

## The Microscopic Identification of the Pathogenic Microorganisms from Food

Carmen LAZAR<sup>1)</sup>, Ancuta M. ROTAR<sup>1)</sup>, Sorin APOSTU<sup>1)</sup>, Mihaela DUMA<sup>2)</sup>

<sup>1)</sup>University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, lazar\_rody@yahoo.com

<sup>2)</sup>The Health Sanitary Department, no.1, Marasti Square, Cluj-Napoca, dumalsvs@yahoo.co.uk

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### SUMMARY

Many bacterial infections are caused by ingestion of contaminated food. Contamination of food often occurs at home, but can be easily prevented. Home hygiene is particularly important for children, elderly people, pregnant women and immuno-compromised people. (Written by Dr. T. M. Wassenaar, 2009)

Microorganisms are living organisms, most of them unicellular creatures that can be seen only with a microscope. Microorganisms are just that, microscopic in size. Even though they can only be viewed through a microscope, just a few microbes can multiply and wreak havoc on the human body. (Melissa Conrad Stöppler, MD, 2009). For the purposes of this article, focus will center on pathogenic bacteria (*Escherichia coli*, *Salmonella* and *Staphylococcus aureus*) which will be identified using the optical microscope. The optical microscope remains the fundamental tool for phase identification. The optical microscope magnifies an image by sending a beam of light through the objective.

*Escherichia coli*, or *E. coli* for short, is a very common bacterium. There are hundreds of different strains of *E. coli*. Some are harmless while others cause serious illness. Non-pathogenic strains of *E. coli* -- those that do not cause disease - are normal inhabitants of the intestinal tract in humans and animals. (Melissa Conrad Stöppler, M.D., 2009)

*Salmonella* spp. remains a major cause of morbidity and mortality worldwide. Outbreaks of enteric fever remain commonplace in developing countries, whereas nontyphoidal salmonellas are significant in developed countries, with the main presentation that of gastroenteritis. (E. J. Threlfall<sup>a</sup>, 2008)

*Staphylococcus aureus* is considered the world's third most important cause of food-borne illnesses (Tirado and Schimdt, 2001). The ability of *S. aureus* to grow and produce SEs under a wide range of conditions is evident from the variety of foods implicated in staphylococcal food poisoning (Le Loir *et al.*, 2003)

After the analyzing of samples from all food categories the presence of *Escherichia coli* was noticed in 40 samples, *Staphylococcus* coagulase-positive was noticed in 10 samples and *Salmonella* Group C and Group D was present in 20 samples.

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