

The Role of Indigenous Knowledge Systems (IKS) in Chicken Rearing: The Case of Tshongogwe Communal Area in Lupane District, Zimbabwe

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ABSTRACT This was an interactive research which examined the role of indigenous knowledge systems (IKS) in chicken rearing in Tshongogwe Communal Area, Lupane District, Zimbabwe. The study found that the traditional medicine and cultural practices played an important role in rearing indigenous chickens. Indigenous herbs and remedies were used to prevent and treat chicken ailments. These traditional medicines were affordable and accessible. Knowledge about the traditional medicines was acquired through observation and apprenticeship with knowledge holders. The rearing of indigenous chicken and associated knowledge systems contributed to sustainable community livelihood by providing protein and income generation. The study recommended: (i) documentation and dissemination of the ethno-veterinary medicinal plants to contribute to knowledge and awareness on indigenous knowledge in animal health and (ii) establish Ethno Veterinary Gardens (EVG) as sources and repositories of indigenous herbs utilized in indigenous chicken rearing.

INTRODUCTION

Fairhead (1992) defined Indigenous Knowledge Systems (IKS) as “the local knowledge that is unique to a given culture or society.” Paul (2008: 43) asserted that “IK is a key element of the social capital of the poor and constitutes their main asset in their efforts to gain control of their own lives.” Indigenous knowledge is also known as local knowledge, folk knowledge, people’s knowledge, traditional wisdom or traditional science (Gueye 2005). This knowledge has been passed from generation to generation by words of mouth. Johnson (1992) depicted IKS as the basis for local level decision making in agriculture, healthcare, food preparation, education, natural resource management and a host of other activities in rural communities. He further suggested that IKS is part and parcel of the lives of the poor people in most communities. IKS is the social capital of the poor and their main asset to invest in the struggle for survival to produce food and to achieve control of their lives. Their livelihood depends almost entirely on Indigenous Knowledge Systems.

The existing IKS inherited from past generations has sustained the local chicken production and has helped to reduce hunger and poverty in many communities. Thrupp (1989) sug-

gested that indigenous knowledge is of paramount importance because it contributes to the local empowerment and development, increasing self-sufficiency and strengthening self-determination. Hence, utilizing indigenous knowledge in research project management plans, gives it legitimacy and credibility in the eyes of both the local people and scientists, increasing cultural pride and thus motivation to solve local problems with local ingenuity and resources. This is in line with the Afrocentric philosophy which emphasizes the primacy of African indigenous knowledge systems in African social practices including agriculture. For instance, Thrupp (1989) and Paul (2008) indicated “that ethno-veterinary medicine is of greater importance especially in remote areas where people have no income and cannot afford to buy expensive commercial medicines.” In rural communities, indigenous poultry farmers rely on indigenous herbs because they are readily available, free and cheap to obtain. They are obtained in the bush at no cost. More so, herbal medicines have always been a form of therapy for indigenous chickens among resource poor smallholder farmers.

Ernest (1998) postulated that “there is little documentation on the use of the ethno-veterinary medicine, as many researchers and health practitioners view these indigenous practices

as backward.” However *Aloe vera* is used to treat indigenous chickens. Geuye (2000), showed that “*Aloe vera* has several pharmacological properties such as antibacterial, antifungal, antivenin and immunological properties.” *Aloe vera* is widely used for the external treatment of wounds, skin irritation including burns, bruises and abrasions and general inflammatory skin disorders. Documentation of herbal plants is necessary because they are likely to be more important in the future especially given the escalating costs of commercial veterinary drugs. Bronkensha (1990) found that “such knowledge system is essential for development and it must be gathered and documented for a particular community.”

FAO (2008) pointed out that “food security exists when all people, at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and health life.” While Ponge (2012: 2) posited that “food security means that food is available at all times; that all persons have means to access to it; that is nutritionally adequate in terms of quality, quantity and variety and this is accepted within a given culture.” Generally, food security means the accessibility of food.

Hence, IKS enhance food security and reduce poverty through indigenous chicken rearing in rural communities of Lupane and IKS is the basis for community level decision making in areas regarding food security and other host activities in rural communities. Dolberg and Petersen (2000) asserted that “poultry farming has improved food security and nutrition status. It provides cheap, readily harvestable protein enriched white meat and eggs.” This means that through rearing of indigenous chickens, local farmers gain protein in the form of meat and eggs. Meat and eggs are also a major source of their income. Ndiweni (2013: 4) stated that “households sell chickens and get money to pay school fees for their children; medical expenses, buy clothes and pay village taxes.” Furthermore, they sell their indigenous chickens and buy basic food commodities. This becomes clear that indigenous chickens are kept for economic, nutritional and social purposes. The monetary value of eggs and chickens contribute to income and food security. Local farmers regard indigenous chickens as their banks because they are a source of their income.

