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Review

A review on ethno-veterinary and veterinary medicines used to treat livestock of communal farmers

Thobela Louis Tyasi[1*] Masibonge Gxasheka[2] Ning Qin[1] Zhi-Chao Lyu[3*]

[1]Department of Animal Genetics, Breeding and Reproduction, College of Animal Science and Technology Jilin Agricultural University, Changchun ,130118, P. R. China
[2]Department of Plant Protection, Laboratory of Plant Pathology, Jilin Agricultural University, Changchun, Jilin 130118, China
[3]Department of Food Analysis and Testing, Institute of Modern Agriculture, Jilin Province Economic Management Cadre College, Changchun, 130118. P.R. China

*E-mail of corresponding author: lvzhichao861024@163.com

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The main objective of this study is to review types of remedies which are commonly used by small-scale livestock farmers. Some small-scale farmers use a variety of remedies both veterinary and ethno-veterinary to treat their livestock. These small-scale farmers are found to be uneducated and some of them have low levels of education. This result to these farmers to be unemployed, thus depend on pension as a source of income. However, small-scale farmers are faced with the need to protect and treat their livestock; in the process they use a range of conventional and non-conventional remedies. The efficacy of any drug depends on its proper use in terms of dosage and purpose. Therefore, this study can reveal some of the factors that affect how farmers use remedies. Thus, this can lead to improvement of livestock production once proper use of remedies is practiced by small-scale farmers. Furthermore, this study can be disseminated to extension officers, who can use this review to plan appropriate advices to be used in their trainings of farmers. This can be done by educating small-scale farmers about various management techniques in using remedies to prevent diseases and increase livestock productivity.

Keywords: Ethno-veterinary; veterinary; remedies; small-scale farmer; livestock

INTRODUCTION

In most African countries livestock contribute 30% of total agricultural gross domestic product (Hall and Sulaimen, 2008). More than 60% of the population depends on agriculture for their livelihood (World Bank, 2009). National Livestock Statistics (2010) reported that livestock are useful for developing countries and their numbers are reportedly increasing in developing countries. However, this may make a clear evidence of the ability of stock to survive and produce in environments on low-cost feeds; their suitability in capital-scarce family farms in developing countries (Max, 2010).

Livestock play a major role in many communal areas, as they produce milk, meat, manure and provide cash from their sales (Thornton et al., 2002). The productivity of stock is however, impaired by infection (Mathias, 2007). Animal health play a vital role in management of livestock (Buhr et al., 2003), so as to be able to improve the health status of livestock (Davies et al., 2005). Small-scale farmers reported that use of commercial drugs is effective in reducing parasites that cause diseases (Mwale and Masika, 2009). However, their use causes harm if not used properly (McGaw et al., 2007). Since they are expensive (Maphosa and Masika, 2010), rural farmers prefers ethno-veterinary medicine' on the other hand, other small-scale farmers have been found to combine remedies (Nalule et al., 2011).

Ethno-veterinary medicine is gaining fame in the treatment and control of livestock diseases in Africa (Mathias, 2007). Farmers mostly use medicinal plants, which is a component of EVM, in controlling diseases (McGaw et al., 2000). The small-scale farmers use many

medicinal plants according to their trust, however, the efficacy of many of these medicinal plants have not been evaluated. According to Masika et al. (2000), the knowledge of EVM use is orally transmitted from generation to generation. The objective of this paper was to review the common drugs which are commonly used by communal livestock farmers.

Importance of livestock in rural farmers

Livestock are often one of the most important sources of income for poor farmers (Max, 2010). Some farmers sell milk from ruminants and poultry eggs that are readily available in order to make money (Ayalew et al., 2003). Animals utilize feeds with uses to produce highly nutritious food for farmers (Swanepoel, 2010). Cattle one of the few assets owned by poor farmers and can be crucial in maintaining household survival in times of crisis (Thornton et al., 2002). Small scale farmers keep animals in order to gain respect in a community, however these farmers sell their stock in order to pay school fees for their children and also lobola (Seerad, 2003). Another importance of stock is that they provide manure that is used as a fertilizer (Rinald, 2009) and also provide draught power. Livestock are also often used for social events and ceremonies (Ayalew et al., 2003).

Challenges faced by small scale farmers on their livestock

A number of challenges faced by rural farmers depend on local situation mainly with regards to ecological conditions, social systems and stock practices (Davies, 2004). Stock has an impact on public health such as uncontrolled watering of animal which bears a risk of transmission of diseases from animal to animal and animal to humans through water pollution with animal faeces (Fox and Nel, 2003). However, this study focuses on the effect of illiteracy when small-scale farmers use remedies to treat livestock.

