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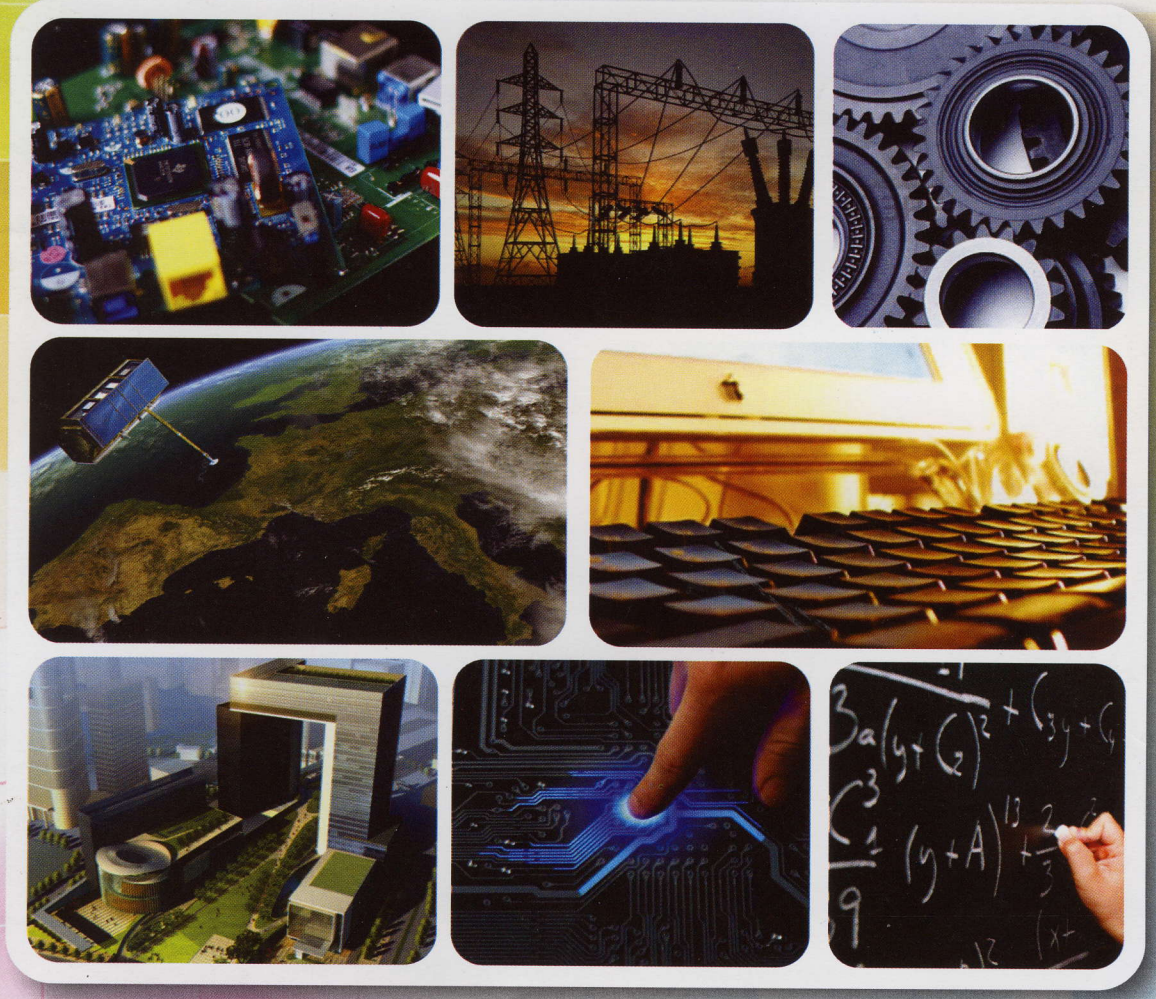

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Microbial Risks Assessment of Bakso and Restaurant Food Consumption due to the Escherichia Coli Contaminated Water Sources in Abepura City, Papua Indonesia 2013

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ABSTRACT

Microorganisms in drinking water sources may colonize in gastrointestinal (GI) tracts and this phenomenon may pose a potential health risk especially to immune compromised population. The survival characteristics of both generic E. Coli and Escherichia coli O157:H7 in varied drinking water sources were investigated to assess the potential for human exposure. This study aimed to assess microbial risks posed by human exposure due to the generic Escherichia coli (MPN/100 ml or cfu 100 g) (n=20) and Escherichia coli O157 (n=20) contaminated water drinking consumption from various sources in Abepura Regency, Papua Province. Samples from Bakso sellers and restaurants source were analyzed for those two kinds Escherichia coli contamination. Risk analysis is a necessary component to assist in selecting priority hazards and identifying hazardous scenarios. Research revealed levels of generic E. coli in water (from Bakso Seller ranged from 1.5 to 35 ± 6 cfu/100 mL, whereas in the restaurant were ranged from 0 to 12 ± 2 cfu/ml. The WHO permissible limit is 0 cfu/100 mL per water sample in ideal conditions. The highest generic E coli count recorded was 35 log cfu/ml and 12 cfu/ml in Bakso and restaurant, respectively. E coli O157:H7 were found in the same point stations (from Bakso seller mean: 1.0 cfu/g and restaurant 0.0 cfu/g). Samples that exceeded disease risks set by the WHO were collected before the implementation of strict regulation from local health centre that regularly test the restaurant food and street sellers then set fine and punishment to those sellers who break the regulation. Disease risk from consumption of Bakso and food from restaurant in Abepura was found to be within acceptable levels. No relationship was found between E. coli concentrations in Bakso' water and water used in restaurants. Conclusion; Quantitative results revealed the presence of pathogenic organisms and water quality risk due to the unsanitary water sources and environmental sanitation. Continued water quality monitoring, the application of household based disinfectants, and healthy domestic hygiene practices are highly recommended.

Keywords: *Drinking water, generic E coli, Escherichia coli O157, Microbial risks.*

analysis of various scenario are required to have more specific performance of assessment and the potential infections due the microbial contamination.

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