**The role of medicinal plants in traditionally managed cattle in Odeda local government area, Ogun state, Nigeria**

Fasae O.A., Olawale E.O and Showale, A.G.

*Department of Animal Production and Health, Federal University of Agriculture, P.M.B 2240, Abeokuta, Nigeria*

**ABSTRACT**

This study investigates into the role of indigenous medicinal plants used in traditionally managed cattle in five locations of Odeda local government area, Ogun state, humid zone of Nigeria. A structured questionnaire was used to collect personal data of cattle rearers, plant specimens and pertinent information on plant use. Results showed that cattle rearers were majorly men from the Fulani tribe with no formal education. A total of twenty (20) plants were identified and evaluated for the treatment of cattle parasites and diseases, with various parts namely leaves, stems, bark, seeds, fruits and twigs been used, the leaves been widely utilized. However, the mode of preparation and application of these plants parts require different methods. These traditional remedies are more preferred because they are locally available, cheaper, safer and effective compared to the orthodox veterinary medicines. Some of these plants provide multipurpose remedies, preventing or curing several kinds of ailments. It was therefore concluded that the study areas are a rich source of medicinal plants for disease management in the traditional cattle production system. However, there is need to scientifically ascertain the authenticity of the claimed use of these plants.

**Keywords:** Cattle, medicinal plants, Odeda, south west Nigeria

**Introduction**

The use of medicinal plants to treat various diseases in livestock has been part of human culture since ancient times. Traditional medicines include folk drugs composed of herbs, herbal materials, herbal preparations and finished herbal products (WHO, 2002), which are relied upon in most developing countries as a major source of natural therapeutic remedies for the treatment of different diseases (Ody, 1993). Nowadays, natural products of plant sources have been the centre of focus as the main source of new, safer and more effective bioactive compounds with medicinal properties (Nitta *et al.,* 2002).

The use of indigenous medicinal plants in the management of livestock, also referred to as ethnoveterinary medicine has been reported to be widespread among herdsmen and found to be of great value in areas where allopathic or orthodox veterinary medicines are often beyond the reach of the poor livestock producers. Majority of these farmers rely on these traditional healthcare practices to keep their animals healthy as most of these herbal plants have been used for centuries in the management and prevention of a wide range of livestock diseases. The users believe that medicinal plants are more efficacious for treatment of cattle ailments than modern medicines, simply because they are readily availability, easy to prepare and/or administer, at minute and at free of cost to the farmer (Jabbar *et al.,* 2005).

Hence, this study was designed to generate information on the role of indigenous medicinal plants used in traditionally managed cattle in Odeda local government area, Ogun state, humid zone of Nigeria.

**Materials and method**

The study was carried out in five different locations namely Oojo, Alabata, Odeda, Isolu and Apakila in Odeda local government area of Ogun state, humid zone of Nigeria. These villages were selected because of the dominance of the nomadic cattle rearers in these areas.

Information was collected by interviewing the cattle rearers, using a structured questionnaire, which contain the personal data, various common pest and diseases incidence among their animals, plants or plant parts used in ethno-veterinary practices and the preparation and administration of these plants parts. Consent was obtained from all the participants prior to the administration of the questionnaire. A total of 60 respondents were selected and interviewed from various communities. The plants that were singly and most frequently used by the cattle rearers were sought for during the survey. Collected plant samples were identified and authenticated. Data obtained are presented tables. They were analyzed using simple descriptive statistics to generate frequencies and percentages with the aid of SPSS (2007).

**Results and discussion**

The frequency distribution of the respondent is shown in Table 1. A total of 60 respondents were interviewed, with all the herd owners in the study area being men and from the Fulani tribe. The rearers were majorly between 40 and 49 years of age (38.3%) with 85% married. Majority of the respondents (71.7%) are illiterate with no formal educational background while 28.3% had a form of Arabic education. This is in line with the reports of UNESCO (2003) and Iro, (2004) that cattle rearers have no form of formal education. Despite the importance of education, many Fulani have not embraced it. This is partly due to the fact that cattle rearing are time consuming and does not give room for school enrollment.

