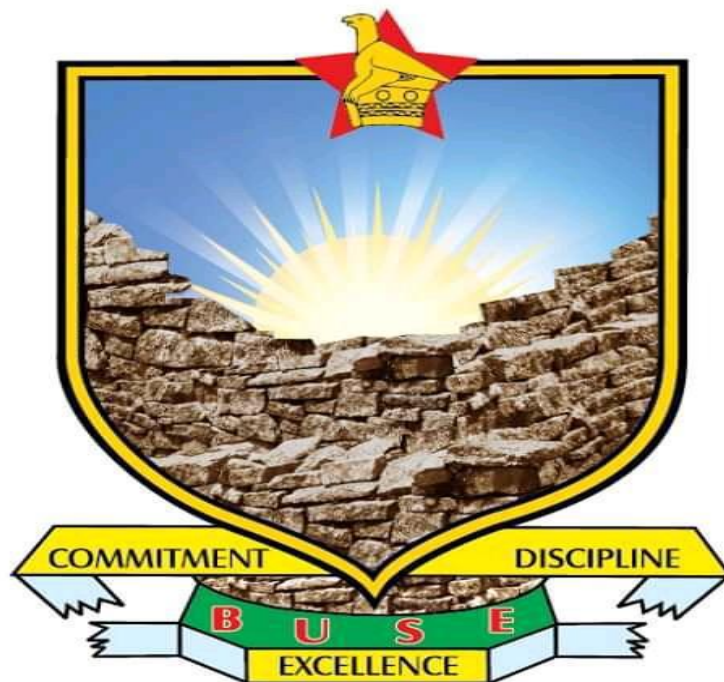


BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE DEPARTMENT OF
ANIMAL SCIENCE

**A survey on indigenous veterinary medicine in Kadoma and Chegutu,
Zimbabwe**



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A dissertation submitted to the Department of Animal Science, Faculty of Agriculture and Environment Science, Bindura University of Science Education in partial fulfilment of requirements for the degree Bachelor of Science Honours in Animal Health Production and extension (HAHPE)

30/05/2025

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Year: 2025

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ABSTRACT

This study conducted a survey on indigenous veterinary medicine in the study areas of Kadoma and Chegutu, Zimbabwe. The study was aimed at documenting the use of indigenous veterinary medicine in Zimbabwe, particularly in Kadoma and Chegutu. The research objectives included identifying the commonly used indigenous veterinary medicine in Zimbabwe, evaluating the effectiveness and safety of indigenous remedies and exploring the potential of integrating ethno-veterinary medicine into conventional veterinary practices. The study site had a total of 165 participants which included farmers, extension workers, veterinary professionals, local community leaders and elders, farm workers and students studying programs related to animal health. Cluster sampling technique and some simple random sampling were applied to select the sample population of 50 participants respectively. Data was then collected from the participants using qualitative techniques. The collection was done through interviews and a focus group discussion (FGD). The results were then analysed using SPSS 21 with the aid of Excel. The results showed that there were quite a number of indigenous plants which farmers were using to improve their animal/livestock health and well-being. The study documented a total of above 32 indigenous plants which farmers were using. The study also noted that the farmers had developed vast experience in the utilisation of these indigenous remedies.

DEDICATION

I would like to dedicate this research project to my mother and father who have always supported their little girl.

ACKNOWLEDGEMENTS

I would like to thank my parents, Mr. and Mrs. Chirashi, my friends Memory, Magoche, Chimanga, Mushayi, Hiya, Vhwzha, Magwizi and Blessing. Lastly a warm thank you to Tcn Mangwiro and Dr Kusangaya who have been helping me on each step of the this research.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.0 Introduction

In many regions of sub-Saharan Africa, including our cherished Zimbabwe, traditional animal health practices and local knowledge have played a vital role in livestock management for centuries. These practices emphasize preventive care, the use of locally available medicinal plants, and a holistic approach to animal health and welfare. The integration of traditional medicine into veterinary care is known as ethno-veterinary medicine, which encompasses the folk beliefs, knowledge, skills, methods, and practices employed in animal healthcare.

This study aims to enhance the delivery system for animal health in a sustainable, practical, and cost-effective manner. We will conduct a survey to explore the traditional health practices utilized by farmers in the city of Kadoma and the town of Chegutu. This will involve oral interviews and in-depth discussions with local farmers. Our focus will be on understanding the use of medicinal plants, preventive measures, and assessing the health status of livestock on these farms. We will also recommend the most effective practices based on our findings.

By illuminating the traditional animal health practices in Kadoma and Chegutu, this research aspires to provide valuable integrated animal health strategies that can improve cattle health and productivity. Ultimately, we aim to address potential risk factors and implement effective traditional and modern cattle health practices that contribute to the overall enhancement of livestock management in the region.

1.1 Background of the Study

In Zimbabwe, the integration of traditional animal health practices and local wisdom into modern extension programs represents a critical intersection between ancestral knowledge and contemporary scientific approaches. The regions of Kadoma and Chegutu, with their rich

agricultural history and diverse livestock populations, provide a fertile ground for exploring this integration (Chikanga et al., 2020). This evaluation study aims to assess the effectiveness of blending traditional practices with modern veterinary methodologies to enhance holistic animal health care in these communities.

Traditional animal health practices have long been the backbone of livestock management in Zimbabwe. Farmers have relied on indigenous knowledge systems, which encompass a range of practices from herbal medicine to rituals aimed at ensuring animal well-being (Mafongoya et al., 2019). Despite the evolution of veterinary science, these traditional methods remain prevalent due to their accessibility, cost-effectiveness, and cultural significance. For many local farmers, traditional practices are not merely supplementary; they are integral to their identity and way of life (Ndlovu et al., 2018). Consequently, understanding the context in which these practices exist is crucial for effective integration into modern extension programs.

Modern veterinary extension services have been designed to improve livestock productivity and health by disseminating scientific knowledge and advanced animal husbandry techniques (Moyo et al., 2021). However, these services often overlook the local context, failing to recognize and incorporate the existing traditional practices that farmers hold dear. This disconnect can lead to resistance against modern practices, as farmers may view them as foreign or incompatible with their established ways (Mugabe et al., 2020). Therefore, a comprehensive evaluation of how traditional and modern practices can coexist is essential to create a more effective and culturally sensitive extension model.

The concept of holistic animal health care emphasizes a multifaceted approach that considers the animal's physical, emotional, and social well-being (Kahindi et al., 2020). In this regard, integrating traditional practices may offer valuable insights into animal welfare that modern approaches alone may not address. For instance, traditional knowledge regarding the use of specific herbs for treating ailments can complement veterinary interventions, leading to improved health outcomes for livestock (Chikanda et al., 2021). By leveraging the strengths of both systems, extension programs can foster a more inclusive approach that resonates with local communities.

Moreover, local wisdom encompasses a broader understanding of the socio-economic and environmental contexts in which livestock farming occurs. For instance, traditional practices often reflect ecological sustainability, utilizing resources that are readily available and adapted to local conditions (Ndlovu et al., 2018). In contrast, modern practices may sometimes emphasize high-input systems that can be economically burdensome for smallholder farmers. Therefore, integrating local wisdom into extension programs can promote practices that are not only economically viable but also environmentally sustainable (Chikanga et al., 2020).

The evaluation study will employ a mixed-methods approach to gather qualitative and quantitative data from stakeholders in Kadoma and Chegutu. This will include surveys of local farmers, interviews with veterinary extension workers, and focus group discussions to explore attitudes and perceptions towards traditional and modern practices (Moyo et al., 2021). By capturing a diverse range of perspectives, the study aims to identify the barriers and opportunities for integration, focusing on the potential for developing a more effective extension program that aligns with the needs and values of local communities.

The anticipated outcomes of the study include a deeper understanding of how traditional practices can enhance modern veterinary care and vice versa. It is expected that by recognizing the validity of traditional knowledge systems, extension programs can foster greater trust and collaboration between farmers and extension workers (Mugabe et al., 2020). Additionally, the study aims to contribute to policy discussions on animal health care by providing evidence-based recommendations for integrating traditional practices into formal veterinary services.

In conclusion, the integration of traditional animal health practices and local wisdom into modern extension programs is not only a matter of improving livestock health but also of respecting and valuing the cultural heritage of the communities in Kadoma and Chegutu. As this evaluation study unfolds, it is hoped that it will pave the way for innovative solutions that honor both traditional and modern knowledge systems, ultimately leading to a more holistic approach to animal health care in Zimbabwe.

1.2 Problem Statement

The distribution of veterinary services in Zimbabwe remains a complex issue especially for small scale farmers who own over 90% of the country's livestock. The Department of

Veterinary Services (DVS) has historically been the primary provider of veterinary services, offering free or heavily subsidized services. However, over for over a long period of time, this has not been the case. Public veterinary institutions struggle to reach most of the areas in Zimbabwe, inclusive of Kadoma and Chegutu, due to limited resources, insufficient staffing and inadequate investment which tend to hinder the ability to provide adequate services. According to Mills and Lee (1993), the public owned institution has a low geo-graphic coverage that is some areas are left bare without or with little service being given to them, in terms of veterinary medicine. Similarly, the World Organisation for Animal Health (WOAH) reports in 2023 concluded that veterinary services in Zimbabwe fell short of optimal levels. Furthermore, the supply of veterinary service in Zimbabwe has become challenged due to the financial crisis of the republic. This has made the veterinary drugs expensive for the farmers, especially the smallholder farmers. The employment of Community Animal Health Workers (CAHWs) tried to mitigate the challenges that were being faced by providing animal health services at local level, thereby bridging the gap between state services and farmers. However, challenges kept on being experienced to the extent that famers ended up using ethno-veterinary medicines to treat their animals/livestock. This research therefore aims to investigate availability and usage of indigenous veterinary medicine in Kadoma and Chegutu.

1.3 Justification of the Study

This study is of great relevance and significance in the context of our country and in areas like Kadoma and Chegutu. Due to the fact that the rural and indigenous communities rely heavily on traditional health practices and local wisdom for animal health care. These traditional methods have been passed down through generations and are often well adopted to the local environment and cultural context. The conventional animal health extension programs in Zimbabwe, which are primarily based on modern, Western veterinary practices have had limited reach and impact, especially in remote and underserved areas. This is due to various factors such as limited accessibility, affordability and cultural acceptance. Integrating the traditional health practices and local wisdom to bridge the gap and provide a mere holistic and comprehensive approach to animal health care in Zimbabwe.

