

**INDIGENOUS MANAGEMENT OF CATTLE WOUNDS: CASE STUDY OF  
MUVENGAHONYE FOR DEHORN INFECTIONS IN MAKONDE, ZIMBABWE**

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**ABSTRACT**

This study evaluates indigenous cattle dehorning methods and management dehorning wounds infection. It was obliged by the need to improve the quality of indigenous knowledge and reduce the costs of modern veterinary drugs. The study was guided by qualitative ethno methodology research philosophy. Its emphasis is on what-ever data collection method works. A descriptive survey case study of ward one, two and three of Makonde district guided data collection. A cluster sample of 97 cattle farmers responded to a questionnaire, participated in focus group discussions and informal interviews. Literature provided a yard-stick for practical dehorning. Observations revealed that dehorning is mainly done using hot dehorning iron. There is no cleaning of hands, instruments, calf dehorned area and environment. The omission is associated with wound infections from exposure to bacteria. Infection was intensified by inappropriate after dehorning management, lack of after dehorning monitoring and early infection detection. A medium sized shrub found in Makonde district in Zimbabwe, Muvengahonye (*Cathium huillense*) is used to treat cattle wounds associated with dehorning or broken horn. The shrub's tender leaves and twigs are crushed, mixed with salt and soda. The mixture's juice is squeezed out and dropped on the open wound. The roughage is stuck on the wound. Such treatment can be based on the fact that, wound infection is reduced by dehydrates. Dehydrating the wound facilitates clotting of blood. The roughage maintain the movement of dehydrates by osmosis from a region of high concentration (wound opening) to a region of their low concentration (sinus cavity). This study observed the treatment on seven calves whose wounds were a result of deep cuts and burns during dehorning by hot iron. They all healed within two weeks. The study encourages surgeons to wash their hands and instruments after each calf dehorning. It recommends more trials of the Muvengahonye treatment of cattle wounds to determine its effectiveness.

**Key Words:** Indigenous, management, Muvengahonye, dehorn, wounds, Zimbabwe.

**1. INTRODUCTION**

Makonde district of Mashonaland West province is in Zimbabwe's climatic region two. Its' A1 and A2 resettled farmers keep cattle of different breeds and cross-breeds. God given genetic configuration endowed these animals with a pair of horns on their heads. Presumably, these were for their social dominance in the herd, self-defence and defending their young against wild animals such as hyenas, jackals and the human being. Fantaine and Witte (2002) define a horn as a permanent pair of natural projections from the head of mammals such as cattle, goats and

sheep. Regrettably farmers have resorted to disarming them by dehorning calves at a tender age as a measure to enhance their docility.

From Manda (2018) we understand dehorning to be the total removal or destruction of the horn secreting tissue from the calf. Hence the horn must be removed from the animal's head with approximately a centimetre of skin from the horn's base to prevent possibilities of any horn renaissance. If properly done, no animal can experience dehorning more than once in its life time. The study's lenses are beamed at the whole dehorning process, infection challenges and evaluation of their management using indigenous methods.

According to Mapara (2009) surviving indigenous knowledge systems share their origin in colonisation. They did not die as a result of military conquest purging of what were referred to as heathen and backward practices. Indigenous knowledge systems refer to a body of knowledge or bodies of knowledge of the indigenous people of a particular geographical area that have survived for a long period of time. In this study, indigenous knowledge denotes cattle dehorning expertise of the people of Zimbabwe, Makonde district and their dehorn wound management techniques.

Indigenous knowledge systems were originated locally as a natural survival strategy (Altieri 1995: 4). Infact they are knowledge forms that have failed to die despite the racial and colonial onslaught that they have suffered at the hands of western imperialism and arrogance. According to Hammersmith (2007:2) indigenous practices are linked to the community that produce them although they have been adulterated by time and interracial marriages. For instance, the names are local and indigenous. The instruments (sharp knives) and salt and soda additives are modern improvements of indigenous knowledge. We notice then, that indigenous knowledge is accommodative. Its boundaries are porous and amoebaotic.