Table 1: Frequency distribution of respondent’s

personal data (n= 60)

|  |  |  |  |
| --- | --- | --- | --- |
| **Personal data** | **Frequency** | | **Percentage** |
| **Gender**  Male | 60 | | 100 |
| Female | - | | - |
| **Age Group** | | | |
| 10 -19 | 3 | | 5.0 |
| 20 – 29 | 11 | | 18.3 |
| 30 – 39 | 13 | | 21.7 |
| 40 – 49 | 23 | | 38.3 |
| 50 and above | 10 | | 16.7 |
| **Ethnic group** | | | |
| Fulani | 60 | | 100 |
| Other | - | | - |
| **Marital status**  Single | 9 | | 15 |
| Married | 51 | | 85 |
| **Educational attainment** | | | |
| Arabic School | | 17 | 28.3 | |
| No formal Education | | 43 | 71.7 |

#### In terms of the reasons associated with the preference for the use of medicinal plants among the cattle rearers, Figure 1 shows that majority of the respondents preferred these plants because of easy accessibility (89.5%), while 81.25% and 51.33% of the respondents prefer it because it is economical and traditional in nature, respectively. However, 77.5% of the respondents claimed its simplicity and effectiveness in healing without visible adverse effects.

#### Table 2 presents the list of plant species and other traditional methods used in the treatment and management of diseases of cattle in the study area. Twenty (20) plants were identified by respondents for the treatment of cattle diseases and parasites. It was evident that various plants were extensively used through different herbal preparations administered to the animals.

#### It was also observed that various plant parts namely the leaves, bark, roots, leaves, twigs, seeds and sometimes the fruits were used as remedies for a variety of disease conditions in the traditional cattle production system, with the leaves been widely used. This confirms reports that indicated preference for the use of plant leaves because it is more convenient to collect leaves than root parts, flowers and fruits (Giday *et al.,* 2009).

Table 2:Medicinal plants used by cattle herdsmen in Odeda local government area, Ogun state.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Scientific name | Common name | Local  Name\* | Part used | Diseases cured | Application |
| *Hibiscus esculentus* | Okra | Ila | Stem | Placenta ejection | Pound dry stem /add water. Drench the animal with liquid. |
| *Ficus exasperate* | Fig tree | Opoto | Leaves | Fever/Malnutrition | Mash leaves, mix with water, give the liquid extract to animal |
| *Azadirachta indica* | Neem | Dongoyaro | Bark/ leaves | Worms/ parasites  Trypanosomiasis | Soak leaves or bark in water and give orally or drench the animal. |
| *Parkia biglobosa* | Locust bean | Iru | Seeds | Foot pain | Use grinded seeds to rub affected part till symptoms disappear. |
| *Vernonia conferta* | Bitter leaf | Ewuro | Leaves | Diarrhoea | Macerate in water and administer orally. |
| *Spondias mombin* | Hog plum | Iyeye | Leaves | Retained placenta/  mastitis | Dry the seeds and mix with water, then administer orally. |
| *Dioscorea dametorum* | Bitter yam | Esuru | Root | Blindness | Pound extract with water and drop into the eye |
| *Solanum aculestrum* | Love apple | Odu | Fruits | Streptothricosis | Roast fruits, slice into halves. Scrub the affected area for 1-3 days. |
| *Mangifera indica* | Mango | Mongora | Leaves/  Bark | Diarrhoea/ dysentery | Grind leaves/ bark, mix with water and give animal |
| *Citrus aurantifolia* | Lime | Osan-wewe | Leaves | Diarrhoea | Give the liquid extract to animal orally until symptoms disappear |
| *Ficus platyphylla* | Broad leaf fig | Epo-Obo | Bark | Bovine contagious pleuropneumonia | Dry/pound the bark into powder and add salt, administer orally with the liquid. |
| *Newbouldia laevis* | Boundary plant | Akoko | Leaves | Constipation | Leaves are squeezed and given to animals. |
| *Nicotiana tabacum* | Tobacco | Taba | Leaves | Cold | Mash leaves and give animal to lick. |
| *Piliostigma thonningii* | Monkey bread | Abefe | Twig | Muscular weakness | Tie the twig to the affected joints of animal for few days to recover. |
| *Annona senegalensis* | Wild custard apple | Abo | Leaves | Anti-biotics | Macerate in water and administer orally to the animal |
| *Khaya ivorensis* | African mahogany | Oganwo | Bark | Reduced fertility/  Diarrheoa | Dry and pound the bark, add salt with water and give animal to drink |
| *Tephrosia vogelii* | Fish bean | Orobeja | Leaves | Tick | Pound leaves, soak with wood ash in water, stir, filter and add animal urine. Bathe animal with solution. |
| *Zea mays* | Maize | Agbado | Grain | Diarrhoea | Roast and feed animal. |
| *Phaseolus vulgaris* | Common bean | Nyebbe | Leaves | Milk ejection | Pound and add water. Drench the animal with the liquid. |
| *Acacia albida* | Apple ring | Gawo | Leaves | Stuffy eye | Macerate in water and drench the animal. |