This can leverage strengths of both traditional and modern methods leading to improved animal welfare and productivity. The integrated approach can contribute to the development of more

sustainable and resilient animal health care systems in Kadoma and Chegutu and nationwide, which are better adopted to local environmental and socio-economic conditions. Enhancing the holistic animal health care through the integration of the veterinary medicine can have a positive impact on the livelihoods of small holder farmers, as well as improving the overall food security in the country. The finding of this study can inform policy and institutional changes to better support the integration of traditional and modern approaches for animal health care in Kadoma and Chegutu, Zimbabwe.

Overall, this research topic has the potential to contribute to the development of more inclusive, culturally appropriate, and effective animal health care systems in Zimbabwe, ultimately benefiting the rural and indigenous communities of Kadoma and Chegutu, that rely on livestock for their livelihood and food security for the nation.

1.4 Objectives of the Study

- 1.5.1 Identify the most commonly used indigenous veterinary medicines.
- 1.5.2 Evaluate the effectiveness and safety of indigenous veterinary medicines.
- 1.5.3 Explore the potential of integration of indigenous veterinary medicines into conventional veterinary practices.

1.6 Research Questions

- 1.6.1 What are the most commonly used indigenous veterinary medicines?
- 1.6.2 What is the effectiveness and safety of indigenous veterinary medicines?
- 1.6.3 What is the potential of integration of indigenous veterinary medicines into conventional veterinary practices?

1.7 Limitations of the Study

The researcher faced time constraints as a result of work-related activities given that most of the active hours of the day, the researcher was focusing on other activities. To this end, the researcher used off days and weekends to manage research programme demands. Secondly, it was impossible to interview all targeted subjects and elements due to the exigencies of their work and commitments. In this regard, the researcher made use of phone calls and online interviews to solicit the required information from some respondents.

1.8 Delimitation

Delimitations ensure a focused and manageable study that can provide valuable insights into the impact of BRIC+ collaboration on the global market. It defines the boundaries and scope of the study (Kumar, 2014). This study focused only on Kadoma and Chegutu as the study areas. Therefore, the research was not conducted beyond these specified boundaries.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Livestock plays a crucial role in Zimbabwe's economy, contributing significantly to food security, income, and socio-economic development, especially in rural areas. However, diseases pose a major constraint to livestock production, threatening livelihoods and overall well-being. Smallholder farmers, who manage the majority of livestock, often face challenges in accessing adequate veterinary services due to factors like cost, availability, and infrastructure limitations. Traditional animal health practices (TAHPs), rooted in local knowledge and passed down through generations, offer a potential complement to modern veterinary medicine in addressing these challenges (African Journal of Agricultural Research, 2019). Animal health care in rural Zimbabwe is shaped by a combination of indigenous knowledge systems and formal veterinary services. The districts of Kadoma and Chegutu, located in the Mashonaland West province, are predominantly reliant on smallholder farming, where livestock such as cattle, goats, and poultry play essential roles in livelihoods, food security, and cultural practices. Traditional animal health remedies, passed down through generations, remain a cornerstone of livestock management in these communities. However, the rise of modern extension programs, state-sponsored or NGO-led initiatives that disseminate scientific agricultural knowledge, has led to growing interest in integrating local wisdom with contemporary veterinary practices to achieve more comprehensive and culturally relevant health care for animals.

2.2 Literature Review

Integrating traditional animal health practices and local wisdom into modern extension programs in Zimbabwe is supported by various theories, each highlighting different aspects of the integration process. These theories collectively emphasize the importance of community engagement, holistic perspectives, and the complementary roles of traditional and modern practices in enhancing animal healthcare. By leveraging these theoretical frameworks,

stakeholders can develop more effective, culturally relevant, and sustainable animal health strategies that cater to the needs of local communities. This literature review evaluates existing research on the integration of traditional animal health knowledge systems into modern extension frameworks. It draws on studies from Zimbabwe and other sub-Saharan African contexts to outline the nature of traditional practices, describe the structure and function of extension services, and assess the benefits and obstacles of merging these approaches. The review highlights both the potential of such integration in improving livestock health sustainably and the tensions that arise from differing epistemologies - scientific versus indigenous. Ultimately, the review aims to identify gaps in the literature to justify the relevance of a focused study in Kadoma and Chegutu. It also explores the theories, benefits, challenges, and strategies related to integrating TAHPs and local wisdom into modern extension programs to improve holistic animal healthcare in Zimbabwe.

2.2.1 Ethno-veterinary Medicine (EVM)

Ethno-veterinary Medicine (EVM) is the study of traditional animal healthcare knowledge, skills, and practices utilized by local communities. It emphasizes the importance of understanding and documenting these practices to validate their efficacy scientifically. Furthermore, it recognizes the value of local knowledge in addressing animal health problems, particularly in resource-limited settings. The key points of Ethno-veterinary Medicine include Cultural relevance, Community engagement and Complementarity. On Cultural Relevance, EVM recognizes that local communities possess valuable knowledge about animal health that is often overlooked by conventional veterinary practices. In this regard, EVM emphasizes community-based solutions and the use of locally available resources. On community engagement, EVM fosters a sense of ownership and respect for indigenous knowledge by involving local farmers and traditional healers in the research process. Lastly through complementarity, the theory suggests that traditional and modern veterinary practices can complement each other, leading to improved animal health outcomes.

Ethno-veterinary medicine (EVM) not only serves as a practical alternative to formal veterinary care, particularly in areas with limited access to clinics or drugs, but also aligns with cultural values of self-reliance and respect for ancestral knowledge. In many cases, traditional healers

or community elders serve as informal animal health practitioners, offering advice based on years of lived experience. These knowledge holders often command trust and respect within their communities, which contributes to the continued use and preservation of these practices (McCorkle, 1986).

2.2.2 One Health Theory

The One Health approach emphasizes the interconnectedness of human, animal and environmental health. It advocates for a collaborative, multi-sectorial approach to addressing health issues. Integrating TAHPs aligns with the One Health concept by acknowledging the role of traditional practices in maintaining the health of both animals and the communities that depend on them. The key aspects of One Health Approach includes a holistic perspective which promotes understanding that animal health is intrinsically linked to human health and environmental conditions, making it crucial to integrate various health practices. The second aspect of the approach is a shared knowledge which in the context of Zimbabwe enhances the effectiveness of disease prevention and control measures by integrating traditional practices within a One Health framework. Last but not least, it involves ecosystem management. One Health encourages sustainable practices that consider the ecological balance, which aligns with many traditional animal health practices.

2.2.3 Community-Based Animal Health Care (CBAHC)

CBAHC emphasizes the role of local communities in delivering animal health services. It aims to empower communities to take charge of their animal health needs. According to the Animal Journal of Animal Health (2015), CBAHC emphasizes the involvement of local communities in the delivery of animal health services. Integrating TAHPs into extension programs supports CBAHC by empowering communities to utilize their own knowledge and resources for animal healthcare. Key aspects include local empowerment, collaboration and accessibility. By training community members as animal health workers, CBAHC leverages local knowledge and practices, including traditional methods. On the other note, accessibility approach

improves access to veterinary care in remote areas where modern services may be scarce. Similarly, it encourages collaboration among stakeholders through which it fosters partnerships between traditional healers, veterinary professionals, and local communities, thereby facilitating the integration of traditional practices into formal health systems.

2.2.4 Holistic Management Approach

Holistic Management is a systems-thinking approach to managing resources sustainably. This approach focuses on managing resources in a way that considers the whole system, including the environment, animals, and people. In simpler terms, it considers the interrelationships between the environment, animals and people. Integrating TAHPs aligns with holistic management by recognizing the importance of traditional practices in maintaining ecological balance and promoting sustainable livestock production. The key facets of this approach include Systemic approach which emphasizes understanding the entire ecosystem's dynamics, allowing for the integration of traditional practices that promote ecological sustainability. It also takes into account sustainable practices whereby many traditional animal health practices align with holistic management principles, focusing on long-term ecological health rather than short-term fixes. Lastly, it emphasises adaptive management through adapting practices based on local conditions and knowledge, which is essential for integrating traditional wisdom effectively.

Traditional animal health practices in rural Zimbabwe are deeply embedded in cultural knowledge systems, reflecting generations of empirical observation and adaptation. In both Kadoma and Chegutu, livestock farmers rely on locally available herbs, rituals, and ethno-veterinary knowledge to treat common diseases and maintain animal well-being. These practices are often informed by a holistic understanding of animal behavior, seasonal patterns, and the socio-ecological context in which livestock are raised (Mapiye et al., 2009). For example, common ailments like tick infestations or gastrointestinal problems are treated with concoctions made from indigenous plants such as *Lippia javanica* or *Aloe chabaudii* (Maroyi, 2012).

2.2.5 Participatory Rural Appraisal (PRA)

Participatory Rural Appraisal (PRA) is a set of participatory approaches used to engage local communities in assessing their needs and resources. Key aspects include empowerment in which the approach encourages the empowerment of communities to actively participate in identifying and addressing their health needs, including animal healthcare. Additionally, PRA methods facilitate the documentation and validation of traditional practices by involving community members in the research process through the use of local knowledge. In this approach, there is also an emphasis of tailored solutions by understanding local contexts and practices, extension programs can be tailored to better meet the needs of the community.

2.2.6 Social Learning Theory

This theory posits that people learn from one another, through observation, imitation, and modelling. The key aspects of the Social Learning Theory include knowledge exchange, cultural transmission and collaborative learning. Integration of traditional practices into modern programs can facilitate social learning, where farmers learn from each other's experiences. Similarly, traditional knowledge can be transmitted through social networks, enhancing the community's overall capacity to manage animal health. Through collaborative learning, the approach encourages collaboration between traditional healers and veterinary professionals fosters an environment where both groups can learn from one another.

2.3 Empirical Evidence

Despite their widespread use, traditional practices are often undervalued in national policy and academic discourse. Scholars such as Chavunduka (1994) have argued that the neglect of indigenous veterinary knowledge reflects broader colonial and post-colonial tendencies to privilege Western science over local knowledge systems. This has implications not only for the efficacy of animal health programs but also for the empowerment of local communities. Moreover, although some traditional remedies have been scientifically validated for their antimicrobial or antiparasitic properties, others remain untested or inconsistently applied,

raising concerns about safety and efficacy. This lack of standardized documentation also presents a challenge for integration into formal extension programs. Nevertheless, the resilience and adaptability of these traditional systems suggest that, if properly supported and researched, they could complement modern veterinary approaches effectively. Traditional animal health practices in Kadoma and Chegutu represent a vital yet underutilized resource. They offer localized, accessible, and culturally rooted solutions to animal health challenges, making them a valuable component in the quest for more inclusive and effective animal health care strategies.