Indigenous knowledge systems denote knowledge used by Africans during the Stone and Iron age period. Actually pre-colonial societies used this knowledge before the advent of colonialism. Nyota and Mapara (2008) observed that indigenous knowledge forms are known by different names associated with traditional technical, rural as well as ethno-scientific knowledge. Hence indigenous knowledge manifests itself in different dimensions. Among these are Agriculture, medicine, security, botany, zoology, craft skills and linguistics. However the current study is focusing on Agricultural medicine dealing with indigenous herbs for the treatment of cattle wounds resulting from dehorning.

Documentation by Plumb (2011) traces dehorning to Tennessee, United States of America cowboys since 1886. Although Neff and Hurni (2016, p 14) do not give us dates, their report shows that dehorning was allowed under Animals Welfare Act of 1890. In Switzerland it was to be done with sealing iron (700°C) under local anaesthetic by a trained professional. In Germany disbudding is permitted for calves up to the age of six weeks. In The United Kingdom, calves have to be disbudded within the first two months of life under an anaesthetic by a trained person. New Zealand and Australia are also recorded because they were literate before Africa. Cattle domestication in African society was a source of wealth and social prestige. Its history of cattle dehorning is scanty, we doubt if at all Africans dehorned their cattle before colonisation cattle

farming methods were implemented. Therefore, this study is resuscitating by documenting indigenous knowledge for using local herbs in the treatment of cattle dehorning wounds.

### **Statement of The Research Problem**

The study is inspired by the observation that, there is limited documentation of indigenous medication for treating wounds resulting from calf dehorning. Currently (2020) all veterinary medicines in Zimbabwe are imported using forex. This renders them too expensive for Zimbabwean farmers. Kiringe (2006, p57) attribute the popular use of traditional medicine among rural communities to its' affordability, being readily accessible and cultural acceptability. Manda's (2018) reports reveal that, Zimbabwean farmers do not hire surgeons to dehorn their cattle. They carry out the dehorning process by themselves using indigenous medicines, without an aesthetics and antisepsis treatment. Under such situations, the possibilities of dehorning wounds being infected by bacteria are high. The role of this study is binary. First is to evaluate the dehorning process for improvement. Second is to provide an accurate record of indigenous medicines for the treatment of dehorned calf wounds.

### **Research Questions**

The study seeks answers to the following pertinent questions:

1. How are farmers in Makonde district dehorning their calves?
2. What traditional medication do they use to manage wounds from dehorning?

### **Study Objectives**

This study sought to:

1. Describe the dehorning process used by farmers in Makonde district of Zimbabwe.
2. Document traditional medication used for wounds arising from dehorning.

### **Significance of Study**

This study is important for contributing literature on indigenous cattle wound healing methods. Such knowledge improves cattle management in Zimbabwe. It raised participants' awareness of dehorning, cattle wounds and their treatment. Study findings are important content for farmer training workshops and prize giving day speeches.

