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## Impact of heat treatment, ionizing radiation and microwave radiation on *Campylobacter jejuni* survival in poultry

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**C**ampylobacteriosis is the most commonly reported foodborne illness in the EU. Poultry meat is the most important source of human campylobacteriosis. It is usually described as quite sensitive to physical factors used for food preservation. The aim of the study was to evaluate the influence of heat (50, 55 and 60°C), gamma radiation (250, 500, 750 and 1000 Gy) and microwave radiation (180 W for 30, 60, 90, 120 and 150 sec) on *C. jejuni* survival in ground poultry meat. The linear regression equations which have been calculated on the basis of this study, allows to determine the degree of *C. jejuni* reduction in poultry meat for any selected values for given treatment. The obtained results showed that heat sensitivity of *C. jejuni* had been overestimated. Nevertheless, a properly-conducted meat pasteurization should be efficient for its inactivation. *C. jejuni* is very sensitive to gamma radiation. The usage of minimal doses recommended by EU should guarantee the *C. jejuni* inactivation in irradiated products to the food safety level. *C. jejuni* is relatively sensitive to UV radiation. There are significant differences between temperatures measured inside and on the meat surface during the microwave processing. Uneven distribution of heat in product cooked in a microwave oven may result in the formation of hot and cold spots, which offered *C. jejuni* some protective effect. Therefore, temperature measurement is not an efficient way to control the microbial effect of microwave heating.

### Biography

Agnieszka Jackowska-Tracz is an Assistant Professor in Department of Food Hygiene and Public Health Protection, Faculty of Veterinary Medicine, Warsaw University of Life Sciences – SGGW (WULS-SGGW), Warsaw, Poland. She conducts research on the impact of several factors on the ability to reduce pathogens in food of animal origin, and studies on the potential use of nanotechnologies to improve the hygiene of the production environment. Her field of specialization is hazard analysis and improvement of HACCP systems. She conducts classes and lectures for veterinary students and postgraduate students in the field of safety of animal origin products.

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