Modern agricultural extension services in Zimbabwe have long played a central role in disseminating scientific knowledge and improving livestock productivity. These services, often coordinated by government departments such as the Department of Veterinary Services (DVS) and supported by NGOs, aim to provide farmers with access to modern veterinary inputs, disease surveillance, and best practices for animal management. The extension model is typically top-down, relying on trained officers who deliver information and solutions developed through formal scientific research (Chavhunduka & Bromley, 2015). While this model has improved certain health outcomes, it has also been criticized for inadequately addressing the specific contexts and needs of smallholder farmers.

In many rural districts, including Kadoma and Chegutu, the reach of these services remains uneven. Infrastructural challenges, understaffing, and resource limitations hinder consistent delivery. As a result, farmers often revert to traditional methods or blend both systems informally. Recent policy shifts have encouraged participatory extension models that recognize the value of farmers' experiential knowledge. This shift has opened up opportunities for integrating traditional animal health practices into formal extension frameworks (Zhou et al., 2016).

Integration efforts have been documented in several pilot programs across Zimbabwe and neighboring countries. These initiatives aim to bridge the gap between scientific veterinary practices and indigenous knowledge by facilitating dialogue between extension officers and local knowledge holders. For example, participatory rural appraisal (PRA) methods have been used to document indigenous practices and incorporate them into training modules for extension staff (Madzimore et al., 2013). The Zimbabwe Indigenous Knowledge Systems Trust

(ZIKSIT) has also played a role in advocating for the recognition and documentation of traditional veterinary knowledge (Nyamwanza, 2014).

However, integration is not without its complications. One major barrier is the epistemological divide between Western scientific methods and orally transmitted local knowledge. While extension officers are trained to rely on empirical data and standardized protocols, traditional practitioners often use context-specific, experiential approaches. This divide can create skepticism and lack of mutual respect, impeding collaboration (Scoones & Thompson, 1994). Additionally, the absence of formal mechanisms to validate and regulate traditional remedies raises concerns about efficacy, dosage, and safety, which extension services are mandated to uphold.

Nevertheless, the growing emphasis on holistic and sustainable agricultural development has prompted a reconsideration of how extension systems are conceptualized. Studies suggest that when local knowledge is acknowledged and integrated meaningfully, farmer participation increases, and the relevance of veterinary interventions improves. In the context of Kadoma and Chegutu, where both traditional and modern systems are practiced concurrently, there is significant potential for integration to enhance animal health outcomes while preserving cultural heritage.

The integration of traditional animal health practices into modern extension frameworks offers several promising benefits, especially in rural districts like Kadoma and Chegutu. When harmonized effectively, the two systems can complement each other, with traditional methods providing culturally rooted, cost-effective alternatives, and modern veterinary science contributing standardized treatments and diagnostics. This dual approach can increase the accessibility and acceptability of animal health services among smallholder farmers, many of whom hold deep trust in indigenous practices (Mudzengi et al., 2014). Moreover, integration has the potential to strengthen local ownership of extension programs, foster innovation, and encourage the preservation of traditional knowledge systems that are at risk of erosion.

One of the most significant advantages is the potential for improved animal health coverage. In areas where veterinary infrastructure is limited, traditional practices fill critical gaps. When these are recognized and supported through formal extension channels, farmers gain a broader

toolkit to manage disease and improve livestock productivity. Studies in similar contexts have shown that participatory extension models that incorporate indigenous knowledge lead to increased farmer engagement and more sustainable outcomes (Sillitoe, 2002).

Despite these benefits, the literature also points to persistent challenges. Foremost among these is the lack of systematic documentation and validation of traditional remedies. Without scientific testing and standardization, it remains difficult to incorporate traditional knowledge into national policy or veterinary curricula. Furthermore, institutional biases often marginalize local knowledge, treating it as anecdotal rather than legitimate. This can create power imbalances in decision-making processes, where extension personnel may disregard or undervalue input from traditional practitioners (Millar & Curtis, 1999).

Another challenge lies in the institutional capacity of extension services. Many extension officers are not trained to engage with or evaluate indigenous knowledge, and there are few formal mechanisms to facilitate collaboration between knowledge systems. Additionally, resource constraints limit the ability of programs to implement participatory approaches, particularly in underfunded rural districts. In Kadoma and Chegutu, these constraints are compounded by limited research specific to the local context, leaving a significant empirical gap regarding how integration efforts could be structured or scaled.

The literature also reveals a methodological gap. Many existing studies rely on qualitative data and case studies but lack longitudinal or comparative research that could provide deeper insights into the long-term effects of integrated approaches. Furthermore, there is limited documentation on the perceptions of livestock farmers themselves—how they navigate between systems, what influences their decision-making, and under what conditions they are willing to adopt integrated methods.

2.4 Most Commonly used Indigenous Veterinary Medicines

Indigenous veterinary medicine refers to traditional practices and remedies used by local communities to treat animal diseases (Hossain et al, 2016). They play a pivotal role in livestock health management in Zimbabwe. Understanding and documenting these practices can help

preserve cultural knowledge and improve animal health outcomes. In Zimbabwe, these practices are vital for livestock management, especially in rural areas where access to modern veterinary services is limited. The advantages of using indigenous veterinary medicines include accessibility, cost effectiveness, and cultural significance. These remedies are readily available in local environments, making them accessible to rural farmers. Likewise, traditional medicines are often less expensive than modern veterinary treatments. Last but not least, indigenous practices are an integral part of the cultural heritage and knowledge of local communities. Despite these advantages, there are some associated challenges and considerations to be considered when using indigenous veterinary medicines. For instance, many indigenous remedies lack rigorous scientific validation or studies to confirm their efficacy and safety. Furthermore, without proper knowledge, there is a risk of incorrect application or dosage. Likewise, there is a need for collaboration between traditional healers and veterinary professionals to enhance animal health management.

In Zimbabwe, there are quite a number of indigenous veterinary medicines that farmers use for the treatment of their livestock/animals. The commonly used indigenous veterinary medicines include those outlined in the following sub-paragraphs.

2.4.1 Herbal Remedies

Herbal remedies in indigenous veterinary medicine play a critical role in the healthcare of animals, particularly in communities that rely on traditional practices. They continue to be an integral part of veterinary care in many indigenous communities, blending traditional wisdom with modern practices. These herbal remedies have benefits that range from being easily accessible, cost effective to having a cultural significance to communities. Their application methods include infusion and decoctions (preparing the herbal teas to administer orally), topical applications (using pastes or oils on wounds or skin conditions) and through powders in which dried herbs may be mixed with feed for systemic benefits. The following are types of herbal remedies commonly used.

a. Aloe Vera (*Aloe barbadensis*)

- Uses: Applied for skin wounds and infections.
- Preparation: The gel is extracted and applied directly to the affected area.
- Application: Applied to cuts, burns and digestive issues.
- Effectiveness: According to Hossain et al (2016), it is known for its antimicrobial and healing properties.

b. Moringa (*Moringa oleifera*)

- Uses: Used to enhance animal nutrition and treat various ailments.
- Preparation: Leaves are dried and powdered, then mixed with feed.
- Effectiveness: Fahey (2005) acknowledged that Moringa is rich in vitamins and minerals, promoting overall health.

2.4.2 Plant-Based Treatments

These plant based indigenous medicines are vital for animal health and well-being. Their application methods include infusion/decoctions, as powders and topic treatments. Furthermore, their usage combine traditional knowledge with practical applications. Some of the examples of plant based treatments are as discussed below.

a. Neem (*Azadirachta indica*)

- Uses: Effective against parasites and skin conditions.
- Preparation: Leaves are crushed and mixed with water to create a topical solution.
- Application: Treats skin infections and internal parasites.

- Effectiveness: Kumar et al (2014) noted that Neem exhibits insecticidal properties which makes it a crucial indigenous medicine.

b. Sorghum (Sorghum bicolor)

- Uses: Used in treating digestive disorders in livestock.
- Preparation: Infusions made from the grains.
- Effectiveness: Contains tannins that may help with gastrointestinal issues (Sinha et al., 2014).

2.4.3 Animal-Based Remedies

Animal-based remedies are often derived from the use of animal products to treat various ailments in livestock and pets. Their application methods include topical use, oral administration or through nutritional supplements. They highlight the diverse approaches to animal health, blending tradition with practical applications. The following are some of the animal-based remedies commonly being used.

a. Cow's Urine

- Uses: Used in treating infections and as a general health tonic.
- Preparation: Administered orally or topically.
- Effectiveness: Kumar & Singh (2018) put across that this remedy is believed to have antimicrobial properties.

b. Goat's Milk

- Uses: Used as a nutritional supplement for weak animals.
- Preparation: Administered fresh or mixed with herbs.

- Effectiveness: Provides essential nutrients for recovery (Khan et al., 2017).

2.5 Effectiveness and Safety of Indigenous Veterinary Medicines in Zimbabwe

Indigenous veterinary medicines play a crucial role in animal health management in Zimbabwe, particularly among rural communities. These traditional practices utilize local plants and remedies that have been passed down through generations. In Zimbabwe, they offer effective and culturally relevant solutions for animal health management. Many rural farmers in Zimbabwe rely on indigenous knowledge systems for veterinary care due to limited access to modern veterinary services (Mavengahama et al., 2016). This is because Zimbabwe is rich in medicinal plants, with over 100 species commonly used for veterinary purposes (Ndlovu et al., 2018). However, while many remedies demonstrate significant therapeutic potential, careful consideration of safety and quality is essential. Continued research and community education are vital to ensure the sustainable use of these valuable resources. This presentation explores the effectiveness and safety of these indigenous veterinary medicines, highlighting their significance in livestock management.

2.5.1 Effectiveness of Indigenous Veterinary Medicines

Research has increasingly highlighted the effectiveness of indigenous veterinary medicinal practices. Many traditional remedies have shown promise in treating common ailments, enhancing immunity and promoting overall well-being in animals. For example, plants used in indigenous veterinary medicines have been documented for their antibacterial, antifungal and anti-inflammatory properties. As research continues to validate their effectiveness, there is potential for these practices to complement modern veterinary medicines, particularly in underserved areas. Embracing this holistic approach could enhance animal welfare and support biodiversity conservation. The effectiveness of these indigenous medicines lies in the following properties.