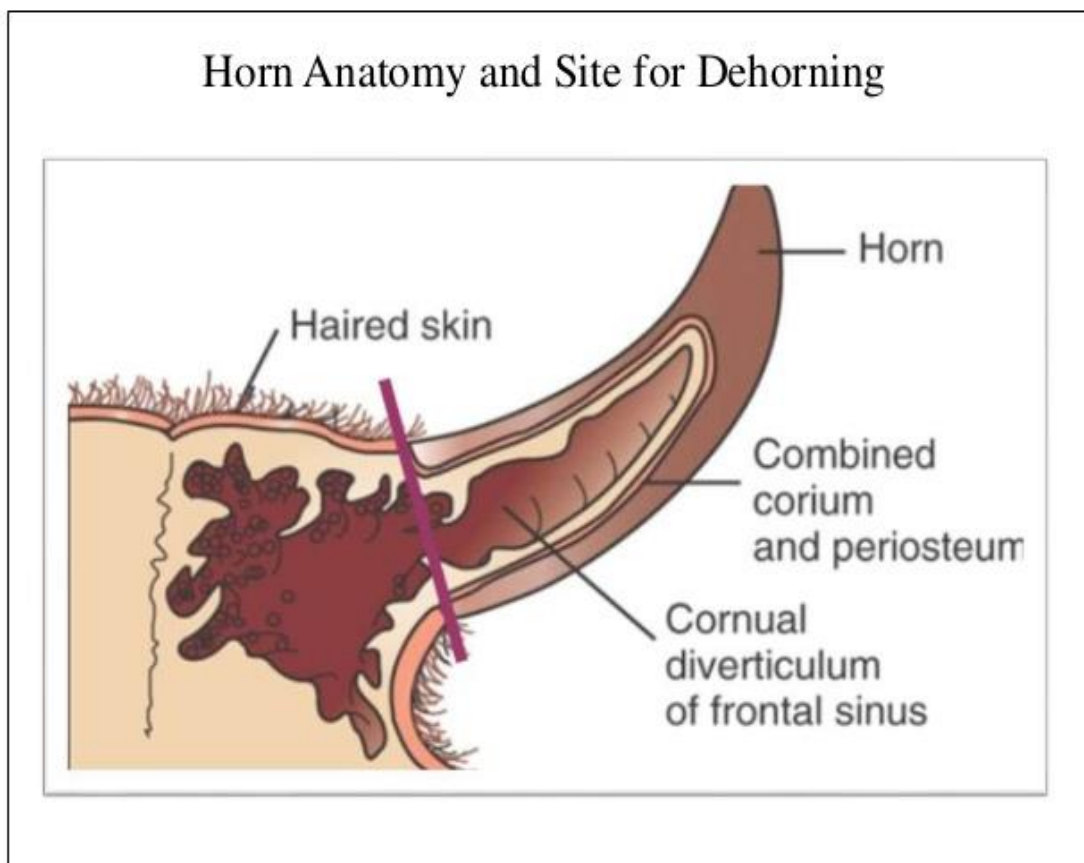
## **2. LITERATURE REVIEW**

### **Overview Anatomy of the Horn**

Horns are permanent projections which grow from a unique area of skull. At about two months of age, horns become attached to the frontal bone of the skull. Neff and Hurni (2016, p4) define a horn as a condensed protrusion of the skin. A bone grows into the skin forming a horn. The bonny core is penetrated by blood cells furnished with nerves. They are sensitive and connect with the sinus cavities. Horns continue to grow throughout the life of the animal.

A sinus lies within the skull beneath the horn bud. As the horn grows this frontal sinus forms into adjacent portion of the horn.

The cross-section of the horn below shows a central conical bony core (Cornual diverticulum) or corneal process which grows from the frontal bone of the skull. The corneal contains blood vessels and sensory nerves. If the horn above is to be tipped off the saw should not cut the combined corium or corneal. A ridged porous epidermis forms the protective covering of the horn. This is not painful because of the absence of sensory nerves. Take note of the hair which should be shaved off during dehorning. The word dehorning is confined to the removal of horns in calves. Randerson (2008) restricts dehorning to calves below six months.



Source: Dorji, J. (2020) Online, Slideshare.net

### Arguments Against Dehorning

The debate of cattle dehorning swings from an advocacy for to total denouncing of the dehorning process. Tenny 1886 in Plumb (2011, p13) argue against dehorning with the following emotional overtones: *“the operation of dehorning cattle or amputating the horns is very painful. It is surely a cruel practice excepting for disease, fracture, faultyhorn direction and deformity.”* The word

*amputate* conveys the idea of deformed end result. Yes, dehorning deforms the cattle's God given physical appearance.

