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**Application of ultrasound in food preservation**

**Aplicação de ultrassom na conservação de alimentos**

Methods using heat are the most used by the industry for food preservation. They present good efficiency in microbial and enzymatic inactivation, but on the other hand, they lead to greater losses in the sensorial and nutritional characteristics of the products. Therefore, in order to preserve these characteristics, non-thermal technologies are gaining popularity, such as the ultrasound. This technique is defined as the application of sound waves with a frequency that exceeds the human auditory threshold (>20 kHz). In general, ultrasound applications fall into two categories: low and high intensity. Low intensity ultrasound does not cause physical or chemical changes in the properties of the material, producing non-destructive effects and providing information on the physicochemical properties of the material. The ultrasound of high intensity causes physical and chemical changes in the properties of the material where it propagates. There is a wide application of high intensity ultrasound in food, such as the formation of emulsion, filtration, dehydration, extraction and microbial and enzymatic inactivation. Cavitation is the main effect of ultrasound, generating regions of high pressure and temperature in the matrix, in addition to shear forces, which is responsible for microbial and enzymatic inactivation. Ultrasound can be combined with other treatments, such as pressure and temperature, thus improving its effectiveness in microbial inactivation. Although there are many studies related to ultrasound-based technologies in laboratory scale, their application in the food industry is not common and therefore studies need to be focused on the scale up viability of these processes.

## **Referenes**

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