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Novel approaches to sterilize foods

Conventional thermal processes have been very reliable to offer very safe sterilized food products but some of them are of questionable overall quality. Flavor, aroma and texture among other attributes are significantly affected during those processes. To reduce the degradation of those quality attributes, alternative approaches to sterilize foods have been explored in the last few years. Nonthermal technologies such as pulsed electric fields, high pressure, ultraviolet have been also studied in depth and it is well known they are not capable to sterilize foods unless they are combined with other stress factors such as heat. In other words, most of the new strategies to sterilize foods rely on using thermal approaches, but in a more efficient way than in conventional methods. Some of these emerging technologies have proven to be reliable and have been formally approved by regulatory agencies such as FDA, but additional work needs to be done in order to be fully adopted by the food industry and to optimize their use. Some of these emerging technologies to sterilize food include Pressure Assisted Thermal Sterilization (PATS), Microwave Assisted Thermal Sterilization (MATS), Advanced Retorting. This presentation deals with fundamental and applied aspects of these new and very promising approaches to sterilize foods.

Biography

Barbosa is director of the Center for Non Thermal Processing of Food (CNPF) and works in the BSysE Food Engineering research emphasis area. His primary interest is in finding effective and less harmful methods of preserving food through the study, development, and application of nonthermal technologies.

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