From Manda (2018) we get the following points against cattle dehorning: First, cattle should not be dehorned because horned livestock are better able to defend themselves and their young from predators such as wolves and dogs. Dehorning them contradicts God's design of the animals. It weakens their protective competence rendering them vulnerable to predators and human abuse. Neff and Hurni (2016) point out that, dehorning cattle brings their eyes closer to each other on its face. That set up reduces its' rear vision by increasing the its' blind sport. In addition, the animal's silhouette reflects its' character through its horns. Dehorned cattle are submissive and less confident.

There is a positive correlation between cattle horn and form of horns for temperature regulation. Cattle in hot climate have long horns and slimmer bodies for thermoregulation. During hot times, blood flows up the horns through the corneal to regulate temperature by facilitating heat loss through radiation from the porous horn surface. Those cattle in cooler regions tend to have smaller horns or none at all, to reduce surface area. Cattle horns provide a social hierarchy among themselves. The dehorned and hornless polls occupy the lower social ranks. Dehorning interferes with animals' social status.

Human beings benefit from the horns of their cattle. They provide a secure point for roping than holding the animal's head. Neff and Hurni (2016, p 9) informs us that, the number of rings on the horn of a cow indicates the number of calves the cow has given birth to. This aspect is removed by dehorning. Some types of yoke used by draught oxen require the presence of those horns. In some African countries like Kenya, horns are of cultural significance often being decorated or even trimmed into strange shapes. They are used as music instruments for traditional ceremonies.

Manufactures use horn meal or shavings to manufacture fertilizer with a12% to 15% nitrogen content. Also plates, cups, combs, buttons and door handles are produced from cattle horns. By dehorning their calves, farmers are reducing raw materials. Horns are a traditional trademark in some breeds and breeds standards may require their presence. Such examples include Texas long horn, Highland and White park cattle.

### **Arguments for Dehorning**

Those who support dehorning of cattle, proffer the following points: cattle horns may injure cattle handlers. This is a selfish consideration to promote human supremacy over the animals. Horned cattle cause significant damage to hides and carcass quality. Prayaga (2007) reports that, bruising costs the Australian beef cattle industry an estimated \$20 million yearly. This is a great loss for cattle to have their horns. Even the point that horned animals injure each other is flimsy and actually is an end to the farmer's economic gains.

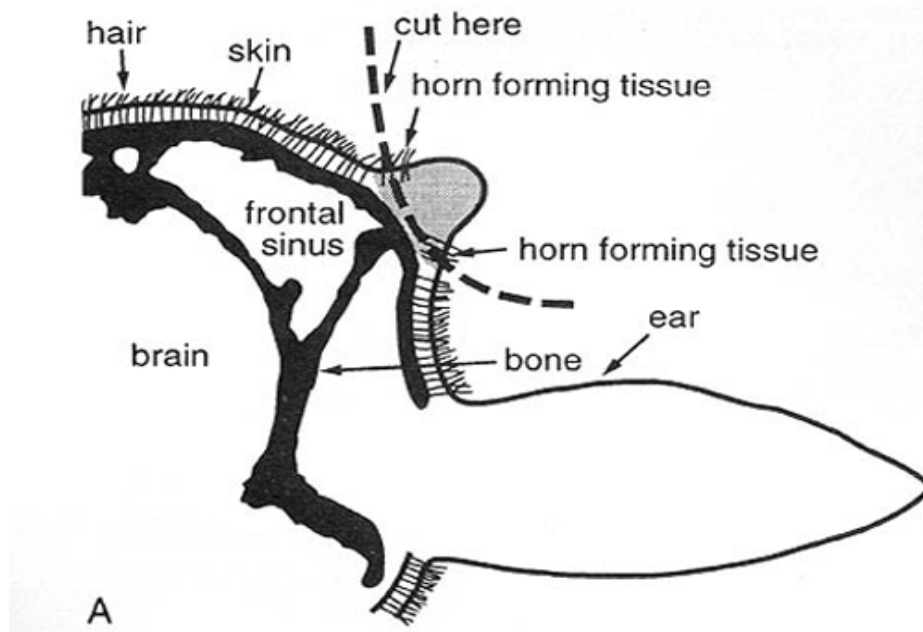
More opinions for dehorning include these, horned animals take up large space causing issues at the feed bank and during vehicle transportation. As a result horned animals may require specialised equipment, such as feeders and angulate crushes. The human being proposing these cattle management based influences is springing from an economic diving board.

