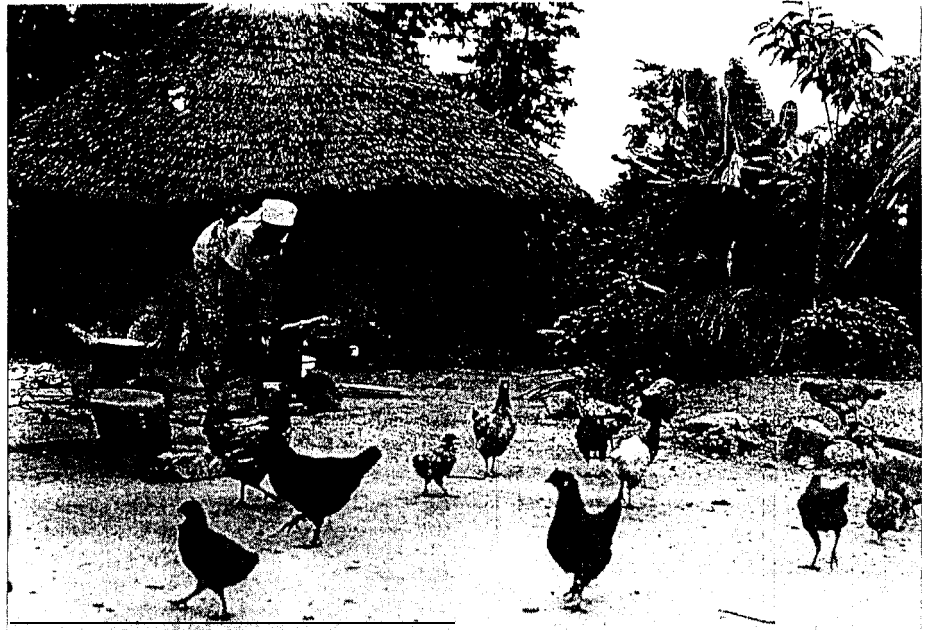


ZV000 1542

1548

The high incidence of diseases is one of the principal constraints to African smallholder livestock systems. The generally resource-poor farmers do not have money for or access to chemical medicines or other cost-intensive management systems. In ethno-veterinary medicine, traditional natural products - especially plant products - are used for the treatment of diseases. These locally available products are very suitable for use by small farmers. Both the 'Afro-Asian Network for Rural Poultry Development' (ANRPD) in Senegal and the University of Ibadan, Nigeria, report on many positive experiences with the use of ethnoveterinary medicines for both village chicken and cattle production. However, they also agree on the need for applied research to substantiate these findings.



Diseases in village chickens

Control through ethno-veterinary medicine

El Hadji Fallou Guèye

Chickens are of great importance to African village households. They constitute more than 80% of the total poultry population in Africa (Sonaiya, 1995). In general, village producers keep small flocks of between 5 and 20 chickens per household. Women and children play a key role in their management. The chickens are generally raised in a free-range system, scavenging around the compound of households, feeding on the locally available resources e.g. earthworms, household refuse, insects, residues from the harvest etc. In addition, their feed is supplemented with agricultural (hy-) products, especially in the period of food scarcity. At night time, the chickens are sheltered in rudimentary coops, often raised from the ground, which provide protection against bad weather and night predators such as reptiles. Thus village chickens in Africa are maintained with very low land, labour and capital inputs and can therefore be kept by even the poorest social strata of the rural population.

However, because of its low productivity, indigenous chicken production in Africa has been neglected, and is frequently considered by farmers as an insignificant occupation compared with other agricultural activities. Nevertheless, outside the urban centers, and especially in non-coastal areas, village chickens provide the population with a vital source of protein and income and play a key role within the context of many social (for special feasts for family or distinguished

guests, gifts, etc.) and/or religious ceremonies (e.g. cocks as offerings for the divinities).

Common diseases and mortality

One of the major constraints to village chicken production is undoubtedly the existence of various diseases. For example, Saïdu et al (1994), in a 15-year study (October 1976-1991) of indigenous chickens in Nigeria, showed that the commonest and most significant causes of mortality were Newcastle disease (40.9%), infectious bursal diseases (19.3%), fowl pox (19.1%), ectoparasitism e.g. lice and mites (26.9%) and endoparasites, for example, *Tetrameres* sp., *Syngamus* sp. and tapeworms (31.3%). There were also various parasitic associations in village chickens.

