contained both open and close-ended questions. The questionnaire was divided into four sections, the socio-demographic data of the respondent as the first section, the second section examines the respondents view on the knowledge and attitude of livestock farmers towards ethnoveterinary practice, the third section seeks to know the rate of use of ethnoveterinary medicine in various livestock farms while the fourth section which is the last section was to know the factors and attitude that could promote the knowledge of ethnoveterinary practices among livestock farmers.

The data collected was analyzed using Microsoft excel software

RESULT

Farmers' profile.

A total of 102 farmers were contacted, 57% of the respondents were males while 43% were females. Fifty nine percent of the farmers

practiced semi-intensive method of livestock production while 41% practiced intensive livestock production (Table 1). The farmers kept several domestic, animal species including, in decreasing order of importance,

chickens, goats, pigs, sheep, fish, cattle and rabbit. Majority of those interviewed had been in the business for an average of 4 years and most were HND/Bachelor degree holder (42%).

TABLE I: PERCENTAGE DISTRIBUTION OF THE SOCIO - DEMOGRAPHIC DATA OF THE RESPONDENTS

Responses	Frequency(n)	Percentage%
A.SEX OF RESPONDENTS		
Male	58	57
Female	44	43
Total	102	100
B.LIVESTOCK PRODUCED		
Chicken	40	39
Pig	14	14
Goat	17	17
Fish	13	12
Rabbit	3	3
Cattle	4	4
Sheep	11	11
Total	102	100
C. DURATION OF LIVESTOCK PRODUCTION (in years)		
2	23	22
3	18	17
4	27	27
5	16	16
>5	19	18
Total	102	100
D. LOCATION OF FARM		
Ile-Ife	20	19.6
Ibadan	70	68.6
Others	12	11.7
Total	102	100
E.ACADEMIC QUALIFICATION		
School cert	20	19.6
OND	32	31.4
HND/BSC	42	41.2
Masters/PHD	8	7.8
Total	102	100

Knowledge and attitude of livestock farmers towards ethnoveterinary practice.

71% of the respondents reported that they were familiar with ethno veterinary medicine practice while 29% of respondents reported otherwise meaning that majority were familiar with the practice. Out of the 71% of respondents

that have heard about ethnoveterinary medicine, 21.13% reportedly heard about ethnoveterinary medicine from their parents while 56.34% heard from their peers. Other avenues were radio and magazines/newspapers.

Out of the respondents that have used EVM,

79.25% reported that they applied it for the treatment of diseases/symptoms while 4.22% applied it to enhance optimum feed intake and growth. Most of the farmers purchased EVM used from diverse sources (54%), while the remaining 44% harvested it. The various parts of plants used in ethno veterinary medicine practice were leaves, roots, bark of plants, fruits, seeds and combination of all the parts. (Table

According to the survey, EVM was used to treat trypanosomiasis (16.92%), ectoparasites (67.16%), brucellosis (2.98%), diarrhea (2.98%), stomach and intestinal worm (8.96%). The respondents also reported that there was no dosage to their ethnoveterinary medicine. Also,

most of the respondents reported no side effect on the application but a few others reported some side effects such as reduced feed intake.

Factors that would help promote ethnoveterinary practices among livestock farmers by respondents.

Forty four percent of respondents strongly agree that there will be positive use of ethnoveterinary medicine if livestock farmers are well trained in the use of EVM. The side effect of EVM was a major concern for 36% of the respondent while knowledge of the specific plant material to use for specific ailment is a major issue for 65% of the respondent.

