

Indigenous livestock production paradigms revisited: Survey of plants of ethnoveterinary importance in southeastern Nigeria

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Abstract: The diversity of plants of ethnoveterinary importance was investigated in southeastern Nigeria. It was found that indigenous farmers and healers utilize 24 plant species in the treatment of common livestock ailments such as diarrhoea, ecto- and endoparasitic infections, retained placenta and dehydration among others. Methods of preparation and administration were found to include direct feeding of the plant parts, drenching with aqueous decoction or direct external application of plant juice on the affected parts. It was concluded that efforts on the development of cheaper veterinary services and imputes in the region should focus more on the abundant indigenous resources such as flora and culture.

Resumen: Se investigó la diversidad de plantas de importancia etnoveterinaria en el sudeste de Nigeria. Se encontró que los granjeros y curanderos indígenas utilizan 24 especies de plantas en el tratamiento de padecimientos comunes del ganado tales como la diarrea, las infecciones por ecto- y endoparásitos, la placenta retenida y la deshidratación, entre otros. Se encontró que los métodos de preparación y administración incluyen la alimentación directa de los animales con las partes vegetales, el vertido sobre ellos de una decocción acuosa o la aplicación externa directa del jugo de la planta sobre las partes afectadas. Se concluye que los esfuerzos por desarrollar servicios veterinarios más económicos en la región deberían enfocarse más en los abundantes recursos indígenas tales como la flora y la cultura.

Resumo: A diversidade de plantas com importância etnoveterinária foi investigada no sudeste da Nigéria. Foi encontrado que os lavradores e curandeiros indígenas utilizam 24 espécies de plantas no tratamento das doenças comuns do armentio tais como entre outras, a diarréia, infecções ecto e endoparasíticas, retenção da placenta e a desidratação. Foram encontrados métodos de preparação e administração que incluíam a administração alimentar directa de partes de plantas e fazer beber decocções aquosas ou aplicações externas directas do suco da planta nas partes afectadas. Concluiu-se que os esforços no desenvolvimento de serviços veterinários baratos e insumos na região deve dar um enfoque maior aos recursos indígenas abundantes como sejam a flora e a cultura.

Key words: Ethnoveterinary, livestock ailments, plants, Nigeria

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Introduction

Ethnoveterinary research and development defined as the holistic inter-disciplinary study of local knowledge and its associated skills, practices, beliefs, practitioners and social structures pertaining to the healthcare and husbandry of income producing animals, has emerged as a fertile field for the generation and transfer of appropriate and sustainable veterinary alternatives to people everywhere but especially to third world stockraisers (Daniels *et al.* 1993; de Haan & Bekure 1991; McCorke 1989; Schillhorn van veen 1991). In Nigeria, for example, the highest proportion of livestock remains in the care of traditional herdsman among whom ethnoveterinary healthcare forms a major part of disease management (Aladi 1999; Arowolo & Awoyele 1982; Nwude & Ibrahim 1980; Shittu & Bwala 1988; Wahua & Oji 1987).

Although limited scientific research has focused on the use of herbal remedies in animal healthcare in southeastern Nigeria, many of the plants used in human medication in the region are also applied in ethnoveterinary practice. A number of browse plants utilized in ruminant feeding in the area are also used to treat various illnesses of such animals (Ucha unpublished; Wahua & Oji 1987) *Manniophyton fulvum*, *Microdesmis puberula*, *Spondias mombin* and *Aspilia africana* among others have been positively identified to have prophylactic or therapeutic properties (Etkin & Ross 1982). Numerous home remedies utilized in the treatment and relief of pains, external injuries such as burns, abscesses and wounds and for the treatment of ecto- and endoparasites, respiratory infections and enteritis contain these indigenous plants. (Arowolo & Awoyele 1982; Etkin & Ross 1982; Nwude & Ibrahim 1980; Shittu & Bwala 1988).

Serious investigations into traditional animal production paradigms of nutrition, diseases, disease treatment and socio-economic aspects of animal husbandry geared towards proper understanding of animal production systems of an area and proposing of appropriate solutions, should, therefore, include surveys of plants of ethnoveterinary importance in the area. Such information will not only promote the development of useful concepts in veterinary medicine but also encourage the maintenance of bio-cultural diversity.