Arguments for dehorning cattle based on the animals' welfare encompass these: some cattle horns may grow towards the head eventually causing injury to its jaws or shoulders. These may be tipped and not dehorned because dehorning is done at six months before anybody has prognosticated their direction. Horns may become broken causing blood loss and potential for infection. Horned animals may become trapped in fences or vegetation causing self-injury.

### **Dehorning Process**

Despite the arguments submitted for and against dehorning, farmers are dehorning their animals. Dehorning is the total removal of the budding horn from the calf's head. It should be done by a professional veterinary surgeon. Literature recommends the following steps for a comfortable calf dehorning.

1. The calf should be put down, on some grass mat to reduce environmental dirty, get its feet bound firmly together and hold its head.
2. The surgeon should trim and shave the hair around the horn (see diagram below).
3. Wash the area with soap and water and disinfect it using surgical spirit.
4. An anaesthesia can be injected in the skin of the calf between the eye and the base of the horn to reduce pain through loss of sensation. Kihurani (1987) recommended one injection 5ml for each horn. The dose takes 10 to 15 minutes hence the dehorning operation must be completed within 15 minutes. Five antiseptics were recommended that is:-ethanol in proper concentrations is one of the best antiseptics for general use. - washing animal skin with sterile gauze using alcohol reduces germ growth rate. -hydrochloric is used as an antiseptic with high bactericidal activity against a variety of bacteria and fungi. -Iodine is a skin irritating antiseptic which can cause calf skin burns. -hydrogen peroxide is an oxidising agent with an antiseptic effect. It oxidises the wound environment making it unsuitable for anaerobic bacterial growth.



Source: Dorji, J. (2020) Online, Slideshare.net

5. Using clean hands and scooping knife, the surgeon can cut the calf's horns as close as possible to the skull without cutting the skull. Masika et al (1997) suggested cutting a centimetre of flesh below the base of the horn (see diagram above).
6. Dress the wound applying fly repellent. Prayaga (2007) warned surgeons not to dress calves returned to their mothers. The mother will lick-off the dressing.

### Dehorning Wounds

Wounds refer to any opening of the animal's skin exposing tissue and blood cells. Luseba et al, (2007) consider wounds to include sores, abscesses, warts and inflamed skin disease. They can be a result of ticks infestation, cuts, bruises from other animals or dehorning from human beings. Lucas (2011) observed that, there is no dehorning method which can be infection proof. The act of cutting the horn off the calf's head exposes the sinus and cause blood loss resulting in a man-made animal wound. The knives, dehorners, saws or guillotines all increase the risk of infection during dehorning process.

The wound opening which exposes the sinus provides entry for bacteria and attract attracts disease-carrying flies. If the wound conditions are ideal, flies and maggots breed in sinus cavities. The presence of infection can be detected by smell, pass or swelling of the infected area. Other signs of sinusitis from Lucas (2011) can include lack of appetite, fever, nasal discharge and abnormal head carriage. Such infections can show up immediately after dehorning or even months later, after the wounds have healed.

According to Fantaine and Witte (2002) there are chances of confusing dehorning wounds with horn cancer. The exact cause of horn cancer is not known, but may be partly hormonal due to its high prevalence in adult castrates. It is found common in Zebu cattle, and primarily affects short-horned Harijana cattle of India. The condition has been reported in other Zebu breeds in other parts of the world. A similar condition occurs in Sudanese cattle.

Affected animals commonly have a previous history of injury to the horn we included it here because dehorning is classified as horn injury. Persistent rubbing of the tissues round the base of the horn from head ropes is common in Zimbabwe for cattle which are tied for the night.

