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### **Ethnoveterinary medicine practices in the Northwest Province of Cameroon**

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In Cameroon as well as in most developing countries (especially in Africa), disease remains one of the principal causes of poor livestock performance, leading to an ever-increasing gap between the supply of, and the demand for, livestock products. The ever-declining provision of animal health services has resulted in the resurgence of a number of epizootic diseases, undermining the economic efficiency of livestock production in Africa. After elaborating on the nature of orthodox veterinary medicine and ethnoveterinary medicine, the authors propose a complementary approach.

#### **Livestock production in the Northwest Province of Cameroon**

Livestock production in the Northwest Province (NWP) of Cameroon is carried out mainly by Fulani herders. With its 410,000 head of cattle, the NWP ranks third in cattle production in Cameroon. In the last three decades Fulani herders have evolved from nomadic to semi-nomadic or transhuman livestock owners. This evolution has given most of them an opportunity to become agropastoralists. Although transhumance is in general preferable to total nomadism (Williamson and Payne, 1978:730; Niamir, 1990; Brown, 1993), this pattern of life is quite problematic for livestock owners, whose grazing land is often lost as a result of human population pressures. In addition, the yearly burning of native range destroys the less fire-resistant pasture species, eliminates habitat and pollutes the environment. As a result, livestock become malnourished and emaciated because they do not get enough to eat or the feed is of low quality. Under these

conditions, they are predisposed to disease and cannot trek the long distances required to find feed.

About six decades into colonization in the 1940's, orthodox veterinary medicine was introduced in the NWP. Many orthodox veterinarians did not promote indigenous practices, because they did not appreciate the role which they played. In some places, it was even illegal to treat animals using local herbs without the permission of a vet. As a result, many livestock owners ceased to use local practices, while those who continued to rely on them did so in secret. This meant that the knowledge and use of ethnoveterinary medicine declined. Before the introduction of orthodox veterinary medicine in Cameroon, pastoralists depended solely on indigenous health practices. Nomadic livestock owners treated animal health problems using various biologicals from plants and animals, while carefully avoiding disease-infested areas and regions dominated by toxic plants. Their knowledge of ethnoveterinary medicine encompassed surgery, pharmacology and toxicology (Ndi, 1990:4).

Ethnoveterinary practices, especially for ruminants such as cattle and other large animals, were introduced into Cameroon at the end of the last century by migrating and nomadic Fulani pastoralists from neighbouring Nigeria and Chad, who were searching for new pasture (Ndi, 1990:1). Thus livestock owners have used traditional animal health practices for a long time and are convinced of their efficacy. In a recent study conducted by Nuwanyakpa and associates (1995a:16-17), farmers claimed that 33 out of 55 cattle diseases and ailments (60%) prevalent in the NWP of Cameroon are treatable or preventable solely by traditional medicine. Some 9% of these diseases (anthrax, blackquarter, bovine tuberculosis, contagious bovine pleuropneumonia and rinderpest) can only be treated using orthodox methods, while the remaining 31% are dealt with by the complementary use of ethnoveterinary and orthodox veterinary medicines. In the latter case, the livestock owners stressed that orthodox practices should be used only after the traditional ones have failed; they claim that about 91% of their animal health problems can be solved by means of traditional medicines. In some cases, they prefer to use traditional medicines even where orthodox drugs are available (Marcus, 1992:2). The advantages which they ascribe to local medicines include availability, lower cost, efficacy, one treatment for various ailments, and the fact that they rely on local knowledge and manpower, and are based on materials and equipment which are locally available.

Collaborative work between HPI<sup>\*\*1</sup> and orthodox veterinary institutions (including the Ministry for Livestock, Fisheries and Animal Industries, MINEPIA and the Institute for Animal Research, IRZV) in Cameroon and elsewhere in Africa has revealed that when it comes to the diagnosis of livestock diseases (e.g. clinical symptoms and post mortem signs), the knowledge of ethnoveterinarians closely parallels orthodox veterinary patterns. For example, the ailment known as *Labba* in Fulfulde has been identified as blackquarter disease in cattle. *Pettu* (which means 'falling down in great number') as an epidemic has been identified as rinderpest in cattle (Nuwanyakpa et al., 1995b).

### **Advent of orthodox veterinary medicine and associated drawbacks**

The enforcement of orthodox veterinary practices--especially following the independence of Cameroon--was the result of a number of livestock epidemics (including rinderpest), the belief that orthodox medicine is superior to indigenous practices, and growing human population pressures, all of which have been detrimental to the application of traditional animal health care practices in Cameroon (Nuwanyakpa et al., 1995a). Livestock owners were forced to stop using ethnoveterinary medicine, as it was thought that orthodox medicines were capable of solving all the health problems encountered in cattle. The government also failed to promote the complementary application of orthodox and ethnoveterinary medicine.

