

**Research Paper**

*Afr. J. Traditional,  
Complementary and  
Alternative Medicines*  
[www.africanethnomedicines.net](http://www.africanethnomedicines.net)

**ISSN 0189-6016©2007**

ETHNO-VETERINARY PRACTICES AMONGST SMALL-HOLDER FARMERS IN EKITI STATE, NIGERIA

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This paper aimed at identifying factors influencing the use of ethno-veterinary practices amongst goat and poultry farmers in Ekiti state, Nigeria. It specifically described the socio-economic characteristics of the farmers; identified some diseases of goats and poultry with their corresponding indigenous cures; presented the procedures used in developing some of the ethno-veterinary medicine amongst farmers; identified the reasons for using ethno-veterinary practices; analysed the ecological factors influencing ethno-veterinary practices; identified the roles played by institutions in the utilisation of ethno-veterinary practices; and examined the benefits and problems associated with ethno-veterinary practices in Ekiti State, Nigeria. A multi-stage sampling procedure was used to select 100 respondents from ten communities, namely: *Otun-Ekiti, Igogo-Ekiti, Osin-Ekiti, Omuo-Ekiti, Ilasa-Ekiti, Araromi-Ekiti, Efon-Alaaye, Oba-Ayetoro, Ise-Ekiti, and Orun-Ekiti*. Pre-tested structured and unstructured interview schedules were used to collect quantitative data, while Focused Group Discussions (FGDs) were used to elicit qualitative data from the respondents. Frequency distribution, percentages, means and standard deviation were used to describe the data. Inferential statistics such as correlation and Chi-Square analyses were used to make deductions. The correlation result showed that at  $p \leq 0.05$  level of significance, age ( $r = 0.368$ ), family size ( $r = 0.114$ ) and association membership ( $r = 0.231$ ) were positively and significantly correlated with the utilisation of ethno-veterinary practices while education level ( $r = -0.342$ ), farming scope ( $r = -0.261$ ), and cosmopolitanness ( $r = -0.135$ ) had negative but significant correlation with the utilisation of ethno-veterinary practices. Some of the problems (associated with the use of indigenous knowledge) identified by the farmers were lack of institutional support and the seasonal nature of some medicinal plants. It is, thus, suggested that all identified constraints need be removed by government to enhance the use of low-external inputs for sustainable agricultural development.

**Key words:** Ethno-veterinary practices, small-holder farmers, indigenous knowledge, socio-economic characteristics, low external input.

**Introduction**

Indigenous knowledge or local knowledge is seen as pivotal above all in discussions on sustainable resource use and balanced development (Brokenshal *et al.*, 1980; Compton, 1989; Gupta, 1992; Niamir, 1990; Warren, 1990). However, these views are in sharp contrast with those of many earlier theorists, who saw traditional knowledge and institutions as obstacles of development. Although local knowledge or indigenous knowledge systems (IKS) may appear simple to outsiders, they have come to represent mechanisms built to ensure minimal livelihoods for the rural resource-poor people. Therefore, identifying, documenting and incorporating IKS into agricultural extension organisations are essential in order to enhance sustainable agricultural development. IKS provide the basis for local level decision-making, which is most apparent in formal and informal community associations and organisations. Communities identify problems and seek solutions through experimentation and innovations. Successful new technologies are added to the body of existing knowledge systems. Kolawole (2001)

had identified the stages for local knowledge development and utilisation. He, thus, wrote that observation (of the environment leading to insight), experimentation, validation (through results), are the stages of IKS development. Awareness (of a particular phenomenon), perception (of the phenomenon as a problem), motivation (to seek a solution), evidence (arising from a specific approach employed to bring about a solution), utilisation (of the tried and tested approach) were the stages of local knowledge utilisation by the grassroots people (Kolawole, 2001).

