

Monitoring Quality Parameter, 3-Chloro-1,2-Propanediol (3-MPCD) and Glycidyl Esters (GE) during Bleaching with different Types of Bleaching Earths

Behiye Ebru Şahiner¹, Merve Akpınar Uzun¹, Cansu Ekin Bonacina¹, Aziz Tekin¹

¹ Department of Food Engineering, Ankara University, Turkey

Changes in some quality parameters, 3-kloropropan-1,2-diol (3-MCPD) and glycidyl esters (GE) contents of palm olein were investigated during bleaching with different types and ratios of bleaching earths. Four types of Tonsils (activated and neutral) were used at 0.5, 1.0, 2.0 and 3.0% in bleaching processes, and peroxide, color, conjugated diene and triene values as well as 3-MCPD and GE contents of palm olein were monitored.

The results showed that higher reductions in peroxide values and GE levels were observed after the use of acid activated bleaching earths, compared to the neutral one. However, little reductions in 3-MCPD concentrations were detected with the use of neutral earth. Conjugated dienes were increased more with the use of neutral earth while trienes were higher with the activated ones. Raising the earth ratio in bleaching increased L* and a* values where as decreased b* values.

Key words: Bleaching earth, 3-chloro-1,2-propanediol (3-MCPD), glycidyl esters (GE), quality