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### **The effect of processing on sensory properties of mayonnaise**

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#### Introduction

Mayonnaise is an oil in water emulsion, generally produced in high intensity rotor-stator mixers. The taste, flavour and texture is appreciated by consumers but local markets value different sensory properties. The effects of processing conditions on these properties are not fully understood. However, it can be hypothesized to primarily depend on mixing intensity (i.e. the rotor tip-speed) and processing time (i.e. the average number of rotor-stator passages). The aim of this study was to evaluate the effect of mixing intensity on sensory and instrumental characteristics of mayonnaise.

#### Methods

A standard recipe for mayonnaise was processed in a rotor-stator mixer using two different mixing intensities (rotor tip-speeds of 4.7 m/s and 7.1 m/s respectively). The processing time was chosen to give the same number of average rotor-stator passages for each rotor speed. Sensory properties were evaluated using an analytical panel and Quantitative Descriptive Analysis (QDA). In addition, texture was measured instrumentally as curdled consistency by back extrusion (TVT Texture Analyzer, Perten Instruments).

#### Results

The higher mixing intensity (7.1 m/s) led to a more yellow appearance compared to the lower intensity (4.7 m/s). It also resulted in an altered texture, both when assessed as by hand manipulation and in-mouth. Processed at higher speed, the mayonnaise was *e.g.* more resistant to stirring corresponding to a higher Peak Force A (N) and Adhesiveness (J) when measured instrumentally. No effect on taste and flavour related sensory properties was found.

#### Discussion and conclusion

The result indicate that there is a potential to tailor the texture characteristics of mayonnaise through processing. By varying the mixing speed the appearance and texture of mayonnaise was affected, a higher mixing intensity led to a more yellow and firm product. The alterations in processing conditions had however no effect on taste and flavour of the mayonnaise.

**Keywords:** mayonnaise, emulsification, appearance, texture