2.5.1.1 Antimicrobial Properties

Indigenous plant extracts, such as those from *Moringa oleifera* and *Aloevera*, have shown antimicrobial activity against common livestock pathogens. A study found that extracts from these plants effectively inhibited the growth of bacteria such as *Escherichia coli* and *Staphylococcus aureus* (Maroyi, 2013).

2.5.1.2 Anti-inflammatory Effects

-Many traditional remedies are used to manage inflammatory conditions in livestock. For instance, *Ziziphus mauritiana* has been documented for its anti-inflammatory properties. Research indicates that these plants can reduce swelling and pain in injured animals (Chivandi et al., 2015).

2.5.1.3 Wound Healing

Traditional remedies involving plant extracts are frequently applied to wounds. The use of *Commiphora molmol* (myrrh) has been noted for its wound healing properties. Studies confirm that these applications can enhance recovery and reduce infection rates (Ndlovu et al., 2018).

2.5.1.4 Nutritional Support

Indigenous plants like *Moringa oleifera* are also used as nutritional supplements, providing essential vitamins and minerals to livestock. Incorporating these plants into animal diets has been shown to improve growth rates and overall health (Mavengahama et al., 2016).

2.5.2 Safety of Indigenous Veterinary Medicines

Indigenous medicines play a critical role in animal health across various communities. For centuries, indigenous communities have utilized local plants, minerals, and animal products to treat livestock and pets. This extensive historical use has allowed for the accumulation of knowledge regarding the safety and efficacy of these remedies. However, as modern veterinary practices evolve, it is essential to critically evaluate the safety profiles of these traditional treatments despite the fact that they are often celebrated for their effectiveness and accessibility. Their safety margins lies in the toxicity, quality, interactions, and research and documentation.

2.5.2.1 Toxicity Assessment

Some indigenous medicines may contain compounds that can be toxic at certain doses or when used improperly. Thorough knowledge about the dosage and application is crucial to ensure safety. While many indigenous medicines are considered safe, some plants can be toxic if misused. For example, *Tephrosia villosa* has been reported to have toxic effects in high doses (Kambizi et al., 2006). It is crucial for practitioners to have knowledge of the proper dosages and preparation methods to avoid adverse effects.

2.5.2.2 Quality Control

The lack of standardization in preparation and application methods can lead to variability in efficacy/potency and safety. Ensuring consistent quality is essential for safety, hence community education on proper practices is essential (Ndlovu et al., 2018). Research is needed to develop guidelines for the safe use of these remedies, ensuring that they meet safety standards.

2.5.2.3 Research and Documentation

While many indigenous remedies have been used safely for generations, scientific validation and regulation are necessary to establish safe usage guidelines. This involves rigorous testing to assess toxicity, efficacy, and potential side effects. Increased scientific research into indigenous veterinary medicines can help validate their safety and effectiveness. Collaborative

studies between traditional healers and veterinary scientists can enhance understanding and promote safe practices (Mavengahama et al., 2016).

2.5.2.4 Interactions

Indigenous remedies may interact with conventional veterinary medications, leading to unforeseen side effects. Understanding these interactions is vital for safe treatment protocols.

2.6 Integrating Indigenous Veterinary Medicine into Conventional Veterinary Practices

The integration of indigenous veterinary medicine into conventional veterinary practices presents a unique opportunity to enhance animal health management, particularly in areas with limited access to modern veterinary services, in Zimbabwe and beyond. This paragraph explores the potential benefits, challenges, and strategies for effectively combining these two approaches, focusing on their relevance in Zimbabwe and similar contexts. By leveraging local knowledge, improving accessibility, and fostering community involvement, this integration can lead to more effective and culturally relevant veterinary care. Addressing challenges through research, education, and policy support will be crucial for successful implementation.

2.6.1 Potential Benefits of Integration

2.6.1.1 Enhanced Animal Health

Indigenous medicines act as complementary treatments which can complement conventional treatments, providing holistic care that addresses both the physical and cultural needs of livestock (Mavengahama et al., 2016). In rural regions, indigenous remedies offer accessible alternatives for managing animal health, especially when veterinary services are scarce (Ndlovu et al., 2018).

2.6.1.2 Cost-Effectiveness

They have the advantage of reduced costs to secure and use them. According to Maroyi (2013), indigenous medicines are often more affordable than modern pharmaceuticals, making them an attractive option for resource-poor farmers. Additionally, utilizing locally available plants reduces transportation and procurement costs, enhancing sustainability (Chivandi et al., 2015).

2.6.1.3 Cultural Relevance

The integration of traditional practices respects local cultures, fostering greater acceptance and adherence among farmers, hence their acceptance by the community (Kambizi et al., 2006). There is also the issue of empowerment of local communities during the use of these indigenous medicines. Involving local healers in veterinary practices can empower communities and enhance their role in animal health management (Mavengahama et al., 2016).

2.6.1.4 Biodiversity Conservation

According to Ndlovu et al (2018), promoting the use of indigenous plants encourages conservation and sustainable management of local biodiversity. The use of indigenous medicines was noted by Maroyi (2013) to have a positive effect of preserving traditional knowledge. He indicated that integrating these practices helps preserve indigenous knowledge systems that are at risk of being lost.

2.6.2 Challenges to Integration

Despite the potential benefits derived from the integration of indigenous veterinary medicines, there are some potential challenges likely to affect the integration. These challenges are as outlined below.

2.6.2.1 Scientific Validation

Many indigenous remedies lack scientific validation, making it difficult to assess their safety and efficacy (Mavengahama et al., 2016). There is also need for standardization since variability in preparation and application methods can lead to inconsistent results, necessitating standardization of practices (Chivandi et al., 2015).

2.6.2.2 Training and Education

Veterinary professionals need training in traditional practices to effectively integrate them into conventional systems (Ndlovu et al., 2018). Furthermore, awareness Programs are needed to equip the farmers and all stakeholders involved. In this regard, Kambizi et al (2006) asserts that educating farmers about the benefits and proper use of indigenous remedies is essential for successful integration.

2.6.2.3 Regulatory Framework

There is a need for supportive policies that recognize and promote the use of indigenous veterinary medicines within formal veterinary practices (Maroyi, 2013). Establishing regulations for the preparation and use of traditional medicines can enhance safety and efficacy (Ndlovu et al., 2018).

2.6.3 Strategies for Successful Integration

2.6.3.1 Collaborative Research

Collaborating with traditional healers, researchers, and veterinary professionals can facilitate knowledge exchange and validate traditional practices through partnerships (Mavengahama et

al., 2016). Conducting field studies to assess the effectiveness and safety of indigenous remedies can provide scientific backing for their use (Chivandi et al., 2015).

2.6.3.2 Community Involvement

There is need to engagement of local healers. Involving traditional practitioners in veterinary care can enhance community trust and improve health outcomes (Kambizi et al., 2006). Participatory Approaches are critical to mitigate the challenges involved during the integration processes. Utilizing participatory methods to gather local knowledge can enrich conventional practices and strengthen community engagement (Ndlovu et al., 2018).

2.6.3.3 Education and Training

When successful integration of the indigenous veterinary medicines is to be achieved, there will be need for curriculum development. As propounded by Maroyi (2013), integrating traditional medicine into veterinary education can prepare future veterinarians to incorporate these practices into their work. Workshops and seminars will also play a critical role during the integration process. Organizing training sessions for both veterinarians and farmers can promote understanding and effective use of integrated approaches (Chivandi et al., 2015).

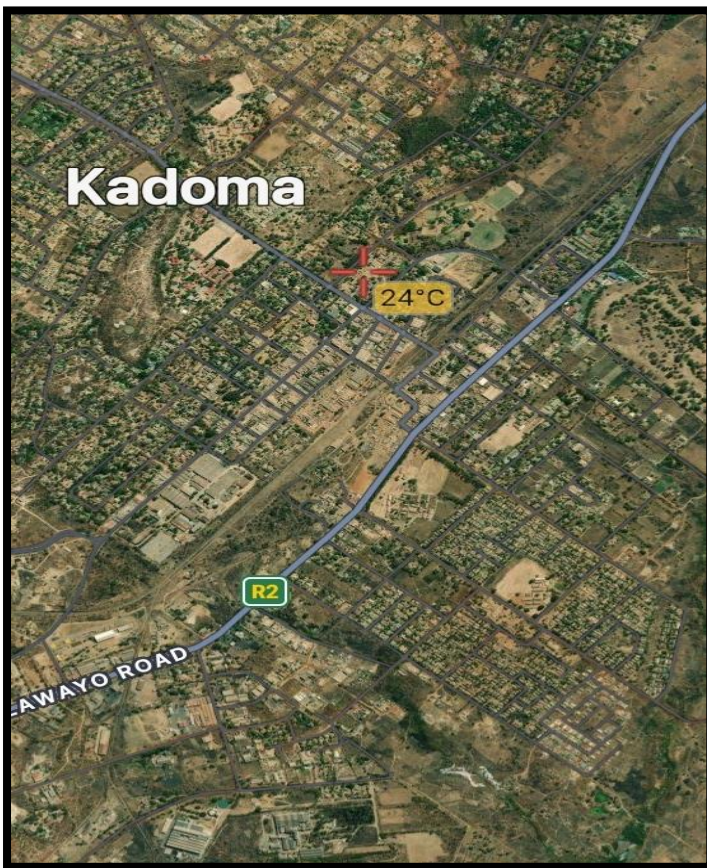
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Methodology

The study was conducted in the general areas of Kadoma and Chegutu. Fig 3.1 below shows the study sites in which the research was conducted. Data required for the research was collected using qualitative approach. In this regard, face-to-face interviews and focus group discussions were conducted for those participants who resided in Kadoma and on the other hand, online interviews were conducted for those who resided in Chegutu. These online interviews were done through the use of voice calls and social platforms which included Zoom and Vroom. The study areas of Kadoma and Chegutu had a total population of 95 and 70 participants respectively, making a total of 165 participants. This total population consisted of farmers, extension workers, veterinary professionals, local community leaders and elders, farm workers and students studying programs related to animal health. From this target population of 165, a sample of 50 participants was then selected for data collection using the cluster sampling since the sample variable appeared in a group format and some simple random techniques were employed to guard against bias during sample selection. The details of the sample population are as shown in Table 3.1 below. Prepared questions were asked to interviewees and also to participants during the focus group discussion. The information the participants provided during FDGs and interviews was filled on the prepared interview guide and also recorded so that no word was missed. An example of an interview guide which was filled during the interview is as shown at Appendix 1. The collected primary data was then analysed through the use of SPSS 21 with the aid of Excel. On the other hand, content analysis was used to analyse secondary data gathered during the study. The findings were then generalized to represent the total population.

