



The audit in white meat slaughtering units: ensuring compliance with food safety and animal welfare regulations in the context of technological advancements

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Abstract: *The audit process in white meat slaughtering units is fundamental in ensuring the consistent application of food safety and animal welfare regulations, particularly in the context of ongoing technological advancements. Implementing stringent auditing frameworks enables the systematic assessment of hygiene practices, operational procedures, and adherence to legal requirements, ensuring that meat products reaching consumers meet the highest safety standards. White meat products, such as poultry and rabbit meat, are highly susceptible to contamination, necessitating rigorous monitoring throughout the slaughtering process. This paper provides a comprehensive examination of audit procedures in white meat slaughtering units, focusing on integrating advanced technologies, adherence to European and national food safety standards, and the resulting impact on public health and industry profitability. The study reveals that consistent auditing improves traceability, minimizes contamination risks, and fosters greater consumer trust in white meat products.*

• Introduction

The white meat industry, mainly focused on poultry and rabbit, meets growing protein demands while adhering to strict food safety and animal welfare regulations. Audits play a key role in ensuring compliance, guided by EU legislation. Technological advances like automation and digital monitoring have improved audit accuracy and efficiency. This study examines current audit practices, highlights key control points, and explores how technology can enhance compliance and consumer trust.

• Material and method

This study combined site inspections, stakeholder interviews, and audit report analysis in white meat slaughtering units. Multidisciplinary teams assessed hygiene, equipment, and regulatory compliance.

Hazard identification included the following:

- **Biological hazard:** *Salmonella*, *Campylobacter*, *E. coli*—detected via microbial testing.
- **Chemical hazard:** Residues from veterinary drugs, disinfectants, heavy metals—analyzed chemically.
- **Physical hazard:** Foreign materials like bone fragments and packaging debris—identified through metal detectors and X-ray screening.

• Results and discussions

Audits revealed that technological advancements—such as automated stunning and chilling systems—greatly improved product safety, consistency, and regulatory compliance by reducing human error. However, gaps in staff training and inconsistent adherence to hygiene protocols were noted as ongoing challenges. Digital traceability systems enhanced supply chain transparency and response to safety incidents, though high costs limit their adoption in smaller units.

Key corrective actions included stricter hygiene enforcement, equipment upgrades, improved waste management, and better documentation. Implementing these measures supports compliance, boosts operational efficiency, and strengthens consumer trust. Economically, adherence to audit recommendations increase market access and reduces food safety risks.

• Conclusions

Regular audits play a vital role in ensuring food safety and animal welfare in white meat slaughtering units. Technological integration improves monitoring and consistency, while ongoing staff training and digital traceability are key to maintaining compliance. Addressing audit findings through corrective actions enhances safety management and builds consumer trust.