

REVIEWER'S REPORT

Manuscript No.: IJAR-52476

Date: 27-06-2025

Title: Prevalence and Characteristics of Multidrug-Resistant (MDR) Nontyphoidal Salmonella isolates from Poultry in Hazaribagh, along with the associated risks for Food Safety and Public Health

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality			✓	
Techn. Quality		✓		
Clarity		✓		
Significance			✓	

Reviewer Name: Dr Aamina

Reviewer's Comment for Publication.

General Evaluation:

This manuscript addresses a critical issue at the intersection of microbiology, food safety, and public health. It presents a comprehensive study on the prevalence of multidrug-resistant (MDR) Nontyphoidal Salmonella (NTS) in poultry from Hazaribagh, alongside an exploration of its antimicrobial resistance profiles, phylogenetic characteristics, and broader health implications. The topic is timely, globally relevant, and contributes valuable regional data to a growing body of literature on antimicrobial resistance in foodborne pathogens.

Abstract Evaluation:

The abstract effectively communicates the study's scope, findings, and implications. It presents a clear problem statement and emphasizes the public health urgency of MDR Salmonella in

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poultry. The inclusion of genetic insights via phylogenetic analysis adds depth to the findings. The abstract maintains a strong focus on practical implications and offers a well-structured overview, concluding with a definitive call for action against the misuse of antibiotics in poultry production.

Introduction Evaluation:

The introduction provides a strong contextual foundation by highlighting the global burden of salmonellosis and offering relevant epidemiological statistics. It outlines the biological classification of *Salmonella*, the pathways of human transmission, and the historical background of the organism's discovery. The section presents a logical progression from general information to the specific relevance of poultry as a reservoir, particularly in the Hazaribagh region. Citations are appropriately used to support key assertions.

Scientific Merit and Methodological Scope:

The study is grounded in microbiological and molecular techniques, integrating prevalence analysis, resistance profiling, and phylogenetic evaluation. The use of phylogenetic tree analysis to delineate species relationships adds a valuable evolutionary perspective to the resistance problem. The manuscript reflects methodological rigor and multidisciplinary insight, balancing field-level data with laboratory-based genetic analysis.

Findings and Interpretation:

The results emphasize both the frequency of MDR *Salmonella* in poultry and the evolutionary insights gained through phylogenetic studies. The identification of *Salmonella weltevreden* as the most distantly related species, and *Salmonella Schwarzengrund* as the most recently evolved, adds dimension to the understanding of resistance development. The link between excessive antibiotic use and increased resistance is clearly made and well-justified within the broader food safety framework.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

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Relevance and Impact:

The research holds significant implications for food safety, veterinary practices, and public health policy. It reinforces concerns over the emergence of antimicrobial resistance through agricultural channels, with particular urgency in developing countries where antibiotic regulation may be less stringent. By focusing on Hazaribagh, the study adds critical regional specificity to global resistance trends.

Conclusion:

The manuscript concludes with a firm statement on the alarming resistance rates in isolated Salmonella strains and the urgent need for intervention in antibiotic use within the poultry industry. The conclusions are well-supported by the data and reinforce the practical and policy-oriented value of the research.