Fig 3.1: Study Site



The study was conducted in the general areas of Kadoma and Chegutu. Quite a number of farmers were located in these two study sites

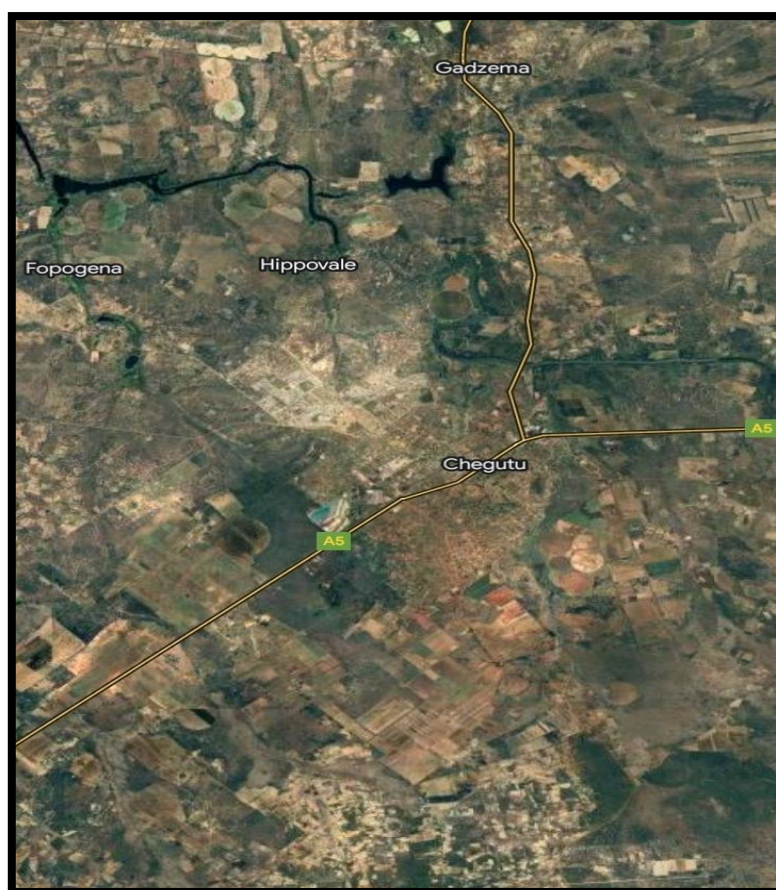


Table 3.1: Sample Size

Serial	Designation	Sampled Population	Sample Percentage
1.	Farmers	12	24%
2.	Extension workers	10	20%
3.	Veterinary professionals	11	22%
4.	Farm workers	7	14%
5.	Students	6	12%
6.	Local community leaders and elders	4	8%
	Total	50	100%

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter analyses and presents the findings obtained during the conduct of the study. The chapter aimed at addressing the objectives of the research spelt out in Chapter 2. The descriptive statistics were used to analyse the quantitative. For data presentation, tables, graphs and pie charts were used. The chapter will be concluded by an overall discussion of the research findings.

4.2 Respondents' Demographics

The respondents' demographics details of sex and gender, professional status, professional experience and educational level were considered during the study. The following sub-paragraphs outlines the respondents' demographics.

4.2.1 Sex and Gender

From the 50 questioners handed, 84% of them were males and 16% females. It also showed that 74% of these informants were 40 years old or above and the least age ranged within the age group of 20 – 35 years. This showed that all the participants who took part in the study were mature enough to understand animal health. The results of their demographics are as shown in Table 4.1 below.

Table 4.1: Demographics Data of Informants

Category	Frequency	Percentage
Gender		
Male	42	84%
Female	8	16%
Age		
20-35	5	10%
35≤ 40	8	16%
≥40	37	74%

4.2.2 Professional Status

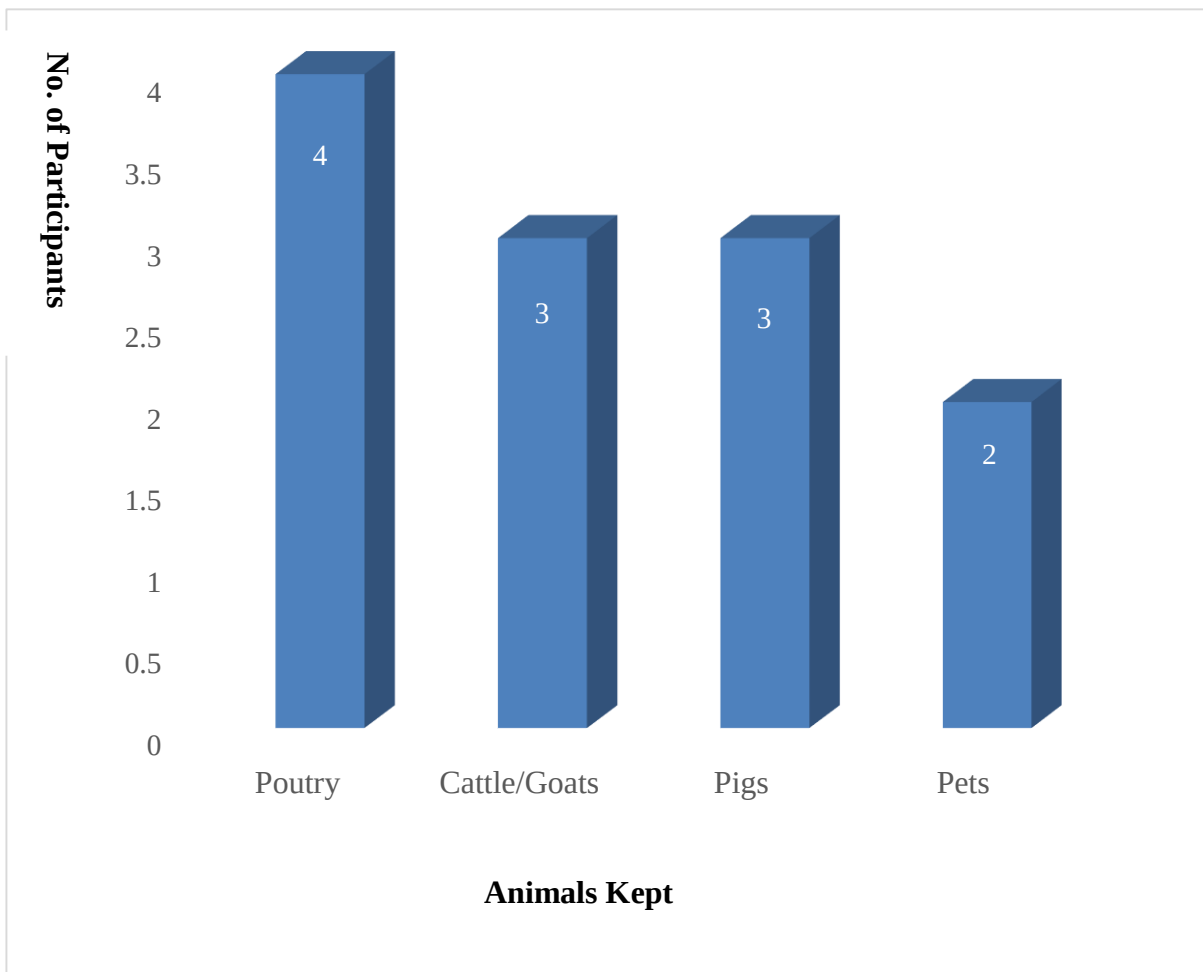


Fig 4.1: Animals being reared by Sampled Farmers

Fig 4.1 above shows the statistics of the types of animals which were being reared by the 12 sampled farmers who took part in the study. The research found out that out of the 12 sampled farmers, 4 participants were into poultry farming, 3 were into cattle/goat and pig farming respectively which 2 of the sampled farmers were into pets. The research noted that the majority of the farmers were into poultry farming.

4.1.3 Professional Experience

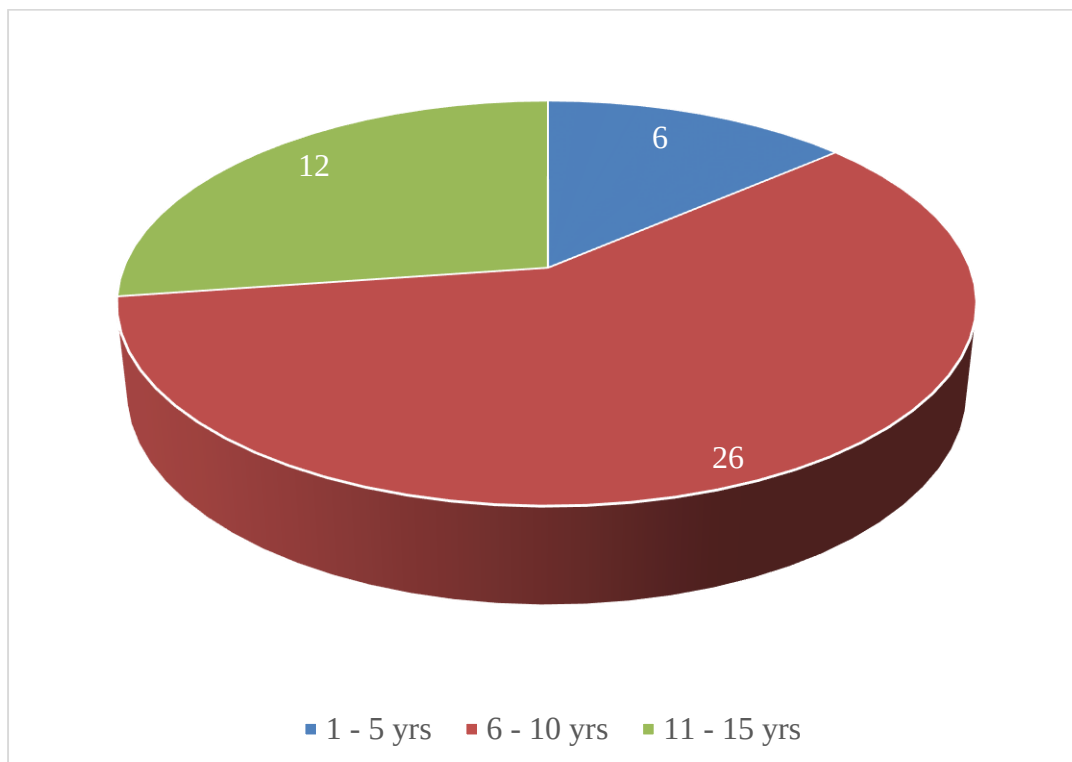


Fig 4.2: Respondents' Working Experience

As depicted in Fig 4.2 above, out of the sampled population (excluding the students), 6 (13.64%) participants had a working experience of 1-5 years in the related animal healthcare field, 26 (59.1%) participants had a working experience of 6-10 years and 12 (27.3%) had worked for 11 - 15 years in the respective field. The study revealed that most of the workers have worked from 06 - 10 years in the animal healthcare field. The research therefore concluded that those who took part in the study had vast knowledge on the matter under study. Presented in Fig 4.1 below are the details of working experience of those who took part during the research, expressed as a percentage of the sampled population (excluding students).