One of the most important aspects of indigenous knowledge systems and practices is human and animal health care. It is, thus, observed that most of the traditional health care practices fall into the category of 'religio-magico' or 'religio-medico' healing. Worldwide, there are a wide variety of supernatural practices designed to cure or prevent diseases. For instance, Mathias (1994) presented an overview of supernatural cures for infectious diseases, treating and preventing dog and snake bites, warding off and casting out evil spirits, and preventing witchcraft, spells, and theft. The problem with these practices is that they are not well understood, due to the secrecy associated with them and the lack of specific information about such practices.

Understanding farmers' knowledge, however, allows a framework of reference for posing technical and scientific questions in research (Rajasekaran and Martin, 1990). It also provides the basis for evolving technological options that are not imposed as alien 'packages', which contradict existing practices (Scoones, 1989). But then, ethno-veterinary information is in danger of extinction because of lack of institutional support (Mathias, Evelyn, 2001).

Even so, most small-holder farmers who desire to adopt modern practices of animal health care are constrained by lack of finance to seek consultancy advice from veterinary officers or perhaps, due to the unavailability of such officers in remote villages. Also lack of proper follow up by extension agents when this innovation is brought to the farmers is another major impediment. Just as farmers would not easily give away what belongs to them because of their belief in traditional practices, some would still seek refuge in the use of IKS (Kolawole, 2001).

There are, however, certain problems faced by the local farmers who use ethno-veterinary approach to treat their animals. These problems include inconvenience involved in the use or preparation of certain remedies; seasonal availability of certain medicinal plants; paucity of treatments against epidemic diseases; existence of harmful practices; difficulty of standardizing herbal remedies (since the concentration of a critical ingredient in a plant often varies from one location to another); and vagueness of local treatment schedules (Mathias and McCorkle, 1989). This paper, therefore, addressed the following questions: What are the socio-economic characteristics of the farmers who practice ethno-veterinary medicine in the study area? What are the ecological factors influencing ethno-veterinary practices in the study area? What roles are certain institutions playing in promoting ethno-veterinary practices in the study area? What are the benefits and constraints associated with ethno-veterinary practices?

Specifically, the study sought to describe the socio-economic characteristics of the farmers who rear poultry and goats in Ekiti state; identify some diseases of goats and poultry with their corresponding indigenous cures; analyse the ecological factors affecting ethno-veterinary practices in the study area; identify the roles played by institutions in the utilisation of ethno-veterinary practices; present the procedures used in developing some of the ethno-veterinary medicine amongst farmers; identify the reasons for using ethno-veterinary practices; determine the efficacy of ethno-veterinary practices as perceived by the farmers; and examine the benefits and constraints associated with ethno-veterinary practices

## Methodology

Ekiti State in Nigeria was studied. It is located on longitudes  $4^{\circ}20'$  and  $5^{\circ}40'$  East of the Greenwich meridian and between latitudes  $6^{\circ}20'$  and  $8^{\circ}10'$  North of the Equator. Ekiti State comprises sixteen Local Government Areas (LGAs). The approximate population size of Ekiti State based on the 2006 Census figure was about 2.3 million people. The total land area is approximately 10,898.68 sq/km. Scattered settlement pattern is dominant; while some remote areas have nuclear and linear settlement patterns. Most of the population are Christians while Muslims and Traditionalists form the minority. The major occupation of the people is farming while few people engage in other activities such as trading, weaving, sewing etc.

A multi-stage sampling procedure was used to select the respondents. About 25.0 percent of the LGAs in the State was purposively selected with a view to ensuring that rural LGAs were selected. Also, 10 communities were proportionately chosen from the selected LGAs. Based on the population of each of the selected communities, 100 respondents were also proportionately sampled. A pre-tested structured interviewed schedule was used to elicit quantitative data while Focused Group Discussions (FGDs) were organised to generate qualitative data. The information gathered include the socio-economic characteristics of the respondents; ethno-veterinary practices;

ecological factors influencing ethno-veterinary practices ; roles played by institutions in the utilisation of ethno-veterinary practices ; efficacy of ethno-veterinary practices as perceived by the respondent ; benefits and constraints associated with the use of ethno-veterinary practices (all of which are explanatory variables) and utilisation of ethno-veterinary practices (dependent variable). The data collected were summarised using descriptive statistics such as mean, standard deviation, percentage, frequency distribution. Also, chi-square and correlation analyses were used to test the hypotheses of the study.