The severe rearing losses result partly from the high mortality of young chicks. It is estimated that mortality of indigenously managed chickens is 50% up to eight weeks of age in Burkina Faso (Wilson, 1986) and Northern Ghana (Van Veluw, 1987), 66% at twelve weeks in Senegal (Sall, 1990; Buldgen et al., 1992), 30.5% up to four weeks of age in Mali (Kounta, 1992), 68% at six weeks in Nigeria (Olognobo, 1992) and 53% up to four weeks of age in Cameroon (Aghèdè et al 1995).

Control of diseases

Poultry diseases seriously affect village chicken production. Birds are almost never vaccinated. Very occasionally they receive an antibiotic tablet originally intended for human use, in the absence of severe

droughts like those which occurred in the 1970's and 1980's in Sahelian countries, ethno-veterinary plant products with recognized medicinal properties are far more accessible to villagers than the drugs used in Western veterinary treatments. Moreover, they can be collected at no cost or are cheap to obtain (see Table 1 and box for similar prescriptions for cattle).

In Senegal, farmers have traditionally used such plants to treat their chickens against endoparasites, for example, *Capsicum* sp. extracts and the leaves or barks of *Azadirachta indica* A. Juss. are added to drinking water and given to birds. In Cameroon, Aghèdè et al (1995) reported good results from the use of plants such as *Kalanchoe crenata* for coccidiosis and pawpaw (*Carica papaya*) leaves for diarrhea, while the use of human medicines (especially antibiotics, Ampicillin, Tifomycin) achieved no success. In Togo, farmers use various infusions (e.g. *Peltophorum ferrugineum*), ground pepper, and the bark of *Adansonia digitata* to treat diarrhea in village chickens (Lobi, 1984). The pepper (*Piper guineense*) is also widely used to treat 'cough' (Aghèdè et al, 1995). In a Cameroon study, Tchoumboue et al. (1996) observed nematocidal properties of the bark of a creeper of *Combretum* sp. in naturally infested village chickens.

In Southern and Eastern Africa, it has been reported that watery extracts of *Nicotiana glauca* can help a chick embryo infected with influenza to survive (Watt and Breyer-Brandwijk, 1962). Lobi (1984) reported on good results obtained after the

use of the *Butyrospermum parkii* (or 'karité') oil to control various ectoparasites such as ticks, lice's and small red ants. According to farmers, this oil obstructs the respiratory system of the parasites. An infusion of the leaves of *Borreria verticillata* are used to treat diseases affecting the birds' locomotion.

In order to prevent snake-bites in village chicken farms, a report from Zimbabwe indicates that the roots of *Annona senegalensis* are soaked and the fluid sprinkled in the hen run to repel snakes (Chavunduka, 1976). In Nigeria, poultry owners grow certain repellent plants or place sliced garlic (*Allium sativum*) around hen houses to keep off snakes (Ibrahim, 1996). According to Ibrahim and Abdu (1996), in Nigeria the spiny fruits of *Cucumis pustulatus* are also placed in the drinking water of chicks to protect them against hawk attacks.

Conclusions

Ethnoveterinary practices using plant products are effective against some diseases. These plant products are locally available and free or very cheap. Further research in this field is important for understanding whether and when traditional practices are effective and should be used for village chicken production and when modern veterinary medicine offers a better alternative. Moreover, studies are needed under controlled conditions on the efficacy rates and veterinary properties of such plant products and treatments.

The 'Afro-Asian Network for Rural Poultry Development (ANRPD)', which has been set up to coordinate research, training and/or extension on village poultry, is encouraging such investigations.

El Hadji Fallou Gu'eye, ANRPD Member and Co-Editor of the ANRPD Newsletter, R.P. 5579, Dakar, Senegal

Selected references

- Agbédé GB, Téguia A. and Manyeli Y. (1995). *Enquête sur l'élevage traditionnel des volailles au Cameroun. Tropicultura* 13 (1): 22-24.
- Bizimana N. (1994). *Traditional veterinary practice in Africa. Schriftreihe der GTZ, No 243*, Eschhorn, Germany.
- Ibrahim MA. (1996). *Ethno-toxicology among Nigerian agropastoralists*. In: McCorkle CM, Matbias E. and Schillborn-van Veen TW, *Ethnoveterinary Research and Development*, IT Publications, Southampton Row, London, pp 54-59.
- Ibrahim MA. and Abdu PU. (1996). *Ethno-agroveterinary perspectives on poultry production in rural Nigeria*. In: *Ethnoveterinary Research and Development* (see above).
- Lobi BB. (1984). *Incidence de la vision et des pratiques traditionnelles sur le développement de l'aviculture au Togo*. Thèse E.I.S.M.V., No 11, Dakar, Senegal
- Watt JM. and Breyer-Brandwijk MG. (1962). *The medicinal and poisonous plants of Southern and Eastern Africa*, E. & S. Livingstone LTD, Edinburgh and London.

