Changes in Free Fatty Acids during Ripening of Probiotic *Lighvan* Cheese

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Traditional *Lighvan* is a semi-hard cheese and is one of the most popular traditional cheeses in Iran. It is mostly produced from ewe's or goat's milk, or a mixture of them. Lipolysis is one of the major biochemical changes that occur during cheese ripening. The free fatty acids (FFA) released during lipolysis along with proteolysis contribute to the production of volatile component as well as some other agents of the cheese flavours Georgala *et al*. (2005). Furthermore, analysis of the short and medium-chain FFA profile has been suggested as an index for characterizing cheeses over the ripening period (Woo and Lindsay 1984). The purpose of this study was to evaluate lipolysis process during ripening of probiotic *Lighvan* cheese. The level of lipolysis was assessed in cheese samples 5, 25, 45 and 60 days old by measuring the acid degree value (ADV) and free fatty acids (FFA) content. ADV increased continuously during ripening. This increase was due to proteolysis and post-acidification. The mean concentration of acetic acid and individual FFAs of probiotic *Lighvan* cheese increased throughout ripening. Butyric acid was the main FFA in SCFFA experimental cheese samples The relatively higher increase was viewed in the concentration of SCFFA ($C_{4:0}$ to $C_{8:0}$), which has a significant impact on the development of characteristic aroma of cheese, during ripening than medium chain free fatty acids (MCFFA) ($C_{10:0}$ to $C_{14:0}$) and long chain free fatty acids (LCFFA) ($C_{16:0}$ to $C_{18:2}$).

Keywords: Lighvan, cheese, Probiotic, Lipolysis

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