

Pulsed Electric Field as Pretreatment for Different Drying Method in Chilean Abalone (*Concholepas Concholepas*) Mollusk: Effects on Product Physical Properties and Drying Methods Sustainability

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Abstract : In this study, pulsed electric field (PEF: 2.0 kV/cm) was used as pretreatment in drying methods, vacuum microwave (VMD); freeze-drying (FD); and hot air (HAD), in Chilean abalone mollusk. Drying parameters, quality, energy consumption, and Sustainability parameters were evaluated. PEF+VMD showed better values than the other drying systems, with drying times 67% and 83% lower than PEF+FD and FD. In the quality parameters, PEF+FD showed a significantly lower value for hardness (250 N), and a lower change of color value ($\Delta E = 12$). In the case of HAD, the PEF application did not significantly influence its processing. In energy parameters, VMD and PEF+VMD reduced energy consumption and CO2 emissions.

Keywords : PEF technology, vacuum microwave drying, energy consumption, CO2 emissions

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