

POLICY BRIEF

Use of antibiotics in livestock production in Uganda: Who is using them too often?

Background

Antibiotics save animal lives and reduce disease burden. This ultimately contributes to improved food production and safety, improved quality of life of animal owners and consequently to national economic development. But the continued and frequent use of antibiotics in livestock production by farmers can result in drug resistance, which not only affects animal health but also has significant effects on public and environmental health, and economic development overall.



Estimates of frequency of antibiotics use are generally unavailable and when available cover a few districts, have limited samples and tend to be livestock specific. This is, attributed to the poor documentation by both farmers and livestock-health practitioners, the weak enforcement of policies on antimicrobial use and nonexistent or poor national monitoring systems. This poses a great risk of unchecked drug misuse by farmers leading to building of antimicrobial resistance, a rising global threat to both human food safety and environmental conservation.

Key Messages

- Perceptions that antibiotics retain their effectiveness even with continuous use were driving the decision and frequency of antibiotics use. This could be due to mixed or limited information on the potential buildup of antibiotics resistance.
- Without countering these perceptions, it will be difficult to reduce antibiotics use among some sects of livestock keepers resulting in unsustainable use of antibiotics which fuels building up of antimicrobial resistance.
- Keeping exotic animals and higher number of animals were found to influence both the decision to use and the frequency of antibiotics use. This could drive increased antibiotics use as livestock keepers target to meet increasing demand for livestock products.
- Alternative to antibiotics should be popularized to reduce antibiotics use with more intense production systems.

Uganda has put in place an integrated action plan to address antibiotic resistance. This plan has, among others, the objectives of reducing antibiotic use in agriculture and educating health professionals, policymakers, and the public on sustainable antibiotic use. This brief, extracted from a bigger study¹, seeks to inform decisions on designing appropriate interventions to guide suitable and sustainable use of antibiotics and prevent or slow the development of antimicrobial resistance.

Methodology

¹ Based on a paper titled “Use of antibiotics in livestock production in Uganda”, by Kibooga, C., Asimwe, R., and Nakiyemba, C. (2023).



The study used the Annual Agricultural Survey (AAS) 2018 data set that was implemented by the Uganda Bureau of Statistics (UBOS) and the FAO. Frequency of antibiotics use (never, occasionally, or often) was analyzed at household level using descriptive analysis, disaggregated by gender, age, region, livestock kept and weighted sample percentages were reported. Drivers of antibiotic use were determined using a Probit model while the drivers of frequency of antibiotic use were analyzed using a zero-inflated ordered Probit model.

Production systems (keeping cattle, keeping exotic livestock, and herd size), socio economic and demographic (male headed households and higher levels of education) increased the probability of using antibiotics. Households which accessed information on antibiotic use and were located less than 5 km radius to a drug shop had a higher likelihood of using antibiotics. Livestock keepers that perceived antibiotics to retain their effectiveness even with continuous use were more likely to use antibiotics than their counterparts who perceived the opposite.

Level of antibiotics use-prevalence

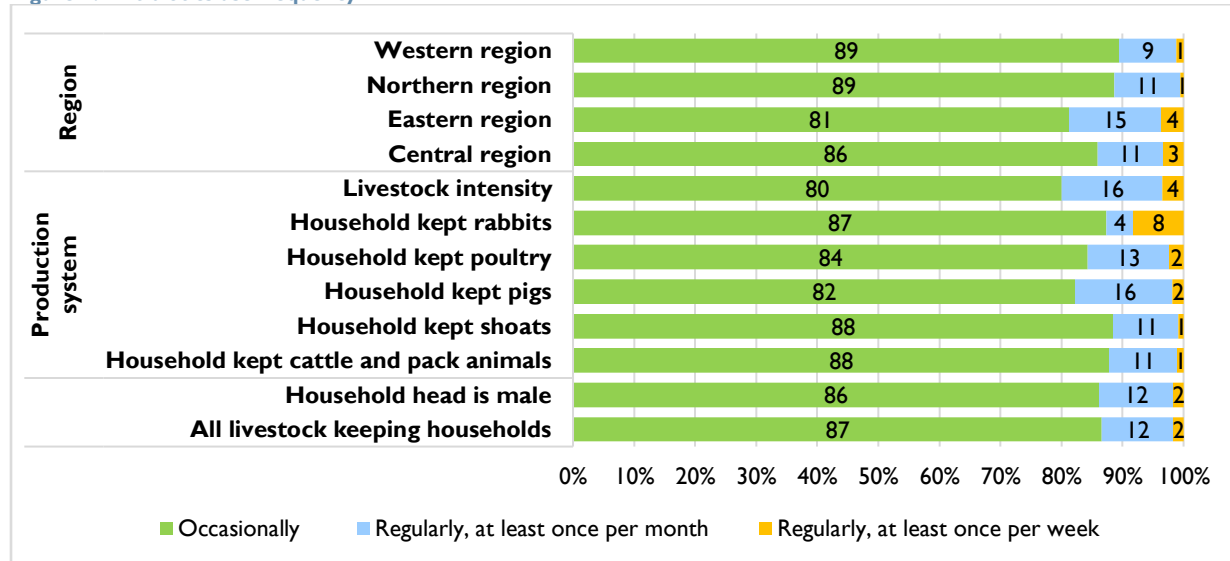
On average, one in every three livestock keepers (33.3%) had used antibiotics in the last 12 months either curative, preventive, vaccination, or growth promotion purposes. Antibiotics use was significantly more prevalent among households keeping cattle and pack animals, and shoats (Figure 1). More households from the Western, Eastern and Northern region also significantly used antibiotics compared to the central region. More male headed households and households keeping exotic² animals used antibiotics than their respective counterparts.

