**Development of Novel Bigels Fortified with Carrot Pomace (paper presentation)**

Nujamee Ngasakul1\*, Michaela Freyová1, Ali Kozlu1, Diana K. Baigts Allende1, and Iveta Klojdová1

*1DRIFT-FOOD Center, Faculty of Agrobiology, Food and Natural Resources, Czech University of Life Sciences Prague, Prague 16500, Czech Republic*

In this study, a novel biphasic system, termed “bigel”, was developed by mixing of two distinct gel networks: a hydrogel (water-based phase) and an oleogel (oil-based phase). These phases are combined to form a cohesive material, wherein one gel phase is typically dispersed within the other. The structure of a bigel allows for unique properties that are unattainable in standalone hydrogels or oleogels. To enhance the properties of bigel, carrot pomace, an important source of the bioactive compounds—including carotenoids, vitamins, minerals, and dietary fiberswas incorporated. The hydrogel was prepared by heating plant-based protein concentrate with distilled water and gellan gum to 90°C, while oleogel was formulated by heating vegetable oil, lecithin, and carrot pomace powder to 70°C. The oleogel phase was then added dropwise into the hydrogel phase at a ratio of 40:60 while maintaining a high temperature (70°C) with continuous stirring. After homogenization, the bigel samples were cooled down to room temperature and allowed to solidify in the fridge for 1.5 h. The visual appearance, color properties, texture and rheological behavior, and gel stability (oil-binding capacity) of the bigels were evaluated. The results revealed that variations in the type of oil and the concentration of carrot pomace influenced the final properties of the bigels. This study highlights the potential of bigels as a structured gel system, offering opportunities for the incorporation of functional ingredients for innovative food applications. Additionally, the addition of carrot pomace is a sustainable approach to enhance the properties of prepared samples.

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