



The Sinos River Watershed and Microplastic Pollution: current status, presence evaluation and perspectives

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Introduction

The Sinos River is the main water body of the Sinos River Basin. Located in the state of Rio Grande do Sul, Brazil, it comprises 32 municipalities and supplies water for more than 1.6 million inhabitants.

Human activities are vastly diversified along the watershed, directly reflecting on its environmental quality once it receives constant domestic and industrial untreated wastewater discharges.

Study area



To date, studies evaluating the presence of microplastics in this region are scarce.

The basin is subdivided into three sections (● from right to left): **upper**, **middle**, and **lower**.

Aims

1. Assess the occurrence of microplastics in the Sinos River;
2. Contribute to the scientific knowledge regarding the presence of microplastics in this important freshwater ecosystem.

Materials and methods

Surface water and sediment samples were collected at sites in Caraá (upper a.), Parobé (middle b.), and São Leopoldo (lower c.) sections along the riverbank.

Samples were preserved in controlled conditions. After laboratory procedures, samples were vacuum-filtrated using cellulose acetate membrane filters.

A quali-quantitative analysis was performed and according to specific literature, the filters were observed under a stereomicroscope and the particles were counted and classified. Precautions were taken in all steps to avoid external contamination.

Results and discussion

Microplastics were observed in all samples from the three sites analyzed. In general, fibres were the predominant shape found.

These findings are part of a larger ongoing research developed at Feevale University and the final results will lead to important contributions concerning microplastic pollution at state and regional levels.

References:

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