## Results and Discussion

Data presented in Table 1 showed the result of selected demographic characteristics of the respondents. The average age of respondents in the study area was 49.9 with a standard deviation of 2.30. About 30.0 percent of the respondents was in the age range of 30 - 40 years while 35.0 percent of the population was between 41 and 50 years. About 20.0 percent was between 51 and 60 years, just as some (15.0 percent) of the respondents were 61 years and above. More than half (71.0 percent) of the respondents were males while 29.0 percent were females. While majority (53.0 percent) of the respondents had farming as their main occupation, 31.0 percent of the respondents was engaged in trading and 12.0 percent was engaged in teaching. Also, about 3.0 percent was engaged in weaving, while 10.0 percent of the respondents was engaged in sewing.

About 32.0 percent of the respondents had primary education just as 24.0 and 20.0 percents of the respondents had secondary education and tertiary education, respectively. However, 24.0 percent did not go to school at all. The average family size in the study area was 5.19 with a standard deviation of 4.47. Some (42.0 percent) of the respondents had between 2 and 4 family members (including husband, wife, children and dependants), while majority (58.0 percent) had between 5 and above family members, which is typical of a farm family in Africa (Ekong 2003). The average farm size was 2.30 hectares with a standard deviation of 1.40. The average income of the respondents was \$166.15 per month with a standard deviation of \$27.90 (\$1.00 is the equivalent of ₦130.00). About 29.0 percent of the respondents had between \$115.39 and \$230.77 per month. While 26.0 percent of the respondents had between \$238.46 and \$346.15, about 28.0 percent had between \$355.85 and \$461.54, just as 7.0 percent had above \$461.54. Majority (64.0 percent) of the respondents were married, 4.0 percent was single, 18.0 percent was widowed, and 14.0 percent was divorced. Majority (71.0 percent) of the respondents were male farmers while only 29.0 percent of the respondents were female farmers. This may be as a result of the drudgery associated with farming activities among small-holder farmers and the land tenure system that traditionally places land in the hands of male farmers. Majority (70.0 percent) of the respondents were Christians, while 25.0 and 5.0 percents were Muslims and Traditionalists, respectively. About 34.0, 64.0 and 18.0 percents of the respondents had travelled to other village(s), other town(s), and other county (ies), respectively.

Data presented in Table 2 also showed the result of socio-economic characteristics of the respondents. About 15.0 percent of the respondents reared pig, 40.0 percent reared goat, 12.0 percent reared rabbit, and 30.0 percent reared poultry, while 15.0 percent of the respondents reared other animals. Only about 5.0 and 10.0 percents of the respondents specialized in crop farming and animal rearing, respectively, while majority (85.0 percent) practised mix farming. This feature, according to Olayiade *et al.* (1981), is the basic characteristic of small-holder farmers in the rural areas of Nigeria. The average number of animals (small stocks) reared by the respondents was 33.25 with a standard deviation of 7.80. Some (47.0 percent) of the respondents had animals less than 50 and 15.0 percent of the respondents had a total number of animals ranging between 50 and 100. About 23.0 percent had between 100 and 200, while 15.0 percent had above 200. Majority (55.0 percent) of the respondents belonged to Co-operative societies. While 17.0 percent belonged to the trade union, 6.0 and 22.0 percents belonged to elite club and community development, respectively. About 10.0 percent, however, belonged to young farmers club.

