Prevention of lipid oxidation in omega-3 enriched foods by antioxidants and the use of delivery systems.

Due to the health beneficial effects of marine omega-3 fatty acids there is an increasing interest in developing functional foods containing these healthy fatty acids. However, such foods are very susceptible to lipid oxidation, which will give rise to undesirable off-flavours and unhealthy oxidation products. Efficient strategies to prevent lipid oxidation are therefore required. Such strategies include addition of antioxidants or the use of omega-3 delivery emulsions. However, antioxidant efficacy in complex omega-3 enriched foods are influenced by many factors including the lipophilicity of the antioxidants. Selection of the optimal antioxidant system is therefore a major challenge. Likewise, a range of factors can influence the ability of omega-3 delivery systems to protect the omega-3 fatty acids against oxidation after addition to food systems. These challenges will be discussed in this presentation and examples from the authors own research on antioxidants and omega-3 delivery systems will be given.

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