Gelling properties of black soldier fly (Hermetia illucens) larvae protein after ultrasound treatment

CASANOVA F. (1), KUMAR S. (1), SALES QUEIROZ L. (1), MOHAMMADIFAR M. (1)
1 DTU, National Food Institute, Denmark, Lyngby, Denmark

H. illucens, black soldier fly larvae (BSFL) is one of the sustainable sources of protein however, the research on the functionality of BSFL proteins is limited and need to be explored to increase consumer acceptance. The aim of this study is to create a gel system from BSFL protein and evaluate the impact of ultrasound treatment at different exposure time (5, 15, 30 min) on the size, structure, and gelling properties of BSFL protein. The highest gel strength was found after 15 min of ultrasound treatment. The rise of the particle size and surface hydrophobicity was observed till 15 min of treatment. The water holding capacity of the gels were significantly higher after ultrasound treatment. High elastic modulus was observed after 15 min of ultrasound treatment. Lastly, the gel's pore size was investigated by confocal laser scanning microscopy (CLSM) coupled with image analysis.