4.2.3 Educational Level

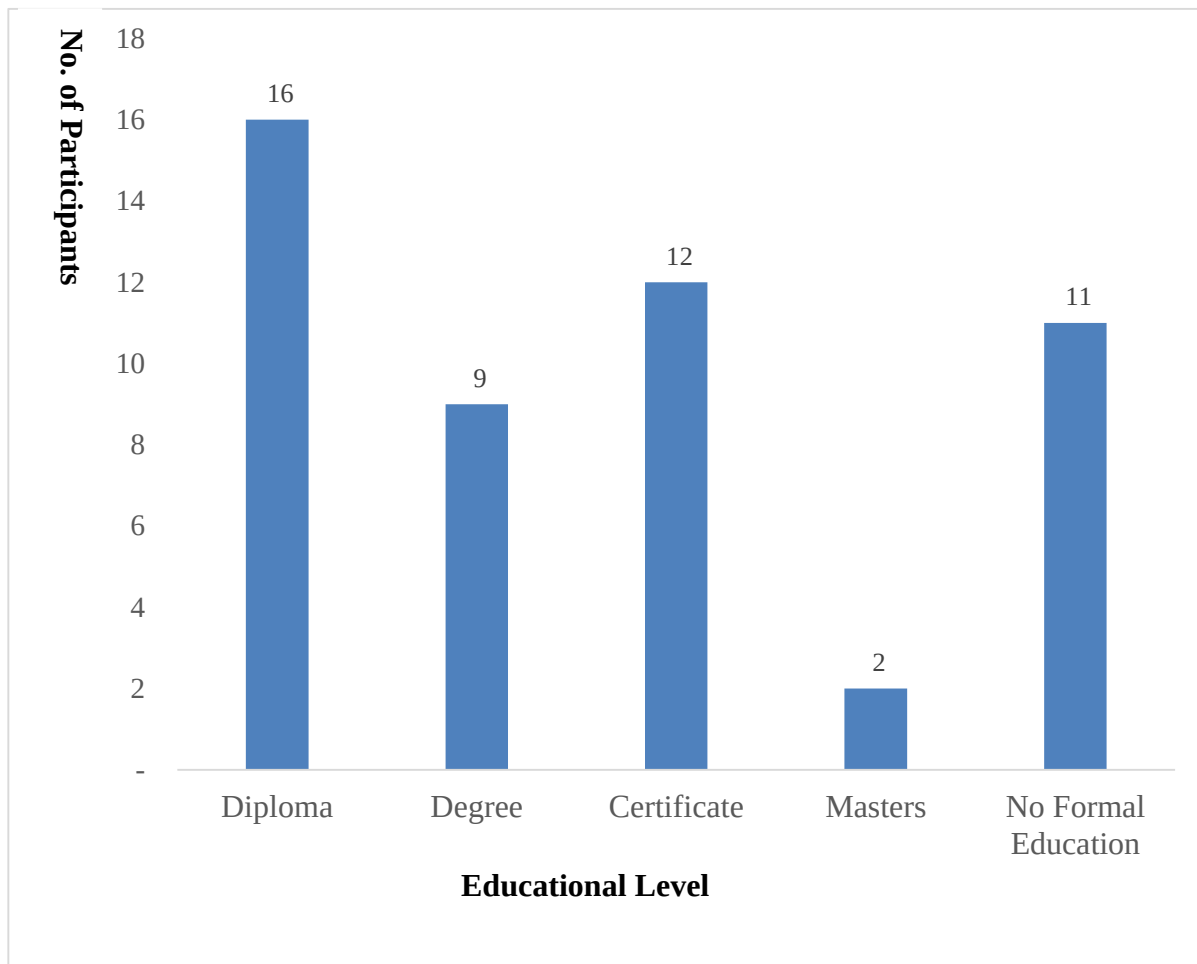


Fig 4.3: Educational Experience

The study noted the educational level of the participants who took part during the research. This professional qualification was believed to have a positive effect on the findings of the research. The research found out that 16 out of the 50 sampled participants had Diplomas in related animal healthcare field, 12 had reached Certificate level, 9 had Degrees, 2 had Masters in related field whilst 11 had no formal education. The study therefore revealed that most of the respondents had passed through college and university education and obtained relevant knowledge in animal healthcare. However, the study noted that those who had no formal education had vast knowledge in animal health and indigenous medicine. The researcher concluded that they had gained this vast knowledge through traditional inheritance and also

through years of experience. The participants' educational levels surpass the requirement of Cresswell (2015) who put across that the sample population should be knowledgeable enough to give meaningful contributions during research. Fig 4.3 below depicts the educational level of the participants who took part during the research.

4.3 Indigenous Veterinary Medicines commonly being used in Zimbabwe

Table 4.2: Plant Remedies used to treat Livestock

Botanical name	Vernacular name/ English name	Freq uency	Part of herb used	Ethno- medicinal use
<i>Acacia karoo</i> Hayane 	Sweet thorn/ Muunga	2	Bark, leaves, pods, gum: crush plant material and prepare infusion with water	Used in cattle, goats, sheep: the bark is used as an astringent for treating diarrhea and dysentery. Also used as an anthelmintic and used for wound healing

Moringa aleifera



Drumstic
tree/
murango

1

Leaves: Coccidiosis,
Crush Coughing,
the
leaves
and
dissolve
in
drinking
water

Capsicum annum



Chilli
pepper/
Mhiripiri

20

Fruit: Dewormer in
crushed poultry and
and dogs
infuse Analgesic
with and anti-
water, inflammatory
can be
used as
is

<i>Aloe chabaudi</i>	Gavakava/ Aloe	25	Leaves: Crush the fresh plant material and prepare infusion with water	Coccidiosis, Flu-like symptoms, Weight loss, Coughing, Lethargic birds, Newcastle disease, Fowl pox Antibiotic in most animals
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<i>Diplorhynchus condylocorpon</i>	Mutowa/ African rubber	1	Whole plant	Growth booster
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The research aimed at gathering the indigenous veterinary medicines which were commonly used in Zimbabwe. With the aid of the participants, the research found out that there were several indigenous trees/plants or medicines which were commonly being used in Zimbabwe. Most of the participants indicated that these trees/plants were local available in Kadoma and Chegutu. The participants highlighted the various indigenous plants which were found in Kadoma and Chegutu and they further stated the types of medicines they produce or animal

treatments they were using them for. The details are as shown in Table 4.2 above and the other plant species and their uses are illustrated in Appendix 2.

Table 4.4 Indigenous Remedies in the Study Area and Symptoms they Cure

Serial	Health Problem/ Disease Category/ Symptom	Plant Species Available	Names of the Plant Species <i>(*both in Kadoma and Chegutu*)</i>
1.	Wounds	4	Mushamba, Bute, Huchi, Mupfura
2.	Magotts	2	Muwengahonye, Mhiripiri
3.	Growth enhancers	1	Mashamba
4.	Stomach problems	9	Mukundanyoka, Chin'ai, Mutyora, Mhiripiri, Moringa, Munhunguru, Gavakava, Bute, Mutiti
5.	Antibiotics	6	Mupfura, Nhundurwa, Mutiti, Aloera, Muunga, Mushamba
6.	Anti-venom	1	Mupfuti
7.	Respiratory problems	4	Nhundurwa, Bute, Moringa, Mupfura
8.	Stopping bleeding	1	Mupfumbamaropa
9.	Fertility booster	2	Mutamba, Musekesa
10.	Antidote	2	Chin'ai, Matsito

The indigenous remedies which were both found in Kadoma and Chegutu were further grouped during the study to ascertain the number of plant species available, their respective names and the diseases' or symptoms they were being used by farmers to cure. The findings are as illustrated in Table 4.4 above. For instance, there were nine (09) plant species which were being used by farmers to cure stomach problems in the study area during the period the research was conducted. The research concluded that there were quite a number of plant species available in the study sites which farmers were using to prepare indigenous remedies to treat their animals/livestock.

The research also inquired on which plant parts the farmers were commonly using for the preparation of the indigenous remedies. When asked, the participants indicated that leaves were the most frequently used plant part with 40% of the preparations being made from leaves followed by bark (33.75%), roots (18.75%) and fruit, pods and seeds 7.5% of ethno-interventions being made from each of one them. Trees and herbs were the predominant growth forms of the plant species used in ethno-interventions medicine in the city of Kadoma and town of Chegutu.

4.4 Effectiveness and Safety of Indigenous Veterinary Medicines

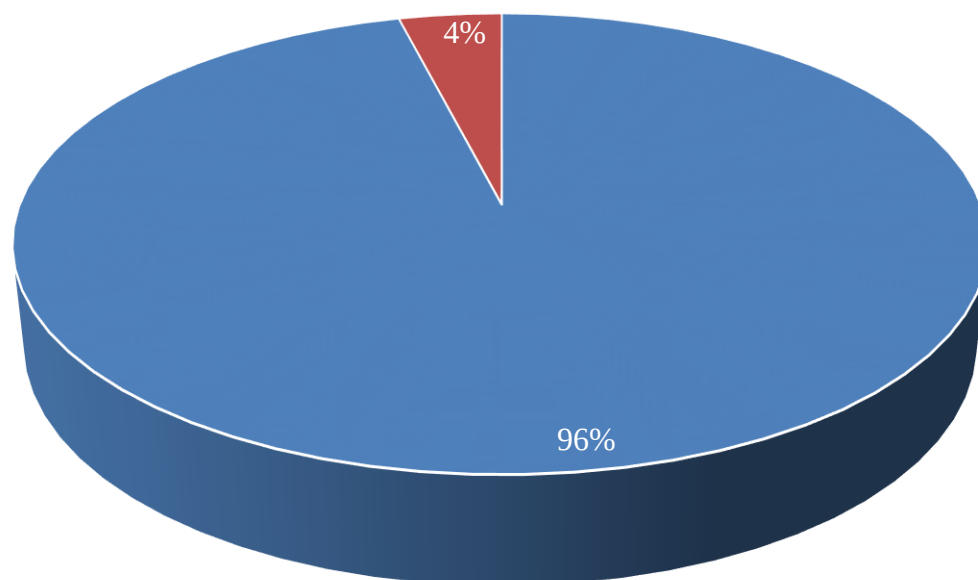
The research aimed at establishing the effectiveness and safety that is associated with the use of indigenous veterinary medicines. When asked about how effective were indigenous remedies in treating livestock and animals, 43 respondents (86%) strongly agreed that these indigenous remedies were very effective, 5 (10%) participants agreed, none disagreed whilst 2 (4%) participants had mixed feelings about the assertion. Those who had mixed feelings were further probed to explain further and they indicated that the effectiveness of these indigenous remedies lied with the correct dosage being given to the livestock/animal, if not safety will be jeopardized. The research then concluded that indigenous medicines were effective and need adequate knowhow on their usage and application for safety to be guaranteed. This was confirmed through the findings of Bhowmick and Bardhan (2023) who noted that safety should be prioritised when treating animals and livestock with indigenous veterinary medicines. The outcomes are as presented in Table 4.3 above.

