

oxidative stability of meat based system and deep fat fried products.

#### AV PO 09

### Effect of sodium alginate/carrageenan composites on the oxidative stability of microencapsulated fish oil and its application in noodles

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Fish oil has an excellent source of omega-3 fatty acids. However, the use of fish oil as functional ingredients in foods has been limited by its oxidative susceptibility. Hence, fish oil has to be protected against oxidation preferably by microencapsulation. In the present study, the potential of sodium alginate/carrageenan as a wall material along with gelatin and maltodextrin for microencapsulation of fish oil was investigated. Microencapsulation of fish oil was done by spray drying. Fish oil and wall material was used at the ratio of 1:4. Microencapsulated fish oil had moisture content of 2.48-2.52%. Encapsulation efficiency of microencapsulates ranged from 84.22%-87.86. Flow properties of fish oil encapsulate were passable. SEM analysis showed spherical shape of the micro particle with size of 1.76  $\mu$ m to 19.7  $\mu$ m. FTIR analysis indicated the formation of polyelectrolyte complex between wall and core material and successful encapsulation of fish oil. Oxidative stability of microencapsulates were tested under accelerated (60°C) and refrigerated temperature (4°C). TBARS values of microencapsulates crossed the acceptable

limit of 2 mg MDA/kg on the 4<sup>th</sup> day (2.2 mg MDA/kg), 28<sup>th</sup> day (2.5 mg MDA/kg) during accelerated, refrigerated temperature, respectively for the encapsulates contained sodium alginate. Results indicated that microencapsulates contained sodium alginate was oxidatively stable than carrageenan added one. Microencapsulated fish oil fortified noodles were prepared by hand extrusion. Wheat flour was used as base material. Based on the sensory analysis, incorporation of fish oil encapsulates up to 2% level were acceptable without affecting the taste of noodles.

#### AV PO 10

### Effect of green tea extract on the quality of fish nuggets during chilled storage

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In the present study, fish nuggets were prepared from pink perch (*Nemipterus japonicus*) mince and their qualities were evaluated under chilled (2°C) storage. Pink perch mince had 81.46% moisture, 17.44% protein, 0.85% fat and 1.02% ash. Fish nuggets were prepared in three different formulations by incorporating corn starch (4%), green tea extract (0.1%) and BHT (0.01%). Formulation containing only corn starch (4%) was served as control. Biochemical and microbiological qualities of fish nuggets were evaluated up to 17<sup>th</sup> day. Results showed an increasing trend in thiobarbituric acid (TBA) values during storage. However, sample contained green tea extract had a lower TBA value (0.34-0.44 mg MDA/kg) than BHT incorporated