The challenge that farmers face when administering remedies to treat diseases is that they sometimes overdose the remedies (Githiori et al., 2003). However, it is not only overdosing, they also under dose animals so as to reduce expenses and also due to ignorance, thus leading to toxicity and ineffectiveness of remedies (Van der Merwe, 2007). They also use remedies for purposes that are not recommended by the manufacturers. Farmers also combine conventional and alternative remedies (Nalule et al., 2011). Presently, there is no documentation of these misuses of remedies by resource-limited farmers (Masika and Afolayan, 2003). This is because they believe it will be effective when overdosed, as much as it may cause severe damage. Also when using alternative medicine, they will administer for instance one plant to treat several diseases in livestock.

Livestock health management practice

There are methods that are found to be the most effective and practical in achieving an objective or preventing livestock diseases (Waller, 2006). The practice includes proper sanitation, such as removal of dead livestock from the kraal or keeping large stock separate from other small stock (Krecek and Waller, 2006), providing livestock with housing that is cleaned and disinfected regularly, separating young from older livestock such as sheep or goats can serve as reservoirs of infection for younger sheep or goats (Rosina et al., 2006) and provide the sheep and goats with clean and safe pastures (Molento, 2009).

It is essential to ensure that animals have better health management (McDermott, 2004). Supply of veterinary inputs and provision for animal health are most important to farmers. This can however improve the health status of animals, thus improving the productivity of livestock (Tyasi et al., 2015). However, small-scale farmers are unable to afford veterinary services, as they are scarcely available (Dold and Cocks, 2001). Nonetheless, some of these management practices are impractical to most resource-limited farmers and most livestock end up being infected. Thus, some resource-limited farmers tend to control diseases through the use of commercial drugs and ethno-veterinary medicine.

Most remedies used by rural farmers on their livestock

Remedies used by rural farmers for their livestock production are divided into two; conventional medicine and also the non-conventional medicine. Both of these remedies are very important in livestock production and are used worldwide (Moyo, 2008).

Use of Conventional Medicine

Conventional medicine is a remedy or drug used for diagnosis, treatment of disease and for maintainace of health of an animal (Tyasi et al., 2015). It is applied through conventional methods such as dipping livestock such as cattle, spraying and also through injection (Martins *et al*., 1995). Their application to livestock has been simple and widely accepted by governments and

communities (Latif and Jogejan, 2002). Many diverse conventional products are available to control or treat livestock diseases (Papadopoulos et al., 2007); however, these drugs are produced in several different physical forms and sold in various brand names (Githiori et al., 2003). For example in the case of controlling internal parasites there are three families of anthelmintic drugs which are used to treat internal and external parasites such as roundworms, and mange mites in livestock: Benzimidazoles - Fenbendazole, Albendazole, Oxybendazole, Thiabendazole; Nicotinics - Levamisole, Pyrantel, Mora and Macrolytic Lactones - Ivermectin, Doramectin, Moxidectin.

However, they are found to be expensive (Maphosa and Masika, 2010, Tyasi and Tyasi 2015), resource- limited farmers have no choice, or no option left, rather to resort to readily available, accessible and affordable alternative such as ethno-veterinary medicine (Laffon et al., 2001; McGaw et al., 2007).

Use of Ethno-veterinary Medicine

Ethno-veterinary medicine (EVM) is the use of medicinal plants, surgical techniques and traditional management practices to prevent and treat spectrum of livestock diseases (Nguyen et al., 2005). Alternative medicine is contained with oral administration and the use of effective and safe herbal remedies is encouraged to resource-limited farmers (Van der Merwe, 2007; Tyasi and Nkohla, 2015). This practice covers people's knowledge, skills, methods, practices and beliefs about livestock health care (Mwale and Masika, 2009). The use of medicinal plants is becoming more important in developing countries where most resource-limited farmers are found (Iqbal et al., 2005). Conventional medicine are increasingly becoming unavailable and expensive (Maphosa and Masika, 2010, Tyasi and Tyasi, 2015), and veterinary services scarcely available (Dold and Cocks, 2001).

This has generated a lot of research and farmers perceive that they are effective in controlling livestock diseases (Tyasi and Tyasi, 2015). The information on the use of medicinal plants is rarely written down (Masika et al., 2000). This is so because, most research on EVM has been limited to finding out which plants are used for which purpose (Bizimana, 1997; Moyo, 2008). Yet, some of EVM remedies have been documented and validated for their acaricidal properties (Moyo, 2008). According to Masika *et* al. (2000) and Dold and Cocks (2001), numerous medicinal plants are used by resource-limited farmers to treat diseases of livestock.

CONCLUSION

Small-scale farmers use both conventional and non-conventional medicine to treat livestock diseases, in order to improve livestock production. However, most of them are illiterate thus they cannot follow the procedures of drug administration properly, as much as they find conventional drugs to be expensive. Therefore, resource-limited farmers use ethno-veterinary medicines as their alternative remedy, because they find ethno-veterinary medicines to be cheap, easy to access and the procedures are easy to follow when administering as compared to conventional medicine.

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