The objectives of the study were:

- To assess the role of traditional medicinal plants in indigenous chicken rearing by local farmers in Lupane District.
- To collect and document existing knowledge on indigenous plants and other cultural practices used in indigenous chicken rearing.
- To determine the contribution of indigenous chickens in food security in Tshongogwe communal area.

METHODOLOGY

The study is qualitative in nature which is in line with the Afrocentric philosophy which emphasizes the primacy of African indigenous knowledge systems and social practices in agriculture. This necessitated the use of interactive research methods such as focus group discussions, key informant interviews and field observations. This provided the knowledge holders and community members to share their knowledge and experiences on the research problem. A total of eight focus group discussions were conducted with the farmers in Sobendle Ward, Lupane District, Zimbabwe. The focus group discussions sought to establish the main traditional practices used in chicken rearing, formulations used and how this knowledge is acquired or passed on. Five in-depth interviews were carried out with key informants at the Centre for Agriculture and Rural Development (CARD) at Lupane State University Campus and also with three elderly women who are lead farmers in indigenous chicken rearing with substantive knowledge on IKS. These farmers were in Tshongokwe communal area of Sobendle Ward. The interviews sought to find out the indigenous practices and medicinal plants used in the area in chicken rearing and how the farmers view these practices. Furthermore, field observations during the study provided information about the subject.

RESULTS AND DISCUSSION

One of the issues investigated was traditional methods used in indigenous chicken rearing in Lupane community (Table 1) and indigenous remedies use to prevent ecto-parasites and predators from entering fowl runs (Table 2).

Table 1: Traditional methods of indigenous chicken rearing in Tshongogwe community

<i>Scientific name</i>	<i>Common name</i>	<i>Application form</i>	<i>Ailments treated by method</i>
<i>Sansevieria spp</i>	Sisal	Crushed leaves put in warm water	Endo parasites, intestinal diseases a coccidiosis
<i>Aloe vera</i>	Aloe	Crushed leaves put in warm water	Treats diseases affecting the bird's to the chickens locomotion: power or ability to move, bile infections, coccidiosis and flu.
<i>Moringa oleifera</i>	Moringa	Infusion of leaves	Treats various diseases
<i>Brachystegia spiciformis</i>	Msasa	Wax is mixed with boiling water to dissolve	Deworming solution
<i>Sclerocarya birrea</i>	Marula	Bark soaked in water for chickens to drink	Gastro intestinal diseases
<i>Pterocarpus angolensis</i>	Teak	Apply fresh sap into infected eye	Eye infections
<i>Solanum incanum</i>	Bitter apple and Thorn apple	Drop of juice applied to infected eye	Eye infections
<i>Helix lucorum</i>	Snail shell	Shells crushed into soft powder and put into infected eye	Eye infections
<i>Archispirostreptus gigas</i>	African giant millipede	Dried, powdered and added to drinking water	Eye infections
<i>Euphorbia schinzii</i>	Leaves crushed in water for drinking	Coughing and flu	
<i>Cassia abbreviata</i>	Long pod cassia	Barks boiled in water. Solution given to chickens	Diarrhoea

Table 2: Natural ways of preventing ecto parasites and predators from entering fowl runs

<i>Scientific name</i>	<i>Common name</i>	<i>Application form</i>	<i>Ailments treated by herbal method</i>
<i>Mundulea sericea</i>	Cork bush, silver bush Rhodesian silver leaf	Branches of this tree are put on the rail of the fowl run	Ecto parasites and fleas
<i>Diplorhynchus</i> <i>Condylocarpon</i>	Rhodesian rubber tree Horn pod tree; wild rubber	Leaves hung in fowl runs	Ecto parasites
<i>Guibortia coleosperma</i>	Large false mopane Rhodesian mahogany	Leaves hung in fowl runs	Repels snakes
<i>Annona senegalensis</i>	African custard apple	Leaves and roots boiled and sprinkled around the fowl runs	Repels snakes
<i>Allium sativum</i>	Garlic	Sliced and placed in fowl runs	Repels snakes
<i>Cucumis pustulatus</i>	Horned melon	Spiny fruits placed in drinking water	Prevention against hawks