Data presented in Table 3 showed the ethno-veterinary practices used by the respondents. Majority (95.0 percent) of the respondents had not used palm kernel oil as a traditional technique for curing scabies in goat. Only 5.0 percent of the respondents had used palm kernel oil as a traditional technique for curing scabies in goat. Among the user-respondents, however, majority (60.0 percent) claimed that using palm kernel oil as a traditional technique for curing scabies in goat is very effective, while 40.0 percent claimed that it was less effective. About 98.0 percent of the respondents had not used thyme, *Thymus vulgaris* [L], for curing internal worms in goat and poultry. Only 2.0 percent of the respondents used thyme, *Thymus vulgaris* [L], for curing internal worms in goat and poultry. Among the user-respondents, while majority (67.78 percent) claimed that the use of thyme, *Thymus vulgaris* [L], for curing internal worms in goat and poultry was a very effective indigenous technique, about 32.22 percent claimed that it was less effective, but none claimed that the use of thyme, *Thymus vulgaris* [L], was not effective. About 90.0

**Table 1:** Distribution of respondents by socio-economic characteristics

| Variable                     | Frequency  | Percentage | Central tendency and Dispersion     |
|------------------------------|------------|------------|-------------------------------------|
| <b>Sex</b>                   |            |            |                                     |
| Male                         | 71         | 71         |                                     |
| Female                       | 29         | 29         |                                     |
| <b>Total</b>                 | <u>100</u> | <u>100</u> |                                     |
| <b>Marital status</b>        |            |            |                                     |
| (i) Single                   | 4          | 4          |                                     |
| (ii) Married                 | 64         | 64         |                                     |
| (iii) Widowed                | 18         | 18         |                                     |
| (iv) Divorced                | 14         | 14         |                                     |
| <b>Total</b>                 | <u>100</u> | <u>100</u> |                                     |
| <b>Age(years)</b>            |            |            |                                     |
| (i) 30- 40                   | 30         | 30         | Mean = 49.9<br>Std.dev.=2.38        |
| (ii) 41-50                   | 35         | 35         |                                     |
| (iii) 51-60                  | 20         | 20         |                                     |
| (iv) 61 and above            | 15         | 15         |                                     |
| <b>Religion</b>              |            |            |                                     |
| (i) Christianity             | 70         | 70         |                                     |
| (ii) Muslim                  | 25         | 25         |                                     |
| (iii) Traditionalist         | 5          | 5          |                                     |
| <b>Total</b>                 | <u>100</u> | <u>100</u> |                                     |
| <b>Income level</b>          |            |            |                                     |
| (i) \$ 115.39 – 230.77       | 28         | 28         | Mean = \$166.15<br>Std.dev.=\$27.90 |
| (ii) \$ 238.46- 346.15       | 29         | 29         |                                     |
| (iii)\$ 355.85- 461.54       | 26         | 2          |                                     |
| (iv) above\$ 461.54          | 7          | 7          |                                     |
| (v) No response              | 10         | 10         |                                     |
| <b>Total</b>                 | <u>100</u> | <u>100</u> |                                     |
| <b>Cosmopolitaness*</b>      |            |            |                                     |
| (i) To other village(s)      | 64         | 64         |                                     |
| (ii) To other town(s)        | 33         | 33         |                                     |
| (iii) To other country (ies) | 18         | 18         |                                     |
| <b>Education</b>             |            |            |                                     |
| Primary                      | 32         | 32         |                                     |
| Secondary                    | 24         | 24         |                                     |
| Tertiary                     | 20         | 20         |                                     |
| None                         | 24         | 24         |                                     |
| <b>Total</b>                 | <u>100</u> | <u>100</u> |                                     |
| <b>Family size</b>           |            |            |                                     |
| (i) 2-4                      | 42         | 42         | Mean = 4.<br>Std dev., = 0.8        |
| (ii) 5-7                     | 43         | 43         |                                     |
| <b>Total</b>                 | <u>100</u> | <u>100</u> |                                     |