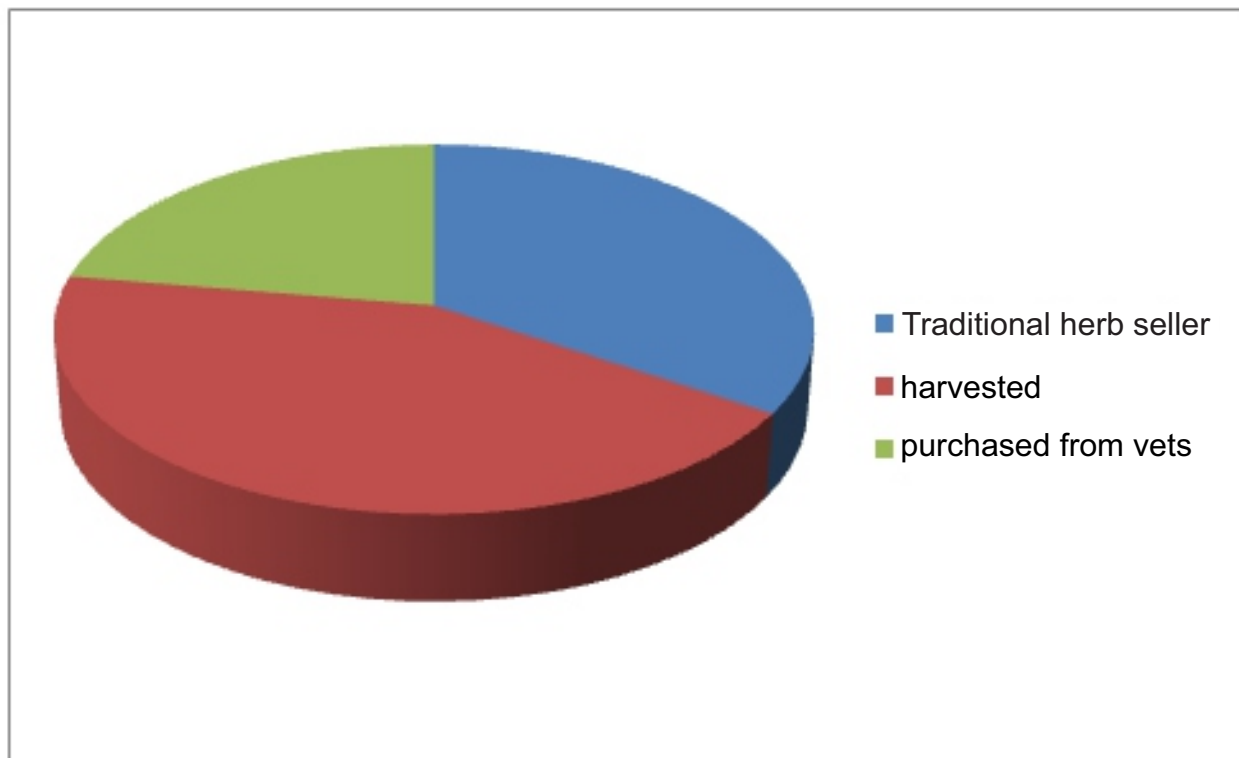


Fig. 1: The Sources Of Ethnoveterinary Plants By Farmers

TABLE II: KNOWLEDGE AND ATTITUDE OF LIVESTOCK FARMERS TOWARDS ETHNOVETERINARY PRACTICE

Responses	Frequency(n)	Percentage (%)
Those that have heard of EVM		
Yes	73	71
No	29	29
Total	102	100
That have practiced EVM		
Yes	67	65
No	35	35
Total	102	100
Sources of hearing about EVM		
Parents	15	20.54
Peers	42	57.54
Radio	10	13.70
Magazines/Newspapers	6	8.22
Total	73	100
Purpose of EVM use		
Trypanosomosis	04	5.97
Lice Infestation	20	29.85
Ticks Infestation	25	37.31
Brucellosis	02	2.98
Diarrhoea	02	2.98
Helminthosis	06	8.96
Enhance optimum feed intake and growth	04	5.97
Sales as Income	04	5.97
Total	67	100