4.5 Potential Benefits of Integrating Indigenous Remedies with Contemporary Medicines

The research found out that there were potential benefits which were associated with integrating indigenous remedies with contemporary medicines. Asked of the potential benefits, 48 (96%) participants indicated that this integration had a significant high impact on enhancing animal/livestock health, 2 (4%) participants indicated an average impact on animal health whilst none indicated low/no impact. Probed to explain further, the majority indicated that these

potential benefits included biodiversity conservation, cost effectiveness, enhanced animal health and cultural relevance. These results concurred with the findings of Ndlovu et al. (2018) who reiterated the significance of integrating indigenous medicine during animal treatments. The research then concluded that integrating indigenous remedies with contemporary medicines will have a significant impact on improving animal/livestock health. However, some veterinary experts said that these indigenous veterinary medicines work but they cannot recommended them to farmers because they were not yet proven and there was no specific dosages and withdrawal periods. The findings of this integration are as shown in Fig 4.5 below.

Fig 4.5: Significant Impact Level of Integration



■ High Impact ■ Average Impact ■ Less/No Impact

CHAPTER FIVE

DISCUSSION AND ANALYSIS OF THE FINDINGS

The results show that the least number of participants were from the age range 20-35 years. This is mainly due to lack of sufficient knowledge as the majority of this age range considered farm life outdated and favours white collar jobs over the blue collar jobs. Other ethno-surveys done in the country also show similar age distributions with most respondents being over 40 years. The low number of female participants compared to males has also been reported in the country. This can be attributed to the fact that the majority of families in Zimbabwe are male headed (Maroyi, 2012).

The high informant consensus factors for coccidiosis, wounds, coughing, Newcastle disease, flu, lethargy and ectoparasites show that most of the respondents agreed on medicinal plants used in the management of these conditions. These findings showed that farmers shared ethno-veterinary knowledge when treating these conditions. Previous surveys carried out in Zimbabwe have also reported the use of *A. chabaudii*, *A. greatheadii* and *E. abyssinica* in poultry ethno-medicine. Maroyi, (2012) reported that farmers in the Midlands Province in Zimbabwe use *A. chabaudii* and *Aloe greatheadii* to manage a number of poultry health problems such as diarrhoea, general weakness, respiratory symptoms and septic wounds. The use reports were similar to findings of the present study (**Table 4.3**). The use of Aloe species to combat Newcastle, diarrhoea and other poultry ailments has also been documented in neighbouring countries such as South Africa and Botswana (Moreki, 2015) (McGaw et al, 2020).

A Zimbabwean study demonstrated that *Aloe chabaudii* possesses antibacterial properties effective against common poultry pathogens. Both methanol and aqueous extracts of *A. chabaudii* were shown to inhibit the growth of *Salmonella gallinarum*, *Escherichia coli*, and *Staphylococcus aureus*, with their zones of inhibition comparable to those of standard antibiotics. This finding is significant because *S. gallinarum* causes Fowl Typhoid and Avian Pathogenic *E. coli* (APEC) leads to avian colibacillosis, both common poultry diseases. The

observed bioactivity of aloe extracts against these Gram-negative bacteria likely explains why farmers in three districts widely and successfully use aloe species in traditional avian medicine (Mbanga et al, 2010).

The observed use of *Erythrina abyssinica* for treating coccidiosis aligns with findings by Masimba et al (2011). Additionally, this plant is utilized in Uganda to treat bloody diarrhea in animals (Santos et al, 2009). Mutamba has also been reported to treat coccidiosis.

Capsicum annuum known as chilli pepper has been used by farmers to treat ecto and endo parasites in poultry and dogs. Researchers has shown that *C. annuum* contains compounds like capsaicin which have shown antimicrobial activities against a range of pathogens and it can be useful into treating infections (Maroyi et al, 2017). The capsaicin property found in *C. annuum* can be beneficial for pain management in animals and also it helps in reducing inflammation which can be beneficial in conditions like arthritis or any other inflammatory diseases in animals (Madzimore et al, 2011).

Solanum incanum known as bitter apple has several medicinal uses. Farmers use the juice from the fruits to treat respiratory problems and the water from the stem, leaves and roots as acaricide to kill ticks and treat tickborn diseases. Researchers discovered that aqueous fruit extracts for *Solanum incanum* can be effective against cattle ticks which is a major problem in many african countries. A study by Madzimore et al., 2013 found out that these extracts were efficacious in controlling tick infestations. *S. incanum* also contains antimicrobial and anti-inflammatory properties that makes it potential treatment for infections in Livestock and also help in conditions like mastitis in cattle. The aqueous root extract of *S. incanum* has been found to have spasmolytic activity which could be used in treating gastrointestinal (GIT) disorders in animals. While not directly related to veterinary medicine the plant contains anti-cancer and anti – oxidant properties (Mandal et al, 2019).

The continued use of *Zanthoxylum chalybeum* is driven by its availability in local environments. The plant is used to treat various animal diseases and conditions such as body inflammation, anthrax, diarrhea, swellings, urinary blockage, mastitis, external and internal parasites. Mgunj et al (2023). The water from the bark and the roots is used to treat animals. But also so known

as tobacco snuff is also used to treat several diseases in animals. The farmers believed that the snuff is used to treat wounds and respiratory infections. *Disostoema chinai* locally known as black sooth or chin'ai is used to treat Colic and as an antidote in cases of poisons. The farmers soak the black soothe in water and give to the animals if the suspect poisoning.

Clausena anisata known as maggot killer or *muvengehonye* has various medicinal uses in ethnoveterinary medicine, particularly in Zimbabwe. The plant is traditionally used as an insect repellent for animals, helping to control ticks, fleas, and other ectoparasites (Maroyi, 2017). The extracts from *C. anisata* have shown antimicrobial activity against various pathogens, making it useful for treating infections in livestock. *Clausena anisata* may help reduce inflammation, which can be beneficial in treating conditions like wounds or infections in animals (Madzimure, 2011). Studies have shown that *Clausena anisata* is used to control ticks and other vectors that transmit diseases to animals. And the extracts have been used to treat various infections in livestock, including bacterial and fungal infections.

Brachystagia boehmii also known as Prince of Whales feathers is used by farmers as anti-venom. The leaves are crushed and soaked in water then given to animals bitten by snakes. In Zimbabwe the use of *Moringa oleifera* is deeply rooted in traditional knowledge. Farmers use moringa to treat different ailments in animals. This plant is preferred due to its availability and effectiveness. The seeds, stem, bark, roots and leaves are used to treat the animals. Studies have discovered that the plant contains antimicrobial, Anti-inflammatory and oxidative properties which makes it helpful when treating diseases like respiratory problems, infections and mastitis just to mention a few. The plant is also known for boosting growth in animals.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter concludes the research and proffer some recommendations which the farmers and relevant stakeholders may utilize during their livestock rearing practices. The conclusions and the recommendations will be done for each respective objective as spelt out in Chapter 1.

6.2 Conclusion

In conclusion the use of traditional veterinary medicine is in place and has many scholars that have had interest in its practice. This has led to the documentation of some of these traditional practices. This research has managed to capture many but not all of the indigenous veterinary medicine practices that are native to the city of Kadoma and the town, Chegutu. It also showed that many farmers prefer to use these practices and herbs mostly on poultry and less on the large livestock and small livestock. Notably the majority of the mentioned medicinal plants have proven antimicrobial and have been rendered effective. The research concluded that there were several indigenous veterinary medicines which were commonly being used in Zimbabwe, including Kadoma and Chegutu. Many traditional remedies have shown promise in treating common ailments, enhancing immunity and promoting overall well-being in animals. However while many remedies demonstrated significant therapeutic potential, careful consideration of safety and quality was essential. Continued research and community education was vital to ensure the sustainable use of these valuable resources.

6.3 Recommendations

6.3.1 Indigenous Veterinary Medicines commonly being used in Zimbabwe

There should be more researches to be conducted in ethno-veterinary medicine as this will help bring to light other indigenous medicines not yet known by farmers and other stakeholders. Farmers should also be given the knowledge. Scientists should also extract the active

compounds from the herbs and package them, that way more trust is put into our own traditional veterinary medicine knowledge that has been in existence before the colonial era.

6.3.2 Effectiveness and Safety of Indigenous Veterinary Medicines

Farmers and other stakeholders should be educated on the effectiveness and safety of indigenous veterinary medicines so that they are knowledgeable enough to use them and make informed decisions in their day-to-day livestock and animal management.

6.3.3 Potential Benefits and Challenges involved during Integration on Indigenous Medicines

There will be need for collaborative researches, community involvement and capacity building of all the stakeholders so that the likely challenges to be faced during the integration process are mitigated against.

