

## INCIDENCE OF *Mycobacterium avium* subsp. *paratuberculosis* IN SOFT CHEESE IN GREECE

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### EXTENDED ABSTRACT

*Mycobacterium avium* subsp. *paratuberculosis* (MAP) is an acid-fast bacillus that causes paratuberculosis in ruminants, which is also known as Johne's disease. The infection, which often results in chronic enteritis and emaciation, involves the excretion of MAP in faeces and milk. Consequently, milk products of certain animal species (sheep, goat, cattle etc.) may harbour MAP, which is currently implicated to the aetiology of Crohn's disease in humans. Although the latter is currently considered of unknown aetiology, there is growing concern about the possible transmission, of the above-mentioned bacterium, to humans, via contaminated food (esp. milk products). The significance of this exposure may be further substantiated by the fact that even high temperature pasteurisation, does not seem to be effective for the neutralization of this pathogen. The aim of the present study was to evaluate the prevalence of MAP in feta-cheese samples in Greece, and its significance in assessing human exposure to the certain bacterium. Each cheese sample was divided into portions. One portion was inoculated into HEYM (Herrold's egg yolk medium) and BACTEC radiometric medium, after decontamination with HPC (hexadecylpyridinium chloride). The second portion was used for DNA extraction followed by PCR detection of a specific MAP DNA fragment within the IS900 element. Confirmation of the PCR results involved assessment of the samples by intra-laboratory evaluation between two laboratories in Greece and the Czech Republic. The results that we recorded indicated 48% (15 out of the 31) and 54.54% (6 out of the 11) positive PCR results for MAP for the commercial and the local brands, respectively. In more detail, for the commercial brands, we recorded 0% for the brand 1 (0 out of 3), 40% for the brand 2 (2 out of 5), 80% for the brand 3 (4 out of 5) and 100% for the brand 4 (4 out of 4) positive PCR results for MAP. The results that were recorded with our second sampling indicated 0 % (0 out of 7), 60 % (3 out of 5), 66.66 % (2 out of 3) positive PCR results for MAP for the brands 2, 3, and 4, respectively. The PCR results were identical in both laboratories and, as expected, culture failed to produce any positive results, six months later, with only the exception of one specimen. In conclusion our data suggest that feta-cheese may represent a significant factor of human exposure to MAP.

**Key words:** *Mycobacterium avium* subsp. *paratuberculosis*, ruminants, soft cheese, Crohn's disease