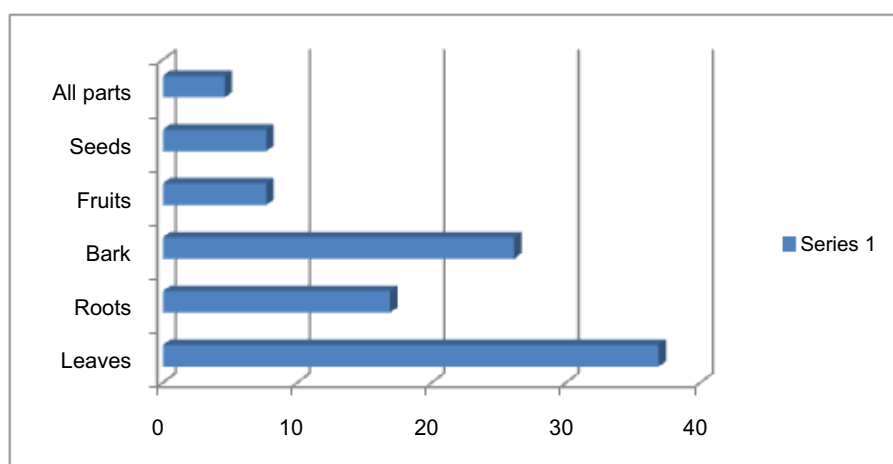
**FIG. 2: THE PLANT PARTS INVOLVED IN REMEDY PREPARATIONS**

TABLE III: SHOWING VARIOUS FACTORS AND ATTITUDE THAT CAN PROMOTE APPLICATION OF ETHNOVETERINARY MEDICINE BY RESPONDENTS

STATEMENT	S. Agree		Agree		S. Disagree		Disagree		Indifferent	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
There will be positive use of ethnoveterinary medicine practice if livestock farmers are well trained	44	44.0	25	24.0	3	3.0	16	16.0	13	13.0
Livestock farmers would use ethnoveterinary medicine if there are no side effects	38	36.0	27	27.0	8	8.0	16	16.0	13	13.0
Knowledge of ethnoveterinary practices will prevent unwanted diseases	65	65.0	8	8.0	4	3.0	13	13.0	11	11.0
There will be increase in use of ethnoveterinary practice if they are very effective.	35	33.0	25	25.0	16	16.0	11	11.0	15	15.0

DISCUSSION

Ethno-veterinary medicine is gaining recognition at the expense of conventional drugs especially because of its greater accessibility, lower costs and apparent effectiveness (Mwale *et al.*, 2005).

EVM can contribute to farm incomes, maintain the resilience of farm communities, promote self-reliance and contribute to a safe and good quality food supply; in addition to providing improved and affordable livestock health care. As such it can serve as a contributor to the economic survival for needy communities (Cheryl *et al.*, 2007).

Previously, ethnoveterinary medicinal plants were mainly collected from the wild but most urban farmers from this study have to rely on purchase of medicinal plants/ products than direct harvesting. This could be due to availability since access to the wild is almost non-existent, this could lead to increase in the cost of livestock production. The cultivation of these essential plants in urban areas may become imperative to combat this phenomenon (FAO) or phytology which is an action-research project bringing together artists and botanists to explore the ecology and medicinal

properties of wild plants and weeds common to derelict and undeveloped urban sites may be the way to solve this problem (Marks, 2013).

Some farmers buy and sometimes sell imported medicinal products which are believed to be efficacious. Some of the farmers are also into sales of herbal drugs from pharmaceutical companies, this could be a viable source of income but due to the fact that most of these herbal drugs are imported it is sometimes expensive and difficult to access. Most of these herbal drugs in Nigerian market are from the Asian countries. According to (Swarup and Patra, 2005) the commercialization of herbal medicines for animals in India is much more advanced than in other countries, with the exception of China. The total market for animal healthcare products in India is estimated at about Rs. 1600 crores (about 400 million US\$). Out of this, about Rs. 200 crores (about 50 million US\$) is the share of herbal products.

Most research on ethnoveterinary medicine is grounded in a society's knowledge on healthcare obtained from learning from their elders, the storage of the knowledge is solely dependent on the collective memory of just a

few entrusted persons within communities for it is just not common 'knowledge' for every body. The knowledge is believed to be collectively and communally owned by ancestors and kept under the custody of living old men and women, depending on the community, ethnicity, sex, age, caste etc. But in this study, peer is the major source followed by mass media. This shift could be due to the waning influence of learning by rote and education. Mass media will be a very important means of educating the populace about EVM, this is in agreement with, Tripathi (2006) who suggested media for communication and networking in ethno-knowledge.

Another effect of urbanisation is the commercialization of medicinal plants, use of the local environmental resources inventively, and adapting those practices over time in response to social, cultural, economic and political change (Berkes, 1999; Roth, 2004).

Majority claimed that they used it for treatment of diseases while others used it for enhancement of optimum growth in animals. This is in consonance with studies that EVM is used for preventative, curative and enhancement of growth (Punniamurthy, 2010, Habib *et al.*, 2014).

