

## **High pressure CO<sub>2</sub> technology for the preservation of ready-to-eat food**

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Food safety and preservation is essential aspect of a sustainable food supply chain in which reduction of the risk of foodborne diseases and increased shelf life are of primordial importance. Supercritical CO<sub>2</sub> has been extensively studied as low temperature pasteurization of fresh food. However, the process has some drawbacks which limited the applications at commercial scale. We developed a new preservation method to increase the microbial safety and the preservation of fresh food products as ready-to-eat (RTE). The technology uses low hydrostatic pressure (< 20 MPa) in combination with Modified Atmosphere Packaging (MAP) enriched with CO<sub>2</sub> to inactivate microorganisms and increase the product's shelf-life. Compared to the conventional supercritical pasteurization, this process uses a low amount of CO<sub>2</sub> and imposes a lower risk of cross contamination. Moreover, a lower pressure is needed compared with conventional High Hydrostatic Pressure (HHP). Experiments were conducted at the lab scale on fresh cut fruits and vegetables. The process reduces the naturally present and inoculated microorganisms, while it preserves the fresh like characteristics of the untreated food. Overall, results are promising for the development of a new mild and innovative food preservation technique of fresh food.