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## **Development of volatile compounds during storage at various conditions of different lipid containing lip balm products**

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Many lip balms contain various lipids to care and soften the lips. However, the content of these lipids even in small amounts increases the risk of oxidation when exposed to heat, light or other conditions with a pro-oxidative effect. The progress of oxidation can be affected by several factors; the degree of unsaturation, the content of antioxidants and the quality of the raw materials. When stored in the homes of consumers the lip balms may be exposed to relatively high temperatures and light. Hence, especially lip balms sold in countries with a warm climate can undergo lipid oxidation and develop volatile compounds with off-odours.

This presentation will include results from a storage experiment on four lip balms stored between 14 and 84 days, under different conditions. The samples were exposed to heat (20°C, 40°C and 50°C), light (samples at 20°C) and iron (samples at 40°C). Samples were analysed for their development of volatile compounds by dynamic headspace gas chromatography-mass spectrometry and peroxide value, and compared to samples stored at 2°C in the dark. In addition, sensory analyses were carried out to assess the off-odours developed in the samples. The result showed that addition of iron increased the concentration of most volatiles. Furthermore, high temperature (40 and 50 °C) increased the concentration of volatile oxidation products. For some volatiles the effect of iron addition was larger in some lip balms than in others, but none of the lip balms had consistently higher levels of volatiles with increased temperature than the other lip balms.