

Characterization of technological properties of *E. faecium* and *E. durans* strains isolated from Siahmazgi traditional cheese

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Abstract

Microorganisms especially wild or added lactic acid bacteria as a starter or adjunct culture have a significant effect on different stages of cheese production. The aim of this study was to evaluate technological properties of 3 strains of *E. faecium* (SC5, SF5, SA12) and 3 strains of *E. durans* (SA25, SE16, SD18) isolated from Siahmazgi cheese in order to select suitable microorganisms regarding technological properties to be used as starter or adjunct culture in the production of fermented dairy products. The strains were evaluated regarding acidifying activity, proteolysis and lipolysis ability and also other biochemical properties. Then the growth curve of the strains was drawn at different environmental conditions. There was a significant difference in relation to acid production, proteolysis and lipolysis ability between Enterococcus strains. The strongest strain in relation to pH reduction was SC5. SC5 and SE16 strains were the strongest strains in relation to proteolysis (4.35 mg Tyr/5 ml milk) and lipolysis (10.37 U/min), respectively. The results showed that growth at salt concentrations (2% and 4%) and also pH=9.6 induced log phase to be started at hour 4, but growth at pH=5 and 6.5% salt concentration induced log phase to be started with delay (hour 8). The results showed that Enterococcus strains isolated from Siahmazgi cheese cannot be used as starter culture because of weakness in pH reduction, but due to proteolysis and lipolysis activity, inability to produce gas from glucose, diacetyl production, and resistance to diverse environmental conditions (SE16 strain) can be used as an adjunct culture.

Key words: *Enterococcus faecium*, *Enterococcus durans*, Traditional cheese, Siahmazgi cheese

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