**Hydrocolloid-Based Fat Analogues: Advancing the Texture and Taste of Plant-Based Meat Products**

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The growing interest in sustainable and healthier meat substitutes has driven the need for innovative strategies to replicate the functionality and sensory characteristics of animal fat. This study investigates the use of hydrocolloids, including kappa carrageenan, gellan gum, methyl cellulose, and konjac gum, to develop structured fat systems specifically designed for meat analogue formulations. Thermo-irreversible gels with varying textural properties can be prepared by adjusting the mass ratio of different hydrocolloids, which enables precise control over gel strength and functionality1,2. By leveraging the gelation, emulsifying, and thermal stability properties of these hydrocolloids, oleogels were created with texture, fat distribution, and mechanical properties resembling those of animal fat. These structured fat systems effectively integrated with plant protein matrices, enhancing their thermal and mechanical behaviour as well as their cooking performance. This research highlights the potential of hydrocolloid-based solutions as sustainable and high-performance alternatives to animal fat in plant-based meat analogues, improving their appeal and acceptance among consumers.

*References:*

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