Orthodox animal health care in Cameroon, as well as in most African countries, is plagued by many problems. These include:

- inadequate manpower and logistical inputs;
- scarce and erratic supply of veterinary drugs and supplies;
- high cost of veterinary drugs and supplies;
- poor communication facilities and other modern amenities;
- counter-productive government policies, which do not promote the complementary utilization of orthodox and indigenous knowledge systems;
- inadequate attention to the development of ethnoveterinary medicine and other indigenous knowledge systems (Nuwanyakpa and Toyang, 1994).

The relation between these problems and the current dependence on orthodox veterinary medicine has resulted in a failure to solve the majority of animal health problems. This has been accompanied by an ever-declining provision of animal health services, together with a resurgence of various epizootic diseases which are presently undermining the economic efficiency of livestock production in Africa (PARC, 1991:2).

### **Sustainable interventions to enhance livestock production**

In 1989 Mopoi Nuwanyakpa, in cooperation with Heifer Project International (HPI), initiated an Ethnoveterinary Medicine/Fulani Livestock Development Project to seek

sustainable alternatives for animal health problems. This initiative was triggered by, among other things, the high level of frustration felt by HPI when faced with the expensive and erratic supply of veterinary drugs and supplies. One of the objectives of the project was to promote the complementary utilization of indigenous and orthodox veterinary medicines in sustainable livestock production. (Nuwanyakpa et al., 1990)

The parallel use of the two knowledge systems was regarded as important for several reasons, i.e., to bring about a reduction in the dependency on expensive imported veterinary drugs and supplies and the resulting savings in foreign valuta; the possibility of discovering new drugs; the increase in manpower at a lower cost; the improvement in communications and contacts between livestock owners and veterinarians; the use of more natural drugs, which do not have the toxic effects on animals which are sometimes experienced with synthetic drugs.

The HPI/Cameroon Ethnovet Project has adopted multi-facetted approaches in promoting the use of indigenous animal health care practices. For example, it has organized Cameroon's first association of traditional veterinarians and promoted active networking among indigenous practitioners and orthodox animal health care specialists. Indigenous knowledge provided by livestock owners has been documented for most aspects of livestock production, and to some extent in crop production and food processing (crops and dairy products).

The information already documented covers the indigenous treatment of 55 cattle, 17 horse, 12 sheep/goat and 21 rabbit diseases and ailments (Nuwanyakpa et al., 1995a:16-18). Using the knowledge of livestock owners as a foundation, the project has trained and equipped livestock producers as the primary deliverers of animal health care. Orthodox veterinarians provide support, as well as certain critical services, such as vaccines and treatment for the 9% of diseases which stock owners cannot treat themselves, and also study the efficacy of indigenous treatments. The testing of ethnoveterinary treatments for their efficacy has been initiated not only on-farms but also on-stations. For example, Nuwanyakpa et al. (1990:59) and Marcus (1992:9) have undertaken several studies on the anthelmintic efficacies of some medicinal plants.

Livestock owners have an amazingly good knowledge of ethnobotany, due to the fact that most of the *materia medica* used in ethnoveterinary medicine are from plants (Mathias-Mundy and McCorkle, 1989:13-14). Thus the ethnobotanical knowledge of local

people has formed the foundation for the worldwide screening of plant material as potential sources of medical drugs (Spore, 1992:5). In this way, a significant number of ethnopharmaceuticals have been shown to be biochemically active. This explains why about 25% of all medicines are of direct plant origin, while the remaining 75% are from animal, plant and synthetic products (Spore, 1994:3).

Livestock owners also have a good understanding of the plant parts and quantities needed, and the methods used in harvesting, processing, storing, preserving and utilizing medicinal plants to ensure good drug efficacy and to enhance the survival of plant germplasm. If the above procedures are poorly executed, plant resources may be over-exploited, which can lead to the extinction of certain species. This means that the best results from medicinal plant preparations can only be obtained when the users are able to judiciously harvest, process, store, preserve and utilize the preparations (Levy, 1988:6-16; Lötschert and Beese, 1983:12) and establish botanic gardens of endangered medicinal plants (Gbile, 1991:10; Spore, 1992:5)

Botanical and backyard gardens of medicinal plants have been established by the project in order to conserve medicinal plants and save them from extinction, and to enhance the availability of medicinal plants. The medicinal plant establishments consist of both *in situ* and *ex situ* conservation strategies. Such conservation efforts contribute to biodiversity preservation and significantly increase the accessibility to, and the utilization of, ethnobotanicals. Some 190 of the nearly 400 medicinal plants that have been identified through the Ethnovet Project have now been scientifically and ethnotaxonomically classified. A number of these are listed in the table below, with some of their uses.

