

# SANITARY-HYGIENIC CONTROL OF TWO COLLECTIVE CATERING UNITS IN THE NORTH OF PORTUGAL

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## INTRODUCTION

The catering units provide food and beverages to kindergartens, schools, hospitals, etc., being extremely important to guarantee the quality and safety of the meals prepared on these units. The compliance of Prerequisite Programs regarding good hygiene practices, plans for cleaning and disinfection, equipment, infrastructures, among other issues, is obligatory.

Some works have been done in order to identify weaknesses in food safety management systems by the evaluation of the knowledge and attitudes of food handlers (Garayoa et al., 2011; Pereira et al., 2015), and by microbiological quality of work surfaces, operators' hands and meals (Petruzzelli et al., 2018).

Thus, in the present work we intended to evaluate the sanitary-hygienic conditions of two collective catering units located in the north of Portugal.

## MATERIALS AND METHODS

A total of 17 inspections were performed on two collective catering units in the North of Portugal (Units A and B) during the period 2015 – 2018. These catering units have the HACCP system implemented, approximately ten (Unit A) and three years ago (Unit B).

Each inspection consisted on:

- Evaluation of the hygienic and maintenance conditions of the following sectors: areas of preparation of vegetables, meat and fish products, kitchen, deserts section, area where the utensils are cleaned, self lines, as well as the equipment/utensils used, and sanitary rooms;
- Implementation and compliance of Plans of Hygiene and Pest Control;
- Application of Good Practices of Hygiene (personal hygiene, work clothes, hands) and Good Manufacturing Practices (ex. temperatures registration of freezers, fridges, water-baths, maintenance ovens, rastreadability, residues, maintenance plan and records);

- Sampling for performing microbiological analyses to food handlers hands, work surfaces, utensils and food, namely:
  - ✓ 34 foods (salads, desserts and fully cooked food)
  - ✓ 135 surfaces (work surface, equipment and kitchenware)
  - ✓ 18 and 16 food handlers in Unit A and Unit B, respectively (right and left hands – Total: 36 and 32 samples).

## RESULTS AND DISCUSSION

In both units, the highest number of nonconformities were detected concerning cleaning and disinfection (33.7% - Unit A and 33.6% - Unit B), and good manufacturing practices (21.0% - Unit A and 22.7% - Unit B).

In the units A and B, 12.5 and 23.8% of the total work surfaces, equipment and kitchenware analyzed, showed unsatisfactory results, respectively (Table 1).

Nonconformities were also detected in the hands of the food handlers (19.4 and 18.8%). Among the food samples (salads, desserts and fully cooked food), only the salads showed unsatisfactory results (Table 2).

Table 1. Nonconformities detected on the surfaces and hands of food operators

Unit	Surfaces				Food handlers
	Work surface	Equipment	Kitchenware	Total	
A	3%	5.0	14.3	16.7	12.5
B	4%	26	18	24	22.7
	%	47.6	18.8	7.7	23.8
	N	21	26	15	61

N - Number of samples

Table 2. Nonconformities detected in food

Local	Foods			Total
	Salads	Desserts	Fully cooked food	
A	3%	53.6	0	37.3
B	11	3	4	18
	%	46.2	0	37.5
	N	13	1	16

N - Number of samples

## Examples of nonconformities



Presence of molds in a window located in the warehouse



Spices stored in recipients in bad condition and without correct labelling



Dustbin without lid



Bread in a flour bag



Kitchen utensil in bad condition

## CONCLUSIONS

These data indicate that the cleaning and disinfection activities of surfaces, equipment, kitchenware and hands of food handlers must be improved. Furthermore, the cleaning and disinfection procedures applied in fresh vegetable salads preparation need to be reviewed and the staff practices improved.

## REFERENCES


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1<sup>st</sup> International Meeting on I&D in the Food Sector  
3<sup>rd</sup> Workshop de I&D no Setor Agroalimentar



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