**The impact of ohmic heating on pea protein structure during higher heat shorter time (HHST) and ultra-high temperature (UHT) treatments**

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Plant-derived proteins have been emerging and growing in interest due to their attractive technological-functional properties and the trend to replace animal-derived proteins. Pea protein demonstrated over the last years to be a promising plant protein alternative due to its nutritional and biological value along with its recognized low allergenicity. Unfortunately, commercially available samples often present limited solubility, which is aggravated by their high level of processing before going to the market and hampers the design of innovative functional ingredients. Ohmic heating, an emergent processing technology, has demonstrated its potential in modifying protein structure and therefore their functionality, with promising results in animal proteins. However, the information regarding the potential impact of such technology on the structure and functional properties of pea proteins remains scarce. Against this background, the aim of this research was to evaluate the potential of ohmic heating, on changing the structure and functional properties of a commercially available pea protein isolate. The structural changes of treated pea protein isolate at different temperatures (90 °C to 150 °C), frequency of 20 kHz and an applied electric field strength of (≈ 25 V/cm) were studied. The preliminary assessment of structural changes in the selected commercial pea protein isolate caused by the application of ohmic heating was carried out through solubility and turbidity measurements, circular dichroism spectroscopy and fluorescence spectroscopy. The results suggested that the ohmic heating treatments affected the conformation of the tertiary and secondary structure of the commercial pea protein isolate. Moreover, an increase in protein solubility of *ca.* 200% was observed with the higher treatment temperature tested. This work confirmed the potential of ohmic heating in protein functionalization, achieving a significant impact in the pea protein structure. This establishes the technology as an effective tool for tailoring pea protein functionality aiming at developing innovative protein systems.