ICEH CISA PORTO 2014

3rd INTERNATIONAL CONGRESS ON ENVIRONMENTAL HEALTH 2014

PORTO, 24th to 26th SEPTEMBER 2014

PROCEEDINGS BOOK

EMERGING RISKS AND CHALLENGES ON ENVIRONMENT, HEALTH AND SAFETY

Allied Health Sciences School of Polytechnic Institute of Porto, Portugal

Title:
3th International Congress of Environmental Health: Proceedings Book
3º Congresso Internacional de Saúde Ambiental: Livro de Resumos

Edition:
1st Edition / Book in 1 Volume, 520 pages

Authors / Editors:
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Santos, Joana; Carvalhais, Carlos; Rebelo, Andreia; Freitas, Marisa; Xavier, Ana

Publisher:
(ESTSP-IPP)
Scientific Area of Environmental Health of Allied Health Sciences School of Polytechnic Institute of Porto
Área Científica da Escola Superior de Tecnologia da Saúde do Instituto Politécnico do Porto

Design / Layout:
4CS

Local / Date:
Porto / November 2014

ISBN:
978-989-20-5086-7

Legal Deposit:
384046/14

(ESTSP-IPP)
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Microbiological monitoring of surfaces and food handlers

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INTRODUCTION:

Every year, foodborne diseases affects about 48 million people in the United States alone, usually associated with microbiological infection or intoxication The increase in demand for catering services has contributed to cases increase (Kleter & Marvin, 2009; Lund, A.C. Baird-Parker, 2000; Newell et al., 2010). These data show the importance of quality assurance from food production to the consumption. Therefore, it is necessary to take into account special care towards the environment (air), facilities, equipment, surfaces, utensils and handlers throughout the processing by cleaning processes and disinfection (Kleter & Marvin, 2009).

OBJECTIVES:

To evaluate microbiological growth on surfaces, utensil and handler of a coffee establishment.

MATERIALS AND METHODS:

An experimental study was conducted with microbiological sample collection from surfaces, utensils and food handlers from a coffee establishment, in April of 2014, before and after disinfection. Samples were collected under aseptic conditions. Contact plates were used to surface evaluation. These plates were kept against surfaces for about 10 seconds. Handlers and utensils were tested using a swab soaked in Maximum recovery diluent-Histidine Lecithin and Polysorbate (MRD-HLPS) rubbing against parts were food might get retained. The parameters evaluated were total counts of viable microorganisms at 30°C/72h, coliforms at 37ºC/24h, *Escherichia coli* at 44ºC/24h and coagulase positive *Staphylococcus* at 37ºC/48h. Disinfection time was extended for 2 minutes when results were unsatisfactory, and sample collection and analysis were repeated.

RESULTS AND DISCUSSION:

According to the results there was absence of *Escherichia coli* and coagulase positive *Staphylococcus*. Handler and utensils revealed presence of coliforms. Utensils also revealed a high number of total counts of viable microorganisms. Fungi and bacteria were observed on surfaces. To eliminate these microorganisms the exposure time to the disinfectant was increased up to 2 minutes, which proved to be effective at reducing the number of microorganisms. After this procedure the counts results were within the established values.

Table 1

		After 10 seconds disinfection				After 2 minutes disinfection
		Coliformsat 37ºC/24h	***Escherichiacoli*at 44ºC/24h**	**Coagulase positive *Staphylococcus* 37ºC/48h**	**Microorganismsviable at 30ºC/72h**	**Microorganismsviable at 30ºC/72h**
Handlers		Satisfactory	Satisfactory	Satisfactory		
Utensils		Unsatisfactory	Satisfactory		Unsatisfactory	Satisfactory
Surfaces	Counter				Unsatisfactory	Satisfactory
	Table				Satisfactory	
	Fridge				Satisfactory	
	Fridgedoor				Satisfactory	
	Cuttingboard				Satisfactory	

CONCLUSION:

After adjustment in the disinfection time, our results show that the coffee establishment is in compliance with food safety requirements.

ACKNOWLEDGMENTS:

We thank the financial support of this project to Biogerm SA.

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