

MICROBIOLOGY COVERAGE IN FSTA®

Trusted by researchers, scientists, students and government bodies in over 150 countries across the globe, **FSTA** is the definitive way to search over fifty years of historic and emerging research in the sciences of food and health.

Covering a wide range of interdisciplinary material, **FSTA** includes a wealth of international microbiology content including:

All aspects of general and applied microbiology relating to food-relevant microorganisms, including bacteria, archaea, protozoa, chromista, microalgae, fungi and viruses

Food-grade microorganisms used in food manufacture and their applications

- Starters, yeasts used in breadmaking, brewing and winemaking
- Probiotic microorganisms
- Food fermentations and preservation

Microorganisms used in food biotechnology and their applications

- Production of food-relevant products
- (biopolymers, flavour compounds, bioactive compounds, nutrients, bacteriocins)
- Bioconversions
- Metabolic and protein engineering
- Fermentation technology and modelling
- Bioremediation of food wastes

Food microflora and commensals

Food spoilage organisms

- Characteristics and control
- Microbiological quality of foods and shelf life
- Antimicrobial activity testing of natural products

Food-related pathogenic microorganisms

- Characteristics, including all aspects of virulence and pathogenicity (virulence genes and factors, infection and infectivity, colonization, adherence, motility, host invasion)
- Microbial toxins (including mycotoxins, enterotoxins, verotoxins, etc.)
- Antibiotics resistance
- Disease transmission

The human gastrointestinal microflora

- Modulation by dietary factors
- Impact on the bioavailability and health effects of food components

Microbiological aspects of public health

- Disease outbreaks and epidemiology
- Disease prevention and control
- Sterilization/disinfection/cleaning and hygiene in general
- Education
- Global public health policy

Microbiological techniques

- Selective media and sampling, including national and international standards
- Species identification
- Flow cytometry
- Genetic methods

USING FSTA FOR YOUR MICROBIOLOGY RESEARCH

Example search questions

- What role does the gut microbiome play in the development of dementia in the aging population?
- What is the prevalence of antibiotic resistant salmonella in chicken? (*Sample record on following page*)
- What is the effectiveness in environmental monitoring programs for controlling *Listeria monocytogenes* in food processing facilities?
- Can bacteriophages be used to prevent formation of *Vibrio parahaemolyticus* biofilms?

SOURCE EXAMPLES

Microbiology content is drawn from a wide variety of sources including journals, patents, books, reports and more. Here are just some of the many microbiology-focused journals included within FSTA, chosen to illustrate the diversity and breadth of content.:

- Applied and Environmental Microbiology
- Critical Reviews in Microbiology
- International Journal of Food Microbiology
- Japanese Journal of Food Microbiology
- Journal of Industrial Microbiology & Biotechnology
- Systematic and Applied Microbiology
- World Mycotoxin Journal

SAMPLE FSTA RECORD FOCUSED ON MICROBIOLOGY

Occurrence, quantification, pulse types, and antimicrobial susceptibility of *Salmonella* sp. isolated from chicken meat in the state of Parana, Brazil.

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Abstract: The aim of this work was to verify the occurrence, quantification, pulse types, and antimicrobial susceptibility profiles of *Salmonella* sp. isolated from chicken meat produced and marketed in the state of Parana, considered to be the state with the highest production of poultry meat in Brazil. Ninety-five of 300 (31.5%) frozen cuts of chicken were found to contain *Salmonella* sp., and 98 different isolates of *Salmonella* sp. were cultured from the positive samples. Quantification showed low *Salmonella* sp. loading, ranging from 0.12 to 6.4 MPN/g. The antimicrobial resistance test was performed against 16 agents from 6 different classes. All isolates were sensitive to meropenem, imipenem, chloramphenicol, and amikacin. The highest resistance rates were observed for nalidixic acid (95%), tetracycline (94%), doxycycline (94%), ampicillin (87%), amoxicillin with clavulanic acid (84%), ceftriaxone (79%), and ciprofloxacin (76%). A total of 84 (85.7%) of the isolates were identified with a multidrug resistant profile, 13 of which were found to have encoding genes extended-spectrum beta-lactamase (ESBL), especially blaCTX-M-2 e blaTEM-1. The major serovars identified were *S. Typhimurium* (43%) and *S. Heidelberg* (39%). The third most isolated serovar was *S. Ndolo* (6%), without previous reports of its presence in poultry meat in Brazil. Molecular characterization of *S. Typhimurium* and *S. Heidelberg* isolates by pulsed field gel electrophoresis (PFGE) showed a clonal relationship between all isolates of the same serovar (genetic similarity greater than 80%). Isolates of *S. Typhimurium* and *S. Heidelberg* with 100% similarity were found in up to five different geographic regions of the state, showing the potential for the spread of this pathogen in the Parana poultry chain. Epidemiological surveys like this are important to understand the dynamics of dissemination and to monitor the prevalence of pathogens in the final products of poultry chains. In addition, to know the resistance profile of strains of *Salmonella* sp. present in food that contributes to the adoption of faster and more effective therapeutic measures, when necessary. ©Sociedade Brasileira de Microbiologia 2019.

Keywords: AMOXICILLIN; AMPICILLIN, ANTIBIOTICS; ANTIBIOTICS RESISTANCE; BRAZIL; CHICKEN MEAT; CHLORAMPHENICOL; CIPROGLOXACIN; DOXYCYCLINE; FOOD SAFETY ANIMAL FOODS; GENES; GENETICS; NALIDIXIC ACID; PENICILLINS; SALMONELLA; SALMONELLA HEIDELBERG; SALMONELLA TYPHIMURIUM; TETRACYCLINES

FURTHER INFORMATION

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