Use of Remedies by Illiterate Small-Scale Farmers for Treatment of Livestock Diseases in Bozwana Village, Lady Frere at Eastern Cape Province of South Africa

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Abstract
Remedies used by rural farmers for their livestock production are divided into two; conventional medicine and also the non-conventional medicine. Both of these remedies are very important in livestock production and are used worldwide. Small-scale farmers use both conventional and non-conventional medicine to treat livestock diseases, in order to improve livestock production. However, most of them are illiterate thus they cannot follow the procedures of drug administration properly, as much as they find conventional drugs to be expensive. Therefore most of resource-limited farmers use ethno-veterinary medicines as their alternative, because they find the remedies to be cheap, easy to access and the procedures are easy to follow when administering as compared to conventional medicine. The main objective of this study was to assess the factors that influence the use of remedies by small-scale livestock farmers. The study was conducted at Bozwana Village, Lady Frere at Eastern Cape, South Africa. The results showed that illiteracy has an effect in the appropriate use of conventional remedies, while employment status did not affect any types of remedies use. It showed that 65.50% of the Bozwana Village used conventional remedies to treat their livestock, while 48.04% solely use non-conventional remedies.

Keywords: Conventional, Education, employment, farmers, non-conventional, Remedies

Introduction
Remedies used by rural farmers are divided into two; conventional medicine and also the non-conventional medicine. However, both of these remedies are very important in livestock production and are used worldwide (Moyo, 2008; Tyasi et al., 2015a). According to Tyasi et al (2015b), some small-scale farmers use a variety of remedies both veterinary and ethno-veterinary to treat their livestock. These small-scale farmers are found to be uneducated and some of them have low levels of education. This result to these farmers to be unemployed, thus depend on pension as a source of income. However, their knowledge on best practices on using these remedies is questionable since they are uneducated (Woods et al., 2003). Therefore, they are unable to afford conventional remedies, thus use non-conventional remedies as their alternative (Namsa et al., 2011). Yet those who afford conventional remedies tend to administer them incorrectly because of their low level of education (Grace et al., 2008). Incorrect use of remedies could also be because, of wrong advices given to them by the sellers of remedies. Therefore, this might result to improper use of remedies to treat livestock by small-scale farmers, due to buying the wrong drugs, and use them at wrong dosages, for the wrong purposes (Van den Bossche et al., 2000). This study was done by educating small-scale farmers about various management techniques in using remedies to prevent diseases and increase livestock productivity (Woods et al., 2003).

MATERIALS AND METHODS
Study area
The study was conducted at Bozwana Village, Lady Frere in Eastern Cape Province of South Africa. The village situated in 10 km away from Queenstown and contains the sweet thornveld areas of Chris Hani District Municipality, Eastern Cape of South Africa. The village coordinates are 31S:26E and falls under the Emalahleni Local Municipality, on the left hand side, along the R61 road between Queenstown and Lady Frere. It is characterised by several vegetation such as trees, shrubs, and grass species with Acacia karroo, Themeda triandra, Panicum maximum, Digitaria eriantha, Eragrostis spp., Cynodon dactylon, and Pennisetum clandestinum being the dominant plant species. The average rainfall is approximately 700 mm per year, and most of the rainfall is from October to end of March.

Data collection
Primary data collection was conducted using, containing structured questionnaires which were administered to households in the Bozwana village. A list of Bozwana village households was obtained from the village project committee and was used as a sampling frame (n= 103). Simple random sampling was employed by using
snowballing in order to ensure that all the households had equal chance to be included in the sample. A sample size of 60 households was obtained. The questionnaires to be used for interviews comprised four parts: demographic information based on gender, marital status, age, household size, level of education, employment status, life span in the area: also comprised of animal production based on housing construction, herding, feeding and lastly the type of medication used for livestock. The questionnaires where written in two languages such as Xhosa and English, in order to accommodate every interviewee.

Data analysis
Qualitative data was analysed by identification of themes and ascribed to the narratives provided by interview. All primary data obtained using semi-structured interview questionnaires from key informants were entered in excel spreadsheet and analysed for descriptive statistics using SPSS 16.0 for Windows. The analyses were primarily focused on frequencies and cross-tabulations.

Results
Respondent’s biographic details

![Medication Duties](image)

Figure 1: Medication duty done within the household
A total of 60 people in Bozwana Village aged between 15-81 years of age were interviewed. From the interviewees 60% were males and 40% were females. About 6% were divorced, 8% were single, 12% were widowed and 71% were married. The household size was arbitral grouped according to the number of household member; small which was (2-6), medium which was (7-13) and large which was (14-25) numbers of people. It was also found that their period of residence ranged between 3 to 90 years, but on the majority 60% of the respondents have stayed in Bozwana Village for 50 years and on average small-scale farmers lived for a period of 23 years. Figure 1 showed allocation of agricultural duties such as medication that was done by children under 15 years of age, male youth, and female youth and also done by the head of the house. Medication done by gender were not significant (P<0.05), meaning that there is no association.
Figure 2: Employments status of respondents

Figure 2 showed employment status of the interviewees were recorded that 20% of the communal farmers were employed, 20% of the small-scale livestock farmers were unemployed, 24% of the small-scale farmers were either self-employed, full time farmers, or were still students and 36% of the farmers were pensioners.