This paper presents the results of a survey carried out to determine the diversity of plants utilized in ethnoveterinary practices in southeastern Nigeria.

Materials and methods

The study was carried out at three locations in southeastern Nigeria, which has been fully described by Okoli *et al.* (2001).

Three rural communities, Umugo in Ugunabo local government area of Abia state, Umuokanne in Ohaji-Egbema local government area of Imo state and Orsumoghu in Ihiala local government area of Anambra state were selected for the study. In each community an average of 6 farming families and 3 local healers were interviewed on the plants they use in treating livestock diseases. On each occasion, information was sought on the local names, parts of plant utilized, medicinal values and methods of preparation and administration. Thereafter, the participants were followed to surrounding compound bushes for direct sampling and identification of the plants. A representative sample of each plant was then collected, tagged and stored for subsequent botanical identification.

Identification of sampled species was done at the Forestry Department of Imo State Ministry of Agriculture and Environment. A table of these plants was subsequently drawn showing the parts of plant utilized, their medicinal values and method of administration.

Results

Appendix 1 shows the plants of ethnoveterinary importance, their medical values and how they are administered in southeastern Nigeria. Twenty-four plants were identified for this purpose. These plants are mostly indigenous or fully adapted to the region and had earlier been collected and deposited by previous forestry workers at the Forest Herbarium Ibadan (FHI), Nigeria with their accession numbers and therefore could be accessed from there.

The leaves were the predominant plant part utilized in treatment. The latex of *Euphorbia hirta* and red oil from the common palm, *Elaeis guineensis* are also extensively employed.

Ailments commonly treated range from open wounds, ecto- and endoparasites, diarrhoea, reproductive disorders to other sundry conditions. For example, coconut milk and red oil are used to counter the poisonous effects of cassava in small ruminants while *Costus afer* is fed to dehydrated goats to replenish them.

Animals usually treated included small ruminants, dogs, pigs, chicken and cattle. Numerous techniques of preparation were employed before administering the remedies. Some of the plants, for example, *Spondias mombin*, *Manniophyton fulvum* are fed directly to the affected animals to achieve desired effects while the leaves of others, like *Aspilia africana* and *Kerstingiella geocarpa* are squeezed to liberate the plant juice needed for topical treatment. In other cases aqueous decoctions are drenched over several days (*Harugana madagascariensis*, *Dioscorea bulbifera*) or the plant is processed with other ingredients to produce the desired compound (*Nicotiana tabacum* and local potash power).

Discussion

The present study identified 24 indigenous plant species utilized in traditional veterinary care in southeastern Nigeria. The information obtained compared favourably with the results of similar studies conducted in the region and other zones of Nigeria (Nwude & Ibrahim 1980; Shittu & Bwala 1988; Ucha unpublished; Wahua & Oji 1987). Traditional animal healthcare practices provide a readily available low cost alternative to modern veterinary impute and services in most rural communities of southeastern Nigeria. Our results showed that common ailments such as diarrhoea, retained placenta, ecto- and endoparasitic infections and dehydration among others were readily treated. Again, techniques of preparation and administration of the remedies are relatively simpler than the complex techniques involved in modern veterinary therapeutics. These indigenous animal healthcare techniques are widely practiced by farmers in the area while professional healers handle more complex problems.

Limited published information exists on the diversity of plants of ethnoveterinary importance in southeastern Nigeria. This is probably because the region was not regarded traditionally as a very important livestock producing area (Agboola 1979;

Aladi 1999). Recent developments have, however, focussed research efforts on small holder ruminant production systems which is very popular in the region (Molokwu 1982; Ademosun 1988, 1994; Ikweghu *et al.* 1994). Under such circumstance, information on indigenous plants of veterinary importance becomes crucial since it provides the clues by means of which research could be focussed upon a particular therapeutical action thus leading to a circumvention of the more costly western methodologies (Elisabetsky & Nunes 1990; Ro-soanaivo 1990). Research efforts geared towards the development of cheaper animal health inputs and services in developing countries should, therefore, focus on indigenous resources such as flora and culture.

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