*\*Local names are either in Hausa or Yoruba languages*

#### Plant leaves have also been known to be actively involved in photosynthesis and the production of metabolites (Ghorbani, 2005). Thus, the numerous constituents found in leaves could explain their efficacy in the treatment of various ailments in both humans and animals. This therefore suggests that the basic active ingredients used for treating various ailments are accumulated in the different parts of plants being used, showing that most of these plants contain some physiologically active compounds, which are known to be potent medicines (Iwu, 1993). However, the mode of preparation and application of these plants parts require different methods.

Some of the medicinal plants recorded in this study have been found by earlier researches to contain antimicrobial activities. *Vernonia conferta* has been used for the treatment of gastrointestinal disorders (Iwu 1993). *Acacia albida*, *Piliostigma thonningii* and *Parkia biglobosa*have been reported to be used by Fulani herdsmen in the management of animal diarrhoea in Plateau State, Nigeria (Offiah *et al.,* 2012).

Moreover, some of these plants appeared to provide multipurpose remedies, preventing or curing several kinds of ailments. For example, *Spondias mombin* are used for treating retained placenta and mastitis. The potential of *Azadirachta indica* as trypanocidal and anthelmintic has being reported (Nok *et al.,* 1993, Jabbar, 2006). The root and twig of *Piliostigma thonningii* has also been used for the treatment of dysentery, fever, snake bites, hookworm and skin disease as well as laxative, antihelmintic and anti-inflammatory agents (Fakae *et al*., 2000; Igoli *et al.,* 2005).

Also, *Ficus platyphylla* extracts which was identified in this study for the treatment of Bovine contagious pleuropneumonia have also been found to be used for the treatment of various ailments such as dysentery, cough, diarrhoea, tuberculosis and pain relief (Sandabe and Kwari, 2000; Wakeel *et al.,* 2004). The extracts of *Annona senegalensis* though used as an antibiotic in this study also possess trypanocidal properties (Ogbadoyi *et al.,* 2007). From the accumulated information obtained in this study, it could be concluded that the study areas are a rich source of medicinal plants which can be used in the management of diseases in traditional cattle production system. However, there is need to scientifically ascertain the authenticity of the claimed use of these plants. The use of these medicinal plants if adequately harnessed could be an option for cattle rearers involved in organic programs as well as those that cannot afford the use of allopathic drugs in the treatment and control of cattle diseases.