\* Multiple responses

**Table 2:** Distribution of respondents by socio-economic characteristics

| Variable                       | Frequency  | Percentage | Central tendency and<br>Dispersion |
|--------------------------------|------------|------------|------------------------------------|
| <b>Occupation*</b>             |            |            |                                    |
| (i) Farming                    | 53         | 53         |                                    |
| (ii) Trading                   | 31         | 31         |                                    |
| (iii) Teaching                 | 12         | 12         |                                    |
| (iv) Weaving                   | 3          | 3          |                                    |
| (v) Sewing                     | 10         | 10         |                                    |
| <b>Types of animal reared</b>  |            |            |                                    |
| Piggery                        | 15         | 15         |                                    |
| Goat                           | 40         | 40         |                                    |
| Rabbitary                      | 12         | 12         |                                    |
| Poultry                        | 30         | 30         |                                    |
| Others                         | 15         | 15         |                                    |
| <b>Farming scope*</b>          |            |            |                                    |
| (i) Animal rearing only        | 5          | 50         |                                    |
| (ii) Crops farming only        | 10         | 10         |                                    |
| (iii) Mix farming              | 85         |            |                                    |
| <b>Number of animal</b>        |            |            |                                    |
| (i) Less than 50               | 47         | 47         | Mean = 33.25<br>Std dev = 7.8      |
| (ii) 50-100                    | 15         | 15         |                                    |
| (iii) 100-200                  | 23         | 23         |                                    |
| (iv) 200 and above             | 15         | 15         |                                    |
| <b>Total</b>                   | <u>100</u> | <u>100</u> |                                    |
| <b>Association membership*</b> |            |            |                                    |
| (i) Cooperative                | 55         | 55         |                                    |
| (ii) Trade union               | 17         | 17         |                                    |
| (iii) Elite club               | 6          | 6          |                                    |
| (iv) Community development     | 22         | 22         |                                    |
| (v) Young farmer club          | 10         | 10         |                                    |

\* Multiple responses

**Table 3:** Distribution of Respondents by use and perceived effectiveness of ethno-veterinary practices

| Indigenous practices  | Never used | Not effective | Less effective | Very effective |
|---|------------|---------------|----------------|----------------|
| (i) Goats) scabies with palm kernel oil                     | ( 95 ) 95  | ( 0 ) 0       | (40) 2         | (60) 3         |
| (ii) Internal worm with thyme                               | ( 97 ) 97  | (0) 0         | (32.22) 1      | (67.78) 2      |
| (iii) Coccidiosis with peper                                | (90) 90    | (0) 0         | (20) 2         | (80) 80        |
| (iv) Eye infection with water from<br>Fermented cassava     | (84) 84    | ( 0)0         | ( 25) 4        | (75) 12        |
| (v) stopping of bleeding with<br><i>Chromolena odoratum</i> | (75) 75    | (0)0          | (20) 5         | (80)20         |

**Table4: Distribution of respondents by institutional factors**

| Variables   | Frequency | Percentage |
|---|-----------|------------|
| <b>Family Role*</b>   |           |            |
| (i) Assist in drugs administering                                   | 18        | 18         |
| (ii) Assist in herbs' collection                                    | 55        | 5          |
| (iii) Others  | 44        | 44         |
| <b>Government Roles</b>   |           |            |
| (i) Encouraged by building on local knowledge                       | 5         | 5          |
| (ii) Discouraged us in building on local knowledge                  | 30        | 3          |
| (iii) No role has been played                                       | 65        | 65         |
| <b>Total</b>  | 100       | 100        |
| <b>Role of Agric Institution*</b>                                   |           |            |
| (i) Not educating people on how to practice the Technique           | 100       | 100        |
| (ii) Not assisting people through provision of relevant information | 100       | 100        |
| <b>Total</b>  | 100       | 100        |

**Table 5:** Correlation and multiples regression analyses showing linear relationship between some socio-economic characteristics of the respondents and utilisation of ethno-veterinary practices.

