

A method to sample and treat salt and brine samples for plastic pollution testing

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Plastic pollution in food-grade salt is an environmental problem of growing concern. Numerous recent studies have researched the quantity and type of (micro-)plastic pollution in food grade salts across the world. Most of these studies focus on bulk and/or packaged salts, thereby focusing on the presence of them in the final product, rather than seeking to understand the source of this form of pollution. This contribution aims at proposing a methodology that allows to sample salt and brines from different stages of the salt production and preparation process in solar evaporation salinas. The focus is not only on finding plastic but comparing the quantity and type of pollution found in the different samples of a given site. By obtaining samples in the different stages, it will be possible to distinguish potential pathways of pollution with a higher degree of accuracy and therefore to address the causes of pollution in a more efficient way. This contribution is divided in two parts: First, the sampling methods in the field, both for brine and salts obtained in solar evaporation salinas. This sampling can be applied in both artisanal and industrial salinas, anywhere in the world and regardless of local specificities in the production method. It can also be used in inland solar evaporation salinas, an endemic type of facility found mainly in the Iberian Peninsula. The second part of the contribution describes the storing, handling and preparation of the samples in the laboratory, before the analysis of the quantity and type of microplastics. Both the field and laboratory methods described here are simple, yet robust, universally applicable and require little resources to implement. This will allow interested researchers to do their own sampling and research on plastics in food grade salt in a way that allows easy comparison and further improvement.