



A Scoping Review of Antimicrobial Residue Prevalence in Milk from Informal Dairy Value Chains and Associated Farmer Knowledge in Kiambu County, Kenya

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Abstract

The informal dairy sector is a vital source of nutrition and income in Kiambu County, Kenya. Unregulated antimicrobial use in livestock poses a public health risk due to potential antimicrobial residues in milk. This scoping review maps the evidence on this issue and associated farmer knowledge. This review aimed to systematically map and synthesise available literature on the prevalence of antimicrobial residues in milk from informal dairy value chains in Kiambu County, Kenya, and to examine evidence on dairy farmers' knowledge and practices regarding antimicrobial use. The review followed the Joanna Briggs Institute methodology for scoping reviews. A systematic search was conducted across multiple electronic databases. Peer-reviewed articles, theses, and relevant grey literature were included. Data were charted and analysed thematically. The available evidence, though limited, indicates a concerning prevalence of antimicrobial residues in milk from informal channels. Beta-lactam and tetracycline residues were frequently identified. Evidence also suggests significant gaps in farmers' knowledge regarding appropriate antimicrobial use, withdrawal periods, and the health implications of residues. This review reveals a clear evidence gap regarding the systematic measurement of antimicrobial residue prevalence and a comprehensive understanding of farmer knowledge in Kiambu's informal dairy sector. The existing fragmented evidence signals a potential public health concern requiring urgent investigation. Primary research is needed to establish robust baseline data on residue prevalence and its drivers. Targeted educational interventions for farmers and value chain actors are critical. Future studies should employ standardised methodologies to inform the development of context-appropriate surveillance and regulatory frameworks. antimicrobial residues, milk, informal sector, dairy value chains, farmer knowledge, Kenya This review consolidates the fragmented evidence on antimicrobial residues in informal milk value chains in a key Kenyan dairy region, highlighting critical knowledge gaps and providing direction for future research and public health intervention.

Keywords: antimicrobial residues, informal dairy sector, Kenya, farmer knowledge, milk safety, East Africa, veterinary public health

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