Frequency of antibiotics use

On average, most (87%) livestock keepers had occasionally (less than once a month) used antibiotics in the last 12 months. The most intense users were among households keeping some exotic animals where 20% of the livestock keepers used antibiotics at least once a month or more frequently (Figure 1). This category is followed by households residing in the Eastern region (19%), keeping pigs (18%) and poultry keeping (14%). Only 11% of households in the Northern and Western regions frequently used antibiotics.

Drivers of the decision to use antibiotics

Figure 1: Antibiotics use frequency



² Animals not indigenous to the production areas including cross breeds and pure breeds

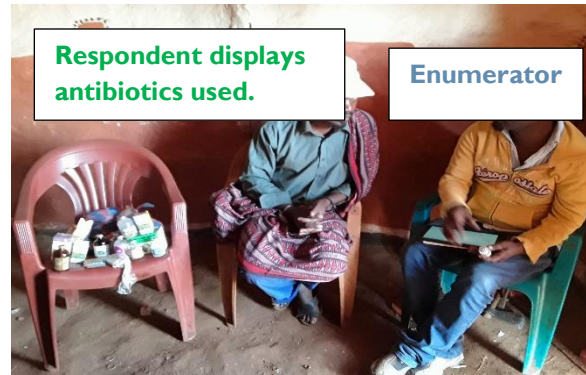
Factors influencing the intensity of antibiotics use in livestock production in Uganda

Livestock keeper's perceptions of continued efficiency of antibiotics even with continued use significantly increased the likelihood of using antibiotics frequently.

Frequency of antibiotics use was found to be driven by the type of livestock kept and the system in which livestock are produced. Households keeping poultry or piggery was associated with a 3% (for both) higher likelihood of falling in the category of frequent use. This implies that once the decision has been made to use antibiotics, households keeping poultry or piggery were more likely to frequently use antibiotics. Household keeping exotic animals were associated with a 4% greater possibility of having used antibiotics frequently compared to households that were not keeping any exotic animals.

Increasing the diversity of livestock kept by one species marginally effected the probability of falling in the never used category but decreased the probabilities of falling in the occasional and frequent use by 2%. Geographical location also influenced the frequency of antibiotics use. Comparing with the eastern region, households from the Western and Central region were 6% and 5% more likely to belong in the never use category. The same households (Western and Central) were 1% (both) and 5% (both) less likely to fall in the occasional and frequent use categories respectively compared to their counterparts in the Eastern region.

Some of the antibiotics used by Livestock farmers in Uganda.



Source of information was found to also influence the frequency of use of antibiotics. Information from trustable source (professional veterinary officer and extension officers) significantly reduced the frequency of antibiotics use. Households that perceived antibiotics to remain effective even with continuous use 69.5% less likely to fall in the never-used category but 55.7% and 13.8% more likely to fall in the occasionally use and frequently use categories respectively. On the contrary, contrary to the decision to use antibiotics, information seeking behavior did not influence the frequency of antibiotics use

Recommendations

The use of antibiotics among smallholder livestock keepers in Uganda is mostly occasional and there is still a window of opportunity to regulate use. Therefore, to regulate antibiotic use and check the buildup of antimicrobial resistance in livestock and human populations, this study recommends:

- Design programs to sensitize all livestock keepers on the possible harmful effects of continuous use of antibiotics in livestock production.
- Target campaigning for judicious use of antibiotics towards more educated livestock keepers, keepers of exotic livestock.
- Strengthen data collection on antibiotics to cover the quantities used.

Acknowledgment

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