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Autoxidation of Fish Oil in Mayonnaise-Like O/W Type Emulsion

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O/W type emulsions were prepared with salmon oil as lipid and soymilk or whole egg as an emulsifier at different pH, to know the effect of pH on the oxidation and flavor stability of mayonnaise-like emulsions. Emulsions were oxidized in the presence of hemoglobin as a catalyst at 20°C. Both emulsions prepared with soymilk and whole egg were stable at pH 4 to 6, when the oxidative stability of emulsions was estimated as the induction period. Volatile compounds produced during oxidation were quantified for emulsions at different pH. Total volatiles were highest at pH 4. Propanal was added as a typical volatile compound to emulsions at different pH. The quantity of propanal in the gas phase was highest at pH 4, while it was lowest in the liquid phase at pH 4. The inferior flavor stability of mayonnaise could be due to the high volatility of low molecular weight compounds at pH 4, but this is not true of the oxidative stability.

Keywords: [emulsion](#), [fish oil](#), [flavor stability](#), [lipid peroxidation](#), [mayonnaise](#)
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