

The matter of insects in cemeteries and the importance of necroslurry polymersCamila A F M Souza¹, Juliana S. M. Guedes², Stéphanie S. R. D. Morais¹ and Maria Alzira P. Dinis²¹FUMEC University, Brazil²University Fernando Pessoa, Portugal

The most well-known destinations for lifeless bodies, used and defended by beliefs, religions and people, are graves and burial chambers. They are the forms of burial, which, in the majority, bring comfort to the families and people close to the deceased, for idealizing that they are religiously and socially intact to beloved beings. However, a large part of the population is unaware or not informed about the environmental problems that such burials bring to public health and the environment. After the burial, the body begins to go through physical, chemical and microbial processes, along the natural sequence of decomposition performed by bacteria, as well as by animals and insects. Pathologies, coming from the construction method used in cemeteries, such as cracks in the concrete and masonry, allow these animals and insects to go into the coffins and take part of the decomposition process. Consequently, they become potential transmitters of diseases. It is important to emphasize that this gathering of animals in the cemeteries causes great discomfort to visitors and annoyance to near by dwellers. Necroslurry is a liquid resulting from the decomposition of corpses, which has a sound capacity to percolate soils and groundwater and therefore, contaminate both, soil and groundwater near the cemeteries, due to the presence of pathogenic microorganisms in its composition. The vulnerability of soils and aquifers, which can be classified as low, medium or high depending on where the burial occurred, medium or high permeability of the cemetery soil and the position either above or below ground level are some of the factors that influence the way necroslurry may reach soils and groundwater. These impacts can cause disease and epidemics, as many cities use such groundwater as their water source and the soil is used produce food crop. . Necroslurry is a greyish and brownish solution, mainly composed of cadaverine, an amine ($C_5H_{14}N_2$) with a repulsive and nauseating odor, a putrefaction by-product, besides being formed by water, minerals and organic degradable substances, the medium density is equal to $1.23g / cm^3$, pH between 5 and 9, at 23 to 28 °C, in its liquid state is more viscous than water, due to its polymerization and the chemical reactions that produce the polymers. Due to the fact that it is a polymerizable substance, the transportation of necroslurry in its liquid phase is aggravated. The ideal is to use a system that transforms the liquid necroslurry into gas, using burial and constructive methods proper for this phase, facilitating the transportation as well as preventing the contamination to the environment. This article will show how these polymers hamper the attempts to prevent the contamination. It will also show what happens to the polymers resulting from the chemical processes of decomposition of the human body, when they reach the soil and the groundwater. Nowadays, There are, in Brazil, technologies that fulfill these needs, monitoring the treatment of gases by molecular dissociation and avoiding the polymerization. Some Brazilian cities have already been using modular structures made of carbon steel and materials, which are submitted to a leak test, so as to ensure that the passage of gases and liquids are stopped, creating, in such a way a great sealing capacity. This method is very effective and causes low environmental impact, eliminating the difficulties of the necroslurry treatment and fully complying with CONAMA Resolution 335/2003.

Biography

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