The earliest sign of horn cancer is a slight drooping of the horn at its base. This deformity increases until the horn bends downwards and becomes loose. It then becomes detached from the skin at the base, exposing the horn core. A grey/yellow lump can be seen at the base of the horn. It is covered with blood and mucus, its bacteria smells bad when infected.

The cancer has cauliflower-like growths covered in foul-smelling blood -stained discharge. It may invade the frontal sinuses causing discharges with pus from the nose. Often there is involvement of the eye, with cloudiness of the eye. The signs on nose and eyes can easily distract the farmer's attention from horn cancer to some nasal and eye infection.

### **Wound Management**

Wound management require knowledge of bacterial sources and factors contributing to the rate of wound healing. These provide targeted wound management strategies.

Wound management must start with preventive measures based on knowledge of bacterial sources. For wound infection prevention Kihurani (1987) identified four main sources of bacteria for the dehorning wound. First is the patient calf. Its horns should be cleaned before dehorning. Dehorned calves must be monitored for signs of infection, such as lack of appetite, fever, abnormal head carriage and foul breath. When cleaning septic wounds, a disinfected swab should be moved from inside wound out. The clean wound can be treated with blood coagulant powder.

Second source of bacterial infection is the operation environment. Dehorn outside of fly season or use fly deterrent. Dehorning in the morning can be encouraged. A dust free enclosure is preferred. Grass bedding can be used.

The third bacteria source is the surgical personnel. These can cut their nails and cover them with gloves. Their noses and mouths can be covered to reduce bacteria transfer from them to animal wounds.

The fourth precaution is focused on the dehorning equipment. It must be cleaned and disinfected after each and every calf operation. New gloves should be used for each calf patient. Luseba (2007) emphasise that, the surgeon must make sure that dehorning instruments are kept sharp,



clean and dry. Surgeon must cleanly cut bone tissue rather than crushing it, as crushed tissue may be more vulnerable to infection.

Newman (2007) admits that it is not considered practical and necessary for antiseptic preparation of the animal skin before dehorning. Such an omission facilitates wound invasion by pathogenic bacteria which delay or prevents healing. Kihurani (1987) identified four factors influencing the rate of wound healing. First is the virulence of the bacteria. This can be reduced by antibiotics. The second factor is the amount of bacterial contamination leading to the infection of the wound. This factor is dependent on the surgeon's practice. Preventive measures discussed above are necessary for reducing the amount of bacterial contagion. The third factor suggests the degree of host animal resistance. A direct implication is that, animal surgeons should dehorn health calves. Last but critical is the nature of the wound. For dehorning, the surgeon's competence in scooping just a centimetre below the base of the horn without cutting the skull is critical (Masika et al, 1997).

Alawa, Jokthaan and Akat (2002) observed that poor cattle health affects their optimal productivity. Therefore treatment of cattle wounds caused by humans through dehorning, is important for the improvement and increase of their productivity. The current costs of veterinary medications are beyond rich of Zimbabwean farmers. The World Health Organisation W.H.O. 2002 cited by Kiringe (2006, p57) attribute the popular use of traditional medicine among rural communities to its affordability, being readily accessible and cultural acceptability. This study's purpose is to record indigenous medicines for accuracy and improve the quality of medication administration.

### **3. METHODOLOGY**

#### **Research Philosophy**

The purpose of this study is to identify and describe the practice calf dehorning in Makonde district. This calls for the guidance of qualitative ethnomethodology research philosophy. According to White (2005, p104) qualitative research facilitates the flexibility of the researchers to create a research design best suited for the problem. Qualitative research design is fluid. Since the key variable indicators are actions of people within the ecological context of Makonde, it is bounded. Sharrock (2017) presents Ethnomethodology in its fragmented form as ethno-methodology. Ethno-refers to a community or particular social group (Makonde farmers) of people. Method-denotes actions and practices (calf dehorning) employed in the community's everyday lives. Ology- is for a systematic description of (dehorning) methods as an indigenous practice. Livingston (2008) has this neat summary of ethnomethodology as a study of indigenous methods used by a group of people to organise their everyday lives. It is a study of actions and their rationale as observed and justified by the group. Ethnography fits in well as a proper subset of qualitative research in that, actions can not be quantified.