The full article and list of references can be requested from the author or ILEIA.

Ethnobotany in animal care

The state of Tahara, North-Eastern Nigeria, is inhabited by resident farmers and Fulani herdsmen. The area is covered with Guinea Savannah vegetation and is characterized by an average annual rainfall of 750 mm with a dry season from November to March. Fieldwork of the University of Ibadan, has revealed that the majority of the Fulani herdsmen (Bororo) have the knowledge of traditional plant preparations through which common herd diseases are cured. Seeds, roots, leaves, barks, tubers and fruits are gathered for processing either by grinding, boiling or soaking in water, and used to tackle skin diseases, wounds, cold and reduced appetite.

The Fulani rely on the indigenous knowledge passed on by their forefathers to observe signs and symptoms of sickness in animals and to decide on the type of treatment. Commonly used species include Boabab (*Adansonia digitata*) against diarrhea and skin disorders; Ginger (*Zingiber officinale*) as a laxative, appetizer and antidiarrhoeal, garlic (*Allium sativum*) as an antidote; African locust beans (*Parkia filicoides*) for skin infections, wounds and worms; Tobacco (*Nicotiana tabacum*) against myiasis, hoof infections and ectoparasites; and Neem (*Azadirachta indica*) as an insect repellent. Farmers justify the potency of the remedies in relation to the animal's health and production performance in terms of feed intake, carcass size and quality, body weight and lactation volume. However, scientific testing would remove any doubts as to their efficiency and assure such traditional techniques acceptance in animal care systems.

From: 'The significance of ethnobotany in animal care'

Akingboye KA, Dept. of Veterinary Public Health & Prev. Medicine, University of Ibadan, Ibadan, Nigeria.

The full article can be requested from the author or ILEIA.

Table 1: Plant products used in ethno-veterinary practices to treat village chickens against various diseases in African countries. (Bizimana, 1994)

Chicken diseases	Plant products	Application form	Country
Fowl pox	Leaves of <i>Aloe excelsa</i>	Added to drinking water	Zimbabwe
Diarrhea	Young leaves of <i>Boswellia dalzielii</i>	Added to drinking water	Nigeria
Enteritis and indigestion	Leaves of <i>Aloe saponaria</i> Haw.	Cold infusion	Southern Africa
Bloody and watery diarrhea	Bulb of <i>Adenium multiflorum</i>	Soaked in water and birds are drenched after 12 hours	Zimbabwe
Warts	Fruit of <i>Cucumis prophetarum</i> or <i>Solanum nodiflorum</i>	Soaked in drinking water	Nigeria
Blood in the excreta	Bark of <i>Cussonia arborea</i>	Soaked in water and sick birds are drenched in the fluid	Zimbabwe
Eye trouble in chicks	Leaves of <i>Cycnium adonense</i>	Its decoction is given to newly hatched chicks to open their eyes	Zimbabwe
Sore eyes	Bulb of <i>Adenium multiflorum</i>	Its juice is used as eye drops	Zimbabwe
Fever	Bulb of <i>Allium sativum</i> and <i>Capsicum annum</i>	Added and given orally	Nigeria
Cholera	Fruit of <i>Cyperus articulatus</i>	Soaked in drinking water	Nigeria
Newcastle disease	Fruit of <i>Adansonia digitata</i>	Broken and dipped in drinking water	Nigeria
	Bark of <i>Parkia filicoidea</i>	Put into drinking water	Nigeria
	Stern of <i>Euphorbia candelabrum kotschy</i> (var. <i>candelabrum</i>) or fruit of <i>Capsicum annum</i> together with leaves of <i>Iboza multiflora</i>	Used	Tanzania
Poor growth, low production	Fruit of <i>Cucumis pustulatus</i>	Mixed with bran and placed in drinking water	Nigeria
	Fruit of <i>Cyperus articulatus</i>	Soaked in drinking water	Nigeria