| Characteristics (x-variables) | Correlation Coefficient(r) | Coefficient Determination(r <sup>2</sup> ) |
|-------------------------------|----------------------------|--|
| (i) Age                       | 0.368**                    | 0.135                                      |
| (ii) Occupation               | -0.283**                   | 0.080                                      |
| (iii) Educational level       | -0.342*                    | 0.117                                      |
| (iv) Income                   | -0.063                     | 0.004                                      |
| (v) Family size               | 0.114**                    | 0.013                                      |
| (vi) Farming scope            | -0.261*                    | 0.068                                      |
| (i) No of animals reared      | 0.146*                     | 0.021                                      |
| (viii) cosmopolitaness        | -0.135*                    | 0.018                                      |
| (ix) Association membership   | 0.231**                    | 0.053                                      |

\*\* r is significant at p < 0 .1 and p < 0 .05 levels.

\* r is significant at p < 0 .1 level.

**Table 6:** Chi – square analysis showing association between the roles of institutions and utilisation of ethno-veterinary practices

| Institutional factors            | Tc    | Tt    | d.f | Decision |
|----------------------------------|-------|-------|-----|----------|
| Family role                      | 7.52  | 3.620 | 3   | S        |
| Role of government               | 2.554 | 7.815 | 3   | NS       |
| Role of agricultural institution | 0.143 | 3.841 | 1   | NS       |

percent of the respondents had never used alligator pepper, *Afromonum melegueta*, to cure birds suffering from *coccidiosis*. However, only 10.0 percent of the respondents did use alligator pepper, *Afromonum melegueta*, as indigenous practice for treating birds suffering from *coccidiosis*. Among the user-respondents, majority (80.0 percent) accepted that alligator pepper, *Afromonum melegueta*, treatment on birds suffering from *coccidiosis*, was very effective while about 20.0 percent of the user-respondents agreed that alligator pepper, *Afromonum melegueta*, treatment on birds suffering from *coccidiosis* was less effective just as none of them perceived it as ineffective. About 84.0 percent of the respondents had never used water from fermented cassava, *Manihort essculentus*[L], tuber as a cure for eye infection in poultry and goat while 16.0 percent of the respondents opined that they had used it as a cure for eye infection in poultry and goat. Majority (75.0 percent) of the user respondents claimed that water from fermentation of cassava, *Manihort essculentus*[L], tuber was very effective for treating eye infection in poultry and goat. However, about 25.0 percent of the user-respondents agreed that water from fermented cassava was less effective for treating eye infection in poultry and goat. Some (75.0 percent) of the respondents had never used Siam weed, *Chromolaena odoratum* [L], to stop bleeding resulting from pecking in poultry. Only 25.0 percent of the respondents had used Siam weed, *Chromolaena odoratum* [L], to stop bleeding in poultry. Nonetheless, majority (80.0 percent) of the user-respondents, found the usage of the sap of Siam weed, *Chromolaena odoratum* [L], treatment on bleeding very effective while 20.0 percent said that the treatment was less effective.

Data presented in Table 4 showed the roles played by institutions in the utilisation of ethno-veterinary practices. About 18.0 percent of the respondents claimed that their family members assisted in drugs administering. About 55.0 percent agreed that family members assisted in herbs collection while 44.0 percent assisted in both drugs administering and herbs collection. This implies that the family, as an institution, supports utilisation of ethno-veterinary practices amongst small-holder farmers in the study area. Majority (65.0 percent) of the respondents claimed that government had not played any significant role in promoting ethno-veterinary practices in Ekiti State, while just 5.0 percent agreed that government had encouraged them to build on existing local knowledge. However, about 30.0 percent claimed that government had discouraged them from building on their local knowledge. Moreover, all (100 percent) the respondents claimed that agricultural institution had neither educated people to practice ethno-veterinary medicine nor provided relevant information on such practices. Agricultural institution's lack of commitment to ethno-veterinary seemed to have betrayed the current emphasis on the use of low external inputs in sustainable agricultural production.

