

Mitigation 3-MCPD and Glycidyl Esters: Final Results from the Second FEI Project of the German Industry

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In August 2014 the second research project on the mitigation of 3-MCPD and glycidyl esters funded by the Research Association of the German Food Industry (FEI) and the German Federal Ministry of Economics and Technology has been completed.

One part of this project was to take up the most promising findings from the first project, use of additives (e.g. citric acid or diacetyl) during deodorization, short-path distillation, two-step deodorization and washing of crude oil after extraction with the aim to optimize these strategies for large scale application and to provide the referring technological fundamentals. Special focus was laid on the influence of the different technological approaches on the quality of the resulting oil.

The lecture presents the final results of this part of the project showing that especially two-step deodorization with a low temperature in a first and a high temperature in a second step, short-path distillation as well as addition of citric acid during deodorization resulted in a remarkable reduction of the formation of 3-MCPD and glycidyl esters in the refining process. The practicability of the different approaches with particular focus on the final product quality is discussed.