Projects:

Oxidation mechanisms in fish oil enriched emulsions
The purpose of the project is to study the oxidation mechanisms in fish oil enriched emulsions in order to develop combined emulsifier and antioxidant systems which are more efficient in protecting fish oil enriched foods against oxidation than existing antioxidant systems. Results obtained in 1999 have shown that the low pH in mayonnaise is a very important factor for the initiation of the oxidation processes in mayonnaise. This is due to the fact that iron ions are released/loosened from the egg yolk components at the oil/water interface when pH is decreased to 4, which is the normal pH in mayonnaise. The released iron promotes decomposition of peroxides to volatiles, which are responsible for the off-flavour formation in mayonnaise. The metal chelator EDTA was observed to be a very efficient antioxidant in mayonnaise due to its ability to chelate iron. A HPLC method for determination of lipid peroxides has been further optimised and is now fully operational. By the aid of GC-MS a large number of volatiles that correlate to the fishy and rancid off-flavours in oxidised mayonnaise have been identified.

National Institute of Aquatic Resources
Department of Biochemistry and Nutrition
Department of Biotechnology
Danisco Ingredients
Association of Danish Fish Meal and Fish Oil Manufacturers
Royal Veterinary and Agricultural University
Period: 01/05/1996 → 31/12/1999
Number of participants: 11
Project participant:
Vu, Thi Thu Trang (Intern)
Jacobsen, Charlotte (Intern)
Hartvigsen, Karsten (Intern)
Lund, Pia (Intern)
Datta, Suvra (Intern)
Hølmer, Gunhild Kofoed (Intern)
Meyer, Anne S. (Intern)
Green, Else (Intern)
Reitz, Suzie (Intern)
Adler-Nissen, Jens (Intern)
Project Manager, organisational:
Børresen, Torger (Intern)

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