



Stabilisation of Salmon Patties with EN-FORT™ 105 WD-D Liquid Natural Antioxidant.

Introduction

Modified Atmosphere Packaging (MAP) helps limiting bacterial spoilage of processed salmon products as well as preserving their colour. The bright colour of salmon is very important as it the consumers' indicator of freshness.

Nevertheless, packaging does not cover all needs. Fatty fish, such as salmon is very sensitive to oxidation. The use of **extracts of rosemary** combined with MAP shows both an increased lipid and colour stability¹.

The objective of this study was to delay the oxidative rancidity of raw salmon patties in MAP (30% CO₂, 70% O₂) by the use of the water dispersible natural antioxidant **EN-FORT 105 WD-D Liquid**.



Figure 1. illustrative shutterstock image

Table 1. Products included in the study.

Product	Composition
Control	Untreated salmon patties
EN-FORT 105 WD-D Liquid	Extracts of rosemary (E392), carnolic acid and carnosol total: minimum 4.5%

Results

Starting from day 3, TBARS (ThioBarbituric Acid Reactive Species, a chemical marker for lipid oxidation) in the untreated salmon patties were significantly ($p < 0.05$) higher than those treated with EN-FORT 105 WD-D Liquid natural antioxidant. Untreated salmon patties showed an exponential rate of oxidation whereas the rosemary treatment demonstrated a high oxidative stability during the 10-day storage study (Fig.1).



Figure 2. illustrative shutterstock image

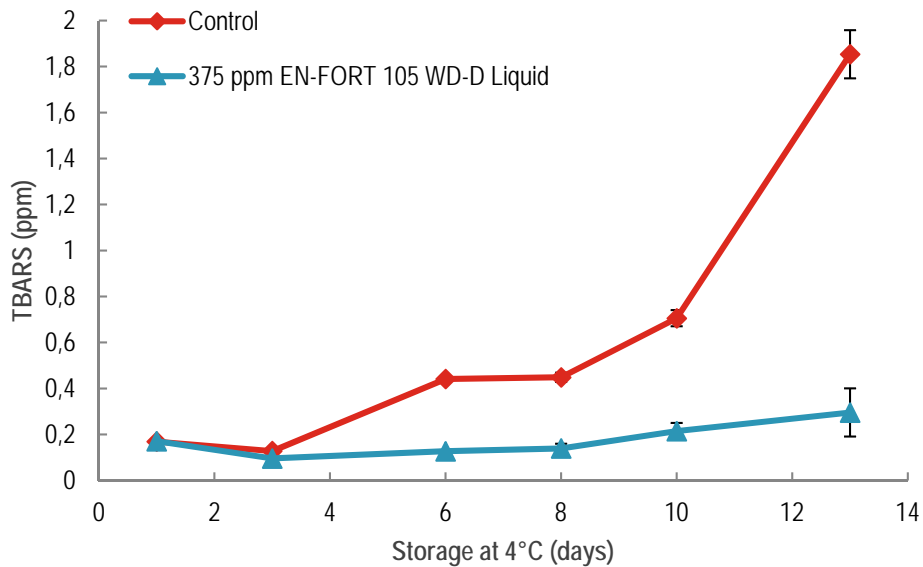


Figure 3. TBARS values (ppm) of raw salmon patties in MAP during storage in the dark at 4°C (error bars represent the standard error of the mean).

Conclusion



Figure 4. illustrative shutterstock image

Based on the analysis of TBARS, raw salmon patties in MAP were sensitive to oxidation.

EN-FORT 105 WD-D Liquid natural antioxidant (extracts of rosemary) showed a high efficacy in delaying rancidity of salmon patties.

References

- ¹ "Oxidation and antioxidants in fish and meat from farm to fork", 2013, from Sabine Sampels, published by Intech (chapter from the book Food Industry)
- ² Kemin Internal Document 16-00134