In terms of ecology, benefits and constraints associated with the utilisation of ethno-veterinary practices, about 45.0 percent of the respondents perceived that the rainfall patterns in their areas were heavy. While 40.0 percent of the respondents perceived it as moderate, 15.0 percent perceived it as low. Majority (74.0 percent) of the respondents identified their ecological zone as derived savannah, while 26.0 percent categorised theirs as Rain-forest zone. Majority (95.0 percent) of the user-respondents, identified effectiveness, simplicity, environmental friendliness, preservation of culture and profitability as reasons for utilising ethno-veterinary practices. Some of the attributes of IKS and other benefits associated with ethno-veterinary were reechoed during the FGD sessions as presented in the following boxes.

**Box1: Locally prepared medicine are readily available**

It is not that modern medicines are not good but you know local medicines are readily available and you don't have to spend so much money before you can get them and they are very effective. I have been using these traditional techniques for some years and they have been very effective. I don't have to seek for family assistance before administering the drugs to the animals. For example, one can use palm kernel oil to cure scabies in goat. If worms are disturbing your animal, you can use thyme, *Thymus vulgaris* [L], which is popularly known as "efinrin" to cure it. You'll pound a handful of thyme, *Thymus vulgaris* [L], leaves and then add to the drinking water given to the animals.

A 55-year old woman in Omuo Ekiti.

**Box 2: How to solve animal reproductive problems**

I don't have poultry farm except for the local birds I am rearing. I do not go to market or chemists to buy modern drugs but I use what our forefathers used in treating their animals. I know that if an animal is having reproductive problem, you can use milkweed, *Calotropis gigantana*[L], known as "eruku" and alligator pepper *Afromonum melegueta*, popularly known as "ataare". We buy them from those in the local market here. You crush the milkweed, *Calotropis gigantana*[L] and alligator pepper, *Afromonum melegueta*, allow it to cool down. Take about 2 teaspoonfuls and give to the animal in drinking water.

A 68-yearold woman in Otun Ekiti.

**Box3: How to cure diverse animal diseases**

I work as a Principal in a secondary school and I have been in the profession for the past 32 years. I combine this profession with farming (animal rearing). But then, I never studied Animal Science in the University but developed interest in it when I was in school. I am really making progress in the farming job. I realise nothing less than \$230.77 from this job apart from my salary. Yes, there are some diseases that affect our animals at home. Examples are scabies, which could be cured by using mixed kerosene with potash. If an animal eats anything poisonous, you can administer red palm oil and this will stop it from foaming. If birds are suffering from coughs and colds, bitter kola, *Garcinia kola* [Heckel], popularly known as “orogbo” could be boiled with citrus lemon, *Citrus limon* [L], known as “osan wewe” and given to the animals in drinking water. In fact, I have been employing these traditional techniques for more than 10 years now. Truly, some people may be having negative attitudes as to what kind of animal should be reared in a particular community personally; I don't have any taboo in rearing any animal, which I wish to rear. There is no taboo in this land that says people should not rear a particular animal. I don't think this is happening in other places in Ekiti State generally.

A 60-year old man.

**Box 4: Diarrhea treatment**

I rare about five goats and twenty poultry (hen, cock and duck). I use both modern and local approaches to treat their diseases. But I don't really make use of modern techniques except in cases when the condition has become critical. If any of my animals is sick, I will go to the bush and harvest some plants that could be used to cure it. If my birds or any of them is suffering from diarrhea, I use crushed garlic, *Allium sativum* [L], which is mixed with the feed and given to them. By the time I do this for about 1-2 weeks, the problem is solved. I didn't know that garlic, *Allium sativum*[L] could be used to cure diarrhea in animals until I was told to try it. The techniques are very effective and less costly. You know most of these plants are available in our community. You can use these plants as long as you want; there is no taboo attached to their use.

A 68-year old woman in Otun Ekiti.

