CAAZAP PROJECT
(Combating Antimicrobial Resistance and Antimicrobial Use in Zambian Poultry)

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Abstract

The CAAZAP project is an ICARS funded intervention and implementation research, which will take a longitudinal approach in the broiler farming sector. The implementation partners are the Ministry of Fisheries and Livestock, the University of Zambia and the Veterinary Association of Zambia. Baseline data will be collected on the knowledge, attitudes and practices (KAP) of farmers and veterinary personnel prior to and after the planned interventions. Information on the farm economics and antimicrobial use by farmers will also form part of the baseline and endline data.
The study will be conducted in the Copperbelt and Lusaka provinces and will involve 280 broiler farmers.
The planned interventions are Farmer Field Schools (FFS), Training of Veterinary Paraprofessionals (VPPs) as well as production and dissemination of treatment guidelines to veterinary personnel.

Introduction

Poultry production is one of the most important activities in the livestock sector in Zambia, with the poultry population estimated at 94 million broilers in 2019 (4). The production of chicken meat usually demands great care to ensure poultry meat is safe for human consumption thereby, assuring food safety. The disease burden has however remained the major challenge in poultry production in Zambia, (5, 6). Some of these causative pathogens have been found to be resistant to antimicrobials resulting in a risk to public health.
The ever-growing consumer demand and the desire to maximise profit increases the pressure for farmers to use antimicrobials to prevent and treat poultry diseases and for growth optimization (1, 2).
Antimicrobials being used in a non-prudent manner can enhance the development of AMR in bacteria found in poultry and result in elevated levels of antimicrobial residues in chicken products, which compromise food safety (3).

Methods and Materials

The study is an intervention research which will take a longitudinal approach in the broiler farming sector.

- KAP survey will be conducted prior to and after the interventions targeting 280 farmers, 20 veterinary personnel.
- AMU and farm economics data will be collected from the same participants will be done before and after the interventions targeting 160 farmers.
- Interventions will be Farmer Field Schools (FFS) (2 per district), training of Veterinary Paraprofessionals (VPPs) (30 VPPs) as well as production and dissemination of treatment guidelines to veterinary personnel.
- Residue testing will be conducted on the chickens being produced by the participating farmers and on common feed brands.

Study Objectives

Main Objective
The aim of this project is to reduce antimicrobial use and residues by at least 30% in intensively managed broilers through optimisation of antimicrobial prescribing and use among the veterinarians, veterinary para-professionals and broiler farmers in select districts in Lusaka and Copperbelt provinces.

Specific objectives

1. To determine the knowledge, attitudes and practices among broiler farmers and veterinary personnel before and after the planned interventions in selected districts of Zambia.
2. To conduct training of poultry farmers on production practices and use of antimicrobial alternatives through farmer field schools (FFS) in the selected districts.
3. To determine antimicrobial use (AMU) on the target farms before and after the interventions during the project cycle.
4. To determine the possible presence, extent and levels of antimicrobial residues in broiler meat before and after interventions.
5. To determine the possible presence and extent of antimicrobials in different types and brands of commercial broiler feed.
6. To develop and disseminate treatment guidelines regarding poultry disease management among veterinary personnel.
7. To determine economic impact and uptake of intervention measures put in place so as to inform policy and scale up.

Table 1. Work Packages in the Project

Work Package	Description
1	Knowledge, attitudes and practices among key stakeholders
2	Farmer Field Schools
3	Veterinary Paraprofessionals' (VPPs) Training
4	Treatment Guidelines Development and Dissemination
5	Antibiotic Residue Testing in Poultry Meat and Feed
6	Antimicrobial Use (AMU) Trends and Economic Impact Assessment on farms

Table 2. Project Progress

Work Package	Progress
1	Scoping mission, Development of tools, data collectors trained
2	Identification of FFS host camps and Facilitators
3	Not yet started
4	Consultant engaged, data collection and review started
5	Data and sample collectors trained, lab personnel trained
6	Tools developed, data collectors trained

Year 1 → Year 2 → Year 3

Preliminary Findings and Challenges

- The findings presented are from the Scoping Mission to the four study districts of Kitwe, Ndola, Chongwe and Chilanga.
- The VPPs in the districts were far less than what was initially assumed. This resulted in a reduction in the number of VPPs that could be involved in the data collection, the FFSs and the number to participate in the VPP Course.
- The districts were deficient in transportation (motor bikes) for the VPPs to visit farmers in their camps they would therefore have to use public transportation.
- The project has organized most of the data collection to result in less visits to the farms than what was previously intended to ease the work of the VPPs but achieve the same outcome.
- As the farmers will be at different stages in the production cycles, the data collection for AMU, residues and farm economics will be done over a period of three months .

Conclusions

- The Scoping mission proved to be a very important activity in ensuring project feasibility and for the finalization of the protocols.
- The training of the data collectors provided a further opportunity for refinement of the data collection tools and some further protocol adjustments.
- The training also highlighted the need for additional data collection/management tools for use by the VPPs such as the Broiler Cycle Schedule, meat sampling procedure guide and a guide for navigating Kobo Collect software.

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