According to Kiringe (2006) ethnomethodology's objectives can be to: recover indigenous understandings which constitutes facts, learning from practice and practitioners with an emphasis

on the analysis of materials and actions. In this study, ethnomethodology guides the systematic study of calf dehorning in Makonde district of Zimbabwe.

### **Research Design**

Qualitative research designs are fluid, depending on the nature of data required and natural setting from which it is obtained. This study took off with extensive literature review for standards. This was followed up by surveys of participants' views. Observations of the actual dehorning practices (methods) were carried out together with interviews for the rationale of the actions. Data collected in the field enabled the environment to contribute significantly to the validity of data interpretation. Descriptive surveys facilitated the description of cattle wounds, their indigenous management and farmers' views. Verma and Mallick (1999, p79) applauds descriptive surveys for revealing variable characteristics under prevailing conditions.

### **Population and Sampling**

The population of this study was made up of human, animals and documents. The human population was composed of cattle farmers in A1 and A2 farming wards one, two and three. The total number of cattle farmers as per their dip-tank records were Ward one had 35, ward two had 56 and ward three had 62. Since the population is finite ( $N = 153$ ), probability sampling was applicable. Descriptive surveys allow the application of probability sampling. The variable (calf dehorning practice) depends on wards, cluster sampling was called for. Proportional sampling had the following results: Ward one got 22 participants, ward two had 36 and ward three 39 farmers who responded to a questionnaire. The sample size  $n = 97$ . This was statistically large enough for the variable to be normally distributed and survey findings to be generalised. Individual farmers were selected by matching farm number to a random number generated by a computer. When a number was repeated, it was ignored.

The animal population was composed of dehorned calves. Its total was unknown. Researchers did not know how many calves were to be dehorned and indigenous management applied. We settled for a purposive sample of seven calves. Their inclusion criterion was being rich sources (dehorned and indigenous medication), being available and accessible (will to participate) for observation. Documents for literature review qualified on their content being on dehorning and being available. Since they are published, researchers considered them reviewed, valid and requiring no further validation.

### **Instruments**

The main instrument used in this study was the questionnaire. It captured individual farmers' dehorning methods and wound management. Focus Group Discussion guides gathered group perceptions and management methods. Interview guides sought clarifications on particular actions and insights raised from questionnaire responses. Observation guides focused on what action was done. These instruments were designed and administered by researchers for the study. Actions and practice required in this study was collected by instrument and method triangulation of questionnaire, focus group discussion, interview and observation guides. These facilitated the projection of the dehorning process as a whole in the context of Zimbabwe's Makonde district.

Data Collection and Presentation

Data collection was initiated by permission seeking from veterinary offices of Makonde district and individual cattle farmers. This was an ethical issue satisfaction which also lobbied for support. This was followed by visits to Makonde veterinary offices and dip-tanks to meet cattle farmers.

Ward chair-persons organised focus group discussions in their respective wards. Each group had two open ended questions: how do you dehorn calves? and what traditional methods do you use to manage wounds arising from dehorning? Participants answered them in groups and reported. Researchers noted common points during group presentations. They asked groups to explain unique group insights.

Participants' age is a quantitative continuous variable. In this study it presented on a Stem and Leaf diagram to maintain the original identity of each participant's age. White (2005) emphasise that, presentation of original findings is a strong source of validity in qualitative research.

These qualitative findings are presented as direct quotations to allow readers to extract more from the words used.

Researchers visited 97 farms for familiarisation first then to administer questionnaires. They also asked questions during informal interviews. Verma and Mallick (1999) consider informal interviews as more authentic due to the informal setting that they take. Researchers considered them appropriate because they did not disturb much of the activities at the farm. Dehorning practices are presented as descriptions of actions.