Ectoparasites have a major effect on the husbandry, productivity and welfare of livestock. These obligate parasites live on, puncture, or burrow into the surface of their host's epidermis, to feed or shelter (Colebrook and Wall, 2004) . Majority of the respondents used EVM to treat ectoparasites infestation such as ticks and lice, this could be due to the fact that ectoparasitism is very prevalent in livestock and parasites are becoming resistant to most of the known synthetic drugs. This is in agreement with the fact that many small-scale farmers are known to use ethno-veterinary practices for the control of ticks (Njoroge and Bussmann, 2006). This result is in agreement with the work of Habib *et al.*, (2014). Diarrhoea could be due to infectious and non infectious causes and is a major symptom treated with EVM. Major livestock diseases with diarrhea as

symptoms are PPR, coccidiosis, rinderpest etc. EVM was used to treat symptomatic signs of diarrhoea. Trypanosomiasis is a major hindrance to cattle rearing in South western, Nigeria, so that inspite of the abundance of grazing area, few farmers venture into the business. The few farmers who are into cattle rearing claimed that they have been treating trypanosomiasis and brucellosis in their flock.

Infections with gastro-intestinal nematodes can have a detrimental effect on animal health (Lüscher *et al.*, 2005), leading to clinical and sub-clinical diseases, that may result in financial loss and overall decreased productivity (Rahmann *et al.*, 2002).

CONCLUSION

In conclusion from this study, it can be inferred that farmers will be favourably disposed to the use of EVM if they have accurate knowledge of the herbs to use for different health challenges of their animals, if they are sure of the dosage and if it is readily available to them. Hence there is need for adequate research into EVM to scientifically establish the efficacy of medicinal plants, establish proper dosage and establish herbal gardens in the urban areas so as to standardized herbal products for veterinary healthcare . The Veterinary curriculum should also be reviewed in such a way as to train veterinarians and animal health technologists on EVM. There is also the need for educating the populace through mass media and other innovative means since the passing down of knowledge through family is no more the most effective means of knowledge transfer for EVM in the urban setup.

REFERENCES

- AKHTAR, M.S. (1988). Anthelmintic evaluation of indigenous medicinal plants for veterinary usage. Final Research Report (1983-1988). Department of Physiology and Pharmacology, University of Agriculture, Faisalabad, Pakistan.
- AKHTAR, M. S. and AHMED, I. (1992). Comparative efficacy of *Mallotus philippineensis* fruit (Kamala) or

