

## **Application of green technology in gelatin extraction: A review**

### **ABSTRACT**

Growing demands for green and sustainable processing that eliminates the utilization of toxic chemicals and increases efficiency has encouraged the application of novel extraction technologies for the food industry. This review discusses the principles and potential application of several green technology for gelatin extraction. Several novel technologies and their processing efficiency are discussed in this review. Furthermore, factors that affect the quality of the gelatin produced from different sources are also highlighted. The potential application of ultrasound-assisted extraction (UAE), subcritical water extraction, high-pressure processing, and microwave-assisted extraction (MAE) to improve gelatin extraction are addressed. These technologies have the potential to become an efficient extraction method compared to the conventional extraction technologies. Several combinations of green and conventional technologies have been reported to yield promising results. These combinations, especially using conventional pre-treatment and green technologies for extraction, have been found to be more effective in producing gelatin. Since gelatin could be produced from various sources, it exhibits different characteristics; thus, different approaches and extraction method should be identified for specific types of gelatin. Although these technologies have limitations, such as overhydration and sophisticated systems explicitly designed for large-scale production, they are nonetheless more efficient in the long run to safeguard the environment as they reduce solvent usage and carbon footprint along the way.