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Meat Quality and Contamination in Brazil and Health Surveillance

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1. Introduction

The production of meat and meat products in Brazil plays an essential role in the country's economy, in addition to being an important source of nutrients for the population. However, ensuring the safety of this food is a critical issue for Health Surveillance, given that meat can become a vehicle for microbiological and chemical contamination, directly affecting public health. To ensure the quality of these products, strict control is required at all stages of the production chain, from animal breeding to marketing.

This chapter addresses the importance of meat in the economy and in the diet of Brazilians, the various forms of contamination to which it is subject, the main diseases associated with its consumption and the changes caused by microorganisms. In addition, we highlight the fundamental role of Health Surveillance in the prevention and control of food contamination, promoting food safety and preventing disease outbreaks.

2. Meat and the Role of Health Surveillance

Meat is a widely consumed food in Brazil and an important export item. However, due to its high perishability and the possibility of contamination at various stages of production, storage and distribution, a robust Health Surveillance system is necessary. This system monitors compliance with hygiene and health standards, identifies risks and proposes corrective and preventive measures to ensure food safety for the population.

The Health Surveillance Agency, as part of the Health Surveillance system, plays a central role in the quality control of products of animal origin. It is responsible for inspecting establishments that produce, process and distribute meat, as well as monitoring the levels of chemical residues, such as antibiotics and hormones, that may be present in food. Health control is crucial to prevent outbreaks of foodborne diseases and to ensure that the meat consumed is safe and of high nutritional quality.

3. Contamination Factors and Surveillance

3.1 Physical, Chemical and Biological Factors

Meat contamination can occur due to physical factors (presence of materials such as glass or plastic), chemical factors (residues from cleaning products, heavy metals, antibiotics) and biological factors (pathogenic microorganisms such as bacteria and parasites). The Health Surveillance system plays a fundamental role in identifying and controlling these contaminations, carrying out regular inspections and implementing monitoring programs that aim to prevent risks to the health of the population.

Health Surveillance promotes actions to ensure that food is handled and stored correctly, preventing cross-contamination and ensuring that products do not present a risk to the consumer. These controls are essential to prevent food poisoning and outbreaks of food-related diseases.
from the consumption of contaminated meat.

3.2 Chemical Contamination and Surveillance Monitoring

The use of antibiotics, additives and other chemicals in the raising and processing of meat is one of the main focuses of Health Surveillance. Contamination by chemical residues can occur when there is inappropriate use of veterinary medicines or additives at levels higher than those permitted by law.

Health Surveillance monitoring is carried out through the inspection of establishments and the collection of meat samples for laboratory analysis, aiming to detect residues of antibiotics, hormones and

other chemical substances. These actions are important to ensure that the foods sold do not pose risks to the health of the consumer, in addition to contributing to the prevention of bacterial resistance, a growing concern in public health.

3.2.1 Antibiotics and Additives

The inappropriate use of antibiotics can result in residues in meat, which, when consumed, can encourage the emergence of resistant bacteria. Health Surveillance strictly monitors the permitted limits of these residues, ensuring that the products available on the market meet legal requirements and do not put consumers' health at risk.

4. Foodborne Diseases and the Role of Surveillance

Diseases transmitted by food of animal origin, such as taeniasis, salmonellosis and poisoning by Staphylococcus aureus, are some of the main concerns of the Health Surveillance. These diseases can be prevented through good practices in the production, handling and marketing of meat.

The Health Surveillance Agency carries out control and prevention actions, such as inspections of slaughterhouses and meat processing establishments, in addition to awareness campaigns on the importance of hygiene in food handling. These efforts are essential to prevent disease outbreaks and protect public health.

5. Microbiological Changes in Meat and Monitoring by Surveillance

Microbiological changes in meat, such as putrefaction and rancidity, are signs of contamination that can occur due to improper handling or lack of sanitary control. Health Surveillance is responsible for identifying these changes and acting preventively to prevent products that are unfit for consumption from reaching the market.

Frequent inspections and laboratory analysis of samples are actions carried out by the Health Surveillance Agency to monitor the presence of pathogenic microorganisms in foods of animal origin, ensuring that they do not pose risks to the health of the consumer.

6. Example of Scientific Research on Meat Contamination

A study conducted in Cuiabá (MT) investigated the presence of coliforms in ground beef sold in local supermarkets, revealing high contamination. The study highlighted the importance of good manufacturing practices and sanitary control to prevent the proliferation of pathogenic microorganisms.

This type of research is essential for Health Surveillance, as it provides relevant data for the development of public policies and corrective actions that aim to improve the quality of commercialized foods and reduce risks to public health.

7. Conclusion

Ensuring the hygienic and sanitary quality of meat products is essential for food safety and public health. Health Surveillance plays a central role in this process, through continuous monitoring, inspection and the promotion of good practices at all stages of the production chain.

Strict control of meat quality is a responsibility that must be shared between producers, distributors and regulatory bodies, always aiming to protect the health of the population and prevent the prevention of foodborne disease outbreaks. The implementation of effective Health Surveillance policies is essential to ensure that the meat consumed in Brazil is safe and of high quality.

REFERENCES

BRIDI, Ana Maria. Factors affecting the quality and processing of animal products. Department of Animal Science, State University of Londrina, 2017.

LEVINSON, Warren. Medical Microbiology and Immunology. 13th ed. São Paulo: Artmed, 2016.

MARTINS, DI; MIDIO, AF Food toxicology. 2nd ed. São Paulo: Varela, 2000.

PARDI, MC, SANTOS, IF, SOUZA, ER, PARDI, HS Meat science and hygiene. Goiânia: UFG, 1995.