Table 1. A few of the medical plants so far identified and some of their major uses.

Family	Botanic name	Fulfude name <sup>(2)</sup>	Some uses
Annonaceae	<i>Annona senegalensis</i>	Dukuhi	Diarrhoea and antiseptic (wounds)
Asteraceae	<i>Vernonia amygdalina</i>	Suwaka	Worms, diarrhoea and purgative
Bignoniaceae	<i>Kigelia africana</i>	Jillahi	Brucellosis, retained placenta and mastitis
Caesalpinaceae	<i>Cassia occidentalis</i>	Tapasa	Worms, blackquarter, anaplasmosis and babesiosis
Crassulaceae	<i>Kalanchoe</i>	Noppi bali	Worms, blackquarter, anaplasmosis and babesiosis

	<i>crenata</i>		
Euphorhiaceae	<i>Ricinus Communis</i>	Kolakolahi Bloat	Purge, oil used in drug preservation and administration, antidote to poisoning in animals and humans
	<i>Bridelia ferrugiana</i>	Bududi	Snake bite, brucellosis, bloody diarrhoea, fertility enhancement
	<i>Croton macrostachyus</i>	Ngalawahi	Purgative
Meliaceae	<i>Khaya anthotheca</i>	Kahi	Blackquarter, bloat, brucellosis, ciarrhoea, worms and babesiosis
Mimosaceae	<i>Entada abyssinica</i>	Peluwahi	Ephemeral fever, FMD (foot and mouth disease), babesiosis and worms
	<i>Dichrostachys cinera</i>	Burli	Brucellosis and bloody diarrhoea
Moraceae	<i>Ficus elastica</i>	Biskehi	Fertility enhancements (hormone)
Papilionaceae	<i>Tephrosia nana</i>	Yomji (wild)	Mange and ticks
	<i>Tephrosia vogelii</i>	Yomji	Mange, ticks and balckquarter
	<i>Erythrian senegalensis</i>	Bobillohi	Ringworm, mange and brucellosis
Rubiaceae	<i>Gardenia ternifolia</i>	Dii-ngali	Aphrodasiac and growth-enhancer
Solanaceae	<i>Solanum aculeastrum</i>	Gitte-nai	Streptotricosis and worms
Seruliaceae	<i>Cola acuminata</i>	Gorohi	Babesiosis
Verbenaceae	<i>Vitex doniana</i>	Bummehi	Brucellosis, FMD, shipping fever and anaplamosis/babesiosis

The ethnotaxonomy has been carried out in 10 major Cameroonian languages. The plants classified so far are from 90 families; 20 of the 190 plants classified are also used in human medicine, 11 in milk preservation and processing, 5 as insecticidal and raticidal plants, and 20 in soil fertility improvement (Toyang and Wirmum, 1994:4). This means that most of the plants have multipurpose uses. An herbarium for the preservation of mounted specimens of medicinal plants is also being set up to enhance education and research on ethnoveterinary medicine.

## Conclusion

Now that a good number of the plants used in indigenous remedies to treat or prevent livestock diseases have been classified both scientifically and ethnotaxonomically, it is time to publish this information. This is expected to make a substantial contribution to the

field of ethnoveterinary research and to development in Cameroon and elsewhere. Formal research in ethnoveterinary medicine will no doubt help to confirm the claims made by ethnoveterinarians with respect to the efficacy of ethnoveterinary treatments by ethnoveterinarians.

The project has already started field testing of the storage and efficacy of some of the many ethnoveterinary treatments that have been documented. For example, since 1989, HPI/Cameroon has used mainly two medicinal plants (*Terminalia schimperiana* and *Vernonia amygdalina*) as the sole or principal drugs against gastrointestinal tract helminths in cattle. This has resulted in a huge drop in the project funds spent annually on orthodox dewormers. Many poultry diseases and most health problems in rabbits are now also being treated or controlled mainly through ethnoveterinary practices.

The recognition and support that the Cameroon Council of Experts on Ethnoveterinary Medicine now receives from the government of Cameroon, traditional authorities and development organizations will make possible the realization of the HPI Ethnovet Project.

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**Endnotes:**

\*\*1 Heifer Project International (HPI) is an American-based, non-governmental organization (NGO) that promotes sustainable agricultural development in many countries, including Cameroon.

\*\*2 Fulani or Mbororo name