- Nilzan® drug against gastro Intestinal cestodes in Beetal goats. *Small Ruminant Research*, 8: 121-128.
- BERKES, F. (1999). *Sacred Ecology*. Philadelphia, PA: Taylor and Francis
- CHERYL, L., NANCY, T., TONYA, K., GERHAND, B. and WILLI, B. (2007). Ethnoveterinary medicines used for ruminants in British Columbia, Canada. *Journal of Ethnoveterinary Medicines*, 3:11 doi: 10.1186/1746-4269.
- COLEBROOK, E. and WALL, R. (2004). Ectoparasites of livestock in Europe and the Mediterranean region. *Vet Parasitol.* **120**: 251-274.
- FAO/WB - Urban Agriculture for Sustainable Poverty Alleviation and Food Security, Rome 2008
Accessed 12th November, 2014
- FAO (2001) Urban and peri-urban agriculture http://www.fao.org/fileadmin/templates/FCIT/PDF/briefing_guide.pdf Accessed 12th November, 2014.
- FIELDING, D. (1998). Ethnoveterinary medicine in the tropics-Key issues and the way forward? Paper presented to the tropical agricultural association seminar, on local knowledge in tropical agricultural research and development. Durham University, Durham, UK
- HABIB, U.L., HASSAN, WAHEED, M., AKASH, T. and ASHFAQ, A. (2014). Ethnoveterinary study of medicinal plants in Malakand Valley, District Dir (Lower), Khyber Pakhtunkhwa, Pakistan Iranian Vet J. 67(1): 6
- HUSAM, M.K. (2007): Urban Agriculture As A Tool For City Planning: Nablus City As A Case Study. Submitted in partial Fulfillment of the Requirements for the Degree of Master of Urban and Regional Planning, Faculty of Graduate Studies, at An-Najah National University, Nablus, Palesine.
- IQBAL, Z., JABBAR, A., AKHTAR, M.S., MUHAMMAD, G. and LATEEF, M. (2005). Possible role of ethno veterinary medicine in poverty reduction in Pakistan: Use of botanical anthelmintics as an example. *J. Agri. Soc. Sci.*, 1(2): 187-195.
- LANS, C., HARPER, T., GEORGES, K. and BRIDGEWATER, E. (2000). Medicinal plants used for dogs in Trinidad and Tobago. *Prev. Vet. Med.*, 45:201-220.
- LÜSCHER, A., HÄRING, D. A., HECKENDORN, F., SCHARENBERG, A., DOHME, F., MAURER, V. and HERTZBERG, H. (2005). Use of tanniferous plants against gastro-intestinal nematodes in ruminants. In: Köpke U, Niggli U, Neuhoﬀ D, Cornish P, Lockeretz W, Willer H (eds) *Researching sustainable Systems : proceedings of the First Scientific Conference of The International Society of Organic Agriculture Research (ISO FAR)*, 2_23 September 2005, Adelaide, South Australia. Frick : Forschungsinstitut für biologischen Landbau FIBL, 660 p
- MARKS, K. (2013). Bringing Medicinal Gardening to urban Landscapes : Healing herbs on vacant lots? Why not? <http://www.networx.com/article/bringing-medicinal-gardening-to-urban-labour>.
- MATHIAS, E. (2004). Ethno veterinary medicine: Harnessing its potential. *Vet. Bull.*, 74(8): 27N-37N.
- MCCORKLE, C.M., RANGNEKAR, D.V. and MATHIAS, E. (1997). Whence and whither ER & D? In: *Proc. Intl. Conference Ethnoveterinary Medicine: Alternatives for Livestock Development*. Organized by BAIF Development Res. Foundation. 4-6 Nov. 1997, Pune, India, Vol.1.
- MONTEIRO, A.M., WANYANGU, S., KARIUKI, D.P., BAIN, R., JACKSON, F. and MCKELLAR, Q.A. (1998). Pharmaceutical quality of anthelmintics sold in Kenya. *Vet. Rec.*, 142:396-398.
- MWALE, M., BHEBH, E., CHIMONYO, M. and HALIMANI, T.E. (2005). Use of herbal plants in poultry health management in the Mushagashe small-scale commercial farming area in Zimbabwe. *Int. J. Appl. Res. Vet. Med.*, 3(2):163-170.
- NJOROGE, G.N. and BUSSMANN, R.W. (2006). Diversity and utilization of antimalarial ethnophytotherapeutic remedies among the Kikuyus (Central Kenya) *Journal of Ethnobiology and Ethnomedicine* 2:8

doi:10.1186/1746-4269-2-8

PUNNIAMURTHY, N. (2010).
Ethnoveterinary Medicine for Primary Health
Care of Livestock. Heritage Amruth 6(3): 11 –
14

RAHMANN, G., KOOPMANN, R. and
HERTZBERG, H.
(2002).Gesundheitsverhalten statt Krankheit kurieren.
FORSCHUNGSREPORT, Verbraucherschutz, Ernährung,
Landwirtschaft. Forschungs Report Nr. 1 p. 4-7.
RANGNEKAR, S.D. (1998). Studies on
Ethnoveterinary Practices with women
Methodological Approach and Issues.ICAR
Summer Short Course on “Techniques for
Scientific validation and evaluation of
ethnoveterinary practices”, Aug. 3-12, Division
of Medicine, IVRI, Izatnagar, pp. 109-113.

ROTH, R. (2004) Spatialorganisation of
environmental knowledge : conservation
conflicts in the inhabited forest of northern
Thailand. Ecology and Society 9:5.
<http://www.ecologyandsociety.org/vol9/iss3/art5/>
Accessed 9th March, 2015

SWARUP, D. and PATRA, R.C (2005).
Perspectives of Ethnoveterinary Medicine in
Veterinary Practice.Proceedings of the National
conference on Contemporary Relevance of
Ethnoveterinary Medical Traditions of India
(Ed.)M.N.B. Nair. FRLHT, Bangalore

THE WORLD BANK GROUP (2014).
P o v e r t y .
<http://data.worldbank.org/topic/poverty>.
Accessed 12th November, 2014