

MAN_05 - Waste valorization through sustainable management at the Instituto de Tecnologia em Imunobiológicos - Bio-Manguinhos /Fiocruz Case study

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Introduction: In the industrial processes developed at Bio-Manguinhos a significant and diverse volume of chemical wastes is generated that needs to be correctly managed to maintain the safety of workers, environmental management and to comply with legal aspects and regulations. The practices currently adopted at BM comply with the environmental legislation through the implementation of good management practices for health service residues - PGRSS. In 2021, the 39 tons of chemical wastes were sent for treatment by incineration process. However, the growing discussions about environmental sustainability, the incorporation of measures to reduce/mitigate environmental impacts and the roles of institutions/companies drive the incorporation of new practices and concepts such as waste recovery.

Objective: The objective of this research is to study the potential value of chemical residues generated at Bio-Manguinhos, based on the establishment of sustainable management practices.

Methodology: The research was classified as applied, exploratory, and as for the procedures, the bibliographic and documental research and case study were adopted with the application of the designed methodology (data collection through inventory, data evaluation, and prognosis).

Results: With the application of the designed methodology, the following results were possible: Identification of new chemical waste that can be forwarded to the collection network of the Effluent Treatment Plant - ETE-CTV, such as the waste from aseptic simulations; Identification of chemical waste with potential for recycling and recovery, such as solvents and cleaning and sanitizing agents; Mapping the option of co-processing and physical-chemical treatment of chemical waste from aqueous solutions; Best choice of treatment for chemical residues that are not decharacterized in the incineration process, such as cationic resin from the water treatment center - CTA.

Conclusion: The results of the study indicate that it is feasible and cost-effective to incorporate new practices for chemical waste management, in addition to enabling the adoption of better environmental sustainability practices.

Keywords: Chemical waste; Sustainability and environmental management