Famer’s level of education

Figure 3: Educational levels of respondents

Figure 3 showed that how farmers went in terms of education and also show those that never went to school. The differences between their levels of education were observed for their effect on the used or
administrations of remedies. Primary level of education was the highest and tertiary level education was the lowest.

**Frequently of remedies used by farmers**

Table 1 showed the establishment of the study that 65.50% of the Bozwana Village used conventional remedies to treat their livestock, while 48.04% solely use non-conventional remedies, and it was observed that there was no farmer that combined conventional and non-conventional remedies to treat their livestock. The frequently used conventional remedies were Valbazen (11.11%), Swaventy (9.8%), and Dectomax (9.8%). And the mostly used non-conventional remedy was *Aloe ferox* (34.32%).

**Table 1:** Frequently used remedies

<table>
<thead>
<tr>
<th>Methods</th>
<th>Name of remedies used</th>
<th>% of farmers using the remedy</th>
<th>Purpose of remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional medicine</td>
<td>Terramycin</td>
<td>8.82%</td>
<td>cough, ticks, gallickness</td>
</tr>
<tr>
<td></td>
<td>Ivomec</td>
<td>4.41%</td>
<td>Used for worms, ticks</td>
</tr>
<tr>
<td></td>
<td>Valbazen</td>
<td>11.11%</td>
<td>Used for ticks</td>
</tr>
<tr>
<td></td>
<td>Dectomax</td>
<td>9.80%</td>
<td>Used for ticks</td>
</tr>
<tr>
<td></td>
<td>Tramisol</td>
<td>5.88%</td>
<td>Used after castration</td>
</tr>
<tr>
<td></td>
<td>Allason</td>
<td>5.88%</td>
<td>Used to treat scab</td>
</tr>
<tr>
<td></td>
<td>Hitet</td>
<td>5.88%</td>
<td>To stregthen bones</td>
</tr>
<tr>
<td></td>
<td>Bimectin</td>
<td>1.96%</td>
<td>To treat diarrhea</td>
</tr>
<tr>
<td>Non-conventional medicine</td>
<td><em>Aloe</em></td>
<td>34.32%</td>
<td>Used for cough, wounds, chest pains</td>
</tr>
<tr>
<td></td>
<td>Cooking oil</td>
<td>11.77%</td>
<td>Used for chest pains</td>
</tr>
</tbody>
</table>

**Discussion**

The context of this study was to determine factors that influence the use of remedies by small-scale livestock farmers, however, the study established that relatively administration of conventional and non-conventional remedies was mostly done by the head of the household and male youth, and least done by female youth and children less than 15 years of age (Figure 1). According to Nalule et al. (2011), women and children are close to the elderly who are more knowledgeable and willing to share their knowledge to them than male youth. Yet so, animal care using non-conventional remedies is known to be done by females and administration of conventional remedies is known to be done by males (Antonio and Ahmed, 2010).

Therefore, this is the reason why females and children less 15 years of age least administer non-conventional drugs, that is why the most remedies used by small-scale farmers are conventional compared to non-conventional remedies (Table 1). The reason for higher percentage of ethno-veterinary remedies is that knowledge of *Aloe ferox* used to treat various ailments in livestock, resides with certain people such as old-aged people (Moyo, 2008). Another reason may be due to overgrazing by livestock and persistent drought (Nalule et al., 2011). Low percentage of using cooking oil is that it is mostly used for cooking within the household by females.

It also was noted that most of these communal farmers were pensioners (Figure 3), followed by others which represents students and self-employed farmers, meaning that there is a slight possibility that they can afford conventional remedies. However, the ability of them to afford conventional remedies may be affected by the household size, as it may depend to that source of income for maintenance of the household at large. Other farmers sell their livestock such as sell a number of two to three goats, in order to buy conventional remedies. Considering that only 20% of interviewed respondents are employed, it is evident that they are able to afford to buy conventional drugs. However, of most concern is the appropriate use of conventional remedies due to their education status. Primary level of education is relatively high (%), followed by respondents of Bozwana Village who never went to school (%) and few respondents went to tertiary level (Figure 2). This shows that most of them have low levels of literacy and others are not illiterate at all. This therefore affects appropriate use of remedies by small-scale farmers.

According to results on table 1, it shows types of remedies, their names, percentage of farmers using remedies and the purpose of these remedies. The results established that these communal farmers use conventional remedies not according to the manufacturer’s instruction. They for instance use Terramycin for removal of ticks in cattle and to treat cough in chickens. However, Terramycin is an antibiotic used to prevent eye infection, also used for the treatment of bacterial disease, such as gastro-intestinal infections in livestock (Benbrook, 2002).
Conclusion
Small-scale livestock farmers use a wide range of ethno-veterinary practices and remedies which include non-plant material. Knowledge of non-conventional remedies in treatment and control of certain ailments is transmitted orally from generation to generation. However, there is a danger that this knowledge cannot be preserved because, the elderly people who die turn to pass this information to females since they are close to them as compared to males. Therefore there is urgent need to document and validate information on use of ethno-veterinary remedies for the benefit of both genders. The study established that illiteracy has an effect in the appropriate use of conventional remedies, while employment status did not affect any types of remedies use.

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References
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