The study found that indigenous knowledge systems which includes traditional medicine and cultural practices, played an integral role in enhancing rearing of indigenous chickens in the study areas. It was found that indigenous herbs and remedies were used to treat various diseases and endo- and ecto-parasites that affect their chickens and also improve the health status of their indigenous chickens. Respondents mentioned that

IK helped them to treat and prevent various diseases such as coccidiosis, gastro-intestinal diseases, eye infections, cough and flu and some other diseases that affect their indigenous chickens. Indigenous remedies were sourced locally and included *Moringa*, *Aloe vera*, *Isihaqa*, *Intume*, *uThangazana*, *uMkundayoka*, *Isanhlenle*, *Umtshibi* and many were found to be extensively used to treat various ailments and condition in indigenous chickens.

Focus group discussions showed that *Moringa* contained nutritive elements that were of health benefit to chickens. El Sohaimy et al. (2015) indicated that *Moringa* contains more than 90 nutrients and 46 different antioxidants. Of particular relevance in chicken rearing are vitamins A, B and C, potassium, calcium, iron and protein. *Moringa* also contains eight essential amino acids and other powerful antioxidants. *Aloe* was the most commonly used herb for indigenous chicken rearing in the study area. This was also observed by Grindlay and Reynolds (1986) and Mwale et al. (2005) who indicated that *Aloe* was used in the management of a variety of diseases and acted as a broad spectrum remedy in rural poultry management.

Through interviews and focus group discussions with CARD staff members, it was revealed that the high incidence of diseases was one of the constraints to Lupane local farmers and the CARD indigenous chicken project. It also emerged that local chicken farmers could not afford modern medicines as they were very expensive. Hence they relied on traditional medicines which were affordable and easily accessible as well as effective and reliable in indigenous chicken rearing. The study was also interested in establishing how knowledge was acquired and transmitted with the local community. Fifty percent of the respondents indicated that they acquired the knowledge about the plants, their preparation, and application and associated socio-cultural practices through observation and verification from knowledge holders, including parents and community members. In so doing, they enriched their knowledge base on indigenous remedies and practices for chicken health.

The study found that grandparents play a pivotal role of advising and supervising the younger generation on indigenous knowledge. They also play a critical role in ensuring continuity between indigenous knowledge and values of their forefathers.

It was the finding of the study that indigenous chicken rearing through IKS has reduced food insecurity in Tshongogwe communal area in Lupane by providing proteins in the form of meat and eggs. Local farmers sell these birds and eggs and hence, obtain money to buy necessary food products, pay children's school fees and other important household expenses. This implies that indigenous chickens in rural com-

munities are a source of people's livelihood since they generate income from selling indigenous birds and their eggs.

CONCLUSION

The study applied Afrocentricism as a theoretical and methodological approach to investigate the role of indigenous knowledge systems in chicken rearing in Lupane District, Zimbabwe. The following were the major observations: indigenous knowledge systems which includes traditional medicine and cultural practices played an integral role in enhancing rearing of indigenous chickens; indigenous herbs and remedies were used to treat various diseases such as coccidiosis, gastro-intestinal diseases, eye infections, cough and flu and endo- and ecto-parasites that affect their chickens and also improve the health status of their indigenous chickens. The remedies were sourced locally and included *Moringa*, *Aloe vera*, *Isihaqa*, *Intume*, *uThangazana*, *uMkundanyoka*, *Isanhlenle*, *Umtshibi*. The local chicken farmers could not afford modern veterinary medicines as they were very expensive and therefore relied on traditional medicines which were affordable and accessible. Knowledge about the plants, their preparation, and application and associated socio-cultural practices was acquired through observation and apprenticeship with knowledge holders including parents. Indigenous knowledge on indigenous chicken rearing systems contributed to sustainable community livelihood by providing protein and income generation. However, in spite of this contribution of indigenous knowledge systems, the ethno-veterinary practices are not adequately documented.

RECOMMENDATIONS

It is on the basis of these conclusions that the study recommends the following: (i) the documentation and dissemination of the ethno-veterinary medicinal plants to contribute to knowledge and awareness on indigenous knowledge in animal health; (ii) conduct ethno pharmacological research to ascertain how ethno-veterinary medicine can mitigate the problem of escalating costs of modern drugs; (iii) establish Ethno Veterinary Gardens (EVG) as sources and repositories of indigenous herbs utilized in indigenous chicken rearing.

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