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Interviews and Surface Sampling Surveys to Improve Surface Hygiene in Restaurants

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The aims of this study were to update the own-checking guidelines for registered food operators based on the Food Act (297/2021) and the Food Hygiene Decree (318/2021) as well as to guide the food operators in microbial sampling of surface. These instructions for restaurants are based on surface sampling in real working surroundings in 30 restaurants in Ilmajoki and Kurikka (in fall 2021). At the same time as the samplings were performed the operators were instructed in self-monitoring requirements. A total of 268 surface surfaces were taken (Tietäväinen, 2022). The food control is carried out according to the Oiva system, which provides consumers with information on the results of the food control in form of an Oiva report visible both in the restaurant and on the restaurant's homepage (Finnish Food Authority, 2021; 2022).

In restaurants, the microbiological compliance of food is ensured by taking care of food preparation, surface cleanliness, sale times, serving times, storage

conditions and storage temperatures (Rahkio et al., 2013; Koskinen et al., 2021). At most, food services are inspected twice a year and at least every three years. Finnish Food Authority recommended sampling frequencies are 4-12 times a year. (Finnish Food Authority, 2021).

Premises and operations must meet the requirements set in food legislation (European Union, 2005; Food Act, 2021; Food Hygiene Decree, 2021; Finnish Food Authority, 2021 & 2022). In the guidelines published e.g., by European Hygienic Engineering and Design Group the operators can find instructions how to apply with the requirements (EHEDG, 2014). The operator is responsible for the self-monitoring, in which samples are taken from surfaces in direct contact with foodstuffs: equipment and vessels used in food preparations, cutting boards and other work-tops, knives, and serving utensils storage etc. (Rahkio et al., 2013).

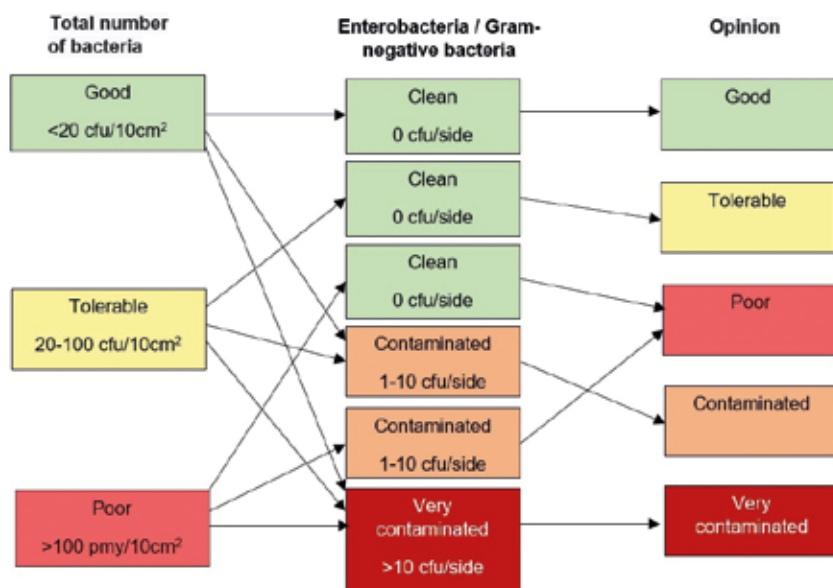


Figure 1. Total aerobic bacterial and enterobacterial counts were used in determining the surface cleanliness in the restaurants.

RESULTS FROM INTERVIEWS AND SURFACE SURVEYS

Based on the interview responses, the restaurant operators showed great importance to surface cleanliness, but according to the study by Tietäväinen, approx. half of restaurants were taking surface cleanliness samples (Tietäväinen, 2022). The level of equipment hygiene and cleanliness of the cleaning closets was good. Storage on the floor is not recommended, because this affects both the material quality and cleaning possibilities. However, the surface cleanliness samples showed that food contact surfaces were cleaner than the indirect food contact surfaces. Food contact surfaces were cleaned several times a day, especially after use. The food contact surfaces in the restaurants were well cleaned, but all restaurants did not expose the surfaces to detergents for a sufficient period. Based on the responses in the interview, there was still room for improvement especially in using disposable gloves and washing hands before putting on disposable gloves. Furthermore, more than half of the restaurants use disposable cleaning cloths. But especially in small restaurants, cleaning cloths were also taken home for washing. At home, it should be noted that these must be washed separately from other laundry. Based on the surface cleanliness samples (Figure 1), the food contact surfaces were cleaner than those surfaces in indirect contact (Figures 2).



Figure 2. Overall statement of the microbiological cleanliness of the surfaces in the restaurants is based on the total bacterial and the enterobacterial counts. The presence of enterobacteria on the surfaces lead to classification as either contaminated (1-10 cells) or highly contaminated (> 10 cells).

Figure 2 shows that enterobacteria or high levels of other aerobic microbes were found on cutting boards (23%), washed hands (33%) and hand-washed cutters (41%). Furthermore, enterobacteria or high levels of aerobic microbes were commonly detected on indirect surfaces e.g., kitchen handles (38%), worktops (47%) and faucets i.e., taps (59%). In the studied cases, only 23% of the faucet environment were clean. The faucet surroundings were often damp, which support the growth of microbes. Only one fifth of the restaurants had automatic faucets. Checking the cleanliness of the sinks with faucets should be a part of the own checking system. The drying of the surfaces should preferably be carried out with dry, disposable cloths or properly laundered cloths. To improve the hygiene level in the restaurants, site-specific guidance can be provided

to restaurant operators based on the questionnaire responses and the hygiene results.

CONCLUSIONS

Based on the surface sample results and questionnaire responses, restaurant-specific guidance and counseling was provided to improve the hygiene level in the participating restaurants. It must be stated that sensory evaluation is not sufficient for monitoring the cleanliness of surfaces. The restaurant operators must consider: equipment and vessel hygiene, cleanliness of cleaning cloths, keeping surfaces dry, the exposure time of cleaning and disinfecting agents, hand hygiene and proper use of disposal gloves etc. All food contact surfaces should be cleaned several times a day. Furthermore, worn cutting boards must be replaced. Where disposable cleaning cloths are used, they should be used only once. In small sites, where there is only one water point, it is important that the water point is thoroughly washed and disinfected between the various operations. According to the recommendation there should be at least three washing points in a restaurant kitchen i.e., separate washing points for hand washing, rinsing of raw materials and rinsing of vessels and other dishes. Preferably, there should also be a separate washing point for facility cleaning operations. Kitchen hygiene can be improved by cleaning drains before other parts of the floor.

The health inspectors will pay attention to the implementation of both hygiene issues e.g., hand and cloth hygiene and the sanitation procedures during inspections. In the own checking, the restaurant operators sample the surfaces at agreed intervals. The restaurant personnel can themselves take the samples or purchase this service. Note that the responsibility cannot be outsourced. This means that the restaurant owner is obliged to check that agreed samples have been taken and reported according to the plan.



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LITERATURE

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