Researchers visited farms four farms where they participated in the dehorning of seven calves. In each of the cases, we jotted notes and asked questions. We also visited the farms to monitor the healing process.

4. FINDINGS AND DISCUSSIONS

Participants Age distribution by Gender N = 97

Stem and Leaf diagram table with columns for Female Leaf, STEM, and Male Leaf, showing age distribution for 97 participants.

Key: 4 7 = 47

The majority (75%) of respondents are male. This can be accounted for by the Zimbabwe traditional culture which assigns issues of cattle as a male possession. The majority of them are in the 70 to 79 year age group. This is an undesired distribution for farming which requires more physically bodied personnel particularly when it comes to wrestling with cattle for dehorning. This negatively skewed distribution is explained by the farm allocation policy implemented 40 years ago. A beneficiary of the farm who was say 20 in 1980, is now over 60 years old. There are two outlier cases, 19 years and 91 years. The 91 year man was a very rich source of information for indigenous methods. All participants are adults whose voices can be relied upon.

### **Dehorning Practices**

Dehorning in Makonde district is done by man who claimed to have learned the dehorning skills from the white-man by informal apprenticeship. This was mainly by seeing, try and do. No certification for the skill was awarded. The interesting observation is that, the community acknowledges such practical skills.

We got to a cattle kraal where seven calves from three farms and their mothers were enclosed. None of them was below the age of six months. They all had visible horns about 13 to 20 cm long. Their actual births were unknown. We noted that, farmers in Makonde needed benefits of cattle record keeping.

**Materials** brought to the operation open space were: a sharp okapi knife, de-budding iron, a mixture of Muvengahonye (cathiumhuillense)tender leaves and twigs crushed and mixed with salt and bicarbonate of soda. A wood fire was made and the de-budding iron was put in the fire.

### **De-horning Process**

When the de-budding iron was red-hot;

1. A calf was dragged out of the kraal by four man. Two pulled the rope tied around its neck and the other two held its front legs. It literally walked its hind legs.
2. The calf was forced to the ground, got its' legs tied and were held to reduce movements.
3. The surgeon got one of his feet on the calf's neck, held the upper horn and with a swift move, cut the horn off.
4. Blood spurted from the horn I felt the pain and looked aside.
5. The red-hot de-budding iron was brought. The surgeon held the wooden handle and pressed the red-hot part on the calf's blood spurting horn. He kept pressing until all the heat on the iron was exhausted. The calf bellowed to deaf ears.
6. It was turned and the process repeated on the other horn. I wish two de-budding irons could be used to reduce the time lost when the iron was returned to the fire and heated to red-hot.
7. The surgeon got the mixture from a container improvised by cutting an empty bottle for Mazoe Orange Crush drink. He squeezed and dropped the juice on each de-budded horn. He made the whole scar and hair around wet. Some roughage was staffed on the opening.

8. The calf was untied but it remained motionless for approximately 7 minutes. Then it got up and moved to join its mother. The process from step 1 to 6 was repeated for each calf. Their reactions were different but not significant.

### De horning Process Evaluation

An evaluation of the de-horning process against a theoretical standard provided in literature review, revealed the following omissions:

1. There was patient (calf) protection from bacteria from the open environment, the surgeon and his team, instruments and the calf's body.
2. There is need to reduce the pain experienced by the calf during the de-horning process.
3. Calves need to be de-horned at a younger age to avoid the need to cut the horn using a knife.
4. All the seven calves recovered within two weeks. We are not sure whether it is the effectiveness of the Muvengahonye (cathiumhuillense) or the natural healing process of the wound. The salt is a dehydrate and soda is an alkaline. These could have made the wound environment unsuitable for bacterial growth. Farmers in Makonde have a strong faith in its functions. Survey responses, focus group discussions and interviews strongly recommended Muvengahonye (cathiumhuillense) as a de-horning wound infection remedy. We recommend further research to verify the effectiveness of Muvengahonye (cathiumhuillense) for de-horning wounds.

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