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Tetracycline residues in milk and beef from the Ugandan Cattle Corridor

Justus Mwesigye , **Justus Kwetegyeka** , Ivan Gumula , **Timothy Omara** & Ivan Kiganda

Received 06 Dec 2025, Accepted 28 Jan 2026, Published online: 05 Feb 2026

Cite this article https://doi.org/10.1080/03601234.2026.2625598 Check for updates

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Abstract

Veterinary antibiotic residues in foods of animal origin (FOAO) are of public health concern because they can contribute to antimicrobial resistance, disruption of gut microbiota, hypersensitivity reactions and developmental effects following chronic exposure. This study investigated the occurrence of six veterinary tetracyclines (oxytetracycline, tetracycline, doxycycline, chlortetracycline, demeclocycline and

Nakasongola. Raw milk, muscle tissue, liver and kidneys were analyzed for tetracyclines using high performance liquid chromatography and liquid chromatography-tandem mass spectrometry. Districtwise analysis revealed a moderate prevalence of tetracycline residues in milk (5.3–42.1%) and beef (7.7–69.2%), with oxytetracycline being the most detected. Of these, 5.3–69.2% of the samples had oxytetracycline, methacycline and tetracycline concentrations exceeding their maximum residue limits established by the European Union Commission Regulation No. 37/2010. These results provide baseline data on the presence of tetracycline residues in marketed FOAO from the Ugandan Cattle Corridor. It emphasizes the need for strengthened antimicrobial stewardship, enforcement of veterinary drug withdrawal periods, and routine national antimicrobial residues monitoring in FOAO.

Keywords:

Antibiotic resistance food safety methacycline tetracycline oxytetracycline

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

Data supporting the conclusions of this study are available from the corresponding authors upon reasonable request.

Additional information

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