

# Food Safety And Regulatory Measures

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## Detection and monitoring of 3-monochloropropane-1, 2-diol (3-MCPD) esters in cooking oils

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**3**-monochloropropane-1, 2-diol (3-MCPD) esters and Glycidyl Esters (GE) are compounds which were formed during processing of vegetable oils. Formation of 3-MCPD esters is due to the presence of chloride in the oil and processing aids, as well as high temperature during the oil processing. On the other hand, GE formation is largely due to diacylglycerol content in the vegetable oils. Several analytical methods were developed to determine the levels of these compounds, and MPOB has successfully optimized and verified the BfR method (Indirect determination of 3-MCPD esters in refined vegetable oils and fats. MPOB has also verified and optimized the AOCS Official Method for the determination

of 2- and 3-MCPD esters and glycidyl esters in refined oils and fats. Cross check analyses were carried out with reputable private laboratories in Europe to compare the results obtained from this analysis. Based on the data collected from mills and refineries in Malaysia, the refiners are able to produce palm olein with lower 3-MCPD esters and glycidyl esters. In general, maintaining good quality crude palm oil will greatly reduce the formation of these compounds in refined oil. This paper will provide information on the research works carried out in MPOB with regards to this issue.

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