**Optimisation of plant-based milk alternatives through the use of specific pea protein fractions**

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Due to their structure, plant proteins differ from milk proteins in terms of their emulsifying capacity, especially in milk alternatives, where additional hydrocolloids are sometimes used to support the stabilisation of the emulsifier. This is partly due to the different stabilisation mechanisms of the individual protein fractions, whose effectiveness and interaction still need to be better clarified.

The aim of the study was to characterise the emulsifying properties of individual protein fractions from pea and thus identify possibilities for improving stability. For this purpose, the pea protein fractions albumin, vicilin and legumin were isolated and incorporated into a model system based on a dairy alternative.

The emulsion stability was analysed by measuring the oil droplet size distribution and microscopy as well as visual assessment of the creaming behaviour. At pH 7 under varying salt concentrations, the interfacial properties were characterised using shear and dilatation rheology.

Results show, that there was a correlation between the interfacial properties of the pea protein fractions and the emulsion stability. In particular, the separate use of vicilin as an emulsifier led to stronger interactions at the interface and higher emulsion stability compared to pea protein isolate.