

Advancement of 3-MCPD and Glycidol ester analysis in edible oils by GC-MS

Martin Maier^a, Julian Weghuber^{a,b}, and Clemens Schwarzinger^c

^aAustrian Competence Center for Feed and Food Quality, Safety and Innovation,
3430 Tulln, Austria

^bUniversity of Applied Science Upper Austria, 4600 Wels, Austria

^cJohannes Kepler University, Institute for Chemical Technology of Organic Materials,
4040 Linz

The three different official methods of AOCS, ISO and DGF for analysis of 3-MCPD and glycidol esters in edible oils show some negative aspects regarding sample preparation and analysis effort. The mentioned methods focus on an indirect determination of the glycidol ester content as the difference in the 3-MCPD content of two measurements. Therefore, the existing methods were further developed to minimize the effort for sample preparation and to allow a simultaneous determination of 3-MCPD and glycidol esters. The contained glycidol esters are converted to bromohydrin by bromination, the conversion rate and recovery are determined by stable isotope labelled internal standards.