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Importance of the use of environmental indicators in the water pre-treatment process of a case study in Veracruz, Mexico

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Environmental indicators are necessary to enable decision making to be easier for organizations and provide a reliable basis of environmental information for the continuous improvement of different processes. Regarding the quality of water for human consumption, its characteristics can favor both the prevention and the transmission of disease-causing agents. Due to the importance of controlling this process, this research analyzed the operation indicators (turbidity, residual chlorine and pH) of the water pre-treatment process in a locality in the state of Veracruz, Mexico, using statistical process control through control of means and ranges. Environmental indicators' behavior led to the knowledge that this process is affected by the quality of the water; this is variable especially, in the rainy season, when there is more turbidity due to the dragging of sediments towards the supply source, in addition to the existence of a relationship between the increase in the turbidity of raw water and the dosage of disinfectant used. Through a strict control placed on the incoming water, environmental indicators could be improved upon, which would favor the next step in its potabilization contributing to compliance of the current national regulations. Therefore, it is concluded that with the support of this statistical tool, corrective actions can be established to ensure water quality standards for human consumption.

Speaker Biography

Lorena De Medina Salas completed her PhD at age 29 at Pacific Western University, USA. She is a professor and researcher in the waste management area of the Environmental Engineering Program at Facultad de Ciencias Químicas, Universidad Veracruzana in Mexico, with 15 years of experience. She has published more than 30 papers and has been serving as a scientific reviewer for reputed journals.

Mario Rafael Giraldi Díaz earned a doctorate (PhD) in Environmental Engineering at the Polytechnic University of Catalonia, Spain. He was granted with two postdoctoral research fellowship. He has more than ten years of experience in the scientific-field of industrial ecology, he has several international publications and theses directions in this field. He has professional experience in the industry and government agencies, currently he is full professor and researcher of environmental engineering at the Faculty of Chemical Sciences of the Universidad Veracruzana, Mexico.

Eduardo Castillo González is a Civil Engineer with professional certification, master's degree in Environmental Engineering and doctorate (PhD) in Education. He is a full-time professor at the Faculty of Chemical Sciences of the Universidad Veracruzana. He has published more than 30 papers and belongs to the National System of Researchers in Mexico. He is currently the Principal of the Faculty of Civil Engineering in the Xalapa region of the Universidad Veracruzana.

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