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Indigenous Knowledge and Sustainable Agricultural Development in Nigeria

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Edited By:
Prof. C. P. O. Obinne
Prof. B. A. Kalu
Prof. J. C. Umeh

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ETHNOVETERINARY MEDICINE AND SMALL
SCALE LIVESTOCK FARMING IN NIGERIA

PROF. A.E.J. OKOH

Dean, College of Veterinary Medicine
University of Agriculture, Makurdi, Nigeria

INTRODUCTION

In recent times there has been an increased awareness of the importance of traditional medicine in the healthcare of human and animal populations in developing countries. Efforts are being made in different countries to carry out researches in to traditional medicine and to integrate it with modern orthodox medicine. However, not much has been done to salvage traditional medicine or to apply it to veterinary practices. It is a fact that before the advent of modern medicine our people were managing animal diseases through traditional medicine treatment.

It is an indisputable fact that small scale livestock and poultry farmers utilize their indigenous knowledge systems in treating their animals before the birth of veterinary services in Nigeria.

The traditional animal care enjoys a wider acceptability among the cattle rearers than orthodox veterinary practices. The major contributory factor, however, is the fact that traditional veterinary medicine blends readily with the socio-cultural life of the people in whose culture it is deeply rooted (Makinde, 2000). Traditional veterinary care among the rural livestock producers like the pastoralists of Nigeria constitute the first tier of animal health care delivery as most of the clinical cases presented to the veterinarian would have been first treated by traditional remedies. In Nigeria, herdsmen, village elders and others who keep animal and who are experienced in diagnosing and treating animal disease are those primarily associated with traditional veterinary medicine. The emerging problems in animal production brought about by socio-economic, technological and ecological changes are related

current knowledge of the materials used for traditional veterinary practices and their potential usefulness are highlighted. The constraints of ethnoveterinary traditional practices are discussed and the way forward for research and development is proffered for improved livestock production in Nigeria.

Orthodox veterinary practice is now universal the world over. So why is there a sudden awakening or revival of ethnoveterinary medicine in Nigeria, one may ask. There are several reasons advanced by some authors (Nuru, 2000, Nwude, 1998), the most prominent among which are: (1) Poor socio-economic base compels farmers to resort to the traditional (2) They complement orthodox drugs, which may not be as effective or cheaper than traditional medicines. (3) For culture identity and preservation. Ethnoveterinary medicine is, therefore, an important cultural and traditional knowledge asset that should be preserved and improved upon. There are great values in cultural heritage of traditional medical practice which must be retained and passed on to future herdsmen and animal keepers. (4) The poor resource base of most livestock producers create impeded access to modern veterinary services and drugs because of rising costs of maintaining animal health. (5) The adoption of ethnoveterinary practices could form the basis of an enduring primary veterinary health care to increase livestock productivity since ethnoveterinary products are available, accessible, affordable and so well acceptable by the livestock farming communities. Accurate documentation of the traditional system of treatment for animal diseases is needed as a basis for conducting studies aimed at establishing the efficacy of the herbs used.

ETHNOAETHIOLOGY, ETHNODIAGNOSIS AND EPIDEMIOLOGY

How small scale livestock farmers determine the cause of livestock diseases and establish the diagnosis is central to the mode of treatment given. They do not have the scientific basis for their activities but they use some basic criteria to identify the cause of disease in their cattle, sheep, goat, pigs and the variety of

vernacular name, the part of plant used and the conditions or diseases used for (see Table 3)

PLANTS AND HERBS USED IN ETHNOVETERINARY MEDICINE IN NIGERIA

The materials used for ethnoveterinary medicine among small scale farmers in Nigeria include medicinal plant parts (leaves, barks and roots), and products (sugar, oil e.g. groundnut, palm-oil, cotton seed oil, castor oil, palm kernel oil, corn oil, shea butter, etc).

