Reducing the import of antimicrobial resistance through day-old chicks and eggs

BENIN

Project sector
Terrestrial and Aquatic Animals

Project partners
Directorate of Livestock of Ministry of Agriculture, Livestock and Fisheries

Polytechnic School of Abomey-Calavi, University of Abomey-Calavi, University of Abomey-Calavi

The Territorial Agricultural Development Agencies; Association of Private Veterinarians of Benin (AMeVeP)

Union of Suppliers of Inputs and Services in Poultry Farming of Benin (UFISAB)

National Union of Poultry Farmers of Benin (UNAPB)

Timescale
15 February 2023 - 15 August 2024

ICARS funding
149,948 USD

Context

The government of Benin is currently deploying efforts to reduce antimicrobial resistance (AMR) and antimicrobial use (AMU) in humans. Importantly, in 2016, WHO supported the Ministry of Health to develop a national action plan (NAP) for the prevention and control of healthcare associated infections, with the overall aim of significantly reducing the use of antimicrobials in humans.

However, there is currently limited international support for AMR efforts in the veterinary sector, despite the inclusion of the sector in the national action plan to fight AMR. Regarding the poultry sector, Benin does not have enough hatcheries and thus relies to a large extent on imports to procure day-old chicks. This represents a risk for Benin to import antimicrobial resistant bacteria carried by those chicks which can then disseminate throughout the Beninese value chain. Illegal imports of day-old chicks are estimated important in Benin.

Problem

ICARS funded a co-development study in July 2022 in Benin which revealed the presence of multidrug-resistant bacteria (*E. coli, Salmonella* spp., *Enterobacter cloacae, Bacillus cereus, Pseudomonas* spp. and *K. pneumoniae*) with a predominance in the informally imported day-old chicks compared to the formally imported ones. For example, 80% and 93 % of *E. coli* strains isolated from illegally imported day-old chicks were resistant to ciprofloxacin and gentamicin, respectively.

Project overview

The project aims to design and support the implementation of a microbiological certification system (MicS) for imported day-old chicks and hatching eggs in Benin. The objectives/work packages (WP) of the project are to:

- Conduct an in-depth mapping of the poultry value chain in Benin, including the formal and informal sectors and routes involved in day-old chick and hatching egg imports in Benin.
- Assess the knowledge and practices of the main stakeholders of the poultry value chain in Benin.
- Determine the types and levels of antimicrobial resistance in priority bacteria (*E. coli, Enterococcus faecalis/faecium* and *Salmonella* spp.) in day-old chicks and hatching eggs imported formally and informally.
- Explore with relevant stakeholders (formal and informal) the conditions and set-up criteria of the MicS.
- Suggest the design and content of a potential future formal and legal MicS for imported day-old chicks and eggs.

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Outcomes

The project will lead to a much better understanding of the poultry value chain organization and actors in Benin, which is essential to implement interventions in this sector. The knowledge and practices of these actors will also be better known, as well as the risks of AMR import through hatching eggs and day-old chicks in Benin. The design and feasibility study of the MicS will represent a significant milestone in the efforts of Benin to protect its poultry value chain and consumers from AMR.

"The import of day-old chicks and eggs presents a significant risk for the spread of antimicrobial resistance, but there are strategies that can help reduce this danger and safeguard public health. This project will lead to the establishment of a microbiological certification system for imported poultry products in Benin through a multicentric approach. We are really excited to see the powerful results."

Dr Victorien Dougnon,
Associate Professor in Microbiology,
University of Abomey-Calavi

"This project will explore the required conditions that will need to be in place in order to establish a microbiological certification system for imported poultry products in Benin to avoid the importation of resistant bacteria. It's an ambitious project and we are looking forward to seeing the results."

Dr Annick Lenglet, Science Team Lead, ICARS