

Decontaminating Effect of Sifted Watermelon Rind Applied in Water with Mercury

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Abstract

The objective of the following article is to find a decontaminant of mercury present in water through the sifting of watermelon rind. The proposed process to prepare the watermelon rind is to dehydrate it and sift it at 150 microns. It is meant to know how it will affect pH, particle size and contact size of different contaminated solutions of mercury. It is known that 70% of freshwater resources in Mexico are contaminated by substances, known as heavy metals, including mercury, which can be found in the form of metal, mercury salts or organic form. Watermelon has 93% water in its shell, it has properties that help it stand out as an ideal cleanser since it helps eliminate certain toxins in heavy metals. Thanks to the amounts of lycopene and its potential as an antioxidant, watermelon peel can eliminate the chemicals that accumulate in the water found in the human body, which makes it a very good option as a decontaminant for this project. One of the innovations that is considered the most important in this research and at the time of project implementation, is the disposal of waste in a favorable way, which is, the elimination of a large part of the watermelon waste, without causing another type of contamination or bad odors due to the rotting of the fruit, and at the same time favoring the decontamination of other means, in this case the polluted water.

Keywords: decontamination, mercury, sifting, watermelon

Biographies

Valeria Cárdenas Morales is currently studying medicine at Universidad de Monterrey. She studied at Centro de Investigación y Desarrollo en Educación Bilingüe in high school and did an investigation on the amount and types of microorganisms that a public restroom can have and the differences between the results of men and women restrooms. She was involved in a research about schizophrenia.

Dayan Alondra Garza Cantú studied two years of high school at CIDEB. She belonged to a community support team called Techo which helps collect money to build homes for people in need in Mexico. She studied a year and a half of medicine at the UANL where she took first aid courses and also attended patients at nursing homes to perform social service and help the elderly. She is currently studying medicine in

Universidad de Monterrey. As a first semester student in medicine, she is interested in being part of groups that foster community service and continue helping the society by making medical brigades.

Aleyda Herrera Melgoza studied two years at high school 19. She was an outstanding student and was selected to study her final school year in Montpellier, France. She belonged to the high school cheerleading team called “Scorpions”. She currently belongs to a community called “physicians in action” a group formed by medical students which helps needy people giving free medical consultations. She is currently studying medicine in Universidad de Monterrey.

Leslia María Sánchez Franco studied tenth and twelfth at Universidad Tecmilenio campus Mazatlán. In eleventh grade, she studied at Edward Milne Community School in Sooke, BC, Canada, where she used to practice rugby and won five times the most valuable player in the team. She is currently studying medicine in Universidad de Monterrey. As a student, she has an academic scholarship, earned by an average higher than 90 in high school.

Emilio Sánchez Torres is currently studying medicine at Universidad de Monterrey. He previously attended South Texas Academy for Medical Professions as a high school student where he was involved in biomedical debate in HOSA and competed at state level for 4 years. He is also certified in first aid services and as a dental assistant.

Julia Michel Tijerina Fernández is currently studying medicine at Universidad de Monterrey. She studied three years of high school at Centro Educativo Guadalupe Victoria and did an investigation on the influence of technology on children from five to ten years old, and also did community service with low-income schools in Monclova, Coahuila. She studied three semesters of medicine at UANL where she took first aid courses, and workshops related to diseases such as depression, anxiety and personality disorders, suicidal risks, upper limb sutures, dermatological surgery and advances in laser therapy, comprehensive care of the elderly and vaccination.

Astrid Vega Domínguez is currently studying medicine at Universidad de Monterrey. At her time as a high school student at Tecnológico de Monterrey, she won first place at the science fair in environment area. The research she was involved in was about analyzing of the cigarette tails affected less by being biodegradable than being regular tails when thrown to the ground.