

ARE BRAZILIANS CONSUMING MICROPLASTICS?

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ABSTRACT

INTRODUCTION: Microplastics (MPs) are particles ranging in size from 5 mm to 1 μm , such particles easily permeate the water filtration systems of sewage treatment plant systems. Unfortunately, MPs reach rivers, lakes and oceans, posing a potential threat to aquatic and human life. Added to this is the fact that Brazil is one of the largest plastic producers in the world, without protective legislation against exposure to such contaminants, and for MPs research in Brazil there are not even guidelines through standards with parameters, tolerance limits and official methodologies established. Just like, regrettably, methodologies all over the world are converging to detect MPs in a concise and precise way. **OBJECTIVES:** The objective of this work was to compare different methodologies for digesting the gastrointestinal system, gills and fat of fish of the Pintado species (*Pseudoplatystoma corruscans*), family Pimelodídos acquired in the market of Goiânia, State of Goiás for the detection of MPs. **MATERIAL AND METHODS:** Two treatments were carried out to digest the samples, using different reagents, temperatures and digestion times. The methods of Hou et al. (2021) were applied to the samples (1): H_2O_2 30%, 75 °C, 48 h, $\text{Fe}(\text{SO}_4)$ at 70 °C; under stirring for 30 min, followed by vacuum filtration; and by Fockema et al. (2013) (2): 10% KOH, room temperature in 3 weeks, until complete digestion; vacuum filtration followed. Both residues obtained were dried for 48 hours at 30 °C; were read using a Stereomicroscope (Leica M205C). Therefore, after digestion of the samples, the presence of MPs was verified, when the dry residues obtained were light in color. **RESULTS AND CONCLUSION:** In method 1, the residue was dark brown in color and made detection impossible. Therefore, only by method 2, it was possible to detect using optical means. In Brazil, although there is a legal framework focused on food safety, many environmental pollutants, including the detected microplastics, still do not have legislative limits. In view of this, studies are needed to reveal the real contamination by MPs, requiring the official standardization of methodologies for detecting and quantifying MPs in fish, with maximum tolerance limits, aiming to guarantee food safety associated with fish consumption.

Keywords: methods; microplastics; fish.

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