**Box 5: Modern animal care is costly**

I took farming as a profession after leaving primary school. I have been in this profession quite for some time. Yes, my children assist on the farm whenever they are on holiday from school. My wife equally assists me in carrying out some farming activities such as harvesting, transportation and marketing of farm produce. I have some animals that I rear such as goat, sheep, dog, pig, poultry etc. In our community, there is no restriction to the kind of animal reared; you can rear any kind of animal you want to rear. I don't make use of modern methods in curing animal diseases because it is costly and the number of my animals is small.

A 55-year old farmer

All (100 percent) the respondents agreed that lack of institutional support and seasonal nature of herbs were the major constraints associated with the utilisation of ethno-veterinary practices.

Data in Table 5, revealed that at 0.05 level of significance, age ( $r = 0.368$ ); family size ( $r = 0.114$ ); and association membership ( $r = 0.231$ ) had positive and significant relationship with the utilisation of ethno-veterinary practices. On the other hand, education ( $r = -0.342$ ), farming scope ( $r = -0.261$ ), numbers of animals reared ( $r = -0.146$ ) and cosmopolitaness ( $r = -0.231$ ) had negative but significant correlation with the utilisation of ethno-veterinary practices. Ethno-veterinary practices, although mainly transmitted through non-formal education, is practical oriented. Members of a household in Africa form the bulk of the labour force (Olaide *et al.*, 1981). Hence, increase in household size guarantees labour for collection of medicinal herbs and subsequently increases the utilisation of ethno-veterinary practices. Local community associations as agent and medium of change (Ekong, 2003) provide the platform for members to acquire knowledge and skills of indigenous knowledge systems. Group or association influence increases members' receptivity to utilisation of ethno-veterinary practices. The inverse relationship between utilisation of ethno-veterinary practices and formal education of the respondents is a reflection of the Nigerian educational curricula that are patterned after Western knowledge systems. It is against this background and in consonance with basic resource theory of economic growth and development that Giwa (1991) opines that integrating indigenous knowledge systems in the Nigerian educational curricula is a catalyst for national development. The little or no emphasis on ethno-veterinary practices underscores the problems of seasonal availability, which Mathias and McCorkle (1989) have identified as an impediment to the development of indigenous knowledge systems. Of the three institution variables investigated, the data in Table 6 showed that only

family role, ( $T_c = 7.52$  ; $T_t=3.620$ ) had significant association with the utilisation of ethno-veterinary practices while government ( $T_c = 2.554$ ;  $T_t = 7.815$ ), and agricultural institution roles ( $T_c = 0.143$ ; $T_t = 3.841$ ) were not significantly associated with the utilisation of ethno-veterinary practices. This, therefore, implies that the family had played an important role in promoting indigenous knowledge systems while government and its institutions, on the other hand, have had no significant influence on the utilisation of indigenous knowledge systems.

### Conclusion and Recommendation

The average age of the respondents was 49.9 years with a standard deviation of 2.3. Although the number of non-users of ethno-veterinary practices in the study area was greater than those of the users, all the users agreed that effectiveness, ecological friendliness, preservation of cultural heritage and cost effectiveness made ethno-veterinary practices better off than Western techniques. Some of the indigenous techniques put into use in animal care in Ekiti State, Nigeria, included the use of palm kernel oil to cure scabies in goat; the administering of thyme to cure internal worm infestation; the use of bitter kola and citrus lemon to cure cough and cold, etc. However, seasonal availability of herbs, lack of commitment by government and its institutions were the major hindrances to the utilisation of ethno-veterinary practices in the study area. Encouraging the formation of farmers' association or cooperative is vital in promoting the utilisation of ethno-veterinary practices amongst the farmers. Since indigenous knowledge systems are pivotal to sustainable development, policy makers could enact policies that would enhance the integration of Western knowledge systems with indigenous knowledge systems. In addition to this, scientific standardisation of ethno-veterinary practices will enhance their acceptance across culture and among professionals. Hence, government needs to encourage researchers and users of ethno-veterinary practices through grants, soft loans and subsidy to enable them improve on the existing indigenous knowledge systems.

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