A lot of work has been done in this country on medicinal plants used in humans but not much has been done on those used in animals. Nwude and Ibrahim (1980) compiled information on plants used in traditional veterinary medicine. Table 1 shows examples of plants used in ethnoveterinary medicine in Nigeria and their indications.

More of this type of work is needed to identify plants used in various localities to treat animal diseases. These plants should be investigated for efficacy and tolerable levels of toxicity.

Recently the first systematic attempt to document plants and different herbal recipes for treatment of trypanosomiasis in Nigeria was made (Atawodi et al, 2000b; Zachariya et al, 2000). The survey showed the use of several plants either alone or in a combination for the treatment and management of trypanosomiasis in Kaduna State and Abuja Municipal Area Council.

Ectoparasites are mainly members of the class Insect and Arachnida in the phylum Arthropoda. They owe their medical and veterinary importance to their ability to serve as vectors transmitting diseases, causing nuisance and provoking severe irritations and allergies.

Table 2 shows some of the numerous livestock and poultry conditions and diseases treated using ethnoveterinary medicine by traditional veterinary healers.

(*Anacarsicum occidentale*), powdered root of *Annona senegalensis* and burned gum resins of *Boswellia dalzielli*. Paraffin is widely used in northern Nigeria for its insecticidal and acaricidal effects. (Atawodi, 2000).

Burned shear butter nuts (*Butyrospermum paradoxum*), wax of *Canarium Schweifurthi*, burned dried leaves of *Hyptis specifigera* are used individually as insect repellants in Nigeria (Nwude, 1987)

Burned dried peels of *Citrus aurentifolia* is used as insect repellent in all animal bath with solution of pounded leaves of *sesbaria aculeate* prevents tse tse fly and other insect bites in cattle.

In general, recent surveys reveal that smoking of the herds (morning and evening) is widely used to protect animals of all species from ectoparasitic infestation and insect bites. One of the most common source of smoke for this purpose is the burning of *Adansonia digitata* pulp.

HERBAL ACARICIDES

Many herebal preparations are available and used by livestock farmers for control of tick infestation of cattle and other ruminants. As an acaricide for livestock, paraffin is used as a foot bath for sheep and as a wash for ectoparasites of cattle esprially against ticks and insects.

The bathing of animals with the plant *Euphorbia deifhtonni* is also reported to be an effective treatment for ticks and other ectoiparasittes in Northern Nigeria. Also the use of mahogany (*Khaya senegalensis*) seed oil in the control of tick is also widespread in this region (Atawod; 2000). A survey of the former Gongola State (now Adamiawa and Tararba states) revealed the use of a bath consisting of a mixture of tobacco (*Nicotiana rustica* and *Nicotiana tubaccum*) leaves or snuff and soap as an effective procedure for controlling tick and flea infestation of cattle and other ruminants. Recently (Mgbojikwe and Okoye, 2000) reported the acaricidal effects of soaked stem bark of *Adenium obesummm*.

establish toxic level of these ethnoveterinary remedies. The need to identify active ingredients of identified plants and herbs is also stressed just as the need to validate the efficacy of the various ethnoveterinary practices while harmonizing all local methods for the benefit of all livestock producers. Finally, the need to invest time in interacting with the small scale farmers in order to get opinions with regards to ethnoveterinary medicine cannot be overemphasized.

The future direction for development and advancement on ethnoveterinary medicine and research in Nigeria needs to take in to consideration the following:

All stake-holders should

- (1) encourage close interaction between all livestock farmers and researchers as a way of disseminating indigenous knowledge system in ethnoveterinary medicine
- (ii) identify and collate information of proven useful medicinal plants;
- (iii) carry out research in to ways of standardizing the methodology for herbal medical preparation to ensure specificity of action, dosage regime and clinical efficacy of preparations from medicinal plants
- (iv) establish cottage ethno-pharmaceutical industries that would prepare, validate, standardize and package these products for ready use by livestock farmers

There is the need to identify new materials abundant in plants animal and resources for their pharmaceutical activities. This is essential for basic development of veterinary drugs locally.