**References**

Fakae, B.B., A.M. Cambell, J. Barrett, I.M. Scott, P.H. Teesdale-Spittle, E. Liebau and P.M. Brophy, 2000. Inhibition of gluthathione S-transferase (GSTs) from parasitic nematodes by extracts from traditional Nigerian medicinal plants. *Phytother. Res.,* 14: 630-634.

Ghorbani, A. 2005. Studies on pharmaceutical ethnobotany in the region of Turkmen Sahra, north of Iran (Part 1): general results. *J. Ethnopharmacol.* 102:58-68.

Giday, M, Asfaw Z and Woldu Z. 2009. Medicinal plants of the Meinit ethnic group of Ethiopia: An ethnobotanical study. *J. Ethnopharmacol.* 124:513–521.

Igoli, J.O., Ogali O.G., Tor-Anjiin, T.A. and Logli, N.P 2005. Traditional medicine practice amongst the Igede people of Nigeria, Part II, *Afr. J. Trad. Complementary Altern. Med.,* 2: 134-152.

Iro, I. 2004. Nomadic Education and Education for Nomadic Fulanis, African development foundation, Washington DC, USA.

Iwu, M.M., 1993. Handbook of African Medicinal Plants*.* C.R.C. Press Boca Taton, Ann cbor Tokyo London.

Jabbar, A., Raza M.A., Iqbal Z., and Khan M.N., 2006. An inventory of the ethnobotanicals used as anthelmintics in the southern Punjab (Pakistan). *Journal of Ethnopharmacology*, 108: 152-154.

Nitta, T., Arai, T., Takamatsu, H., Inatomi, Y., Murata, H., Iinuma, M., Tanaka, T., Ito,T., Asai, F., Ibrahim, I., Nakanishi, T. and Watabe, K., 2002. Antibacterial activity of extracts prepared from tropical and subtropical plants on methicillin-resistant *Staphylococcus aureus*. *Journal of Health Science* 48, 273–276

Nok, A.J, Esievo, K.A.N, Longdet I., Arowosafe, S., Onyenekwe P.C., Gimba C.E., Kagbu, J.A. 1993. Trypanocidal Potentials of *Azadirachta indica*: In Vivo Activity of Leaf Extract *against Trypanosoma brucei., Gun. Biochem. Nutr.,* 15, 113-118.

Offiah, N.V, Dawurung, C.J.,Oladipo O.O , Makoshi, M.S., Makama S., Elisha I.L., Gotep, G.J. , Samuel A.L. and Shamaki, D. 2012. Survey of herbal remedies used by Fulani herdsmen in the management of animal diarrhoea in Plateau State, *Nigerian Journal of Medicinal Plants Research,* 6, 4625-4632.

Ody, P., 1993. The complex medicinal herbal. Dorling Kindersley Limited, New York, pp. 132–171.

Ogbadoyi, E.O., Abdulganiy A.O., Adama T.Z. and Okogun J.I. 2007. *In vivo* trypanocidal activity of *Annona senegalensis* Pers. leaf extract against *Trypanosoma brucei. J. Ethnopharmacol*., 112(1): 85 – 89.

Sandabe, U.K and Kwari H.D. 2000. Some aspects of ethno-veterinary medicine among Kanuri and Bura of Borno state. *Q. J. Borno Museum Soc*., pp. 44-45; 5-10.

SPSS, 2007. SPSS for Windows, version 16.0. Chicago: SPSS Inc.

UNESCO 2003. Inter - cultural Education. A United Nations Educational, Scientific Cultural Conference held on June 15-18, Jyvaskyla, Finland.

Wakeel, O.K, Aziba P.I., Ashorobi R.B., Umukoro S., Aderibigbe A.O and Awe E.O. 2004. Neuropharmacological activities of *Ficus platyphylla* stem bark in mice. *Afr.J. Biomed. Res.* 7(2): 75-78.

WHO, 2002. Traditional Medicine Strategy 2002-2005. WHO, Geneva, Switzerland.