REFERENCES

- African Journal of Agricultural Research (2019). Concepts and key issues of ethno-veterinary medicine in Africa: A review of its application in Zimbabwe.
- Chavunduka, G. L. (1994). Traditional medicine in modern Zimbabwe. University of Zimbabwe Publications.
- Chavhunduka, G., & Bromley, D. (2015). Traditional livestock management and extension challenges in Zimbabwe. *Journal of Extension Systems*, 31(2), 45–58.
- Chikanga, P., Moyo, N., & Mafongoya, P. (2020). The Role of Traditional Veterinary Practices in the Management of Livestock Diseases in Zimbabwe. *Journal of Animal Health*, 15(3), 45-59.
- Chikanda, P., Ndlovu, L., & Mugabe, M. (2021). Exploring the Efficacy of Indigenous Herbal Remedies in Livestock Health Management. *African Journal of Agricultural Research*, 17(2), 134-145.
- Kahindi, R., Mbugua, R., & Muriuki, H. (2020). Holistic Approaches to Animal Health in Rural Communities: Insights from East Africa. *Veterinary Research*, 51(1), 123-135.
- Madzimure, J., Mapiye, C., & Dzama, K. (2013). Integrating indigenous knowledge systems into livestock extension: Experiences from southern Africa. *Livestock Research for Rural Development*, 25(6).
- Mafongoya, P., Mugabe, M., & Chikanga, P. (2019). Integrating Traditional Knowledge into Modern Veterinary Services: A Case Study from Zimbabwe. *Tropical Animal Health and Production*, 51(8), 2187-2195.
- Magada, T., Taderera, T., & Mawoza, T. (2017). Comparison study on the hypoglycemic effects of *Sclerocarya birrea* aqueous stem-bark extracts versus leaf extracts in alloxan-induced diabetic rats. *Journal of Applied Sciences in Southern Africa*.
- Maroyi, A. (2012). Use of traditional veterinary medicine in Nhema communal area of the Midlands Province, Zimbabwe. *African Journal of Traditional, Complementary and Alternative Medicines*, 9(3), 315–322. <https://doi.org/10.4314/ajtcam.v9i3.15>

Maroyi (2017); A study on ethnoveterinary medicine in Zimbabwe highlighted the use of various plants, including *Capsicum annum*, for treating different animal health issues.

Maroyi, A. (2023). Medicinal plants used against poultry diseases in Zimbabwe: A systematic review. *Veterinary Research Notes*, 3(9), 69-78. doi: 10.5455/vrn.2023.c31

McCorkle, C. M. (1986). An introduction to ethnoveterinary research and development. *Journal of Ethnobiology*, 6(1),

Millar, J., & Curtis, A. (1999). Challenging the boundaries of local and scientific knowledge in Australia: Opportunities for social learning in natural resource management. *Ecology and Society*, 3(2), 1–21.

Moyo, N., Ndlovu, L., & Kahindi, R. (2021). Bridging the Gap: Traditional Practices and Modern Veterinary Extension in Zimbabwe. *Journal of Agricultural Extension and Education*, 28(1), 67-81.

Mudzengi, C. P., Mupangwa, J. F., & Nyathi, P. (2014). The role of indigenous knowledge systems in livestock disease management in the rural areas of Zimbabwe. *Journal of Sustainable Development in Africa*, 16(6), 145–158.

Mugabe, M., Chikanda, P., & Moyo, N. (2020). The Challenges of Implementing Modern Veterinary Practices in Traditional Farming Systems: A Zimbabwean Perspective. *Livestock Science*, 243, 104301.

Nyamwanza, A. M. (2014). Indigenous knowledge systems and agricultural development in Zimbabwe. *International Journal of Humanities and Social Science*, 4(1), 112–120.

Scoones, I., & Thompson, J. (1994). Beyond farmer first: Rural people's knowledge, agricultural research and extension practice. *Intermediate*

Sillitoe, P. (2002). Globalizing indigenous knowledge. In P. Sillitoe, A. Bicker, & J. Pottier (Eds.), *Participating in development: Approaches to indigenous knowledge*

Zhou, S., Mudzi, W., & Mavhura, E. (2016). Challenges of integrating indigenous knowledge into extension services in Zimbabwe. *Development Southern Africa*, 33(4), 497–511.

- Fahey, J. W. (2005). "Moringa oleifera: A Review of the Medical Evidence for Its Nutritional, Therapeutic, and Prophylactic Properties." **Trees for Life Journal**.

- Hossain, M. A., et al. (2016). "Medicinal Properties of Aloe Vera." *Journal of Medicinal Plants Research*.
 - Khan, M. A., et al. (2017). "Nutritional and Therapeutic Value of Goat Milk." *Journal of Dairy Science*.
 - Kumar, V., & Singh, A. (2018). "Therapeutic Importance of Cow Urine." *International Journal of Current Microbiology and Applied Sciences*.
 - Kumar, A., et al. (2014). "Azadirachta indica: A Review of its Medicinal Properties." *Asian Pacific Journal of Tropical Disease*.
 - Sinha, A. K., et al. (2014). "Sorghum: A Versatile Crop for Livestock." *Journal of Animal Science and Technology*.
- Chivandi, E., et al. (2015). "The Anti-inflammatory Effects of Ziziphus mauritiana Extracts in Livestock." *Journal of Ethnopharmacology*, 174, 486-491.
- Kambizi, L., et al. (2006). "Toxicity Assessment of Tephrosia villosa in Livestock." *Tropical Animal Health and Production*, 38(2), 163-170.
- Maroyi, A. (2013). "The Role of Indigenous Medicinal Plants in Animal Health Management in Zimbabwe." *African Journal of Traditional, Complementary and Alternative Medicines*, 10(3), 451-459.
- Chivandi, E., et al. (2015). "The Anti-inflammatory Effects of Ziziphus mauritiana Extracts in Livestock." *Journal of Ethnopharmacology*, 174, 486-491.
- Kambizi, L., et al. (2006). "Toxicity Assessment of Tephrosia villosa in Livestock." *Tropical Animal Health and Production*, 38(2), 163-170.
- Maroyi, A. (2013). "The Role of Indigenous Medicinal Plants in Animal Health Management in Zimbabwe." *African Journal of Traditional, Complementary and Alternative Medicines*, 10(3), 451-459.
- Mavengahama, S., et al. (2016). "Indigenous Knowledge and the Use of Medicinal Plants for Livestock in Zimbabwe." *Veterinary Medicinal Plants*, 5(1), 23-30.
- Ndlovu, T., et al. (2018). "Medicinal Plants Used in Veterinary Medicine in Zimbabwe: A Review." *Journal of Medicinal Plants Research*, 12(5), 71-81.

APPENDICES

APPENDIX 1: INTERVIEW GUIDE

Vohanda's project Use indigenous of veterinary medicine

Questioners

1) Have you ever used any traditional herbs on your livestock?
YES

2) Name any three herbs you commonly use

- Nhunduma (Solanum Elaeagnum) (Bitter apple)
- Mushamba (Mushamba)
- Mupfura (Manila tree)

3) For the above mentioned herbs, write what each herb is used for and name the part of the plant that is of importance

- Nhunduma → use the fruit juice to treat respiratory problems. Residues from crushed fruits, leaves and stems mix with water and spray for treatment of ticks.
- Mupfura → use the crushed fruit juice and use it as a broad spectrum antibiotics. Use water from soaked bark as anti-histamine.
- Mushamba → use crushed gawi residue to treat wounds and use the bark for treatment of fractures.

11. Have you ever used any traditional herbs?

4) Have you ever come across any side effects, mortalities or decrease in production due to the herbs?

YES → * Nhimdurwa in large quantities leads to toxicity

YES → * Mupfura upon excessive consumption leads to drowsiness

5) Rate the effectiveness of the herbs in number 2 individually out of 10

* Nhimdurwa → 9/10

* Mushamba → 10/10

* Mupfura → 8/10

6) Are herbs safer and more effective as compared to commercial drugs

Yes/ No (tick your response)

7) What is your take on integrating indigenous veterinary medicine into modern day veterinary medicine?

These herbs are readily accessible and inexpensive

8) How do you determine the correct dosage for use in different animals?

Give the herbs gradually until desirable effect

- 9) Can different types of herbs be used in combination creating synergistic effectiveness?
Give an example and disease where such a combination is effective.

In wounds you can use *Mullein* as antiseptic,
Chondrilla for pain and *Witchamander* for
the treatment of the wound (topical).

- 10) What are the costs associated with using herbal remedies compared to conventional treatments?

Conventional treatments are expensive than herbal
remedies. Expensive to consult a herbalist.
- Withdrawal period and dosage of these
herbs is not specific which can lead to
overdose / underdose.

APPENDIX 2: INDIGENOUS TREES COMMONLY USED IN ZIMBABWE

<i>Brachystegia boehmii</i>	Prince of wales feathers/ Mupfuti	2	Bark and roots: crush the plant material and prepare infusion with water	Gastrointest inal issues, diarrhea and sometimes tick control. antivernom Used in cattle, goats
<i>Clausena anisate</i>	Perdepis/ Muvengahonye	2	Leaves, bark, roots: crush infuse in water or decocti ons used as washes	Insecticidal Treat internal parasites and digestive complaints



<i>Diestostemma</i>	<i>chinai</i>	Black Chin'ai	sooth/	5	Whole plant	Colic Antidote
						
<i>Erytrina abyssinica</i>	Mutiti/ bean tree	lucky	3	Bark: Grind the bark into a powder and dissolve in drinkin g water	Coccidiosis, Wounds, Coughing, Flu-like symptoms, Newcastle disease, Blindness	

Muunga/Acacia



<i>Fraxinus excelsior</i>	Dota/ European ash	2	Bark, leaves, seeds, oil from seeds Infuse in water, seeds crush	Treating wounds Antimicrobi al In all animals
<i>Flacourtia indica</i>	Mutyora/ Cooking soda	7	Leaves: rub crushed leaves on wound	For treating wounds and magotts

<i>Lannea schweinfurthii</i>	Munhunguru/ Hornpod tree	9	Roots: crush in water and orally give the extracts	Coccidiosis Corridor disease and prophylactic measure against poultry diseases
<i>Pterocarpus angolensis</i>	Mubvumbamar opa/ African teak bloodwood	2	Bark: Pound the bark and apply extract on wounds	Wounds
<i>Sclerocarya barrel</i>	Murula tree/ Mupfura	3	Leaves,	Broad spectrum antibiotic and believed to be an anti- allergen



<i>Strychnos conclodes</i> 	Mutamba/mon key orange	1	Fruit: Crush the unripe fruit and mix the contents with water and give the birds to drink	Coccidiosis, Coughing, Newcastle, Fowl Pox Fertility booster
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<i>Vachellia karoo</i>	Muunga/ Sweet thorn	2	Leaves crushed in water and taken orally	Treat diarrhea
<i>Zanthoxylum chalybeum</i>	Mukundanyoka/ knobwood	1 3	Roots and bark Crushed in water and then taken orally Rub on site of bite	Antivenom (snakebites) Stomach problems