SUMMARY AND CONCLUSION

Plants and animal were in the services of the development of human and veterinary medicine. Indeed, if these natural resources were not exploited by our ancestors, there would not have been modern medical practices as we know them

Erythrian senegalensis

Liver fluke, diuretic

Crewia carpinifolia

Induce fertility, help delivery

Hibiscus cannobicus

Dystocia, retained placenta

Pennisetum Pedicellatum

External haemorrhage

Stereaspermum kunthianum

Diarrhoea, dysentary, poisoning

Hymenocardia acica

Snake bite

Source: Nwude, 1997

NB: In addition to the above healers also list Abscesses, Bloat, Cough, Retained Placenta and Vaginal and Rectal prolapses as conditions they can treat.

Table 3 Pharmacological Actions attributed to some plants and herbal preparations used in ethnoveterinary medicine in Nigeria

| Pharmacodynamical Action | Scientific & Vernacular name of plant | Part of plant used | Conditions or Diseases used for |
|------------------------------|---|---|--|
| Antibacterial and Antifungal | <i>Combratum padiculatum</i> Farar taramniya 'H') <i>Tepinanthus dodoneifolius</i> (kauchin daurwa 'H') <i>Cassia alata</i> <i>Terminalia sp</i> | Leaves Roots Leaves, Stem Bark, Root | |
| Anthelmintic | <i>Moringa oleifera</i> <i>Cucumis prohetarum</i> (kan fakara 'H') <i>Khaya senegalensis</i> (Madaci 'H', Dalohi 'F') <i>Annona senegalensis</i> (Gwande daji 'H') <i>Solanum incanum</i> (Gautan kaji 'H') <i>Vernonia amygdalina</i> (Suwaka 'H') <i>Acacia albida</i> (Gawo 'H') <i>Acacia nilotica</i> (Gabaruwa namiji 'H') <i>Anogeissus schimper</i> (Marike 'H') <i>Bafamites aegyptiaca</i> (Aduwa 'H') <i>Triumfetta rhomboides</i> (Dankar dafi 'H') <i>Azelia africana</i> (kawo 'H') | Stem or Root Fruits Stem (bark) Stem (bark) Fruits Leaves Fruits Ash from plant Bark Stem, Root Bark Stem, Root Bark, Oil Fruits | Helminthiasis in cattle, sheep goats and poultry |
| Trypanocidal | <i>Adansonia digitate</i> (kuka 'H') <i>Terminalia avicenninoides</i> (Baushe 'H', Wahe 'F') <i>Khaya senegalensis</i> | Leaves Stem bar | Trypanosomiasis |

| | | | |
|-------------------|---|---|---|
| | <i>Citrus aurantium</i> (Lime) <i>Anacardicum occidentale</i> (kanju 'H') <i>Butyrospermum paradoxum</i> (kadanya 'H') <i>Khaya ivoriensis</i> (oil seed of mahogany) | Peels Cashew Oil Oil | Mange in ruminants General insecticide for ruminants & other livestock Dermatitis from Mange & Dermatophilosis in ruminants Control of camel ectoparasites |
| Insect Repellants | <i>Sesbaria aculeata</i> (Alambu 'H') <i>Citrus aurantifolia</i> (lemu 'H') <i>Citrus aurantium</i> <i>Canarium schweinfurthii</i> (Atile 'H') <i>Guira senegalensis</i> (sabara 'H') <i>Adansonia digitata</i> (kuka 'H') | Leaves Peels Peels Wax Leaves & Twigs Pulp | Prevents tse tse fly & other insect bits in cattle Repellant for most insects of livestock Mange in ruminants Insect repellant General insect repellant for ruminants and other livestock |

Key:

'H' = Hausa, 'F' = Fulani, 'G' Gwari (Tribal names of the medicinal plants)

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