

## **Nitrite-free Asian hot dog sausages reformulated with nitrite replacers**

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### **Abstract**

The effect of storage time (2 °C, 19 days) and heating (70 °C, 30 min) on physical characteristics and oxidative stability of fish oil encapsulated in filled hydrogel particles was determined and compared with a conventional oil-in-water (O/W) emulsion with the same oil content (8.5%). Subsequently they were used to enrich meat systems with n-3 LCPUFAs, and their lipid oxidation was evaluated and compared with two other meat systems: one containing all animal fat and another with fish oil added directly. Filled hydrogel particles were more effective in lowering the oxidation rate than O/W emulsion, even when thermal treatment was applied. Oxidative stability over the storage time was best in the n-3 LCPUFA-enriched meat system containing filled hydrogel particles, in which TBARS levels were up to 62% lower than other systems containing fish oil. Hydrogel particles offer a promising means of controlling lipid oxidation in n-3 LCPUFA-enriched meat products.