MICROBIOLOGICAL RISK ASSESSMENT IN CATERING ESTABLISHMENTS

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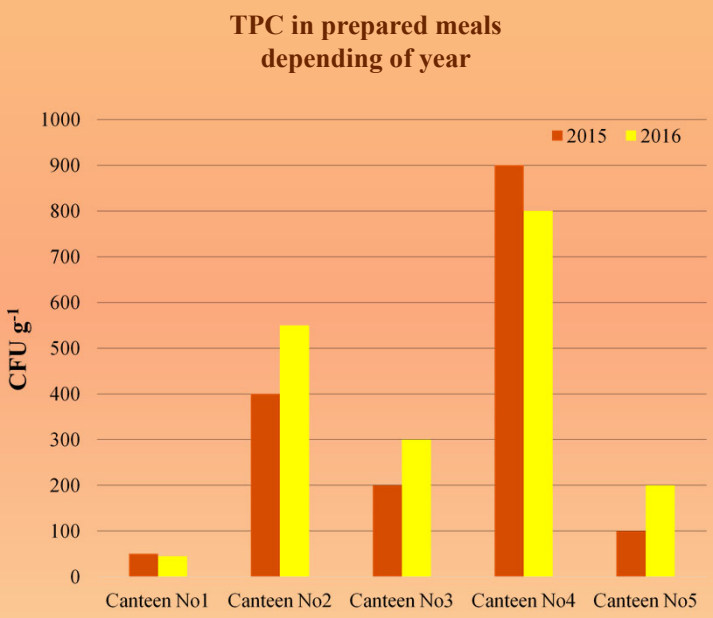
Introduction

Food quality and safety have an important role in consumer health and life defence. All over the world every day are studied and analysed in a variety of foods, that is, their structure, nutritional value, safety, chemical composition, functional properties, organoleptic quality indicators and so on. Microorganism quantity is exactly one of the main indicators influencing product safety. Food safety results obtained depend on the most appropriate, as well as implemented and applied techniques and good hygiene practice in compliance with the fundamental principles. The effectiveness of risk assessment and quality control methods influencing the microbiological safety of the food raw materials was evaluates. Microbiological contamination risk of foods is dependent of technological processing method and equipment. The aim of the research was to analyse the factors influencing microbiological contamination of ready-to-eat food in the catering establishments of closed-type institution.

Materials and Methods

Research objects: NAF catering establishments. Prepared meals, water, hand and surface swabs samples were taken from NAF canteens. Average values of TPC, coliforms and *S.aureus* analysed using standard testing methods: TPC in food products according with standard LVS EN ISO 4833-1:2014; *Enterobacteriaceae* in food products according with standard LVS ISO 21528-2:2007; coliforms in food products according with standard LVS ISO 4831:2006; *S.aureus* from personnel hands according with standard LVS ISO 18593: 2007. The study samples removed from canteen staff hands, as the daily work is mainly related with food products and technological equipment.



Acceptable level of testing results $<10^5$ CFU g^{-1}.

Results

The performed analysis of average values of TPC, coliforms and *S.aureus* in the ready-to-eat products, environmental objects samples, surface of human hands and surfaces that come into contact with food shows that microbiological contamination are controlled according to the self-control procedures and normative acts. The results on microbiological contamination of ready-to-eat food correlate with the results on contamination of food items, equipment and personal hygiene indices. The obtaining results of microbiological risk assessment can be used for improvement of the self-control and personal hygiene procedures and educational programmes of employees of catering establishments.

Conclusions

1. In NAF canteen prepared foods total number of bacteria is acceptable and does not exceed the permissible limit of normal microbial contamination $<10^5$ CFU g^{-1}.
2. *Enterobacteriaceae* count in dishes indicating good microbiological safety of food in NAF units.
3. *S.aureus* in the presence of personnel hands were observed, indicating the staff hygiene requirements.
4. Coliform bacteria in contact surface not been found.